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The Japanese Market for Organic Fruit and Vegetables

A thesis presented in partial fulfilment of the requirements for the degree
of Masters of Business Studies in Agricultural Business
at Massey University

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Abstract

This thesis reports the results of a study conducted in 1997 concerning Japanese consumers' awareness and consumption of organic fruit and vegetables, and their attitudes towards organic produce, food imports in general, and New Zealand in particular, as a supplier of organic produce. The study involved a self-completion survey of 998 Japanese consumers, a further 22 personal interviews with both consumers and people in the food industry, and observations of the retailing and merchandising of organic produce in Japan.

Despite difficulties associated with the Japanese organic market, the study concludes that there is continued potential in Japan for New Zealand organic exporters. There is a significant niche market in Japan for higher priced organic produce, although the price premiums achieved appear to limit the size of this market. New Zealand organic exporters must emphasise the safety of their product, and ensure that certification labelling and explanations are clear and comprehensive. The healthiness, taste, and freshness of the produce are also important points to emphasise in packaging or promotional materials.

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1. Summary

Consumers world-wide are becoming more health-conscious and environmentally aware, and as a result demand for organically-grown fruit and vegetables has risen. Organic produce exports from New Zealand have increased in value from \$12 million in 1996, to over \$20 million in 1997, and it is predicted that the organic industry in New Zealand will experience significant growth in the near future. New Zealand's biggest market for organic produce is Japan. Despite which however, there is relatively little understanding of the Japanese organic consumer. The main objectives of this study were therefore; to better understand Japanese consumers' awareness of, and attitudes towards, organic produce; their buying behaviour in relation to it; and to identify the organic products most commonly purchased by consumers in Japan.

To gather this consumer information, a self-completion questionnaire was delivered to 998 housewives in Japan, of which 700 were returned. The respondents belonged to either the organic groups, or the 'general public' group. Many of those in the 'general public' group belonged to consumer co-operatives, while those in the organic groups belonged to organic consumer groups. Both samples represent populations already inclined towards environmental issues and organic produce, and were chosen firstly because they represent a significant proportion of the population of Japan already inclined towards organic food (and therefore a potential market for organic exports from New Zealand) secondly, to constrain the scope of the study, and thirdly, as an effective means of obtaining research data.

Additionally, 22 personal and group interviews were carried out with consumers, business people, academics, and government officials, and finally, an observation study was undertaken regarding the presentation of organic produce in Japanese supermarkets.

It was found that consumer awareness of the organic system in Japan was quite low and there was a certain amount of confusion amongst consumers as to what the term

'organic' meant, and how this differed from 'chemical-free'. A high proportion of respondents believed that the term 'organic' means 'chemical-free' and/or 'natural'.

A number of significant differences were found between the two groups sampled. As expected, those in the organic groups were more affluent, and spent more on organic produce, more frequently, than those in the 'general public' group. However, while those in the organic groups were generally more affluent, there was no relationship between their level of income and the amount of money they spent on organic produce. Those in the organic groups were also more tolerant of the poor appearance of organic produce, and were more willing to pay the price premiums. Although this group appeared to be a good potential market, they were also more averse to purchasing imported foods, and were less inclined to purchase frozen foods. The 'general public' group, consisting of co-operative members and the wider Japanese population - representing over 18 million consumers in Japan - were the more likely customers of New Zealand organic produce exporters.

Safety was found to be the most important factor concerning organic produce, followed by price, with many respondents stating that they did not usually purchase organic produce due to the expense. The shape and size of organic produce was not important to the majority of respondents, although skin blemishes were to a few. This is fairly irrelevant for New Zealand producers and exporters however, as irrespective of what consumers think, produce that is misshapen or blemished beyond the strict quarantine regulations is not allowed into Japan. A significant number of the respondents indicated that it was important that a wide range of organic produce is available for purchase, and believed both that the range currently available was very limited and that it was generally not as widely available as conventional produce. Many respondents agreed that there were not enough places from which they could purchase organic produce, and, also, that continuity of supply was an important factor to be addressed.

The majority of respondents perceived organic production methods to be more environmentally friendly than conventional production methods, and to a lesser extent, that the legal level of pesticide residue allowed on conventional produce was too high.

Most believed that the trace quantities of pesticide residues allowed on conventional produce did harm people, with many also believing that excessive use of chemicals in food production can cause allergies in children. The majority of respondents, particularly those in the organic groups, perceived organic produce to be better tasting, and more nutritious than conventional produce.

The most common images that interviewees held regarding organic produce were, in descending order: 'safe', (sometimes) 'misshapen' (but they did not consider that important), 'expensive', 'tastes good', (sometimes) 'dirty' (but they did not consider that important), 'healthy', and 'often unavailable or in short supply'.

The main barriers to purchasing organic produce that interviewees had were: the high price premiums, unavailability or limited range, and that they were unable to trust the certification labels and produce.

Over 60% of Japanese consumers surveyed purchased fresh organic fruit or vegetables at least once a month, with less than 35% purchasing organic juice, and less than 25% purchasing frozen organic produce. Less than 16% of respondents purchased canned organic produce at least once a month. Although these are not all large percentages in relative terms - and many consumers prefer not to purchase imported food - considering that 452 of these respondents represent over 18 million consumers in Japan, it can be concluded that in absolute terms, there is a large niche market for organic produce in Japan.

The largest potential market is for fresh produce, although in light of the difficulties associated with exporting fresh produce, producers and exporters may need to focus on the smaller, but promising, markets for organic juice and frozen organic produce. Of the fresh organic vegetables that respondents had purchased in the last three months, the top three varieties for both sample groups were onions, pumpkin, and potatoes, the former two of which are important New Zealand exports. Apples, mandarins, and strawberries were the three most commonly purchased organic fruits, while the most commonly purchased frozen organic vegetables were pumpkin, mixed vegetables, and green beans.

The three most frequently purchased canned organic produce were corn, mandarins, and asparagus, while apple, vegetable, tomato, and orange juice were the most commonly purchased organic juices. According to this study, these are the types of foods that New Zealand producers and exporters could focus on producing and exporting, particularly organic juice, which is currently a small component of the export market.

Retail price is a critical factor to consider in the long term for the organic export industry. The average Japanese consumer is averse to paying the higher prices charged for organic produce, leaving the more health conscious and environmentally aware consumer to make such purchases, although this does still comprise a large market. It is likely that the present market for organic produce will remain a niche market, unless price premiums decrease. That price premiums remain as they are is a critical factor to the success of the New Zealand organic industry - which depends on organic produce being a niche, rather than mainstream, market. If in the future New Zealand producers and exporters are unable to receive price premiums for organic produce sold in Japan, then an alternative niche product and/or an alternative market may have to be sought, as such premiums are necessary for industry viability.

2. Introduction

2.1 Background

In the last decade much attention has been placed both on sustainable and environmentally sound farming practices, and on the international market opportunities for produce grown in a sustainable way. Much of this attention has focused on organic farming, its viability in New Zealand, and the market potential for organic produce in Japan, the United States, and Europe.

One reason for interest in organic farming is that many consumers and producers are concerned about negative impacts that conventional farming may have on physical health and safety, and on the environment. A further reason is that many producers and business people see this concern as a potential market opportunity and therefore as a way of expanding business (Owen, 1989; Organic Products Exporters Group, 1996; Tregear et al, 1994).

2.2 Organically-grown Produce: A Definition

There are many definitions of organic farming. For example, the New Zealand Biological Producers Council defines organic farming as:

“That which seeks to produce food of optimum quality and quantity, and to manage productive ecosystems according to a total concept that endeavours to make them sustainable and non-polluting of the environment, while providing an appropriate level of income to the producer(s), families and communities”.

(The New Zealand Biological Producers and Consumers Council, 1994, pp.A2).

The European Union defines organic farming as:

“(Farming that places) significant restrictions on the use of fertilisers and pesticides which may have detrimental effects on the environment or result in the presence of residues in agricultural produce.”

(Roddy et al, 1994, pp. 4).

Most definitions of organic farming reflect in some way the points covered in the preceding definitions. Organic farming adopts a wide range of alternative practices in place of using agricultural chemicals.

In an organic farming system the soil is given priority, whereas conventionally, everything is done for the crop (Mallard, 1997). In an organic system, soil loss is minimised through techniques such as shelter belt planting and by maintaining a longer pasture cover than would be usual in conventional farming. Soil structure is maintained through deeper rooting pasture and bush, more surface litter, and through careful management of animal trampling and compaction. Soil fertility is sustained through the sowing of nitrogen fixing crops such as legumes, crop rotation, and by recycling organic nutrients. Pests, disease, and weeds, are controlled by enhancing the plant's or animal's resistance by good nutrition, using natural mulches, 'biological controls', and pest and disease resistant plant varieties and species (Ministry of Agriculture and Fisheries, 1994; see Appendix 3 for a more detailed description of organic farming practices). According to Hanna (1996) organic farming is not a return to the past, and modern science is essential for areas such as the development of new biological controls, and for accurate monitoring systems for farmers to anticipate potential problems before they happen.

Although organic crop yields are likely to be lower than the conventional counter-part, it is thought by Lampkin (1990) that this is usually compensated for by the lower variable costs and the price premiums available - many consumers are willing to pay price premiums of up to 30% for organically-grown produce. Organically-grown produce is seen by consumers to be clean (from chemical residues), to taste better, and to be more nutritious than conventionally-grown produce (Powell, 1995). Conversely, organically-

grown produce often has the disadvantages of being irregular in shape, small in size, more often afflicted by blemishes and insects, and relatively more expensive to purchase than conventionally grown produce (Powell, 1995; White, 1995).

A further disadvantage of organic farming is the extra difficulty involved in managing a farm without the use of agricultural chemicals. For example, organic sheep farmers - prohibited from using conventional sheep drenches - must rely solely on techniques such as rotational grazing. Also, organic farmers must rely solely on cultivation to prepare seedbeds, instead of the herbicides used by conventional farmers. In this way, fossil fuels are used more extensively than they otherwise would be, and by relying on cultivation, critics argue that the land is more prone to soil damage and erosion (AGCARM, 1992).

Only in the last fifty years has the extensive use of conventional agricultural chemicals become widespread in developed nations. Much of the success of the New Zealand agricultural export industry during that time is said to be attributable to this fact alone (Hanna, 1997). Agricultural chemicals are legally defined as “pesticides and animal remedies used to control weeds, pests and diseases in agriculture, home gardens, and public places, and to prevent and control diseases and parasites in pets and farm animals”. Agricultural chemicals must meet the standards of the New Zealand Pesticides and/or Animal Remedies Boards before they can be legally sold or used (AGCARM, 1992). Many agricultural chemicals are being used in increasing quantities, as pests, disease, and weeds gain resistance to the chemicals (Hanna, 1996).

Proponents of these conventional practices point to large and sustained increases in food production as a result of the use of agricultural chemicals, and believe that this is critical to sustaining the world’s population growth (AGCARM, 1992). They argue that agricultural chemicals: greatly increase the efficiency and reliability of food production, protect food from bacterial contamination and fouling by rats, cockroaches, weevils and other vermin, ensure that food exports meet the quarantine and quality standards of overseas markets, protect animals from disease, and protect the environment by allowing agriculture to occur on suitable land in adequate quantities, thereby eliminating the need to use unstable, marginal land. The manufacture of conventional fertilisers has led to the

large scale application of fertiliser on farms throughout New Zealand, which in turn has resulted in crop and pasture production levels that are two to three times higher than before application (AGCARM, 1992). Moffat (1997), further states that “chemicals used today are much much different to what was used years ago... they’re more active, grams per hectare are now used rather than kilograms per hectare, they are lower in toxicity, and less residual”.

Critics of the trend towards conventional agriculture argue that the application of large amounts of agricultural chemicals has serious adverse effects including permanent damage to the air, land, and water. Specifically, soil exhaustion, the killing of wild life, the upsetting of the natural balance between pests and predators, and pest build-up as a result of chemical resistance (Segal, 1989; Powell, 1995). According to Goldsmith (1997) “soil is very living, but when (agricultural) chemicals are used for long enough, it loses its structure, becomes inept, therefore requiring more and more (agricultural) chemicals”.

Furthermore, agricultural chemicals are often considered a potential hazard to the health of humans. Watts (1997) asserts that agricultural chemicals originated from nerve gas used against people in World War II, and that now, in the form of agricultural chemicals, they still pose a danger to humans. Suspected illnesses attributable to agricultural chemicals include allergies, vomiting, headaches, and even cancer (cited in White, 1995). Some agricultural chemicals have also been linked in the United Kingdom to brain damage in farmers, although there is no scientific evidence of this (Deuss, 1997). The World Health Organisation has revealed that up to 220,000 deaths may occur annually, as a result of agricultural chemicals (Hanna, 1997). Jennings (1997) argues, however, that there is no scientific evidence for any claim that illness can result from the use of agriculture chemicals, and even if there was, it would be likely that it is caused by improper application of the chemical, or a disregard for the application instructions.

New Zealand studies have found that over 70% of fruit and over 30% of vegetables have chemical residues on them. Similarly, a Ministry of Health survey of New Zealand wines, found that 80% of wines tested contained pesticide residue (Hanna, 1997). Analysis also

reveals that the daily intake of pesticides by children in New Zealand is significantly higher than that by children in the United States. The consumption of the agricultural chemical organochlorine was found to be twice as high, organophosphate five times higher, and organofungicides, 13 times higher (White, 1995; Hanna, 1997).

In addition, it is argued that “pesticides are not registered on the basis of their safety. Instead they are registered on the basis that their benefits will supposedly outweigh their cost. It is also alleged that most pesticides, especially the older ones, have not had all the required tests completed on them. Even so, there is no obligation to review older chemicals, in spite of evidence of damage. For any pesticide to be banned or de-registered, the evidence of damage has to be overwhelmingly strong” (cited in White, 1995).

Former Commissioner for the environment, Helen Hughes, supports this stance on chemicals, stating that “none of our legislation gives adequate protection to the public, or provides an effective sanction for the misuse of chemicals, or provides redress to the people who believe they’ve been exposed to agricultural chemical spray drift”. Jennings (1997) disputes this, stating that the Resource Management Act does do this, and that there have been vast improvements on these issues since its implementation.

AGCARM (1992) also argues that by definition, neither organic nor conventional farming is natural, and that the natural state of the land is one that is covered by trees, bush, and swampland. This, however, would not sustain the present day population, thus AGCARM (1992) suggests that the actual issue is not organic farming or conventional farming, but how to farm in the most *sustainable* way, given all factors.

Though correct to describe the product of organic farming as ‘organically-grown produce’, the term ‘organic produce’ is used hereafter for the sake of simplicity. Terms that are sometimes used interchangeably for ‘organic’ in the industry and literature include; ‘sustainable’, ‘biological’, ‘bio-dynamic’, ‘natural’, and ‘environmental’.

2.3 Summary

The use of agricultural chemicals has had a large influence on the development of agriculture in New Zealand, and is argued to be a vital factor in producing the quantities of food required to sustain the growing world population. Critics argue however, that the use of agricultural chemicals in conventional farming results in extensive environmental degradation and possible ill health for humans.

Organic farming is an alternative to conventional farming in which the use of agricultural chemicals is limited. It relies on a wide range of stock, crop, and pasture management techniques, and on biological controls. It is very labour intensive, and productivity levels may be lower than those for conventional farming. However, higher costs may be off-set by the premium prices paid by consumers for organic produce.

2.4 The Demand for Organically-grown Produce

Consumer demand for organic food has its origins in Europe (Jetro a, 1997) and demand has since extended to include the United States, Australasia, and Japan (Le Pla, 1989).

According to Powell (1995), growth of the organic food industry in the United Kingdom has been 'consumer led', and has received little support from the food industry. Retailers there started selling organic produce in 1981, with the market growing to 125 million pounds by 1995. Although internationally the organic market may make up only 1% of the total food market, in the United States, it is a market worth approximately \$4.5 billion per year, and could be growing at a rate of up to 20% per year (Christie, 1997; Batchelor, cited in Kitchin, 1997).

Powell also asserts that the organic industry in its present state is relatively incompatible with existing market distribution systems, due to difficulties in complying with the buying conditions of the intensely-competitive supermarket industry. In response to this, direct links between the grower and the consumer have been established, forming what are

referred to as consumer co-operatives. As a result of this development, organic growers have a guaranteed market for their produce, and consumers, a steady supply of reasonably-priced organic produce. Consumer co-operatives are common in the United Kingdom, Switzerland, West Germany, Japan, and the United States.

Studies conducted in the United Kingdom reveal that higher prices, rather than produce of non-uniform size or shape, are a major disincentive to purchase, and that many consumers believe that organic produce tastes better than conventional produce (Tregear et al, 1994). United States studies have shown that only a very small proportion of shoppers appear to be willing to pay more than a 10% premium for organic produce, although many of that very small proportion of shoppers may be willing to pay a premium of more than 45% (Hammel, 1995). Recent food trends in the United Kingdom include increasing demand for instant foods and snack type meals, a reduction in traditional meals, increasing concern about the pesticide levels of food, and the continuing importance of taste in food products (Henly Centre, 1987). Organic produce aligns with this trend - it is mostly pesticide free, and is often perceived to be better tasting than its conventional counter-part (Segal 1989; Beharrell and MacFie, 1991).

Surveys conducted in the United States indicate that 20% of consumers would like a total pesticide ban for agricultural production, while 80% want a reduction - or no increase - in pesticide use (Market facts and Porter/Novelli,1990). Forty nine percent of consumers in the United States indicated in a Harris Poll (1989) that they would pay more for organically-grown fruit and vegetables. However, whether these beliefs and attitudes result in action is questionable; a study by Jolly (1989) revealed that, although 40% of consumers perceive organic foods to be safer, and less destructive on the environment, only 23% said that they regularly purchased organic food. It is also estimated that 60% of American consumers who frequently purchase organic food are influenced by environmental issues when they shop (Mintel, 1991).

Western consumers found to be most committed to the environment are females aged between 30 and 49, who have children over the age of six, and are educated, affluent, and politically liberal. They appear to be people who, through lifestyle choice, like to

spend their money on products they see as healthy, tasty, and ecologically benign. It was found that availability and price are the chief factors which inhibit the purchase of organic food, and that the primary factor in the purchase of organic food is the consumer's level of personal disposable income. These organic consumers have been categorised into the following groups:

- a) 'greens' who are concerned with the environment;
- b) food phobics, concerned about chemical residues in food; (plus the healthy eater)
- c) humanists preoccupied with factory farming methods;
- d) hedonists who believe that a premium product must be better and, most importantly, taste better.

(Porritt and Winner, 1988; Mintel, 1991; Ottman, 1992; Davies, Titterington, Cochrane, 1995.)

2.5 Organic Production and Marketing in New Zealand

The Domestic Market for Organic Produce

Organic farming in New Zealand has been slow in developing, and production remains low. Crowder (1996) upon return from time in Denmark, states that "it would be true to say that in my time in Denmark I came across more people who have read my articles on these (organic) issues and remembered me for them than in New Zealand, and they had it all in practice". The reason why the local organic industry is still small is largely due to the attitude held by many New Zealand farmers that organic farming is 'hippie-like', that they 'do not want to be seen as being too green', and the lack of technical understanding amongst most farmers regarding how to farm organically (Jetro a, 1997; Manhire, 1997; Popay, 1990).

Local organic food shop owner Byrnes (1997), says that supply is a big problem; his shop cannot get the continuous supply of organic food required by customers. This not only dissatisfies customers, but also keeps sale premiums high. The general New Zealand

public is reluctant to pay any premium on organic food and the market, which is growing slowly, is small (Jetro ^a, 1997).

Certification

There are two private organic certification authorities in New Zealand: the New Zealand Biological Producers and Consumers Council Inc., (labelled *Bio-Gro*); and the Bio-dynamic Farming and Gardening Association New Zealand Inc., (labelled *Demeter*). Both are members of the German-based International Federation of Organic Agricultural Movements (IFOAM).

Both *Bio-Gro* and *Demeter* are non-profit organisations, whose principle activities include: the formation of production, processing and distribution standards, inspection and verification of licensees and license applicants; and research and education. *Demeter* has the additional focus on the bio-dynamic movement, based on the principles of German philosopher Rudolf Steiner. The standards outline permitted and restricted materials and practices - anything not listed is prohibited (Jetro ^a, 1997).

By January 1997, there were 257 *Bio-Gro* licensees in New Zealand, with certified land area totalling 7,302 hectares. At the same time, there were 42 *Demeter* certified licensees (Jetro ^a, 1997).

Government Involvement

The government recognises the place of organic farming in New Zealand and has produced a number of Policy Position Papers on the subject. It has put aside \$30 million for the next three years for research on organic farming.

There is, however, no government-sanctioned description of organic farming, and, therefore, no official government statistics available on organic exports. The organic industry believes that success of the future organic export industry is dependent on official government recognition and adoption of organic standards. The industry is presently lobbying for this (Jetro ^a, 1997), but whether it will ultimately become the

responsibility of the Ministry of Agriculture Regulatory Authority, Standards New Zealand, or TELARC, is as yet unknown.

Industry Involvement

New Zealand organisations presently, or potentially, involved in exporting organic food have formed a group called 'Project 98'. Member organisations include: Federated Farmers, the Food and Beverages Council, Guy Salmon, Hort Research, Maruia Society, Ministry of Agriculture and Fisheries, Produce marketing Boards, Tradenz, and Watties Frozen Foods.

The goal of Project 98 is to "brand New Zealand food exports as the world's safest and most environmentally viable". Its aims are to increase local producer awareness of organic export markets, to increase domestic supply of organic food by helping farmers to enter the industry and by developing exporting infrastructure (Hughes, pers. comm. 1996).

Another recently-established group is the 'Organic Products Exporters Group' (OPEG), a non-profit industry group consisting of twenty member companies, including Northland Dairy Products, Turners and Growers, Watties Frozen Foods, and Zespri New Zealand. The group's mission is "to develop a sustainable, commercially viable certified organic products exporting industry" (Organic Products Exporters Group, 1996).

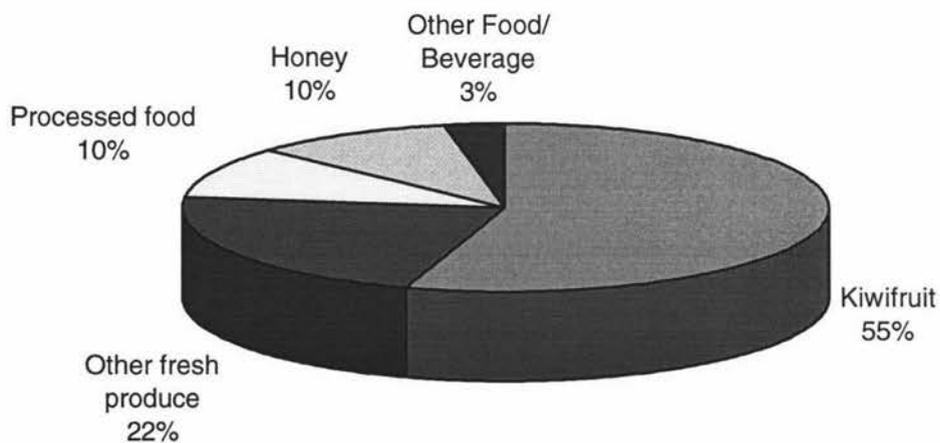
Organic Exports

While the local market for organic food remains small, international organic food exporter, Watties Frozen Foods, has experienced growth in the demand for organic produce in markets such as Japan, and are actively encouraging all of their contract growers to convert to growing certified organic produce (Growing Today, 1997). Zespri International has also experienced significant growth in its sales of organic kiwifruit, and both companies expect organic sales to continue increasing. However, both are concerned with the problem of insufficient supply of their respective organic produce.

Although organic farming and its export potential has received much publicity and attention in New Zealand in the last decade, it still constitutes only a very small proportion of New Zealand's total export earnings. Reported export earnings of \$20 million in 1997 (Jetro *a*, 1997, Tradenz *a*, 1997), represent only 0.1% of the value of all exports, and 0.2% of the value of agricultural exports (see Appendix 4).

The organic industry reported export sales of \$12 million, in the year 1995/6, and stated that there is "potential to considerably raise this figure by identifying market opportunities and working together to overcome barriers to market entry and development" (Organic Products Exporters Group, 1996; Jetro *a*, 1997). For the year ending June 1997, this figure had exceeded \$20 million dollars (Tradenz *a*, 1997). Organic exports by produce type are presented in Figure 1.

Figure 1 Exports by Product Type

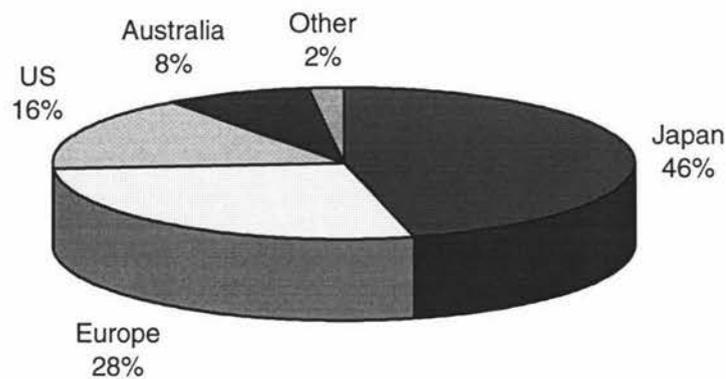


(Jetro *a*, 1997)

Organic kiwifruit represents the largest single category at 55%. Fresh organic squash and onions represent 22%, and processed foods and honey make up 10% each.

Markets for organic exports are presented in Figure 2. Japan is New Zealand's largest market, accounting for 46% of total organic export sales, Europe accounts for 28%, and the United States, 16%.

Figure 2 Markets for New Zealand Organic Produce



(Jetro a, 1997)

Zespri International, New Zealand, has implemented in 1997 a system whereby all its kiwifruit are grown under 'eco green' guidelines, meaning that minimal chemicals are applied to the fruit, and that residues are therefore low. Consumer perception in Japan concerning this is mixed. Most consumers interviewed in this study were uncertain about whether to trust the eco-green system, although a high proportion said that they probably would purchase eco-green kiwifruit - at least initially to try it out. In reality, the near future will see all kiwifruit produced in New Zealand become eco-green, and only the importers and retail outlets - not the Japanese consumer - will know this. A significant proportion of interviewees said that they would pay more for an eco-green kiwifruit than for conventionally-grown fruit. This may be because fruit is seen to be a luxury by many

consumers, and is therefore purchased relatively less frequently than staple foods, hence justifying the extra cost (see Appendix 8, Table A5).

An OPEG mission to Japan in November 1996, returned with the following sentiments concerning the situation in Japan pertaining to organic products.

- There is significant interest in New Zealand organics in Japan - the two seminars drew more than 240 companies.
- This interest represents more demand than New Zealand can currently supply - this point is not widely understood by Japanese importers.
- New Zealand's current certification trademarks are not widely known, nor are their standards understood.
- There is some confusion as to whether Japanese consumer interests lie in certified organically produced produce, or just 'healthy' food (pesticide or additive-free).
- The market will support an average price premium of 15-20% for a product that reaches quality standards.

(Organic Products Exporters Group, 1997)

2.6 Objectives of the study

Japan is expected to remain a major market for New Zealand organic produce. However, knowledge of the Japanese market for organic produce and the potential for New Zealand organic exports to Japan is limited. The primary objective of this study was, therefore, to evaluate this potential.

Specific objectives of this research were:

1. To better understand Japanese consumers' awareness of, and attitudes towards, organic produce.
2. To better understand Japanese consumers' current buying behaviour in relation to organic produce.
3. To identify the organic products most commonly purchased by consumers in Japan.

4. To identify the problems of cross-cultural research in the process of market analysis.

2.7 Outline of Thesis

Chapter one and two outline and describe what is known and thought about organic production and marketing, both locally and internationally. Chapter three outlines the methods used in conducting the research for this study. Comment is also made on the issues and difficulties faced in planning and conducting research in a foreign country - particularly in Japan. The results are presented in chapter four, and are followed the discussion, recommendations, and suggestions for further research in chapter five.

3. The Japanese Market for Organically-Grown Produce

3.1 Introduction

With a land mass similar in size and geography to that of New Zealand, Japan has a population that exceeds 125 million. The high demand for land in Japan makes it the most expensive place to purchase land in the world; consequently the average farm size is only 1.3 hectares. Further hindered by a farming population in which only 12% of farmers work full-time on their farms, and of whom over half are older than 55 years of age, agricultural production in Japan is on the decline (Internet: <http://foodnet...>, 1996).

With a self sufficiency rate of 60% (Yasuda, pers.comm., 1997; see Appendix 7, Interview 19), Japan relies greatly on imported food, and will do so increasingly in the future. With a market share for total Japanese fruit and vegetable imports in 1996 of 4.7% and 5.9%, respectively, New Zealand is presently a fast-growing supplier (Tradenz b, 1997). Japan imports 40% of its total food calories, and is the largest net importer of food in the world. This is a trend unlikely to abate, with government plans to reduce tariffs on fresh vegetables from 5% to 3% by the year 2000, and a recent government move to simplify import quarantine in order to reduce import related delays. Fresh vegetable imports to Japan have consequently been increasing since 1988, and although current fresh vegetable imports account for only 4% of the domestic vegetable market, they provide intense competition for domestic produce (Morio and Toyoda, 1996).

It is predicted that the growth of organic food in Japan will steadily increase in the future (Tradenz *c*, 1997; Jetro, 1994). Jusco, a large supermarket chain, has a goal of 25% of its sales being organic - presently the figure is approximately 5% (see Appendix 7, Interview 14). Wholesalers, as well as supermarkets - which are very influential in Japan - are encouraging the introduction and expansion of organic food in an effort to increase product diversification. The Japanese company Takanashi Milk Products stresses the need for the supply of organic foods to increase in the future to as much as 10% of the company's sales, in order to reduce price and to increase product diversification (Appendix 7, Interview 15). Over 90% of all food retail outlets have reportedly made some attempt to stock organic produce at some time, and wholesalers see the increased demand for organic food as a trend too important to ignore. Note that in this context, the term 'organic' includes low-chemical, chemical-free, and organic (Appendix 7, Interviews 14-16,18; Owen, 1989; Organic Products Exporters Group, 1996; Tregear et al, 1994). Further, imports are encouraged by supermarkets in Japan, who need to purchase fixed quantities of vegetables at stabilised prices throughout the year, as consumers seek to purchase vegetables whether or not they are in season (Appendix 7, Interview 14; Tradenz *c*, 1997; Jetro *a*, 1997).

Industry sources estimate that there are over 300 different organic products presently available in Japan, with prices ranging from 10% to 30% higher than for conventional products (Tradenz *c*, 1997). Most fresh organic produce is supplied domestically, while processed organic foods are mainly supplied from the United States. However, according to Irving (1997) consumer expectations in Japan are changing to the point where they no longer expect to pay higher prices for top quality products, instead consumers expect the same quality for a lower price.

Until recently the organic movement in Japan has lacked support. Now, however, support comes from many government agencies, institutional sources and citizens groups (Focus Japan, 1994). As a result, the wide range of channels dealing with organic produce now includes home delivery services, supermarkets, health food stores, and direct delivery from producer to consumer. Part of this increase in support and growth is

attributable to a strong consumer concern in Japan for healthy, safe, and environmentally sound foods (Appendix 7, Interview 14).

Consumer co-operatives are very common in Japan, and it is estimated that farmers market over 60% of their produce directly to them. The Japanese market is very decentralised in terms of environmental concerns, evident by the existence of 28,000 locally tailored and negotiated environmental agreements between the Japanese industry and local communities (Powell, 1995; Jetro, 1994; Simon, 1992).

Another study (MAFF, 1995) revealed that 98% of 1000 housewives surveyed said they were interested in organic food, and 45% of respondents said that they would be likely to buy it, irrespective of its higher price. Almost half said that they would buy organic produce if it was the same price as mainstream produce. Another survey by a large Japanese food distributor in 1992 (cited in Jetro, 1994), estimated that 80% of consumers had purchased organic produce at some stage, and are well aware of the benefits of eating it. The most common reason for such purchases was safety, rather than taste or nutrition - however, most consumers were not aware of the very strict import standards for organic food, and generally had a negative attitude towards any imported foods. In a similar study, Japanese consumers were found to be less likely than European and North American consumers to make a financial commitment to environmental issues (Focus Japan, 1994; Jetro, 1994; Gallup, 1992).

Domestic supply of *any form* of organic produce in Japan is still very limited, making up less than 1% of Japan's annual agricultural output. However, the government has introduced low-interest loans for equipment purchase to organic farmers, in an effort to encourage more farmers to change to organic farming (Tanaka, pers.comm.,1997; Yasuda, pers.comm.,1997; Focus Japan, 1994). (See Appendix 7, Interviews 19 and 20).

3.2 Organic standards

There is no single term or definition for 'organic' in Japan, and the system of alternative agriculture, including organic, chemical-free, and low-chemical, is complicated and ambiguous (Tradenz *et al.*, 1997; Simon, 1992). In 1992, the Japanese Ministry of Agriculture, Forestry, and Fisheries (MAFF), established a set of six production guidelines pertaining to organic farming. These guidelines are recommendations rather than regulations. Because of the low level of adherence to the guidelines, MAFF is considering a review. The six production levels are, 'organic', 'chemical-free', 'reduced-chemical', 'low-chemical', 'additive-free', and 'natural' (Tradenz *et al.*, 1997; MAFF, 1992 - see Appendices 1 and 2). To date, eight prefectures in Japan have established their own organic guidelines, and a further twenty are preparing to do so (Internet: <http://www2...>, 1996).

3.3 Requirements for organic produce imports

Organic food imports are subject to the same laws and regulations as conventional agricultural produce. These laws and regulations, which include the Food Sanitation Act, the Customs law, the Plant Quarantine Act, and the Quarantine Act, are strict and require a very high standard of product (Jetro, 1995).

There are, however, non-tariff trade barriers for organic produce. Appearance, including both the shape and size of the product, is closely monitored, and is particularly difficult to maintain for fresh organic produce. Whole shipments of produce have reportedly been rejected because these standards have not been met (Jones, *pers. comm.*, 1997).

Furthermore, fresh agricultural produce brought into Japan is randomly sprayed for insects with post-harvest chemicals such as methyl-bromide. No exceptions are made for organic produce, and if sprayed, its organic status is nullified (Jetro, 1994). This spraying is thought to be carried out more as a form of non-trade barrier than out of necessity (Chapman, *pers. comm.*, 1997).

3.4 Food Distribution Issues

The distribution system in Japan is long and complicated, and is the subject of much criticism. It is a significant barrier to foreign firms trying to enter the consumer market. Although presently under reform, the distribution system is still made up of many layers of wholesalers, who have all developed strong, long-term relationships with (or are owned by) other wholesalers, retailers, manufacturers, and importers (Shimizu, 1995; Fahy and Taguchi, 1995).

3.5 Foreign Entry into the Japanese Market

In addition to the inflexible distribution system, Japan has laws that regulate the relationship between large-scale retailers and local shop owners in the opening of new stores. The law acts as a licensing system which limits the entry of outsiders.

Another barrier that a foreign company may face when trying to enter the Japanese market is the impression that they lack the commitment of Japanese companies, and that there are likely to be communication break-downs if they do enter.

Japan is not only over-regulated in its distribution system, but also in the transportation, finance, communication, and health services. This is another reason for prices in Japan being the highest in the world.

It is, therefore, almost impossible for a foreign firm to enter the Japanese market and to attempt to sell its products directly to the consumer. The only practical strategy is to enter into a partnership with a Japanese firm and to capitalise on its established loyalties and relationships (Andrews, 1993; Calder, 1996; Higurashi, 1988; Keizai Koho, 1997; Kennedy, 1993).

4. Methodology

4.1 Overview

In May and June 1997, a survey of 998 Japanese respondents was conducted in the cities of Sapporo, Osaka, Fukuoka, and the Prefectures of Hyogo and Tochigi, Japan. Twenty two personal interviews were also conducted both in these areas, and in Tokyo. Furthermore, a number of organic farms and retail outlets selling organic produce were visited during this time.

Various cultural issues had to be addressed in undertaking this research. Issues concerning cross-cultural research will be discussed in this chapter, beginning with a general overview, followed by a discussion of the issues related to research in Japan and then specifically to this study. A description of the method used in this research will then be presented, including specific discussion regarding how the problems of cross-cultural research were dealt with.

4.2 Cross-Cultural Communication Issues

Introduction

Along with economic, political, professional, and corporate differences, different countries invariably have some degree of cultural variance, the extent of which must be understood by international researchers. Understanding these differences is of paramount importance, as invariably, international market research involves relating information obtained from overseas back to the home country. Due to a lack of understanding of the different cultures involved, many marketing efforts have failed because the issue of cultural differences had not been adequately addressed in the initial stages of defining the marketing research problem (Malhotra et al, 1996).

Culture has been defined as;

A learned, shared, compelling, interrelated set of symbols whose meaning provides a set of orientations for members of a society. These orientations, taken together, provide solutions to problems that all societies must solve if they are to remain viable.

(Terpstra and David, 1985, pp.5).

The researcher must be aware that acceptable behaviour and recognised truth in one culture, may be totally unacceptable and not be recognised truth in another.

4.3 Cross Cultural Communication: An Overview

When conducting market research in a foreign country, it is important that the economic and political systems of that country are recognised and appreciated. Poor nations will have a higher rate of illiteracy than wealthier ones, and the attitudes and interests of participants in the market research will differ vastly depending on their financial situation. Similarly, participants living in communist countries will be less likely to answer with the liberty and confidence of those in a democratic one (Punnett and Ricks, 1992).

In analysing and identifying a culture, factors such as individualism, uncertainty avoidance, power distance, and masculinity are useful to consider, as are the concepts of the relationship of humans to nature, humans' time orientation, beliefs about basic human nature, humans' activity orientation, and the relationship of humans to other humans. These factors all vary significantly in different cultures.

A culture that is highly individualistic allows individuals to take initiative, make decisions, and to work on their own. Individual opinions are encouraged, even if such opinions differ from the norm. Focus group type research is appropriate in this setting, as each participant is likely to express their opinions honestly. A highly collectivist culture encourages group decision making, group action, and group work. Individual

ideas and differences are seen as disruptive and therefore discouraged. Focus group type research is likely to be less effective in a collectivist culture, as participants will tend to agree with the superior or dominant member of the group rather than to express a personal opinion.

Uncertainty avoidance refers to the extent that a society is willing to accept uncertainty in jobs, business, government, and decision making. A culture with a high level of uncertainty avoidance is often more inflexible and bound by tradition than one that is not. In such a culture, it is therefore more important that good relationships are established and maintained with key people well in advance of conducting the market research.

The distance of power differs according to cultural ideals. Some cultures believe that there should be a rigid adherence to a hierarchical power structure in which each person's position is ordered and well-defined. Others adopt a more decentralised approach to authority. It is important when conducting research in a foreign culture that the power structure is well understood by the researcher. Great offence may be taken if the researcher does not act with appropriate respect to those in authority, and often in a culture where the power distance is high, so too are business and social formalities and protocols (Punnett and Ricks, 1992).

Some cultures are very patriarchal, emphasising traditional masculine values and male dominance over women, while other cultures are more sympathetic to feminine values, and view men and women as equal. This is relevant to cross-cultural research as it may be inappropriate for a woman to conduct research in a highly male-dominated society as she may fail to receive the respect, and therefore co-operation required for a successful study. Furthermore, a sample may be biased or limited in such a culture, if only the men are literate, or if the women are forbidden to participate.

The world-view held by a society differs vastly between cultures. A person's relationship to nature will shape the way in which they respond to questions asked. A person who believes life is preordained and therefore that trying to change the future is futile, will

respond differently to one who believes that they must alter their behaviour to live in harmony with nature, and to one who believes that nature is to be conquered.

Research must also be conducted so as to reflect the time orientation of a culture; whether it is focused on past, present, or future situations. Some cultures are forward looking, some look for instant gratification, while others focus on past events and traditions.

Further fundamental differences that arise between cultures is the view on basic human nature. Cultures that view human nature as essentially bad, focus on controlling people's behaviour through punishment. Those that believe it is good, rely significantly on trust and verbal agreements.

The activity orientation of a culture can also reflect the way in which market research is conducted. People in 'being' oriented societies are emotional, and will respond according to how they feel at the time, whereas people in 'doing' societies, place great value on work and efficiency. Those in the latter may see little value in participating in the research if they see it as a time waster and of little benefit to them. In such a culture, the researcher must stress the benefits of the research, and ensure that it is conducted in an efficient and highly situation appropriate manner.

Religion is a large part of many cultures. The researcher should understand what the religion of a culture involves, its importance in regards to what is and is not appropriate to discuss with participants, and the influence it may have on the way that participants respond to the research. Respect and sensitivity towards existing religious beliefs is important.

Cross-cultural research should be conducted in such a way that is sensitive to, and that reflects the underlying attitudes and beliefs held by the culture being studied. What is assumed to be true and appropriate in one culture is often not so in another (Punnett and Ricks, 1992).

Fundamental to a culture is its language. Language has been described by Whorf 1967 (cited in Punnett and Ricks, 1992, pp.164) as defining and perpetuating a particular world view, and is reflected by the belief that thought patterns differ according to the language spoken, that language influences the way people think, and that one can not speak a foreign language correctly until one learns to think in that language.

Translators and interpreters must be arranged if the language is different to the home culture. Specific problems arise when not only the cultural barrier, but also the language barrier must be crossed to conduct the research; additional time and money will probably be required to accommodate this issue.

When using a questionnaire as a research tool, it is important that it is not only worded correctly and contains the intended and contextual meaning in the foreign language, but also that the whole approach to the questionnaire is carefully considered to capture the cultural differences that will influence the way in which the meaning is understood.

A questionnaire cannot simply be translated word for word into a different language, as this will almost certainly result in many unintended and altered meanings. For an accurate translation, it is preferable that the translators be native speakers of the foreign language, as this will mean that they will understand the context and spirit in which the question is to be asked (Punnett and Ricks, 1992).

Cross cultural communication theory suggests that back-translation is a useful technique for checking the accuracy of a translation. It involves the re-translation from the target language into the original language. Back-translation assumes that the time and financial resources are available to translate the original language text, and that the translation will be on a one to one basis, therefore resulting in a very good match (Punnett and Ricks, 1992).

An International Social Survey Programme (ISSP) translation working group report (1995) however, argues that back translation is not always accurate. Reasons are that two identical original language texts do not necessarily mean that the translation is

“good”, in regards to meaning, style, and cultural relevance; two different original language texts do not necessarily mean that the target text is poor; and that monolinguals cannot be involved, as they see the text differently to bilinguals. The working group suggests that an evaluative team is necessary to appraise and fully discuss the back-translation process and content of the two languages involved, and concludes that “in order to get results out of back-translations, the researchers assessing the different versions must therefore provide the expertise - the procedure alone does not”.

A further problem faced in questionnaire translation is that very often there are not direct translations for many words in the other language. Often in English for instance, there is no Japanese equivalence, and even if there is an ‘equivalent’, the meaning can either be different, or reliant on its context for meaning. Research conducted by Voss et al (1996), shows that for a list of English adjectives, ranging from ‘horrible’ to ‘absolutely perfect’ on a scale of 1 to 123, there are slightly different levels of meaning for the majority of the ‘equivalent’ adjective in Japanese or Mandarin.

Furthermore, in many cases there appears to be a number of English adjectives, at slightly different levels of meaning, for only one or two words in Japanese or Mandarin. This serves only to further compound the complexities of non-equivalence in translation between languages (see Appendix 5).

Conclusion

There are many factors that must be addressed if a cross-cultural study is to be conducted successfully. The researcher must understand and account for the economic, political, cultural, and social structure of the country to be researched. Factors to be addressed include the concepts of individualism, uncertainty avoidance, power distance, masculinity, the relationships of humans to nature, humans’ time orientation, beliefs about basic human nature, humans’ activity orientation, and the relationships of humans to humans. Language issues are also paramount. Precautions must be taken to ensure that translations are accurate and that all contextual meanings are retained. Back-translation is a possible means of ensuring this.

4.4 Japan; Culture and Context

Economic and Political Environment

Japan was reported by Kennedy (1992) to have the highest growth rate, the lowest rate of inflation, the lowest level of unemployment, and the largest external surplus of any OECD country. An economic superpower based on exporting industrial machinery, automobiles, and electronics, Japan is expected to have annual exports worth \$US1 trillion by the year 2000. It is argued, however, that the wealth of Japan may belong to the business sector rather than that of the government or the general public. It must therefore be recognised that although a very wealthy country, the spending power of the average consumer may not be so high (Market Overview, date unknown).

Japan has, in principle, a democratic political system and a free market economy. In reality, the freedom of the individual is limited by societal pressures and the ideal of homogeneity endorsed from the highest level. To be 'different' in Japan is socially unacceptable, and personal opinions, ideas, and individuality are therefore suppressed. The average Japanese person is essentially prevented from entering government and positions of high level management; only those with 'connections' being able to do so. Consumer power is weak, the voice of the consumer is seldom heard above those of the powerful producers, wholesalers, companies, and the agricultural co-operative (Wada, Yasue, Honjo, pers.comm.,1997). Cartels and monopolies are legal in Japan, and the subsidies and protection given to the agricultural industry is large, thereby limiting the free market system (Herbig and Palumbo, 1994).

The Cultural Environment

Understanding the culture in which one intends to conduct business or research is fundamental to the success of the venture, and this is particularly so in Japan.

“Culture should not be overlooked, as it permeates every strand of business and management”.

(Goldman, 1994, pp.xxi)

For a project in Japan to be a success, rapport must first be established with key Japanese connections. This is an ongoing, long-term communication and relationship process. To obtain the respect of, and to build a relationship with the Japanese, is time consuming but of paramount importance; the Japanese have a slower approach to doing business (Goldman,1994).

In Japan, small talk and other such formalities are strategic, and where in the West a good communicator is a 'good talker', in Japan, silence is revered and 'talkers' distrusted (Goldman,1994).

Gift giving is an important attribute of the Japanese culture. A researcher visiting the Japanese must be prepared to present gifts to those assisting them in their work or stay in Japan, and the receiving of gifts should also be expected.

Japan is a collectivist culture where the well being of society is valued above that of the individual. Communication focuses on harmony, group loyalty, and the minimisation of differences. A researcher should therefore be wary of asking questions about controversial or socially unacceptable behaviours or attitudes, as a person is likely to respond in the socially acceptable manner, giving the 'right' (tatemae), rather than the 'honest' (honne) answer. These problems are amplified in a group environment.

There is a high level of uncertainty avoidance in Japan (Punnett and Ricks, 1992). Job security is high, work roles of both genders are well defined, decisions are based on group consensus, and change is slow. A market researcher in this environment must be aware of the importance of convincing the market that the product or cause being promoted is of merit and substance. A new idea may be met with resistance, particularly if it is from a foreign country - the understanding and acceptance of foreign countries and their ways is often limited. The Japanese are very nationalistic and suspicious of anything foreign. In many instances, the Japanese way is always seen as being the 'best' way (Fields, 1989).

Power distance in Japan is moderately high, with authority structures and hierarchy well defined and established in all spheres of society. To avoid offence, it is important that when doing research in Japan these structures are respected. Bowing and the degree of politeness used in language differs vastly according to the rank of the person being spoken to. A person will bow deeply on greeting and departure, and use only very polite words when speaking to a superior. A person of high rank will bow only slightly, and use informal words when speaking to someone at a lower level. Although exceptions will be made to foreigners on these issues, the protocols must be respected and understood.

Japan is a highly masculine society. Male and female roles are well defined; males generally work and earn the money; females do the housework, cook, and care for the family. However this is changing among the younger generation as many more women are joining the work force (Anasz, pers. comm., 1998). Most positions of responsibility in business and government however remain dominated by males. When conducting surveys, therefore, response may be limited by gender. Research focusing on political, economic or corporate issues will be best suited to a male-dominated sample. Conversely, research concerning food, family, or social issues, is probably best directed at a female-dominated sample. While it is largely understood by the Japanese that women do hold positions of authority in some foreign countries, a woman researcher in Japan is still likely to encounter sexist attitudes, and may find the job more difficult than if she were a male.

The phenomenal spread of industrialisation in Japan demonstrates behaviour that reflects an attitude of the supremacy of the human race and mastery over nature.

Time-orientation in Japan is future orientated, represented by the emphasis on long-term planning - although the general resistance to change also suggests a focus on the past.

Human nature is seen as basically good, demonstrated both by employers who do not single out employees for praise, as this is simply living up to expectation, and by the importance placed by the Japanese on verbal agreements and trust.

Japan is a very 'doing' oriented society. The high value placed on work and achievement is easily observed in Japan by the intensely competitive education system, and the globally competitive companies found throughout Japan. School students are encouraged to study for exams and train for clubs intensely and almost continuously. Employees are taught that their company is central to their lives, and work hours often extend to late at night, six days a week. The intense busyness and stress experienced by most Japanese workers requires that the research is conducted in a very efficient and timely manner, and may also mean that non-workers are more likely to be prepared to participate in the research.

The major Japanese religions are Buddhism and Shintoism, as well as traditional ideals based on Confucianism. Although still important to many older Japanese people, religion is less important to the younger generations (Anasz, pers.comm., 1998). It is important, however, to understand the influence that Buddhism and Shintoism has had in shaping the Japanese culture. The belief that human nature is basically good is derived from Buddhist beliefs. Conversely, the work ethic reflects the influence that Confucianism has had on Japanese culture

It is very helpful for a researcher visiting Japan to be familiar with some basic Japanese words. This is an important step to building a rapport with the Japanese people and will go a long way to bridging the gap between cultures (Anasz, pers.comm., 1998). The Japanese language is very different to English; sentence order is the reverse of English and the grammar therefore quite different. Word sounds too are different, although once learned are quite simple. The writing system is difficult, and is made up of two alphabets; katakana and hiragana, consisting of 46 characters each; and kanji, (Chinese characters) of which there are 2000 in common use. There are different levels of politeness in Japanese, each applicable to the level of formality required in any given situation. It is a very complex system, with the actual words used varying depending on who one is talking with. There is no clear comparison for this in English, and therefore it is often difficult for a native English speaker to grasp the significance of this in Japanese.

Most Japanese people do have a working knowledge of the English language, although often this is restricted to the written medium; oral understanding of English is not good. Unless very familiar with the Japanese language a researcher should therefore expect to use the services of a translator or an interpreter to assist in the research. It is advisable that any translation or interpreting required is done by a Japanese national, who has the advantage of being able to understand the thinking and therefore the cultural context of the language.

Market Research in Japan

Market research Japanese-style relies on both 'soft data' obtained from retailers and others in the channel, and on 'hard data' about shipments, inventory levels, and retail sales. Japanese decision makers rely on consensus decision making, and if in doubt, always lean towards their intuition. Although consumer attitude surveys are sometimes conducted by a company, these results alone are not normally considered enough on which to base decisions.

In the Japanese business culture, rather than scrutinising an undifferentiated mass public to learn about general attitudes and values, when surveys are conducted it is with consumers who have actually bought or used a product. From a company perspective, although surveys are used, managers will "trust their instincts first". When market research is done in Japan, it is seldom in the consumer attitude survey style favoured by the West. The Japanese believe that it is possible to find out what is needed by travelling around and visiting the retailers who carry their product (Johansson and Nonaka, 1987).

Survey Research in Japan

According to Yamada and Nicolaos (1994) the use of surveys in Japan has steadily increased over the years, although response rates have declined. The most common methods of conducting surveys are by mail, personal interviews, and 'drop-off and pick-up'. Yamada and Nicolaos (1994) report that response rates are highest for the drop-off method, at 85%, 76% for personal interviews, and 56% for mail surveys. However, this is inconsistent with the views of Nakamura, Ochiai, Hirayama, Tanaka (pers. comm.

1997), who claim that the return rate for mail surveys in Japan is only between 5% and 20%.

Women were found to be more likely than men to respond to a questionnaire in Japan (Yamada and Nicolaos 1994).

Monetary incentives, commonly used in the West to encourage people to complete a questionnaire, are quoted by Malhotra et al (1996) to be beneficial in Japan, and may increase the response rate by up to 25%. Anecdotal evidence, however, suggests that monetary incentives are inappropriate for Japan, and are unlikely to have an impact on response rates (Nakamura, pers.comm.,1997).

Qualitative Research in Japan

Focus groups in Japan are considered to be very time consuming and therefore expensive. This is due to the Japanese group mentality in which groups rely on consensus decision making; a decision will not be reached until all members of the group agree. Furthermore, the group is likely to be dominated by one or two members, with the rest of the group agreeing with those who are dominant to both avoid conflict and to reach a consensus easily (Mattson, pers.comm.,1996).

If successful however, focus groups can be used for qualitative preparatory work for surveys. They may reveal to the researcher what is important to the consumer - particularly regarding the (potential) research topic, and, what colloquial and jargon terms and expressions are commonly used by the consumer, both generally and specifically in regards to the research topic. They can also help to determine the content of survey questionnaires, ensure that questions are asked in a language familiar to consumers, and generate attitude statements for quantification by means of scaling techniques (Roddy et al, 1994; Ottman, 1992; Mintel, 1991).

4.5 Method

Introduction

This study involved a self-completion questionnaire of consumer attitudes and awareness towards organic produce, as well as their purchase behaviour; the survey was the primary source of information. In addition, 22 personal interviews were conducted with businesspeople, government officials, academics, farmers, and consumers. An observation study was also conducted with nine supermarkets, to gather information on the distribution and retailing of organic produce.

Survey

The self-completion questionnaire was administered to a sample of 998 people using the 'drop-off, pick-up' method. The sample was selected based on the judgement of, and contacts available to, four people - previously known to the researcher - in Japan.

Two separate samples were chosen, the first comprised members of organic consumer groups, the second consisted of both members of consumer co-operatives and members of the general public. Three hundred and eight questionnaires were delivered to members of organic consumer groups, and 248 were returned; a response rate of 81%. Six hundred and ninety questionnaires were delivered to the second sample of the 'general public' group and 452 were returned; a response rate of 66%. The combined response rate for both samples was 70%.

Both samples represent populations already inclined towards environmental issues and organic produce, and were chosen firstly because they represent a significant proportion of the Japanese population already inclined towards organic food, and therefore a potential market for organic exports from New Zealand, secondly, to limit the scope of the study, and thirdly, as an effective means of obtaining research data.

The sample containing members of organic consumer groups included two groups; the Hyogo prefecture branch of Japan Organic Agriculture Association (JOAA), and a group of housewives in Sapporo. JOAA was established in 1971 by 30 individuals who expressed concern about the serious environmental degradation in Japan at that time.

The Association up-holds a consumer-grower relationship (*teikei*) which is based on mutual co-operation between organic farmers and consumers. As the group is focused on supporting local agriculture, the members are almost by definition averse to buying imported food. There are currently 4000 members of JOAA nation-wide. The housewives organic group in Sapporo was initiated by one woman concerned about the environmental situation in Japan. This group has expanded to include 50 housewives living in one suburb in Sapporo, Hokkaido. The group's primary focus is on supporting local organic farmers by regularly purchasing fresh produce from them.

The respondents belonging to these organic groups were kept separate from the 'general public' group, as it was recognised that they were different from this group by having taken an active stance on organic food. They have a median annual income of \$120,500, spend on average \$256 on food a week, are mostly females aged between 40 and 50 years old, and 37% are university educated (see Table 1, pp.37).

Comparatively, the *average* income for the total working population of Japan is approximately \$87,000, while the average weekly food expenditure amounts to \$233. Women aged between 40 and 60 years account for 30% of the total population in Japan, and 15% of all women in Japan (Keizai Koho, 1997).

The second sample also consists of two groups; members of consumer co-operatives, and members of the general public. These groups were merged as it was recognised that, similar to members of the consumer co-operatives, respondents of the 'general public' group had above average incomes, and would more likely be aware of agricultural and education issues (this was because the four contact people in Japan were all involved in agriculture or education in some way, and therefore were more likely to select respondents in this field).

Consumer co-operatives have a national membership of 18 million, representing approximately 15% of the population of Japan (Japanese Consumers' Co-operative Union, 1995). The co-operative members surveyed were generally aware of organic produce and the environment; more so than the general public would be, but organic

produce was often not their primary focus and purchases of organic produce were not necessarily frequent. For this reason, although originally treated as separate, the similarity between the two groups mentioned here was recognised and the groups were therefore combined. Respondents in this sample have a median annual income of \$95,000, spend on average \$200 on food a week, are mostly females aged between 40 and 50 years old, and 24% are university educated (see Table 1, below).

Table 1 Respondent Description

Demographic Categories	'General Public'	Organic Group
Age (median)	40-50 years	40-50 years
Income (median)	\$95,000	\$120,500 ***
University educated	24.5%	36.7% ***
Mean number of family members under 15	0.69	0.63
Mean family size	3.6	3.7
Female respondents	83%	96%
Respondent is main shopper	84%	98%

*** difference between groups significant at $p < 0.005$

** difference between groups significant at $p < 0.025$

* difference between groups significant at $p < 0.05$

Respondents in both sample groups have an average of between three and four family members living at home, with over half of respondents stating that one of the members was under the age of 15.

The Survey Package

The questionnaire contained 31 questions, and took an average of 20 minutes to complete. Due to the confusion in Japan about what 'organic' actually means, for simplicity, respondents were instructed in the questionnaire to assume that it referred to all and any of organic, chemical-free, low-chemical, and additive-free produce. The main sections in the questionnaire were based around the areas of the perceived definition of organic produce, past and present purchase behaviour and consumption patterns of organic produce, perceptions and opinions of organic produce, attitudes towards imported food, and demographics. The categories of 'organic' produce addressed were fresh and frozen vegetables, fresh and frozen fruit, canned fruit and vegetables, and fruit and vegetable juice.

The questionnaire was printed on green paper which was illustrated with a stencil of fruit and vegetables at the bottom of each page. This was inserted along with a cover letter and a leather bookmark into an A4 sized envelope. The cover letter introducing the research was printed on Massey University letterhead, having been translated into very formal Japanese. The bookmark was imprinted with the words "New Zealand", a map of New Zealand, and a symbol of a Kiwi. This was used as an incentive to complete the questionnaire. A New Zealand souvenir was used as an incentive instead of money as anecdotal evidence suggests that this would prove more effective than a monetary incentive (Nakamura, pers.comm.,1997). The envelope containing the questionnaire had printed on it the title of the research, a fruit and vegetable stencil, and a Massey University logo. Return envelopes were not used, as all questionnaires were collected by those who distributed them.

Due to time and financial constraints, it was decided that the questionnaire used in this study would not undergo back-translation, nor would it be evaluated by a team of people. It was, however, translated by a Japanese national, and then checked by two independent native Japanese translators. The questionnaire was also pre-tested on eight Japanese students at Massey University. Any points raised by these people were investigated and problems addressed where necessary.

A number of cultural issues needed to be addressed in this research. As previously mentioned (page 31), the Japanese culture is 'doing' oriented, and therefore people are very busy. For this reason, the questionnaire ideally should have been shorter than it was. However, a trade-off was made in terms of the quantity of information received from each respondent, and the potential reduced response rate due to the lack of time available for the respondent to complete the questionnaire. In fact, the response rate was actually very good, so the trade-off proved worthwhile. This good response rate may also be attributable to the fact that most of the respondents were female. In the highly masculine society of Japan, many of the women do not work, and therefore have more time available to them than do the men. The high masculinity of Japan was also an important factor to consider when selecting the sample; it is usually the women who shop and

cook, therefore they were more likely to understand, and complete the questionnaire than their husbands would have been.

As the respondents of the survey were mostly strangers, it was important that the cover letter and questionnaire be written in very formal and correct Japanese. Anything less would have been considered impolite and unprofessional.

Japan is a highly nationalistic society, and with respondents therefore tending to be resistant to imports, it was important that the benefits of importing organic produce from New Zealand was emphasised. Although this was discussed in the cover letter of the questionnaire, it was perhaps not done sufficiently, and the extent to which Japanese people are resistant to imports was underestimated when preparing the questionnaire. This was evident by the request from the Tochigi Co-operative, that the cover letter be re-written to de-emphasise the focus on food imports - thereby maintaining its reputation for supporting local agriculture.

Ideally the questionnaire should have been modelled on a good questionnaire already shown to have been successful in Japan. As there was no such model available, the questionnaire used was designed based on a New Zealand format of questionnaire (although advice was sought and received from the Japanese national who translated the questionnaire). For this reason, some respondents had difficulty answering some questions, particularly question 24, concerning the price the respondent would pay for organic frozen mixed vegetables; the format was unfamiliar to most Japanese people. Question 19, asking respondents to rank their preferred country for imports, was also widely regarded as a difficult question to answer in terms of content.

It was found upon conducting the survey in Japan, that there was one case in the questionnaire where a phrase had been translated literally - the word 'shibashiba' was used for 'often', and therefore read a little strangely. The meaning, however, was retained and caused no confusion. The other imperfection in the translated questionnaire was that the answer categories for questions 21 to 23 "agree, disagree", did not perfectly

match the question “to what extent do you think that...”. However, the meaning was understood in context and caused no major problems.

Personal Interviews and Focus Groups

Twenty two personal and focus group type interviews were conducted with respondents in the following categories; general consumer, business/importer, government/academic, and farmer. The interviews were mostly of an open-ended question format, and were recorded on dictaphone. The interviews were later translated into English, with the emphasis on extracting the relevant ideas and points, rather than a very detailed translation (see Appendix 7). Topics covered in the interviews include; images and perceptions of: organic produce, New Zealand, imports, and frozen produce; preferences for organic, chemical-free, and low-chemical; and the barriers to purchasing organic produce.

Although focus groups in Japan have limited effectiveness due to the collectivist mentality of the Japanese, it was decided that there was value in having some group interaction when conducting the interviews. Thirteen of the 22 interviews conducted were in a focus group setting. Focus groups that consisted only of three or four people were very successful, particularly since in these cases each member was of an equal social rank. In other cases, however, the groups consisted of up to 13 members, and due to the collectivist mentality of the culture, if one person was asked to participate, then certain other people also had to be asked. Further, many people were interested in the interview and desired to participate in it, or at least observe it. In these cases, only four or five dominant members of the group actually contributed to the interview.

Observation Study

Nine ‘mainstream’ medium to large-sized supermarkets were studied throughout Japan. An observation schedule was used to undertake this study (see Appendix 9). The purpose was to establish the extent to which organic food was available in these supermarkets, including the range and variety available, presentation, packaging and labelling, and price. The information gathered through observing these supermarkets provided valuable insights and understanding on the topic.

5. Results

5.1 Introduction

The results from the self-completion survey will be presented in this chapter. The layout follows that of the questionnaire; consumer awareness is covered initially, followed by a section on consumer behaviour, and then consumer attitudes. Results from the personal interviews will be referred to in both chapter five and six, while information gathered from the observation study is mentioned almost solely in chapter six, section 6.5.

5.2 Consumer Awareness

Consumer awareness of the organic system among those surveyed was quite low and there was a certain amount of confusion as to what the term 'organic' meant and how it differs from the terms 'chemical-free' and 'natural'. Furthermore, a high proportion of interviewees indicated that they would choose to purchase (and by implication have greater trust in) chemical-free produce over organic produce (see Appendix 8, Table A3). If there was confusion among those surveyed - many of whom have shown themselves to be more interested in food and environmental issues by their membership of consumer groups - then it is likely that this will be equally or more so for the wider Japanese population. While those surveyed represent a large number of consumers in Japan, it must be recognised that this sample does not accurately represent the Japanese population as a whole.

When asked what they thought the term organic meant, survey respondents had the option of choosing any combination of natural, chemical-free, low-chemical, additive-free, traditional, mystical, and not sure. The majority of respondents indicated that the term organic encompasses the concepts of both natural and chemical-free. A few respondents believed that the term also includes the concept of low-chemical, additive-free, and traditional techniques, while almost none believed that there was any mysticism inherent in the term organic (see Table 2, pp.42).

Table 2 Understanding of the term 'organic'

Definition Categories	Proportion of sample choosing each option and combinations of options ¹	
	'General Public'	Organic Groups
	n=452 %	n=248 %
Natural	68	72
Chemical-free	39	63 ***
Low chemical	27	14 ***
Additive free	14	17
Traditional	8	13 *
Mystical	1	2
Not sure	2	0

Note: 1. Respondents could choose more than one category, thus percentages do not sum to 100%

*** difference between groups significant at $p < 0.005$

** difference between groups significant at $p < 0.025$

* difference between groups significant at $p < 0.05$

The proportion of the 'general public' group having previously purchased chemical-free produce was lower than that for those in the organic groups, although the opposite was true for low-chemical produce. This was to be expected, as those in the organic groups are likely to be less tolerant of chemical usage in agriculture than are the 'general public' group, and therefore are less inclined to purchase low-chemical produce in preference to chemical-free produce. Further, those in the organic groups will most likely have better access to chemical-free produce. The same proportion of both groups claimed to have purchased 'natural' produce - that this is different to chemical-free and low-chemical produce is evident, reinforcing the fact that there is a significant amount of confusion amongst consumers regarding the 'different types' of organic produce (see Table 3, pp.43).

Table 3 Categories of ‘organic’ produce ever bought

Produce Categories	Proportion of sample choosing each option ¹	
	‘General Public’ n=452 %	Organic Groups n=248 %
Low Chemical	58	72**
Chemical-free	47	85***
Natural	39	38
Additive free	23	36***
Imported; labelled organic	12	27***
Other	3	2
Never buy	8	1***

Note: 1. Respondents could choose more than one category, thus percentages do not sum to 100%

*** difference between groups significant at $p < 0.005$

** difference between groups significant at $p < 0.025$

* difference between groups significant at $p < 0.05$

Note that for Tables 2 and 3 (reflecting questions 1 - 3 in the questionnaire) the term ‘organic’ was broken down to include all of the six official Japanese definitions: organic, chemical-free, reduced-chemical, low-chemical, additive-free, and natural. However, for the remaining Tables (i.e. the remainder of the questionnaire also) no distinction is made between these six possible definitions. The survey respondents were asked to assume that the term ‘organic’ included all of these definitions when they answered the questionnaire.

5.3 Consumer Behaviour

Most respondents had previously bought fresh organic vegetables at some time, although significantly higher proportions of respondents in the organic groups had purchased fresh organic fruit and fruit juice than those in the ‘general public’ group. Organic vegetable juice was also a popular purchase. Frozen organic vegetables were significantly less popular, although interestingly, those in the organic groups purchased them more, despite their strong preference for fresh produce. This reflects the commitment of these respondents to buying organic food. The remaining produce categories; canned fruit and vegetables, and frozen fruit, were relatively insignificant purchase items (see Table 4, pp.44).

Table 4 Type of organic produce ever bought

Produce Categories	Proportion of sample choosing each option ¹	
	'General Public'	Organic Groups
	n=452 %	n=248 %
Fresh Vegetables	85	94
Fresh Fruit	56	79 ***
Vegetable Juice	28	30
Fruit Juice	26	49 ***
Frozen Vegetables	11	16 *
Canned Fruit	6	5
Canned Vegetables	4	9 **
Frozen Fruit	4	3
Never Buy	7	2 ***
Other	3	1 ***

Note: 1. Respondents could choose more than one category, thus percentages do not sum to 100%

*** difference between groups significant at $p < 0.005$

** difference between groups significant at $p < 0.025$

* difference between groups significant at $p < 0.05$

The top three varieties of fresh organic vegetables were onions, carrots, and potatoes (see Table 5, pp.45). Apples, mandarins, and strawberries were the three most commonly purchased organic fruits (see Table 6, pp.45), while apple, vegetable, tomato, and orange juice were the most commonly purchased organic juices (see Table 7, pp.46). The most commonly purchased frozen organic vegetables were pumpkin, mixed vegetables, and green beans (see Table 8, pp.46). A high proportion of interviewees said that they did not like frozen produce so much because it goes “soft and watery” on cooking, does not taste as good, and was of a generally poorer quality than fresh produce (see Appendix 8, Table A5). The three most frequently purchased canned organic produce types were corn, mandarins, and asparagus (see Table 10, pp.47).

Table 5 Fresh organic vegetables purchased in the last three months

Type of Vegetable	Percentage of sample choosing each option ¹			
	'General Public' n=439		Organic Groups n=246	
	%	Rank order	%	Rank order
Onions	53	1	87***	1
Carrots	46	2	82***	2
Potatoes	41	3	76***	3
Pepper	21	4	26	9
Salad Vegetables	20	5	58***	4
Broccoli	19	6	46***	5
Asparagus	16	7	28***	8
Pumpkin	13	8	24***	10
Eggplant	12	9	15	12
Sweet Potatoes	11	10	33***	7
Green Beans	10	12	37***	6
Cauliflower	6	13	16***	11
Other	13	N/A	20**	N/A

Note: 1. Respondents could choose more than one category, thus percentages do not sum to 100%

*** difference between groups significant at $p < 0.005$

** difference between groups significant at $p < 0.025$

* difference between groups significant at $p < 0.05$

Table 6 Fresh organic fruit purchased in the last three months

Type of Vegetable	Percentage of sample choosing each option ¹			
	'General Public' n=439		Organic Groups n=246	
	%	Rank order	%	Rank order
Apples	34	1	49***	1
Mandarins	30	2	49***	1
Strawberries	30	3	42***	2
Kiwifruit	23	4	26	3
Oranges	19	5	15	4
Cherries	3	6	2	5
Peaches	3	7	0	6
Nashi	2	8	1	7
Other	10	N/A	15**	N/A

Note: 1. Respondents could choose more than one category, thus percentages do not sum to 100%

*** difference between groups significant at $p < 0.005$

** difference between groups significant at $p < 0.025$

* difference between groups significant at $p < 0.05$

Table 7 Organic fruit or vegetable juice purchased in the last three months

Type of Juice	Percentage of sample choosing each option ¹			
	'General Public' n=436		Organic Groups n=246	
	%	Rank order	%	Rank order
Vegetable	55	1	15***	3
Apple	26	2	36***	1
Tomato	24	3	14***	4
Oranges	15	4	20***	2
Carrot	12	5	7***	6
Grape	6	6	8	5
Tropical	1	7	0**	7
Kiwifruit	1	8	0**	7
Other	2	N/A	5**	N/A

Note: 1. Respondents could choose more than one category, thus percentages do not sum to 100%

*** difference between groups significant at $p < 0.005$

** difference between groups significant at $p < 0.025$

* difference between groups significant at $p < 0.05$

Table 8 Frozen organic vegetables purchased in the last three months

Type of Vegetable	Percentage of sample choosing each option ¹			
	'General Public' n=436		Organic Groups n=246	
	%	Rank order	%	Rank order
Asparagus	16	1	2***	5
Mixed Vegetables	14	2	14	1
Pumpkin	12	3	6***	2
Green Beans	10	4	6**	2
Green Peas	9	5	5***	3
Cauliflower	8	6	0***	7
Carrots	3	7	0***	7
Potatoes	2	8	1	6
Broccoli	2	8	2	4
Sweet Potatoes	2	8	0***	8
Pepper	2	8	0***	8
Other	8	N/A	5**	N/A

Note: 1. Respondents could choose more than one category, thus percentages do not sum to 100%

*** difference between groups significant at $p < 0.005$

** difference between groups significant at $p < 0.025$

* difference between groups significant at $p < 0.05$

For frozen produce, a bag size of 250g was most preferred (around 40% of respondents stated this). However, a 500g bag was the preferred choice of approximately 30% of consumers, and larger 750g and 1kilogram bags were each preferred by at least 15% of respondents (see Table 9, below).

Table 9 Preferred bag size for frozen produce

Bag Size	Percentage of sample choosing each option	
	'General Public'	Organic Groups
	n=434 %	n=246 %
250g	38	41
500g	29	29
750g	17	15
1000g	17	15

Table 10 Canned organic fruit or vegetables purchased in the last three months

Type of Produce	Percentage of sample choosing each option ¹			
	'General Public'		Organic Groups	
	n=434 %	Rank order	n=246 %	Rank order
Corn	11	1	8*	1
Mandarins	8	2	5**	2
Asparagus	6	3	2***	3
Green Peas	6	3	2***	3
Peaches	4	4	2**	3
Mixed Vegetables	3	5	1**	4
Green Beans	3	5	0***	6
Carrots	2	6	0***	6
Strawberries	2	6	0***	6
Apples	1	7	0**	6
Oranges	1	7	2	3
Cherries	1	7	1	5
Fruit Salad	1	7	1	5
Nashi	0	8	0	6
Other	4	N/A	8***	N/A

Note: 1. Respondents could choose more than one category, thus percentages do not sum to 100%

*** difference between groups significant at $p < 0.005$

** difference between groups significant at $p < 0.025$

* difference between groups significant at $p < 0.05$

The majority of respondents from the organic groups purchased organic produce once or twice a week, while the remainder made even more frequent purchases (three or four times a week). The 'general public' group generally made less frequent purchases than those in the organic groups, although respondents appear to be split into two groups: those committed to making organic purchases three or four times a week, and those who purchase less frequently (two or three times a month). While fresh organic vegetables and fruit are purchased at least weekly by the majority of respondents, the significantly smaller number of respondents who purchase organic juice, and frozen or canned organic produce, did so on a much less frequent basis.

The most frequently purchased produce category was fresh organic vegetables, followed by fresh organic fruit, organic fruit or vegetable juice, frozen organic vegetables and finally, canned organic produce. Almost 90% of those in the organic group purchased fresh organic vegetables at least weekly, almost twice that of the 'general public' group. This is to be expected, given the nature of the organic consumer groups; most operate under the 'teikei' system, where there is an established relationship between the consumer and the producer, and the same producers deliver their produce to the same consumers a set number of times each week. It is of significant importance to New Zealand exporters that approximately half the respondents in the 'general public' group purchased organic produce at least weekly. This means that a large number of Japanese consumers make frequent and regular purchases, and if only a small number did so, the market opportunities for New Zealand exporters would be less promising.

Approximately 30% of respondents purchased fresh organic fruit at least once a week - a large number of consumers in absolute terms. A relatively high proportion of respondents purchased organic fruit and vegetable juice at least once a month (20% of respondents in the organic groups and 32% of respondents in the 'general public' group). However, only 20% of those in the 'general public' group, and even less in the organic group, purchased frozen organic vegetables at least once a month. This is inconsistent with the data in Table 4, (pp.44) where it was found that a higher proportion of respondents in the organic groups had previously purchased frozen organic vegetables compared with those in the 'general public' group. This conflicting data, suggests that while a higher

proportion of those in the organic groups had previously purchased organic juice, it was not as frequently as those from the 'general public' group. Consistent with the results in Table 4, (pp.44) the number of respondents making monthly purchases of canned organic produce is very small (see Tables 11 and 12 below).

Table 11 Frequency of purchase: '*General Public*'

Frequency	Fresh organic vegetables n=439 %	Fresh organic fruit n=436 %	Frozen organic vegetables n=435 %	Canned organic fruit or vegetables n=434 %	Organic fruit or vegetable juice n=436 %
Everyday	2	1	0	0	0
3-4 times a week	36	23	4	2	6
1-2 times a week	8	4	1	1	1
2-3 times a month	25	24	7	4	9
Once a month	6	10	8	8	16
Less than once a month	11	20	14	14	20
Don't buy	5	11	59	62	38

Table 12 Frequency of purchase: '*Organic Group*'

Frequency	Fresh organic vegetables n = 246 %	Fresh organic fruit n = 246 %	Frozen organic vegetables n = 246 %	Canned organic fruit or vegetables n = 246 %	Organic fruit or vegetable juice n = 246 %
Everyday	3	1	0	0	0
3-4 times a week	11	28	1	0	3
1-2 times a week	72	5	0	0	1
2-3 times a month	6	20	2	1	6
Once a month	1	13	7	5	10
Less than once a month	2	23	18	11	32
Don't buy	1	7	70	76	42

The most common places to purchase organic produce for the 'general public' group were, in descending order, the co-operative shops, the supermarkets, and direct from an organic grower. This differed from the organic groups, who most frequently purchased organic produce direct from the grower, next from the co-operative shops, and finally from the supermarkets (see Table 13, pp.50).

Table 13 Place of purchase of organic produce.

Place of Purchase	Percentage of sample choosing each option ¹	
	'General Public' n=436 %	Organic Groups n=246 %
Co-operative shop	64	44***
Supermarket	39	22***
Direct from a grower	15	64***
I grow my own	14	13
Grocery store	8	9
Speciality food store	6	10*
Direct from a friend	6	9
Convenience store	4	0***
Market	4	2**
Other	10	20***

Note: 1. Respondents could choose more than one category, thus percentages do not sum to 100%

*** difference between groups significant at $p < 0.005$

** difference between groups significant at $p < 0.025$

* difference between groups significant at $p < 0.05$

Respondents from the 'general public' group were found to spend a weekly average of \$14 on fresh organic produce, \$4 on organic fruit or vegetable juice, \$2 on frozen organic produce, and \$1 on canned organic produce. Their average total weekly food expenditure was approximately \$200; an estimated 10% of this was spent on organic produce.

In comparison, respondents from the organic groups were found to spend a weekly average of \$37 on fresh organic produce, \$4 on organic fruit or vegetable juice, \$1 on frozen organic produce, and \$1 on canned organic produce. Their average total weekly food expenditure was \$257; an estimated 16% was spent on organic produce. These means are valid, as the standard errors of the means were very small (with the exception of the mean weekly expenditure on organic produce for the organic groups) (see Appendix 11).

However, there were very low r , and r^2 values for the correlations and regressions respectively, between income and weekly expenditure on organic produce (see Appendix

12). It was expected that those with higher incomes would spend more on organic food than those with lower incomes - this was not so. It was also expected that there would be a strong positive relationship between the total weekly food expenditure and the weekly expenditure on organic produce - there was only a weak one.

Those in the organic groups generally spent over twice the amount that those in the 'general public' group did on organic produce, and they also spent more than double the 'general public' group on fresh organic vegetables. The 'general public' group spent approximately twice the amount on frozen organic produce than did members of the organic groups, although in absolute terms this amount was minimal (see Table 14 below).

Table 14 Mean weekly expenditure on organic produce

Produce Categories	'General Public' n=452	Organic Groups n=248
<i>Fresh</i>	\$14	\$37 ***
<i>Juice</i>	\$4	\$4
<i>Frozen</i>	\$2	\$1
<i>Canned</i>	\$1	\$1
Mean total weekly organic expenditure	\$20	41 ***
Mean total weekly food expenditure	\$200	\$257 ***
Percentage of total weekly expenditure spent on organic produce	10%	16% ***

*** difference between groups significant at $p < 0.005$

** difference between groups significant at $p < 0.025$

* difference between groups significant at $p < 0.05$

As revealed in Figures 3 and 4, (pp.52) at a price of 400 yen, most 'general public' group respondents said that they would 'often', or would be 'quite likely' to, purchase organic frozen mixed vegetables (respondents were told that the price of a similar bag of conventional vegetables cost around 300 yen). At 450 yen, the most common response was that they would 'sometimes' make a purchase, and at 500 yen, the response was that such a purchase would 'almost never' be made. The probability of purchase elasticity for a price increase of 400 to 450 yen was -1.5, and of 450 to 500 yen, was -2. Respondents from the organic group were generally less inclined to purchase a 500g bag of frozen organic mixed vegetables, with the median response being that purchases would be made 'sometimes' at a price of 400 yen, 'seldom' at 450 yen, and 'almost never' at 500 yen.

The probability of purchase elasticity for a price increase of 400 to 450 yen was -2.9, and of 450 to 500 yen, was -2.4 (see Appendix 10 for more detail).

Figure 3
Price Elasticity
'General Public'

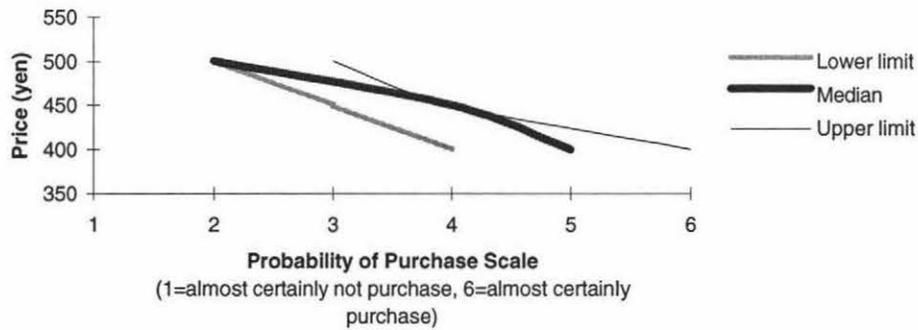
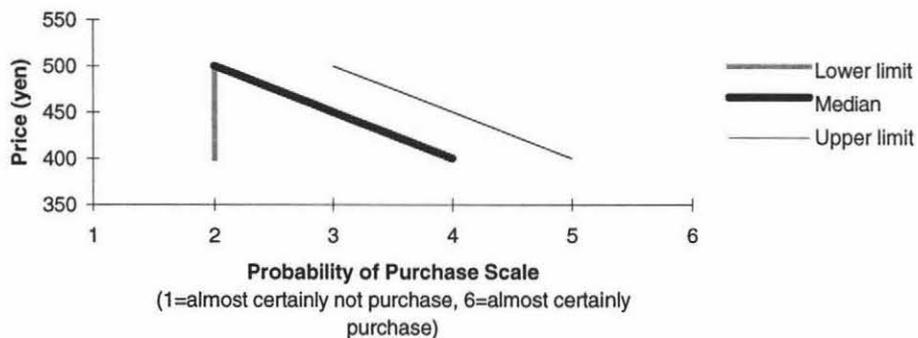


Figure 4
Price Elasticity
Organic Groups



5.4 Consumer Attitudes

Almost all the respondents in both samples indicated that they would prefer to purchase locally grown organic produce rather than imported produce (see Tables 15 and 19, pp.53 and 55). The main reasons for this were that they perceived locally-grown produce to be safer, more trustworthy, and fresher than imported produce, and also that it was

best to consume food produced in one's own country. Many also thought that by purchasing locally-grown produce they could help to preserve Japanese agriculture (see Table 16, pp.53). In addition, over 90% of respondents stated that the guaranteed safety of organic produce was either important or very important, and believed that organic produce was safer to eat than conventional produce (see Tables 19 and 20, pp.55 and 56). This reinforces information provided by Jetro (1994) which states that when buying vegetables, 70% of consumers checked to see whether or not they had been imported, and the majority had concerns about the safety of all imported fresh foods - "a negative image of imported vegetables appears to be firmly entrenched in the consciousness of consumers".

Table 15 Preferred origin of organic produce

Place of Purchase	Percentage of sample choosing each option	
	'General Public'	Organic Groups
	n=435 %	n=242 %
Locally produced organic fruit and vegetables	98	99
Imported organic fruit and vegetables	2	1

Table 16 Reasons for preference for locally grown organic produce

Reason	Percentage of sample choosing each option ¹	
	'General Public'	Organic Groups
	n=410 %	n=244 %
Safer/no worry/can't trust imports/can see farmer	53	28 ***
Fresh	17	22
Preserve Japanese agriculture (and environment/nationalism)	10	14
Post-harvest chemicals	7	9
Think local produce is good/it is natural for society to eat own produce	5	23 ***
Overseas producers use more chemicals than Japanese producers	4	3
Can't view overseas land or production methods	2	0

Note: 1. Respondents could choose more than one category, thus percentages do not sum to 100%

*** difference between groups significant at $p < 0.005$

** difference between groups significant at $p < 0.025$

* difference between groups significant at $p < 0.05$

Despite respondents being strongly averse to food imports in general, many indicated that if they were to purchase imported organic produce, then following Australia, New

Zealand would be their most preferred country from which to purchase organic produce (see Table 17, pp.54). The main reasons given for choosing each respective first choice country were: the perception that the country had clean water, air, and soil, and that there was a lot of perceived trust in the chosen country and its potential organic exports (see Table 18 below).

Table 17 Rank order of preferred import countries

Country	Rank order of country preferences		
	'General Public' n=334	Organic Groups n=161	Both samples combined
Australia	1	2	1
New Zealand	2	1	2
Canada	3	3	3
USA	4	4	4
Germany	5	5	5
England	6	6	6
China	7	7	7

Table 18 Reasons for first choice country

Reason	Percentage of sample choosing each option ¹	
	'General Public' n=410 %	Organic Groups n=244 %
Clean water, air, soil	50	23***
Trust it	26	40***
Feel close to/like the country	21	1***
Its cheaper	9	15***
Produce tastes good	3	6*
Other	9	11

Note: 1. Respondents could choose more than one category, thus percentages do not sum to 100%

*** difference between groups significant at $p < 0.005$

** difference between groups significant at $p < 0.025$

* difference between groups significant at $p < 0.05$

The consumers interviewed indicated that the Japanese image of New Zealand is that it is a beautiful, green and natural place; a farming country with many sheep. Even so, there was still much uncertainty about whether New Zealand organic produce could be trusted (see Appendix 8, Table A10).

Safety was the factor respondents were most concerned in regards to organic produce, with over 95% of respondents in both samples stating this to be either important or very important. Price was also a very important factor, with many believing that organic produce was more expensive than conventional produce. Sixty six percent of respondents in the 'general public' group, and 42% of those in the organic groups stated that they did not usually purchase organic produce due to its expense. Over 90% of respondents stated that the shape and size of organic produce was not important to them, although skin blemishes were more of an issue (see Tables 19, 20, and 21, below, pp.56 and 57 respectively).

Table 19 **Important factors concerning organic fruit and vegetables**

Purchase considerations	Percentage of sample choosing each option ¹	
	'General Public' n=440 %	Organic Groups n=241 %
✓ Guaranteed safety	96	97
Price	80	61 ***
Origin (local versus imported)	78	88
Range Available	49	42
No skin blemishes	47	28***
Regularity of supply	59	59
Size Uniformity	8	1***
Shape Uniformity	8	1***

Note: 1. Percentage of respondents who answered *important* or *very important*

*** difference between groups significant at $p < 0.005$

** difference between groups significant at $p < 0.025$

* difference between groups significant at $p < 0.05$

Almost half the respondents indicated that it is important that a wide range of organic produce is available for purchase, believing that it is not as widely available as conventional produce. Many also believed that the range of organic produce available is very limited. Approximately 70% of all respondents agreed that there are not enough places from which they can purchase organic produce, and about 60% stated that regularity of supply was an important factor to be addressed in regards to organic produce (see Tables 19, 20, and 21, pp.55, 56, and 57 respectively).

Approximately 90% of all respondents perceived organic production methods to be more environmentally friendly than conventional production methods, although only 59% of respondents from the 'general public' group believed that the legal level of pesticide residue allowed on conventional produce was too high. Similarly, 11% of those from the 'general public' group believed that the trace quantities of pesticide residues allowed on conventional produce do not harm people, as opposed to only 5% of those from the organic groups. Furthermore, over 90% of those in the organic groups believed that excessive use of chemicals in food production can cause allergies in children, whereas only 77% of those in the 'general public' group believed this; all these differences are significant at the 0.01 level (see Tables 19, 20, and 21, pp.55, below, and pp.57 respectively).

The majority of all respondents, but particularly those in the organic groups, perceived organic produce to be better tasting, and more nutritious than conventional produce (see Tables 20 and 21, below and pp.57 respectively).

Table 20 Perceptions of organic fruit and vegetables

Statements concerning organic produce	Percentage of sample choosing each option ¹	
	'General Public' n=438 %	Organic Groups n=243 %
Organic food is safer to eat than conventional food	90	97
Organic food is more environmentally friendly than conventional food	87	95
Organic food tastes better than conventional food	74	92***
Organic food is more nutritious than conventional food	72	87***
Organic food is more expensive than conventional food	66	52***
Organic food is not as widely available as conventional food	44	46
Organic food does not look as good as conventional food	35	34
Organic food is more often misshapen than conventional food	33	36

Note: 1. Percentage of respondents who agree or strongly agree

*** difference between groups significant at $p < 0.005$

** difference between groups significant at $p < 0.025$

* difference between groups significant at $p < 0.05$

Table 21 Attitudes concerning organic fruit and vegetables

Statements concerning organic produce	Percentage of sample choosing each option ¹	
	'General Public' n=425 %	Organic Groups n=243 %
Organic growing methods are more environmentally friendly than conventional growing methods	82	91
I would always choose to buy locally grown organic fruit and vegetables over imported organic produce	83	93
Excessive use of fertilisers and pesticides in food production can cause allergies in children	77	91 **
There are not enough places from which I can buy organic fruit and vegetables	70	74
I don't normally buy organic fruit and or vegetables because the prices are too high	66	42 ***
The legal level of pesticide residues allowed on conventional fruit and vegetables is too high	59	70 *
The range of organic fruit and vegetables available is very limited	57	40 ***
I am not be confident about the safety of imported organic fruit and vegetables	39	48 *
I don't buy organic fruit and vegetables if they have rough patches or spots on the skin	17	3 ***
Conventionally grown fruit and vegetables are just as nutritious as organically grown fruit and vegetables	14	5 ***
Although trace quantities of some pesticides are found on conventional foods, these don't harm people	11	5 ***
Conventional growing methods have little effect on the natural environment	10	8
I don't buy fresh organic fruit or vegetables if they are a little misshapen	5	0 ***

Note: 1. Percentage of respondents who agree or strongly agree

*** difference between groups significant at $p < 0.005$

** difference between groups significant at $p < 0.025$

* difference between groups significant at $p < 0.05$

5.5 Summary

Over 60% of Japanese consumers surveyed purchase fresh organic fruit or vegetables at least once a month, with less than 35% purchasing organic juice, and less than 25% purchasing frozen organic produce. The most commonly purchased fresh organic vegetables are onions, carrots, and potatoes while the most commonly purchased frozen vegetables are asparagus, mixed vegetables, and pumpkin. Purchase of organic fruit is less common. Safety, price, clear labelling, taste, and freshness are the most important issues to consumers of organic produce; shape and size are relatively unimportant. The

study revealed widespread resistance to imported food, although New Zealand was ranked second after Australia as preferred country of import for organic produce. The consumers surveyed had higher than average incomes, and belonged mostly to consumer co-operatives or organic consumer groups. Consequently they were actively interested in food quality and safety, the environment, and, in some cases, organic produce.

6. Discussion

6.1 Consumer Awareness

Consumer awareness of the organic system in Japan was quite low and there was a certain amount of confusion amongst consumers as to what the term 'organic' meant, and how this differed from 'chemical-free'. A relatively high proportion of consumers interviewed said that they would purchase chemical-free produce over organic produce (see Appendix 8, Tables A2 and A3). The implication of this is that they perceived chemical-free produce to be better than organic produce. Further, in regards to imported organic vegetables, "awareness of these (strict) standards has not penetrated to the consumer level" (cited in Jetro, 1994). It was found that when asked for their perception of organic produce, the majority of respondents answered with the concepts of chemical-free and natural. The terms chemical-free, low-chemical, natural, traditional, additive-free, and mystical were provided as possible options for answering this question, as they are all concepts closely related to that of 'organic' both in Japan and New Zealand. The term 'mystical' was included as this is something often related to bio-dynamic farming in New Zealand. It appears however, that this latter type of farming is actually very uncommon in Japan.

6.2 Consumer Behaviour

A random survey conducted by the Japanese Ministry of Agriculture, Forestry, and Fisheries (MAFF) in 1995, revealed that 60% of respondents were current purchasers of organic vegetables (cited in Jetro, 1997). A similar study done in 1992 by a large Japanese distributor found that 80% of those surveyed had purchased organic vegetables (Jetro, 1994). Research conducted by the Tokyu department stores found that 90% of the customers surveyed said they would like to purchase organic produce, but many were limited by a lack of time to buy and prepare such foods. The results of this thesis - which indicate that at least 60% of respondents surveyed purchase fresh organic vegetables at least once a month - coincides very closely with the results of the 1995 MAFF survey mentioned above.

Respondents were asked in question 3 of the questionnaire (Appendix 6) to state the categories of organic produce ever purchased. This was asked in order to obtain an estimate of the composition of purchases in terms of produce categories. The results for this clearly reveal that fresh vegetables, followed by fresh fruit, were the produce categories most purchased by respondents. In descending order of past purchases were fruit juice, vegetable juice, frozen vegetables, canned vegetables, canned fruit, and frozen fruit. This is relevant to New Zealand exporters as it indicates that the market for frozen organic produce is presently smaller than that for fresh organic produce, and even organic juice. This is reinforced in monetary terms; significantly more is spent each week on fresh organic produce than on organic juice, and significantly more is spent on organic juice, than on frozen or canned organic produce.

The 1995 MAFF survey also found that 22% of respondents purchased organic vegetables once or twice a week, 6% made purchases three to four times a week, and only 2% purchased organic vegetables daily. This differs from the respondents of the 'general public' group in this study, who were more similar to the MAFF sample population than those in the organic groups. In comparison with the MAFF sample, eight percent of respondents in the 'general public' group purchased organic vegetables once or twice a week, 36% made purchases three to four times a week, and 2% purchased organic vegetables daily. Respondents of the 'general public' group appear more inclined to purchase organic vegetables three to four times a week rather than once or twice a week, as respondents of the 1995 MAFF survey did. The reason for this is likely to be that a large proportion of the 'general public' group were actually members of consumer co-operatives, and are therefore more likely to take an active interest in organic produce than would an unbiased sample of the wider consumer population in Japan.

Barriers faced by consumers in regards to purchasing organic produce include price, the limited range of produce available, the frequent unavailability of produce, the unreliability of organic labels - particularly the Japanese ones - and the subsequent lack of trust towards organic food in general (see Appendix 8, Table A4). This also reinforces the results of the MAFF survey, where 'high price', 'can't trust', 'not sold nearby', and

'ordinary vegetables are good enough', were the most common barriers to buying organic vegetables (cited in Jetro *et al.*, 1997). This can be explained by the many recent incidents in Japan where produce has been falsely labelled 'organic' or 'chemical-free', and was priced accordingly. With fraudulent cases like this exposed by the Japanese media, public confidence in organic produce has been eroded. As the Japanese are generally more trusting of items made in Japan than overseas, it is an expected reaction therefore that imported organic produce is perceived by many to be less trustworthy than organic produce grown in Japan.

Japanese organically-grown produce was perceived to be better than imported organic produce by most Japanese consumers, and a general distrust of imported produce exists (see Appendix 8, Table A5). Much of this perception derives from the propaganda of the powerful agricultural lobbies and consumer groups (Fields, 1989). However this may be a misguided perception as some indication that Japanese farmers may use greater quantities of chemicals than Western counterparts is evident (Saito, *pers.comm.*, 1996).

New Zealand is competing against China, North and South America, and Australia for the organic food market in Japan. At present New Zealand has the advantage of being popular; the most preferred country of import for organic foods after Australia. Interestingly, the Tradenz *et al.* (1997) suggested that the "clean and green" image may be a "perception perhaps strongest in the minds of the New Zealand suppliers themselves". In contrast consumers interviewed and surveyed in this study did appear to have a favourable image of New Zealand (see Appendix 8, Table A9). However, although the present image is a desirable one, it is important that it is maintained and substantiated. If the positive image of New Zealand is lost, producers may lose their markets to the cheaper producers of South America and China.

Fresh fruit and vegetables continue to be the most commonly purchased category of organic produce. Onions, carrots, and potatoes are the most significant group of fresh organic vegetables purchased. Pumpkin, asparagus, and to a lesser extent green peppers, also have a place in the fresh vegetable sector. Organic apples, mandarins, strawberries, kiwifruit, and oranges are the organic fruits most commonly purchased by respondents,

and it would be very beneficial if New Zealand producers were able to produce a regular and stable supply of organic apples and citrus. New Zealand-grown organic strawberries, sold in the Japanese off-season would sell successfully if timely transportation were feasible and costs not too high. Note that the varieties of produce provided in the questionnaire were all ones that are produced in New Zealand. Organic soya products, such as tofu, soya sauce, and 'nutto'- items commonly purchased in Japan - were excluded.

There are, however, many difficulties to be overcome by New Zealand exporters if the market for fresh organic produce is to be exploited. Fresh food imports are randomly sprayed for insect control by Japanese officials at quarantine. No distinction is made between organic or conventional produce when spraying, and if sprayed, organic produce entering the country will lose its organic status. New Zealand companies have the choice of placing organic labelling only on the produce that has not been sprayed upon arrival in Japan, a more costly option, or alternatively they could label the produce 'organic at time of growing', and its organic status at the time of purchase would be unknown. Another issue is the very strict import standards for fresh produce. Japanese regulations stipulate that produce must be of a specific shape and size before being allowed entry. This is particularly challenging for exporters of fresh organic produce. One further issue is that of freshness. Survey respondents strongly indicated that they perceive locally-grown produce to be fresher than produce grown overseas, and would therefore prefer to purchase locally-grown produce.

The study found organic fruit and vegetable juice to be a fairly common purchase among respondents, more so than for frozen organic produce. Currently New Zealand exports minimal quantities of organic juice to Japan, and results from this study suggest that exporters may benefit from investigating this market segment further. Apple, vegetable, tomato, orange, carrot, and possibly also grape and kiwifruit juices, are potential varieties for export.

The market for frozen organic produce was less significant in Japan than for fresh organic produce or for organic juice at the time of this study. The study found that

respondents from the 'general public' group were more likely to purchase frozen organic produce than those from the organic groups. This implies that those not so dedicated to organic food and the inherent freshness of food (i.e. the 'general public' group), are more receptive of, and therefore more likely to purchase frozen organic produce.

The market for frozen organic produce in Japan is smaller than the market for fresh organic produce or organic juices. However, it still has significant market potential, and New Zealand exporters struggle to satisfy the demand. Further, although traditionally Japanese consumers are averse to eating frozen foods, (perceiving them to be less fresh, less tasty, and generally of poorer quality than fresh food), this trend is starting to alter due to lifestyle change. As lives become busier and more women have careers, instant foods are becoming increasingly popular, particularly among the younger generation. Frozen organic pumpkin pieces, presently a common food item sold in Japanese supermarkets, is a potential export opportunity for New Zealand (see Appendix 9).

One of the biggest challenges facing New Zealand producers is the issue of continuity and timeliness of supply. Producers struggle to provide the quantities demanded, and do not supply it with the regularity or stability required (MAF,1994). The survey undertaken in this study revealed that regularity of supply was an important factor for respondents. Consumers need to build a trust relationship with both the product and the supplier, and not only does instability and irregularity of supply appear untrustworthy to the consumer, it also leaves them unsatisfied. Many respondents indicated in the survey that they make regular purchases of organic produce, and stock must therefore be available on every purchase occasion so as to build and maintain brand loyalty.

Respondents most interested in purchasing organic produce were those in the organic groups. However, although it is probable that a niche market exists here, there are a number of significant limitations. These people were strongly supportive of Japanese agriculture, and therefore generally averse to imported produce. Also, they were more inclined to purchase fresh produce as opposed to frozen or processed produce, compared with those respondents in the 'general public' group. For these reasons, those most likely

to purchase New Zealand organic produce, are those in the 'general public' group - of which there is a significant number.

The most common place of purchase for the 'general public' group was the co-operative retail outlets and the supermarkets. This was also true for the random survey conducted by MAFF in 1995, where it was found that co-operative retail outlets and supermarkets were the most common place of purchase for organic vegetables (cited in Jetro *b*, 1997). It is to be expected that the co-operative retail outlet was the primary place of purchase for respondents in both the organic groups and the 'general public' groups (although particularly the latter), as a large proportion of these samples were co-operative members. As Japanese co-operatives are more loyal to local producers, it is less likely that they would be prepared to stock New Zealand organic foods. The results, however, do confirm the importance of targeting supermarkets for New Zealand organic exporters, although co-operative shops are also potential places to target. Supermarkets, rather than co-operatives, are more likely to be receptive to imported food goods (see Appendix 7, Interviews 10,11,13,14). These results - that respondents make most of their organic purchases at large retail outlets - reflect the changing Japanese society, where the trend, as seen in the West, is to move away from small family-operated shops to large supermarkets and co-operative outlets (Shimizu, 1995).

6.3 Consumer Attitudes

The two distinctive groups surveyed, the 'general public' group and the organic groups, make for useful comparison and can be used to predict trends. In the cases where the differences between the two groups are significant, an estimation can be made concerning the wider Japanese population. If respondents in the organic groups constitute an extreme in regards to organic produce, and the 'general public' group (a high proportion of whom are members of consumer co-operatives) are above average on the continuum of the Japanese food shopper, then the wider Japanese population would by default represent the average. Therefore, the importance of price, the absence of skin blemishes, and size and shape uniformity (all significantly more important for the 'general

public' group than for the organic groups), would probably be even more important for the wider Japanese population.

Similarly, when compared to the 'general public' group, a relatively lessor proportion of the wider Japanese population would be likely to agree that organic food tastes better and is more nutritious than conventional food. Less would agree that the legal level of pesticides allowed on conventional produce is too high, and less would agree that excessive use of fertilisers and pesticides in food production can cause allergies in children.

Conversely, when compared to the 'general public' group, a relatively greater proportion of the wider Japanese population would be likely to agree that organic food is more expensive than conventional food and consequently not buy it as often. They would be less likely to buy organic produce if it has rough patches or spots on the skin or if it is a little misshapen, and relatively more would believe that the range of organic produce available is very limited. A greater proportion of the wider Japanese population than that of the 'general public' group would believe that, although trace quantities of some pesticides are found on conventional foods they do not harm people, and that conventional produce is just as nutritious as organic produce. Finally, relatively more of the wider Japanese population would be confident about the safety of imported organic produce.

This means that while the wider Japanese population in general is more likely to purchase imported produce and consume frozen and processed produce, they are also less likely to be tolerant of any imperfections in terms of size, shape and skin condition - common characteristics of fresh organic produce. Further, price will be a big consideration - the average consumer is less likely to pay the present price premiums for organic produce. The implication of this is that the market for organic produce in Japan is indeed a niche one, and therefore New Zealand exporters should target the more health conscious and environmentally aware consumer.

The 1995 survey conducted by Japanese MAFF also revealed that most consumers perceived organic produce to be 'safe' and 'healthy' (cited in Jetro *et al.*, 1997) and 'concern for safety was the most common reason cited by respondents in the survey done in 1992' (Jetro, 1994). This is further validated by the view of an interviewed Jusco (supermarket chain) employee who said, "the most important thing at present is food safety, and this is perhaps foremost on consumers minds as they buy their food now" (see Appendix 7, Interview 14). It is noteworthy that a significant proportion of consumers interviewed in this study believed that the terms 'healthy' and 'safe' meant the same thing (see Appendix 8, Tables A6 and A7). Those believing it to be different however, state that while 'safe' simply maintains the status quo of one's body, 'healthy' means an actual improvement in the state of one's body. The general perception was that chemical residues remaining on conventional produce are gradually stored and built up in the body, eventually leading to possible sickness and disease.

6.4 Price

The higher prices charged for organic produce in Japan was a significant issue for many respondents. Those interviewed reported that higher prices were a barrier to purchase, and the results of the self-completion survey strongly indicate that organic produce was perceived to be expensive - approximately half the respondents said they did not usually purchase organic produce because of the expense. This reinforces the view presented in the Tradenz *et al.* (1997), that both the absolute and relative costs of New Zealand fresh vegetables in general are high, and that this has the potential to both limit export growth to Japan, and to cause future Japanese markets to go to the cheaper producers of South America and China. The report also states that Japanese consumers are "no longer prepared to pay the traditional high prices for top quality". However, an exception was made for fresh organic vegetables.

Question 24 in the questionnaire (see Appendix 6) concerning the price charged for a 500g bag of organic frozen mixed vegetables revealed that the respondents were somewhat price sensitive. The product (organic frozen mixed vegetables) used as the subject of this question is an important export item for the organic section of Watties

Frozen Foods, and was chosen to provide a realistic example for which to extract relevant price information. The results reinforce other indications that price is an important issue for consumers. A large proportion of respondents indicated that they would be likely to purchase the product at 400 yen, 33% higher than the 300 yen charged for a 500g bag of conventional frozen mixed vegetables. At 500 yen (a price premium of 66%) most respondents said that they would almost never make such a purchase.

The willingness of a consumer to pay price premiums is likely to decrease the more expensive the product, or the more frequently the product is purchased. A bag of organic frozen mixed vegetables is a relatively expensive product, or at least perceived to be, and is also an infrequently purchased one. The relative expense appears to be the dominant factor in this case, as although an infrequent purchase, most respondents stated that they would almost never buy it at a price premium of 66%. Respondents from the organic groups were less inclined to make such a purchase which is consistent with the general philosophy of organic groups that frozen produce is not as fresh, and is inferior, to fresh produce.

Unless price does decrease, the market for organic produce will remain a niche market and will not become a mainstream one, with only those who are very concerned about health and environmental issues making regular and frequent purchases. There was no correlation between the level of income and the weekly expenditure on organic produce, which implies that if a consumer does want to eat organic produce, they will do so irrespective of their income. This does not mean that price is not an issue for these consumers, but rather it means that only a very small proportion (less than 1%) of the reason why consumers purchase organic produce, is explained by the level of their income. As expected, there was a correlation, (albeit a very weak one), between total weekly food expenditure and weekly expenditure on organic produce (see Appendix 13).

Non-staple food items such as fruit, seen often as a luxury food, can perhaps demand a higher price premium if organically-grown, due to the consumer perception that it is an infrequently purchased item, and because it is a 'treat', is worth the extra cost. Organic

produce such as onions, carrots, and potatoes - regularly purchased food staples - are less likely to be purchased frequently if they are highly priced.

Food companies who were interviewed stated that their intentions were to establish a large and stable supply of organic food, so that the present high prices would be forced down (Appendix 7, Interviews 14-16, and 18). They saw the growth of the organic food market as being strategic, and potentially a mainstream segment of the present food market rather than remaining the higher priced niche market that it is at present. For New Zealand, this may mean that in the future, importers will demand organically-grown produce without expecting to pay more for it. Should this happen, the present high-paying niche market will remain at least for the short to medium term, but will perhaps cease to exist in the long term. Conversely, the perception of other business people, academics, and government officials is that there is a limit to how much the organic food industry can and will grow, indicating that it will never become part of the lower priced mainstream food market, instead remaining a niche market (see Appendix 7, Interviews 15-20).

At present there is a large niche market of consumers who are willing to purchase the more expensive organic produce. This is further supported by most of the food organisations interviewed: Nissho Iwai, Jusco co. Ltd, Takanashi Milk Products, Tochigi Co-operative, and New Zealand based Zespri International. These organisations all predict that the organic food industry will continue to increase in the near future, and the estimated future percentage of organic sales for these companies will range from 10% to 40% (with the exception of Zespri International, who expects all its kiwifruit to be organic within 20 years). The present price premiums charged by these companies for organic produce ranged from 10% to 100% depending on the product. Nissho Iwai suggested that consumers would generally be prepared to pay a premium of 30%, and lack of supply of organic produce is the main issue that they (and Zespri International) must address. Takanashi Milk Products reported that chemical-free produce with premiums of 10-20%, sold better than organic produce which had premiums of 20-30%, although they stated that the turnover of organic produce is not very good, and that the high price premiums are the largest barrier which prevent consumers from purchasing it.

Conversely, Jusco reported that the turnover of organic produce was very similar to that of conventional produce.

6.5 Promotions

Analysis of the group discussions and the observation study revealed that consumers required clear, quality explanations describing what organic food is, and the production techniques used to grow it. Presently there is often inadequate labelling for low-chemical, chemical-free, and organic produce. This was reinforced by the statement “almost all retail outlets sold (organic vegetables) without clearly distinguishing them from general vegetables, and most (store managers) commented critically that consumers displayed very little interest in organic vegetables” (cited in Jetro, 1994).^{PP.} Many items of organic produce in the supermarkets were sold in clear plastic bags labelled with a bar code sticker manufactured by the supermarket, with the word ‘organic’ on it (see Appendix 9). In some cases however, this produce was difficult to find as it was often indistinguishable from the conventional produce. In other cases the organic produce was distinguishable by large, clearly labelled signs raised above the produce, often also illustrated with photographs of the grower and various stages of the production process.

Promotions are an important factor in maintaining and building a good relationship with consumers (McCull-Kennedy et al, 1994). New Zealand exporters should focus on visual impression; possibly including photographs of producers, the production process, beautiful New Zealand scenery, and an illustrated map of New Zealand. Clear and thorough explanations of what organic certification is and what it involves is vital, and the concepts of safety, trustworthiness, freshness, taste, nutrition, and environmental attributes, could all be stressed. This study revealed that the common consumer perception of the term ‘organic’ was that it was chemical-free and natural. These two terms could be emphasised when promoting organic produce to reinforce in the consumers’ minds the meaning of the term ‘organic’.

6.6 Limitations and Biases

The survey samples were limited to include mainly those concerned with environmental issues demonstrated by their membership of a consumer group. The samples were not, therefore, representative of the Japanese society as a whole, being biased towards those more likely to purchase organic food. This sample group was chosen primarily as it represented at least for the short term, a potential market opportunity of over 18 million people for New Zealand organic exports. As revealed by Johansson and Nonaka (1987) this approach is also commonly used by researchers in Japan, who conduct surveys with consumers who have actually bought the product, rather than to “scrutinise an undifferentiated mass public to learn about general attitudes and values”. However, because the samples were selected using the non-probability techniques of judgmental, snowball, and convenience sampling (Aaker et al, 1995), they may not be totally representative of their respective population groups. Because they were non-probability samples, it is impossible to measure the precision with which they are representative.

This survey was conducted in May and June, 1997, which is late spring in Japan. For this reason therefore, some of the results may not be generalisable for all seasons in Japan. This is particularly so in regards to the type of locally-produced fresh fruit and vegetables purchased - the most readily available for the three months prior to completing the questionnaire (late winter through to late spring) may have included onions, carrots, potatoes, pumpkin, asparagus, apples, mandarins, strawberries, and oranges. If the survey had been conducted in autumn or winter, a range of different foods would have been available. Because this survey was conducted in spring however, there was an abundance of produce available.

This survey was conducted in a variety of locations - both rural and urban. Although there are likely to be differences between rural and urban dwellers in regards to organic produce these differences were not a focus in this study. The majority of respondents lived in, or close to, cities of between one and three million people: Sapporo, Fukuoka, Kobe, and Utsunomiya. Respondents living in the rural areas were not separated from the urban-dwellers. In Japan however, cities such as Utsunomiya - with a population of approximately one million - are often regarded as rural cities, and even a city of this size

would differ from the truly urban city of nearby Tokyo which has a population of 26 million. It is likely that the more urban-dwelling a person is, the more likely they are to be concerned with food safety, and therefore organic produce. There are also likely to be differences between those living in geographically different regions of Japan as every region has its own sub-culture. Both these issues were ignored for the purposes of this study, although it is suggested that future research could focus on those living in the highly urbanised regions of Tokyo and Osaka, as these could be the places most easily targeted by New Zealand exporters in the future (due to their large populations and proximity to sea and air ports).

There were a number of cross-cultural issues that had to be addressed in conducting this research. Due to the language barrier, a translator had to be used to translate the questionnaire from English to Japanese. This led to a number of words and phrases being translated literally, rather than in the spirit of the meaning. Another challenge was that the research had to be planned from New Zealand. Communication with the key contacts in Japan was often difficult and lengthy, and the process was generally more challenging than if the research had been done in New Zealand. The language barrier also caused a number of misunderstandings in communication. Finally, whilst the questionnaire would have been appropriate for an English-speaking New Zealander, the format and layout of questionnaire should have been altered to accommodate the preferences and expectations of the Japanese respondents. This was not anticipated when developing the questionnaire, and was another of the many unknown factors of cross-cultural research.

6.7 Recommendations

In the short to medium term New Zealand producers and exporters should continue pursuing the higher paying niche market for organic produce in Japan, a niche market which holds significant potential for New Zealand. In the long term, it is possible that the market for organic produce will become more mainstream than it presently is, and if so, price premiums will be minimal or non-existent. Should this happen, it is possible that New Zealand producers and exporters should pursue alternative niche products, and alternative niche markets.

New Zealand organic producers and exporters should focus on value-added organic produce. Although there is significant market potential for fresh organic produce - such as onions, carrots, potatoes, apples, mandarins, strawberries, and kiwifruit - if the difficulties associated with exporting the produce can be overcome, attention should also be focused on organic juices, and frozen foods. According to the results of this study, such foods include organic vegetable, apple, tomato, and orange juices - frequently purchased in Japan. Organic kiwifruit, carrot, and grape juices are also potential export items for New Zealand, although they were not consumed in great quantity (which could be due to unavailability rather than dislike). Frozen produce that should be focused on include asparagus, mixed vegetables, pumpkin, green beans, and green peas. Market potential for canned fruit or vegetables, however, is very limited, and attention should probably be focused elsewhere.

Opportunities would exist if the organic industry could learn how to successfully produce traditionally difficult to grow organic produce such as apples and citrus, and develop techniques for growing produce that is of a consistently high quality, ensuring the shape and size requirements of Japanese import standards are always met.

Organic produce should be promoted using colour photographs of the producers, the growing process, New Zealand nature scenes, and an annotated colour map of New Zealand. Clear and fairly detailed explanations of the organic standards and certification labels and the production process should be provided. Also, the concepts of safety, high quality, trustworthiness, taste, nutrition, chemical-free, natural, and the environmental benefits of organic production should be stressed where possible.

6.8 Suggestions for further Research

Further research is required to establish the likelihood of consumers purchasing certain types of organic foods to indicate the actual market potential for each respective product, as well as the extent to which consumers are willing to pay price premiums for it. The Juster scale (Gendall et al, 1991) is a potential tool with which to do this, and for

the first test, participants could be shown a wide range of organic produce and asked to state on a scale of one to ten, the likelihood that they would purchase the product within a certain time frame. For the second test, specific examples of organic produce, and an appropriately wide range of price options could then be shown to participants, upon which they must state the likelihood on a scale of one to ten that they would purchase the product at a given price. This would provide valuable information on potential purchase behaviour, and an estimate of the demand could be derived, which would reinforce, either negatively or positively, the prevailing attitude that price is a significant barrier to purchase. Such a study could be carried out in either a focus group environment, or in a self-completion questionnaire format, ideally with a non-biased sample representative of the whole population. A non-biased sample could be selected by using the electoral roll or the telephone book, although this would be very time consuming and expensive. People shopping at randomly chosen supermarkets might also provide a non-biased sample population.

Research could also be done to investigate what proportion of the population the respondents sampled actually constituted, in terms of how many people in Japan are 'health conscious and environmentally aware' in relation to those who are the 'average' Japanese consumer of the 'wider Japanese population'. In relation to this, a study could be conducted asking the questions of what a niche market actually is, and whether the present market for organic produce in Japan is in fact a niche one. If it is not, what are the possible implications of this - and should alternative niche markets or niche products ~~should~~ be sought.

Future market research could involve having shoppers complete a short questionnaire at a variety of randomly chosen supermarkets throughout Japan. This would ensure a reasonably non-biased sample of those who regularly do the food shopping. Questions asked would need to be very specific and relevant to New Zealand exporters and producers, and should include questions that would reflect actual and potential behavioural patterns of consumers, as well as any barriers that may limit purchase of organic produce. The Juster scale, mentioned above, could also be used in such an environment to determine purchase potential.

Research could also be done on how to produce organic produce at a lower costs, and at higher yields than is presently the case, as well as to look at the viability of organic produce in the future, especially in regards to its potential to compete successfully with China and South America if price premiums were to fall.

Another study that could be undertaken would be to survey Japanese people both living in Japan and in New Zealand, and to compare the results. If it was found that the results between samples were similar, then future research concerning Japanese people could be conducted on New Zealand-based Japanese residents, at a much reduced cost.

Finally, while this study focused on those living in the more rural cities of Japan, future research should maybe focus on those living in the highly urbanised regions of Tokyo and Osaka. Further, a study could also be done comparing the behaviour and attitudes of rural and urban people in Japan, in regards to either organic produce specifically, or issues generally. A similar study could be done to compare attitudinal and behavioural differences of people living in the different regions in Japan.

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8. Appendices

8.1 **Appendix 1:** Guidelines for Labelling on Organic Farm Products and Specially Grown Farm Products

Guidelines for Labeling on Organic Farm Products and Specially Grown Farm Products

Established on October 1, 1992 as No. 4 Shokuryu No. 3889

Revised on December 26, 1996 as No. 8 Shokuryu No. 4567

Section 1 Scope of Application

The guidelines shall apply to vegetables and fruits, etc. [vegetables and fruits (except processed ones), and dried and processed grains (except rice, barley and wheat), beans and teas] covered by farm products, which are sold to many and unspecified consumers.

Section 2 Definition

In the guidelines, the terms in the left columns shall be defined as set forth in the right corresponding space of the following table:

Terms	Definition
Organic Farm Products	Means those farm products produced in the production processes by a cultivation method not using synthesized pesticides, chemical fertilizers and synthesized soil amendments (hereinafter, collectively called "Synthesized Farming Supplies") or by a cultivation method using synthesized farming supplies allowed to be used in the irreducible minimum quantities as set forth in Paragraph 1. of Section 3, and harvested in the fields of which the soils have been conditioned with composts, etc. for three years or more since the suspension of use of other synthesized farming supplies than those allowed to be used in the irreducible minimum quantities as set forth in Paragraph 1. of Section 3.
Transitional Organic Farm Products	Means those farm products produced in the production processes by a cultivation method not using synthesized farming supplies or by a cultivation method using synthesized farming supplies allowed to be used in the irreducible minimum quantities as set forth in Paragraph 1. of Section 3, and harvested in the fields of which the soils have been conditioned with composts, etc. for 6 months or more since the suspension of use of other synthesized farming supplies than those allowed to be used in the irreducible minimum quantities as set forth in Paragraph 1. of Section 3 (excluding those covered by Organic Farm Products).
Specially Grown Farm Products	Means the farm products produced by a special cultivation method focusing on the farming supplies employed in the production process of said products

	(except for Organic Farm Products and Transitional Organic Farm Products), which are composed of "Farm Products Grown without the Use of Pesticides," "Farm Products Grown without the Use of Chemical Fertilizers," "Farm Products Grown with Pesticides Used in Reduced Quantities" and "Farm Products Grown with Chemical Fertilizers Used in Reduced Quantities."
Farm Products Grown without the Use of Pesticides	Means those farm products produced by a cultivation method using no pesticides in the production processes which are covered by Specially Grown Farm Products.
Farm Products Grown without the Use of Chemical Fertilizers	Means those farm products produced by a cultivation method using no chemical fertilizer in the production processes which are covered by Specially Grown Farm Products.
Farm Products Grown with Pesticides Used in Reduced Quantities	Means those farm products produced by a cultivation method in which the frequencies of use of synthesized pesticides during the production processes do not exceed nearly 50% of those usually employed for the said farm products in the same area and in the same cropping period (based on the comparison of a total of the frequencies of use of soil disinfectants, weed-killers and others) which are covered by Specially Grown Farm Products.
Farm Products Grown with Chemical Fertilizers Used in Reduced Quantities	Means those farm products produced by a cultivation method in which the quantity of chemical fertilizers used during the production processes does not exceed nearly 50% of those usually used for the said farm products in the same area and in the same cropping period (based on the comparison of the nitrogen content of chemical fertilizers) which are covered by Specially Grown Farm Products.
Production processes	Means both the processes of production of the said farm products (including preparation of seeds and seedlings and processing of crops of the said farm products by producers. The same applies hereinafter.) and the management of fields during the period between the harvest of previous crops and the planting of the said farm products.
Synthesize	Means to convert chemical compounds and elements into new substances by chemical means (not including the chemical changes by fermentation and aging occurring in connection with vital phenomena).
Pesticides	Those (except natural enemies) covered by Paragraphs 1 and 2 of Sub-article 2 of Article 1 of Pesticides Regulation Law (Law No. 82, 1948).
Synthesized pesticides	Those synthesized which are covered by pesticides.
Fertilizers	Those covered by Paragraph 1 of Article 2 of Fertilizer Control Law (Law No.

	127, 1950).
Chemical fertilizers	Those synthesized which are covered by fertilizers.
Soil amendments	Those covered by Paragraph 1 of Article 11 of Soil Fertility Promotion Law (Law No. 34, 1984).
Synthesized soil amendments	Those synthesized which are covered by solid amendments.
Natural materials	Those materials which come from the nature world or living creatures and do not undergo any change by the above-mentioned synthesizing (including those subjected to only physical treatments, such as crushing and calcination).
Containers and packages	Means those in which farm products are contained or packed and those to be delivered with farm products contained therein or those tapes with which to bundle farm products or seals to stick to farm products.
Labels	Means a piece of paper attached to farm products for the purpose of conveying the information on the said farm products.
Persons responsible for cultivation	The persons engaging in cultivation management at the fields or those guiding them in the cultivation management.
Persons responsible for verification	The persons who investigate the cultivation management method, check the records on the cultivation management, etc. and guide the persons responsible for cultivation in the cultivation management according as the case demands.

Section 3 Labeling Guidelines on Organic Farm Products

1. Synthesized Farming Supplies Allowed to be Used

- (1) Synthesized farming supplies allowed to be used in the irreducible minimum quantity for Organic Farm Products and Transitional Organic Farm Products covered by Section 2 shall be the items cited below. In the case that they are used as pesticides for pest control and other purposes, the pesticides shall be subject to registration under the Pesticides Regulation Law and the use of the said supplies shall be limited within the range covered by the registered usage:
 - a. Inorganic sulfur and copper agents
 - b. Pesticides not applied directly to crops or the fields, such as pheromones
 - c. Synthesized farming supplies with which seeds and seedlings were pretreated at the time of purchase (only when untreated supplies are not available)
 - d. Fertilizers which supply trace elements indispensable to the growth of crops
- (2) Natural useful mineral materials, plants and animals or natural materials picked out, extracted or prepared therefrom, of which the raw materials are manifest, shall be

allowed to be used. In the case that they are used as pesticides for pest control and other purposes, the pesticides shall be subject to registration under the Pesticides Regulation Law, and the use of the said materials shall be limited within the range covered by the registered usage, provided, however, that antibiotics are not allowed to be used.

2. Labeling and Rewriting of Labeling

The labeling and rewriting of labeling for Organic Farm Products and Transitional Organic Farm Products shall be made in the following manner:

- (1) A person responsible for cultivation or a person responsible for verification shall label Organic Farm Products or Transitional Organic Farm Products on the containers and packages or labels for every transaction unit in their distribution in accordance with the provisions set forth in Paragraphs 3. and 4. hereinafter before shipment.
- (2) Those who sell Organic Farm Products and Transitional Organic Farm Products labeled under Subparagraph (1) above shall label by using containers and packages or labels on which the labeling has been made under Subparagraph (1) above, provided, however, that, if the labeling by use of those containers or packages is found difficult, a person responsible for cultivation or a person responsible for verification shall be allowed to rewrite correctly all the contents labeled on the containers and packages or labels under Subparagraph (1) to the panels, etc. at the store.

3. Items to be Labeled

The items to be labeled collectively by a person who labels Organic Farm Products or Transitional Organic Farm Products (hereinafter called the "Labeling Person") shall be as follows:

- (1) Name of Organic Farm Products or Transitional Organic Farm Products
- (2) Statement of conformity to the guidelines
- (3) Name or trade name and address and telephone number of the person responsible for cultivation
- (4) Name or trade name and address and telephone number of the person responsible for verification

However, if the person responsible for cultivation is an agricultural cooperative, a farmers' group corporation or a farmers' organization (hereinafter called "Organization"), the said person may serve as the person responsible for verification concurrently.

4. Methods of Labeling

The labeling person shall indicate those items set forth in Paragraph 3. above in the following manner:

- (1) Items to be labeled collectively by the labeling person shall be placed in a frame clearly

distinguishable from others.

- (2) Names of Organic Farm Products or Transitional Organic Farm Products
Mention shall be made according as set forth in the following table:

Kinds	Methods of Labeling
Organic Farm Products	"Organic Farm Product," "Organically Grown OO (OO shall be a common name for the farm product in question. The same applies for the Transitional Organic Farm Products)."
Transitional Organic Farm Products	"Transitional Organic Farm Products," "Transitional Organically Grown OO," "Organic Farm Product (Transitional)," and "Organically Grown OO (Transitional)."

- (3) Statement of conformity to the guidelines

The statement of conformity to the guidelines shall be made as "Labeling under the Guidelines of the Ministry of Agriculture, Forestry and Fisheries."

- (4) Name or trade name and address and telephone number of the person responsible for cultivation

In the case of an organization, the name, representative's name and location and telephone number of the organization shall be mentioned.

- (5) Name or trade name and address and telephone number of the person responsible for verification

In the case of an organization, the name, representative's name and location and telephone number of the organization shall be mentioned.

- (6) Informal labeling of tapes and seals

Independently of the foregoing labeling, the informal labeling carrying the below-mentioned items only may be made on the tapes with which to bundle Organic Farm Products and Transitional Organic Farm Products and the seals to stick to Organic Farm Products and Transitional Organic Farm Products, provided, however, that all items to be labeled shall be separately labeled by the use of packaging materials, labels and others for the said farm products.

a. Subparagraphs (1) and (2) of Paragraph 3. hereinabove.

b. Name of the person responsible for cultivation or person responsible for verification

- (7) Examples for labeling shall be shown as Appendices 1 and 2 and the Example 1 of Appendix 7.

5. Obligations of Persons Concerned in Distribution

- (1) In the case that Organic Farm Products or Transitional Organic Farm Products with labeling based on the guidelines are subjected to the addition of, or the treatment with,

synthesized farming supplies in the later stage of distribution (including the case that they are subjected to fumigation with synthesized pesticides in the process of importing those products from the exporting countries to Japan), the persons concerned in distribution (including importers; the same applies hereinafter) shall obliterate the said labeling for the lots which are subjected to such addition or treatment.

- (2) In the case that Organic Farm Products and Transitional Organic Farm Products with labeling under the guidelines are not clearly distinguished physically from other farm products or that the said labeling and products are not in a one and undivided status, the persons concerned in distribution shall obliterate the labeling.
- (3) The persons concerned in distribution who has rewritten the labeling shall keep the said containers and packages or labels in custody so that they can present the contents labeled on the containers and packages or labels by the persons responsible for cultivation or the persons responsible for verification with the receiving parties at the time of delivery of said Organic Farm Products or Transitional Organic Farm Products according as the occasion demands.

6. Items Prohibited from Labeling

The following items shall not be labeled:

- (1) Labeling of items other than those cited in the guidelines in the frame for the items to be labeled collectively.
- (2) Any wordings like "Naturally Grown," "Spontaneously Grown," etc. in the labeling for Organic Farm Products or Transitional Organic Farm Product which are easy to be confused with the labeling used for Organic Farm Product or Transitional Organic Farm Products (provided, however, that the labeling prefixed by the word "Natural," etc. which is determined by the established standard of conventionally well known cultivation and which is mentioned outside the frame for the items to be labeled collectively is excluded).
- (3) Any wordings which give rise to the misunderstanding as if it were much more excellent or advantageous than it is.
- (4) Any wordings which give rise to the misunderstanding as if it were remarkably better or advantageous than those farm products grown by the ordinary cultivation methods.
- (5) Any wordings which conflict with those expressed as the items to be labeled in accordance with the guidelines.
- (6) Any letters, pictures, photographs or the like which may give a wrong impression on the cultivation method, quality, etc. of the said Organic Farm Products or Transitional Organic Farm Products.

Section 4 Guidelines on the labeling with regard to Specially Grown Farm Products

1. Labeling and Rewriting of Labeling

The same as Paragraph 2. of Section 3, provided that "Organic Farm Products and Transitional Organic Farm Products" shall be replaced with "Specially Grown Farm Products," and "Paragraphs 3. and 4." being replaced with "Paragraphs 2. and 3. of Section 4."

2. Items to be Labeled

(1) The items to be labeled collectively by labeling persons of Specially Grown Farm Products shall be as follows:

- a. Name of "Farm Products Grown without the Use of Pesticides," "Farm Products Grown without the Use of Chemical Fertilizers," "Farm Products Grown with Pesticides Used in Reduced Quantities," or "Farm products Grown with Chemical Fertilizers Used in Reduced Quantities"
- b. Statement of conformity to the guidelines.
- c. Name or trade name and address and telephone number of the person responsible for cultivation
- d. Name or trade name and address and telephone number of the person responsible for verification

However, if the person responsible for cultivation is an organization, the said person may serve as the person responsible for verification concurrently.

(2) Farm Products Grown without the Use of Pesticides or Farm Products Grown without the Use of Chemical Fertilizers shall bear the following statements in addition to the items set forth in (1) above.

- a. The statement to the effect that chemical fertilizers are used, in the case that farm products grown with chemical fertilizers but without the use of pesticides are labeled as Farm Products Grown without the Use of Pesticides; or the statement to the effect that pesticides are used, in the case that farm products grown with pesticides but without the use of chemical fertilizers are labeled as Farm Products Grown without the Use of Chemical Fertilizers. (The foregoing labeling shall be added to the names of Farm Products Grown without the Use of Pesticides or Farm Products Grown without the Use of Chemical Fertilizers.)

- b. The statement to the effect that no soil is used as for those produced by a cultivation method without use of soils, such as hydroponics.

(3) Farm Products Grown with Pesticides Used in Reduced Quantities or Farm Products Grown with Chemical Fertilizers Used in Reduced Quantities shall bear the following labeling in addition to the items set forth in Subparagraph (1):

- a. The frequencies of use or quantities of synthesized pesticides or chemical fertilizers

usually employed in a cropping period in the same area as the said farm products are cultivated shall be used as the basis for comparison; the rate of reduction in quantity of synthesized pesticides actually used in comparison with the basis hereunder as for the Farm Products Grown with Pesticides Used in Reduced Quantities, or the rate of reduction in quantity of chemical fertilizers actually used in comparison with the basis hereunder as for the Farm Products Grown with Chemical Fertilizers Used in Reduced Quantities.

However, the said basis shall be determined or accepted by the person responsible for verification in consideration of the actual conditions of the use of synthesized pesticides or chemical fertilizers in the said area, and no labeling as Farm Products Grown with Pesticides Used in Reduced Quantities or Farm Products Grown with Chemical Fertilizers Used in Reduced Quantities shall be made in the case that the actual conditions of the use of those materials are not clarified.

b. The statement to the effect that no soil is used as for those produced by a cultivation method without use of soils, such as hydroponics.

(4) Farm Products Grown with Pesticides Used in Reduced Quantities or Farm Products Grown with Chemical Fertilizers Used in Reduced Quantities shall bear the following items in addition to the items to be collectively labeled:

a. Names and frequencies of use of synthesized pesticides actually used in the production processes in the case of Farm Products Grown with Pesticides Used in Reduced Quantities.

b. Names and quantities of chemical fertilizers actually used in the production processes in the case of Farm Products with Chemical Fertilizers Used in Reduced Quantities.

3. Methods of Labeling

The labeling person shall label the items set forth in Paragraph 2. above in the following manner:

(1) Items to be labeled collectively by the labeling person shall be placed in a frame clearly distinguishable from others.

(2) Names of Specially Grown Farm Products

Mention shall be made in accordance with the following table:

Kinds	Methods of Labeling
Farm Products Grown without the Use of Pesticides	"Farm Products Grown without the Use of Pesticides," "○○ Grown without the Use of Pesticides (○○ shall be a common name for the farm product in question. The same applies up to Subparagraph (7).)
Farm Products Grown without the Use of Chemical Fertilizers	"Farm Products Grown without the Use of Chemical Fertilizers," "○○ Grown without the Use of Chemical Fertilizers"

Farm Products Grown with Pesticides Used in Reduced Quantities	"Farm Products Grown with Pesticides Used in Reduced Quantities," "OO Grown with Pesticides Used in Reduced Quantities"
Farm Products Grown with Chemical Fertilizers Used in Reduced Quantities	"Farm Products Grown with Chemical Fertilizers Used in Reduced Quantities," "OO Grown with Chemical Fertilizers Used in Reduced Quantities"

(3) Statement of conformity to the guidelines

The statement of conformity to the guidelines shall be made as "Labeling under the Guidelines of the Ministry of Agriculture, Forestry and Fisheries."

(4) Name or trade name and address and telephone number of the person responsible for cultivation

In the case of an organization, the name, representative's name, location and telephone number of the organization shall be mentioned.

(5) Name or trade name and address and telephone number of the person responsible for verification

In the case of an organization, the name, representative's name and location and telephone number of the organization shall be mentioned.

(6) Statement of the use of chemical fertilizers in Farm Products Grown without the Use of Pesticides

Mention shall be made as "Farm Products Grown without the Use of Pesticides (Chemical Fertilizers Used)" or "OO Grown without the Use of Pesticides (Chemical Fertilizers Used)."

(7) Statement of the use of pesticides in Farm Products Grown without the Use of Chemical Fertilizers

Mention shall be made as "Farm Products Grown without the Use of Chemical Fertilizers (Pesticides used)" or "OO Grown without the Use of Chemical Fertilizers (Pesticides Used)."

(8) Statement to the effect that no soil is used

Hydroponics shall be mentioned as "Hydroponics," and in the case of other cultivation methods without use of soils, the specific cultivation method shall be mentioned accordingly.

(9) Statement of the rates of reduction in quantity of synthesized pesticides or chemical fertilizers

The rates of reduction in quantity of synthesized pesticides or chemical fertilizers shall be mentioned as "O wari (=unit of 10%) Reduced in Quantity in Comparison with the

Area.”

(10) Statement of pesticides used for Farm Products Grown with Pesticides Used in Reduced Quantities

Names and frequencies of use of synthesized pesticides used in the production processes shall be mentioned.

(11) Statement of chemical fertilizers used for Farm Products Grown with Chemical Fertilizers Used in Reduced Quantities

Names and quantities of chemical fertilizers used in the production processes shall be mentioned.

(12) Informal labeling of tapes and seals, etc.

Independently of the foregoing labeling, the informal labeling carrying the below-shown items only may be made on the tapes with which to bundle Specially Grown Farm Products and the seals to stick to Specially Grown Farm Products, provided, however, that all items to be labeled shall be separately labeled by use of packaging materials, labels and other materials for the said farm products.

a. a. and b. of Subparagraph (1) of Paragraph 2.

b. Name of the person responsible for cultivation or person responsible for verification

(13) Examples for labeling shall be as shown in Appendices 3 to 6 and Examples 2 and 3 of Appendix 7.

4. Obligations of Persons Concerned in Distribution

The same as Paragraph 5. of Section 3, provided that “Organic Farm Products and Transitional Organic Farm Product” in Subparagraph (1) of Paragraph 5. of Section 3 shall be replaced with “Farm Products Grown without the Use of Pesticides and Farm Products Grown with Pesticides Used in Reduced Quantities,” and “Organic Farm Products and Transitional Organic Farm Products” in Subparagraphs (2) and (3) of Paragraph 5. of Section 3 being replaced with “Specially Grown Farm Products.”

5. Items Prohibited from Labeling

The same as Paragraph 6. of Section 3, provided that “Organic Farm Products and Transitional Organic Farm Products” shall be replaced with “Specially Grown Farm Products.”

Section 5 Miscellaneous

1. The management of production and delivery of Organic Farm Products and Specially Grown Farm Products shall conform with “Points of Production Management of Organic Farm Products and Specially Grown Farm Products (Circular Notice No. 4 Nosan No. 6283 of

2. The Government, local public entities, and organizations concerned shall exert their utmost to educate business corporations and consumers to popularize the labeling under the guidelines.

Appendix 1 Examples of labeling of Organic Farm Products

The labeling shall be made in the Japanese language. Examples of labeling are supplemented by English for the convenience of readers.

Example 1

農林水産省ガイドラインによる表示	
有機農産物	
栽培責任者	○○○○
住所	○○県○○町△△△
連絡先 ☎	□□-□□-□□
確認責任者	△△△△
住所	○○県○○町◇◇◇
連絡先 ☎	□□-□□-▽▽

- ← Labeling under the guidelines of the Ministry of Agriculture, Forestry and Fisheries
- ← Organic Farm Product
- ← Name of person responsible for cultivation: ○○○○
- ← Address: △△△, ○○ cho (or -machi), ○○ Prefecture
- ← Telephone number: □□-□□-□□
- ← Name of person responsible for verification: △△△△
- ← Address: △△△, ○○ cho (or -machi), ○○ Prefecture
- ← Telephone number: □□-□□-▽▽

Example 2

農林水産省ガイドラインによる表示	
有機栽培ばれいしょ	
栽培・確認責任者	○○農協
所在地	○○県○○町△△△
連絡先 ☎	□□-□□-□□

- ← Labeling under the guidelines of the Ministry of Agriculture, Forestry and Fisheries
- ← Organically Grown Potatoes
- ← Name of person responsible for cultivation and verification: ○○ Agricultural Cooperative
- ← Address: △△△, ○○ cho (or -machi), ○○ Prefecture
- ← Telephone number: □□-□□-□□

Note: A comment on farm products, explanation of the contents of labeling and names of special cultivation methods and materials shall be expressed outside the frame of collective labeling. Same applies hereinafter.

Appendix 2 Examples of labeling of Transitional Organic Farm Products

Example 1

農林水産省ガイドラインによる表示	
転換期間中有機農産物	
栽培責任者	○○○○
住所	○○県○○町△△△
連絡先 ☎	□□-□□-□□
確認責任者	△△△△
住所	○○県○○町◇◇◇
連絡先 ☎	□□-□□-▽▽

- ← Labeling under the guidelines of the Ministry of Agriculture, Forestry and Fisheries
- ← Transitional Organic Farm Product
- ← Name of person responsible for cultivation: ○○○○
- ← Address: △△△, ○○ cho (or -machi), ○○ Prefecture
- ← Telephone number: □□-□□-□□
- ← Name of person responsible for verification: △△△△
- ← Address: △△△, ○○ cho (or -machi), ○○ Prefecture
- ← Telephone number: □□-□□-▽▽

Example 2

農林水産省ガイドラインによる表示	
有機農産物 (転換期間中)	
栽培・確認責任者	〇〇農協
所在地	〇〇県〇〇町△△△
連絡先	☎ 〇〇-〇〇-〇〇

- ← Labeling under the guidelines of the Ministry of Agriculture, Forestry and Fisheries
- ← Organic Farm Product (Transitional)
- ← Name of person responsible for cultivation and verification: 〇〇 Agricultural Cooperative
- ← Address: △△△, 〇〇 cho (or -machi), 〇〇 Prefecture
- ← Telephone number: 〇〇-〇〇-〇〇

Example 3

農林水産省ガイドラインによる表示	
転換期間中有機栽培ほうれん草	
栽培責任者	〇〇〇〇
住所	〇〇県〇〇町△△△
連絡先	☎ 〇〇-〇〇-〇〇
確認責任者	△△△△
住所	〇〇県〇〇町◇◇◇
連絡先	☎ 〇〇-〇〇-▽▽

- ← Labeling under the guidelines of the Ministry of Agriculture, Forestry and Fisheries
- ← Transitional Organically Grown Spinaches
- ← Name of person responsible for cultivation: 〇〇〇〇
- ← Address: △△△, 〇〇 cho (or -machi), 〇〇 Prefecture
- ← Telephone number: 〇〇-〇〇-〇〇
- ← Name of person responsible for verification: △△△△
- ← Address: △△△, 〇〇 cho (or -machi), 〇〇 Prefecture
- ← Telephone number: 〇〇-〇〇-▽▽

Appendix 3 Examples of labeling of Farm Products Grown without the Use of Pesticides or Chemical Fertilizers

Example 1

農林水産省ガイドラインによる表示	
無農薬栽培農産物 (化学肥料使用)	
栽培責任者	〇〇〇〇
住所	〇〇県〇〇町△△△
連絡先	☎ 〇〇-〇〇-〇〇
確認責任者	△△△△
住所	〇〇県〇〇町◇◇◇
連絡先	☎ 〇〇-〇〇-▽▽

- ← Labeling under the guidelines of the Ministry of Agriculture, Forestry and Fisheries
- ← Farm Products Grown without the Use of Pesticides (Chemical Fertilizers Used)
- ← Name of person responsible for cultivation: 〇〇〇〇
- ← Address: △△△, 〇〇 cho (or -machi), 〇〇 Prefecture
- ← Telephone number: 〇〇-〇〇-〇〇
- ← Name of person responsible for verification: △△△△
- ← Address: △△△, 〇〇 cho (or -machi), 〇〇 Prefecture
- ← Telephone number: 〇〇-〇〇-▽▽

Example 2

農林水産省ガイドラインによる表示	
無農薬栽培レタス(化学肥料使用)	
水耕栽培	
栽培・確認責任者	〇〇農協
所在地	〇〇県〇〇町△△△
連絡先	☎ □□-□□-□□

- ✓ Labeling under the guidelines of the Ministry of Agriculture, Forestry and Fisheries
- ← Lettuces Grown without the Use of Pesticides (Chemical Fertilizers Used)
- ← Hydroponics
- ← Name of person responsible for cultivation and verification: 〇〇 Agricultural Cooperative
- ← Address: △△△, 〇〇 cho (or -machi), 〇〇 Prefecture
- ← Telephone number: □□-□□-□□

Example 3

農林水産省ガイドラインによる表示	
無化学肥料栽培農産物(農薬使用)	
栽培責任者	〇〇〇〇
住所	〇〇県〇〇町△△△
連絡先	☎ □□-□□-□□
確認責任者	△△△△
住所	〇〇県〇〇町◇◇◇
連絡先	☎ □□-□□-▽▽

- ✓ Labeling under the guidelines of the Ministry of Agriculture, Forestry and Fisheries
- ← Farm Product Grown without the Use of Chemical Fertilizers (Pesticides Used)
- ← Name of person responsible for cultivation: 〇〇〇〇
- ← Address: △△△, 〇〇 cho (or -machi), 〇〇 Prefecture
- ← Telephone number: □□-□□-□□
- ← Name of person responsible for verification: △△△△
- ← Address: △△△, 〇〇 cho (or -machi), 〇〇 Prefecture
- ← Telephone number: □□-□□-▽▽

Appendix 4 Examples of labeling of Farm Products Grown with Pesticides Used in Reduced Quantities or with Chemical Fertilizers Used in Reduced Quantities

Example 1

農林水産省ガイドラインによる表示	
減農薬栽培農産物	
当地比 〇割減	
栽培責任者	〇〇〇〇
住所	〇〇県〇〇町△△△
連絡先	☎ □□-□□-□□
確認責任者	△△△△
住所	〇〇県〇〇町◇◇◇
連絡先	☎ □□-□□-▽▽

- ✓ Labeling under the guidelines of the Ministry of Agriculture, Forestry and Fisheries
- ← Farm Products Grown with Pesticides Used in Reduced Quantities
- ← 〇 wari reduced in quantity in comparison with the quantity used in the same area
- ← Name of person responsible for cultivation: 〇〇〇〇
- ← Address: △△△, 〇〇 cho (or -machi), 〇〇 Prefecture
- ← Telephone number: □□-□□-□□
- ← Name of person responsible for verification: △△△△
- ← Address: △△△, 〇〇 cho (or -machi), 〇〇 Prefecture
- ← Telephone number: □□-□□-▽▽

Example 2

農林水産省ガイドラインによる表示	
減化学肥料栽培農産物	
○○地域比 ○削減	
栽培責任者	○○○○
住所	○○県○○町△△△
連絡先 ☎	□□-□□-□□
確認責任者	△△△△
住所	○○県○○町◇◇◇◇
連絡先 ☎	□□-□□-▽▽

- ✓ Labeling under the guidelines of the Ministry of Agriculture, Forestry and Fisheries
- ← Farm Products Grown with Chemical Pesticides Used in Reduced Quantities
- ← ○ wari reduced in quantity in comparison with the quantity used in the area of ○○
- ← Name of person responsible for cultivation: ○○○○
- ← Address: △△△, ○○ cho (or -machi), ○○ Prefecture
- ← Telephone number: □□-□□-□□
- ← Name of person responsible for verification: △△△△
- ← Address: △△△, ○○ cho (or -machi), ○○ Prefecture
- ← Telephone number: □□-□□-▽▽

Appendix 5 Examples of labeling of Farm Products Grown without Pesticides but with Chemical Fertilizers Used in Reduced Quantities, etc.

Example 1

農林水産省ガイドラインによる表示	
無農薬・減化学肥料栽培農産物	
当地比 ○削減	
栽培・確認責任者	○○○○
住所	○○県○○町△△△
連絡先 ☎	□□-□□-▽▽

- ✓ Labeling under the guidelines of the Ministry of Agriculture, Forestry and Fisheries
- ← Farm Product Grown without Pesticides but with Chemical Fertilizers Used in Reduced Quantities
- ← ○ wari reduced in quantity in comparison with the quantity used in the same area
- ← Name of person responsible for cultivation and verification: ○○○○
- ← Address: △△△, ○○ cho (or -machi), ○○ Prefecture
- ← Telephone number: □□-□□-□□

Example 2

農林水産省ガイドラインによる表示	
無化学肥料・減農薬栽培農産物	
○○地域比 ○削減	
栽培・確認責任者	○○農協
所在地	○○県○○町△△△
連絡先 ☎	□□-□□-□□

- ✓ Labeling under the guidelines of the Ministry of Agriculture, Forestry and Fisheries
- ← Farm Product Grown without Chemical Fertilizers but with Pesticides Used in Reduced Quantities
- ← ○ wari reduced in quantity in comparison with the quantity used in the area of ○○
- ← Name of person responsible for cultivation and verification: ○○ Agricultural Cooperative
- ← Address: △△△, ○○ cho (or -machi), ○○ Prefecture
- ← Telephone number: □□-□□-□□

Example 3

農林水産省ガイドラインによる表示	
減農薬・減化学肥料栽培はくさい	
当地比 農薬	○割減
化学肥料	○割減
栽培・確認責任者	○○農協
所在地	○○県○○町△△△
連絡先	☎ □□-□□-□□

- ← Labeling under the guidelines of the Ministry of Agriculture, Forestry and Fisheries
- ← Celery cabbages Grown with Pesticides Used in Reduced Quantities and with Chemical Fertilizers Used in Reduced Quantities
- ← Comparison of quantities used in the same area:
Pesticides: ○ *wari* reduced in quantity
Chemical fertilizers: ○ *wari* reduced in quantity
- ← Name of person responsible for cultivation and verification:
○○ Agricultural Cooperative
- ← Address: △△△, ○○ cho (or -machi), ○○ Prefecture
- ← Telephone number: □□-□□-□□

Appendix 6 Examples of labeling of use of synthesized pesticides or chemical fertilizers for Farm Products Grown with Pesticides Used in Reduced Quantities or with Chemical Fertilizers Used in Reduced Quantities (to be placed outside the frame of collective labeling)

Example 1 For example 1 of Appendix 4 and example 2 of Appendix 5

化学合成農薬の使用状況		
使用資材名	用途	回数
○○○○○	殺菌	1回
□□□□□	殺虫	2回
△△△△△	除草	1回

- ← Synthesize pesticides in use
- ← Names of farming supplies used; Applications; Frequency of use
- ← Fungicide: Once
- ← Insecticide: Twice
- ← Herbicide: Once

Note: The farming supplies used shall be expressed by common names indicating main ingredients instead of trade names in principle. The same applies hereinafter.

Example 2 For example 2 of Appendix 4 and example 1 of Appendix 5

化学合成肥料の使用状況		
使用資材名	用途	量
▽▽▽▽▽	元肥	窒素 4kg/10a
◇◇◇◇◇	追肥	窒素 1kg/10a

- ← Chemical fertilizers in use
- ← Names of farming supplies used; Applications; Quantities used
- ← Basal application fertilizer: Nitrogen 4 kg/10a
- ← Additional fertilizer: Nitrogen 1 kg/10a

Note: The use of composts may be described (the same applies hereinafter). In this case, the farming supplies used shall be expressed by common names indicating main ingredients instead of trade names in principle. The same applies hereinafter.

8.2 **Appendix 2:** Special Guideline for Description System of Yuki Vegetables and Fruits

SPECIAL GUIDELINE FOR DESCRIPTION SYSTEM

OF YUKI VEGETABLES AND FRUITS

Director, Agricultural Production
Bureau,

Ministry of Agriculture, Forestry
and Fisheries

Director, Food Distribution Bureau,
Ministry of Agriculture, Forestry
and Fisheries

Food Distribution Bureau 4 - No.3889

October 1, 1992

Special Guidelines for a Description System of Yuki vegetables and fruits were established as follows to facilitate smooth distribution and consumption of Yuki produce. In conformity with these guidelines, the Prefectural offices and other authorities concerned under yet bureau's jurisdiction should be notified and directed to start implementing the description system accordingly. It should be understood that surveys will be conducted after the implementation of this description system and changes may be made for improvement if necessary.

Article 1. Object

In recent years, reflecting the demand for safer food by the consumers, fruit and vegetables with labels indicating they are organically grown produce have been on the market. However, without a standardized description system, there have been some difficulties in production, distribution and consumption of Yuki products.

To improve the situation, these Guidelines have been established for smooth production, distribution and consumption procedures of Yuki products in accordance with the regulation and to facilitate consumers in selecting the produce of their choice.

Article 2. The Extent of Applicability

This Guideline is to be applied to fruits and vegetables (except processed food), dried products such as grains (except rice and barley), pulse and tea leaves which are used to make products that are distributed to the vast majority of consumers.

Article 3. Definition of Yuki Products

In this Guideline, product terms are listed in the left column with their definitions in the right column, as follows:

PRODUCTS	DEFINITION
Yuki Products	These are products produced without any composite agricultural chemicals, chemical fertilizer or composite chemical soil improvement materials (hereinafter, called composite chemical materials), and grown in soil prepared with organic materials, e.g. compost, after three years free of composite chemical materials. These composite chemical materials are not the type described in Article 5 (following).
Transitional Yuki Products	These are products produced without any composite chemical materials and grown in soil prepared with organic materials such as compost after 6 months free of composite chemical materials. These composite chemical materials are not the type described in Article 5 of this Guideline. (Yuki products are excluded from this type.)
Agricultural Chemical-Free Products	These are products produced without agricultural chemicals.
Chemical Fertilizer-free Products	These are products produced without any chemical fertilizer.
Reduced Agricultural Chemical products	These are the products produced with less than 50% composite agricultural chemicals compared to similar quantities produced by other growers for the same in the same area and cultivation period, including soil fumigators and weed killers.
Reduced Chemical Fertilizer	These are products produced with less than 50% chemical fertilizer used compared to other producers' quantity for the same products in the same area and

← 収穫前処理
処理

Products cultivation period. Principally, the nitrogen component quantity is used for comparison.

Article 4. Definition of Terminologies

The definition of terms used in this Guideline is described in the following chart:

TERMINOLOGY	DEFINITION
Process of producers' Cultivation from	Process whereby soil is controlled, including control of seeds, seedlings and harvested crops, the last harvest until the next planting of the agricultural products concerned.
Composite Chemicals	Chemicals resulting from the reaction of elements with certain chemical compounds. Does not include products of fermentation or natural ripening.
Agricultural Chemicals	As stated under Clause 1 & 2, Article 1-2 of Agricultural Chemicals Regulatory Law (Statute #82 passed in 1948).
Composite chemicals. Agricultural Chemicals	Agricultural chemicals made with composite
Fertilizer	Fertilizers stated under Clause 1, Article 2 of Fertilizer Regulatory Law (Statute #127 passed in 1950).
Chemical Fertilizer	Fertilizer made with composite chemicals.
Soil Improvement #34 Materials	As stated under Clause 1, Article 11 of Soil Efficiency Improvement Regulatory Law (Statute passed in 1984)
Composite Chemical Soil	Soil improvement materials made with composite chemicals.

Improvement
Materials

Natural
affected
Materials

Materials which exist in nature and are not by the usage of composite chemicals. (Includes products of grinding or burning.)

Product
Containers
or
Wrappings

Materials that contain agricultural products including tape or stickers that bundle or are attached to the products.

Description
Labels

Description labels to be attached to the agricultural products to inform consumers about the nature of the products.

Cultivation
management
Administrator

A person who is in charge of cultivation or alternatively gives guidance for cultivation.

Inspector

A person who surveys the conditions and control of cultivation, inspects the records regarding cultivation and provides guidance to the Cultivation Administrator as needed.

Article 5. Allowable Composite Chemical Materials

1. For Yuki products or transitional Yuki products defined under Article 3, the composite chemical materials allowable in trace amounts are listed below. In the event these chemicals are used as vermin repellent, their usage should be limited to the quantity which was approved at the time of registration providing that these chemicals are registered in accordance with the Agricultural Chemicals Regulatory Law.

(1) Inorganic sulphur, inorganic copper

(2) Pheromone which is not applied directly to the crops or the cultivation site.

(3) Composite chemical materials with which the seeds and seedlings were treated beforehand (restricted only in the cases when untreated seeds or seedlings are difficult to obtain).

(4) Fertilizer to supply indispensable trace elements for the growth of the crops.

2. Natural materials are allowed to be used if they are extracted from natural effective minerals, plants or animals whose origins are clearly known. If these materials are used as vermin repellent, their usage is restricted only to those which are registered in accordance with the Agricultural Chemicals Regulatory Law and quantities must not exceed the limitation stated in the Law. Antibiotics are not permitted.

Article 6. Descriptions on Labels and their Transcription

Based on this Guideline, these should be implemented as follows:

1. The Cultivation Administrator or the Inspector must provide the descriptions of Yuki products before shipment in accordance with the procedures described in Article 7 and 8. The descriptions may be printed on the container, wrapper or labeling stickers, and each product marketing unit must have a description.

2. Those who market the Yuki products with the descriptions in accordance with above Article 1 must use containers, wrappers or sticker labels with the same descriptions. However, in case it is not feasible to attach the descriptions to each product, the sellers may transcribe the exact descriptions provided by the Cultivation Administrator or the Inspector on a panel and post it in the store.

Article 7. Description Items

1. The items to be on one description label for Yuki products in conformance with this Guideline are as follows:

- (1) Name or brand names of Yuki products
- (2) Statement that the products are described in accordance with this Guideline.
- (3) Name of Cultivation Administrator or the organization concerned, its address and phone number.
- (4) Inspector's name or organization concerned, address and phone number.

In the case that the Cultivation Administrator is the Agricultural Cooperative Union, Agricultural Corporate Body or the Producers Union (hereinafter, stated as "Organization"), they can act as the Inspector as well.

2. For agricultural products that are cultivated without agricultural chemicals or chemical fertilizers, the following description must be added to the label in addition to the terms stated under Clause 1.

(1) When the agricultural products are cultivated with chemical fertilizer, but without agricultural chemicals, the description should so state. When the agricultural products are cultivated with agricultural chemicals, but without chemical fertilizer, the description should also so state. (This should be written next to the name of the products.)

(2) For agricultural products that were cultivated by the hydroponic method, it should be stated that the products were cultivated without planting in soil.

3. For the agricultural products which were cultivated with reduced agricultural chemicals or reduced chemical fertilizer, the following items are to be stated on the label in addition to the requirements of Clause 1.

(1) The common usage (frequency and quantity) of the composite agricultural chemicals and chemical fertilizer by the other cultivators of the same area in the same cultivation period should be the basis for comparison. For the products cultivated with reduced agricultural chemicals, the reduced ratio of composite agricultural chemicals must be determined by comparing the numbers of the standard usage vs. actual usage. The same for chemical fertilizer.

The basis for the comparison should be determined and acknowledged by the Inspector after surveying the actual usage of the composite agricultural chemicals or chemical fertilizer in the area of the same type of products. If the actual quantity of usage is not determinable, "Reduced Agricultural Chemical Products" or "Reduced Chemical Fertilizer Products" should not be included on the description label.

(2) For agricultural products that are cultivated by the hydroponic method, it should be stated that the products were cultivated without planting in soil.

4. For the products cultivated with reduced agricultural chemicals or reduced chemical fertilizer, the following items should be added to the description label.

(1) The reduced agricultural chemical products, must include the generic names and frequency and quantity of agricultural chemicals actually used in the process of cultivation.

(2) The reduced chemical fertilizer products, must include the generic names and frequency and quantity of chemical fertilizers actually used in the process of cultivation.

Article 8. Samples of the Description

For the items listed in Article 7, the description provider should follow the samples as below:

1. The items which should be described collectively by the description provider must be in an official enclosure which is distinctively apart from other descriptions.

2. Types of Yuki products.

Follow the samples as below:

TYPE	DESCRIPTIONS
Yuki Products	"Yuki Products", "Yuki Cultivation XXX" (XXX = generic names of the products.. the same applies up to Clause 7.)
Transitional Yuki Products Period)"	"Transitional Yuki Products", "Transi- tional Yuki (Cultivation xxx", "Yuki Products XXX (in Transitional Period)", "Yuki Cultivation XXX (in Transitional
Agricultural Chemical-free Products	"Agricultural Chemical-free Products", "Agricultural Chemical-free Products xxx"
Chemical Fertilizer-free Products	"Chemical Fertilizer-free Products", "Chemical Fertilizer-free Products xxx"
Reduced Agricultural Chemical Products Products,xxx"	"Reduced Agricultural Chemical Products", "Reduced Agricultural Chemical
Reduced Chemical	"Reduced Chemical Fertilizer Products"

Fertilizer Products

"Reduced Chemical Fertilizer Products xxx"

3.State that the products are described in accordance with this Guideline.

State that the description is in accordance with this Guideline in such words as "Descriptions based on Guidelines set by Ministry of Agriculture, Forestry and Fisheries"

4.Names of Cultivation administrator or administering organization, address and telephone number.

If the Cultivation Administrator is an organization, the names of the organization and representative, address and its telephone number must be stated.

5.Names of Inspector or Organization, address and telephone number.

If the Inspector is part of an organization, the names of the organization and representative, address and its telephone number must be stated.

6. Description of the products cultivated without agricultural chemicals but cultivated with chemical fertilizer.

The description should read "Agricultural Chemical-free Products (Chemical Fertilizer was used)" or "Agricultural Chemical-free Products XXX (Chemical Fertilizer was used).

7. Description of the products cultivated without chemical fertilizer but cultivated with agricultural chemicals.

The description should read "Chemical Fertilizer-free Products (Agricultural Chemical were used)" or "Chemical Fertilizer-free Products XXX (Agricultural Chemicals were used)"

8. Non-soil Cultivation

In the event that the hydroponics cultivation method was used, describe the products as "Hydroponically Cultivated" For other non-soil cultivation methods, specifically describe the method.

9.Description of the reduced ratio of the composite agricultural chemicals or chemical fertilizer.

The description of the reduced ratio of the composite agricultural

chemicals or chemical fertilizer should read "% less vs. quantity used in the same region" or "% less vs. quantity used in XX region"

10. Description of the Agricultural Chemicals used for the "Reduced Agricultural Chemical Products".

Generic names and the frequency and quantity of composite agricultural chemicals used in the process of cultivation should be described.

11. Description of the Chemical Fertilizer used for the "Reduced Chemical Fertilizer Products"

Generic names and the frequency and quantity of chemical fertilizer used in the process of cultivation should be described.

12. Modified descriptions as stated below are permissible on the tapes to bundle Yuki products or the sticker seals to attach to Yuki products.

(1) (1) & (2) of Clause 1, Article 7.

(2) Name of Cultivation Administrator or Inspector.

13. Follow the examples of descriptions in Attachment 1 through 7.

Article 9. Responsibilities of Distributors

1. In cases where Yuki products with the description based on these Guidelines are treated with composite chemical materials or additives in the process of distribution, the distributors must cross out inapplicable descriptions.

2. In cases where Yuki products with the description based on these Guidelines are not clearly separated from other agricultural products, or where the products and their description labels are separated, the distributor must cancel the labels.

3. The distributor who transcribed the description must keep the original labels, containers or wrappers with the description provided by the Cultivation Administrator or Inspector so that they can be exhibited to purchasers on request.

Article 10. Items not allowed in the description

The following items should not be included in the description:

1. Items not indicated previously in these Guidelines that should be described collectively in an official enclosure.
2. Misleading descriptions such as "Naturally cultivated" or "Grown Wild" should not be used. (However, if the products were cultivated somewhat naturally based on traditional methods, it can be described as "Naturally cultivated" or similarly phrased outside of the official enclosure.)
3. Terminology that is misleading and connotates what the products are much superior or more favorable than they actually are.
4. Terminology that is misleading and connotates that Yuki products are much superior or more favorable than the products cultivated in commercial standard farming.
5. Terminology contradicting the definitions of description items included in these Guidelines.
6. Descriptions with certain words, pictures or illustrations that might mislead to consumer misunderstanding about the products' quality or method of cultivation.

Article 11. Others

1. The government, regional public body or organizations concerned should make efforts to educate the enterprises and consumers so that the description labeling system based on these Guidelines will be disseminated.
 2. This Guidelines are in effect as of April 1, 1993.
-

8.3 **Appendix 3:** Organic Farming Practices versus Conventional Farming Practices

APPENDIX V

AN ANALYSIS OF SOME OF THE ENVIRONMENTAL IMPACTS OF ORGANIC AGRICULTURE

This report was prepared by Jon Manhire and Geoff Soper of Agribusiness Services Group, Agriculture New Zealand for MAF Policy, November 1993

EXECUTIVE SUMMARY

This report compares conventional and organic farm management practices in New Zealand and discusses the effects of these practices on soil erosion, structure and fertility. The effects of "organic" and conventional weed, pest and disease management practices are also compared. The report was prepared to assist policy development regarding sustainable land management.

Both quantitative research results and qualitative evidence have been gathered. In many instances no hard data was available. However, some research results, in particular the recent study by Reganold et al (1993), have provided evidence of measurable differences in outcomes from conventional and organic/biodynamic practices.

The organic management practices outlined are those that are recommended to meet organic production standards and accepted by advocates of organic farming. They are adopted to a greater or lesser extent by practising organic producers.

COMPARISON OF ORGANIC WITH CONVENTIONAL FARMING PRACTICES AND THEIR INTERACTION WITH THE ENVIRONMENT

A GENERAL FARMING PRACTICES

The different organic production systems reviewed have the following general management features in common, which aim to:

1 Reduce soil loss

The effects of wind and water erosion are reduced by:

- * maintaining longer pasture cover;
- * landuse based on the site characteristics, (ecozone use);
- * shelterbelt plantings;
- * less modified swamp and waterways;
- * maintenance of remnant forest and riparian cover.

2 Maintain soil structure

a) Pasture cover is retained and ecozone use resulting in:

- * more surface litter;
- * greater organic matter returns; and
- * less animal trampling and compaction.

b) Deeper rooting pasture, bush and tree species help to promote:

- * porosity;
- * organic matter inclusion to depth.

Soil structural benefits are likely.

3 Manage Soil Fertility

- a) Soluble fertiliser additions are replaced by more slowly available legume N, rock phosphate P, glauconite K, and recycling of organic nutrients.
- b) Better soil pastoral cover, tree shelter, and riparian protection acts to reduce runoff and windblow nutrient losses.
- c) Leaching losses are typically reduced by:
 - * more nutrient tied up in plant reserves with less soil excess;
 - * greater soil organic matter buffering of soluble nutrient excess;
 - * deep rooting specie access to leaching nutrient;
 - * more decomposing plant litter.

4 Encourage Nutrient recycling

- a) Typically there is a higher level of organic material found in soils involved in organic systems (eg from green manure crops and longer retention of pasture). Pasture species are able to access deeper soil nutrients and there is enhanced soil microbial activity. This tends to:
 - * reduce nutrient excesses;
 - * reduce nutrient deficiencies.
- b) A tighter, more buffered recycling of nutrients results in:
 - * less animal induced impact, with excreta excesses buffered by other elements in the system.

5 Manage Pests, Disease and Weeds

- a) A combination of strategies, with a low reliance on chemicals, are used under organic management to manage pest, disease and weed problems, Strategies are selected based on:
 - * their relative effectiveness;
 - * low level of impact on the environment; and
 - * with a focus on managing the causal factors of a problem rather than just the symptoms.
- b) Some strategies include the use of:
 - resistant varieties and species;
 - enhancing the plant's or animal's resistance by good nutrition;
 - cultural management strategies;
 - biological control.
- c) Use of alternatives to pesticides results in:
 - * Reduced potential risk of water, soil and product contamination from pesticides;
 - * Maintenance and increased diversity and abundance of earthworms and other soil biota.

Organic management strategies and environmental impacts compared to those for conventional farming, for the production types reviewed in the study;

B SPECIFIC FARMING PRACTICES

PASTORAL FARMING

- a) Organic management favours nutrient recycling through:
greater pastoral nutrient reserves in pasture that is retained longer,
greater access of pasture to deeper soil nutrients,
greater organic matter reserves of soil nutrients, and
greater microbial activity evident on organic pastoral farms implies:
 - * reduced nutrient excesses; and
 - * reduced nutrient deficiencies.
- b) Some problems faced by organic pastoral farmers are currently being researched - e.g. Internal parasites in sheep, Californian Thistle.

DAIRY FARMING

- a) Organic dairy management typically differs from conventional dairy management in having:
 - * lower stocking rates;
 - * application of milking shed effluent at low volume rates to pasture;
 - * light stocking of soils under wet conditions;
- b) Nutrient losses from runoff are considerably greater for dairy cattle than for sheep production systems, but are reduced by:
 - * lower grazing intensity;
 - * less applied fertiliser and dung (although some organic farms apply high levels of effluent);
 - * lower treading damage;
- c) Leaching losses of nitrogen and potassium are likely to be considerably reduced under organic management.
- d) Soil fertility is enhanced through tighter nutrient recycling, with management more attentive to potential losses via leaching and runoff.
- e) Less pollution from pesticide use. However under conventional dairy production lower levels of pesticides are used than for other farming operations.

Organic farmers have developed a range of integrated strategies to manage specific problems. Some of these require more intensive analysis to define their relative value .

ARABLE FARMING

- a) Soil losses - Runoff and windblow losses are reduced by:
- * maintenance of between-crop cover by using green crops;
 - * greater organic matter incorporation which increases structural stability.
- b) Soil structure - organic management affects soil structure:
- * positively through reduced cultivation eg chisel plough use, stubble discing and direct drilling;
 - * positively through greater organic matter incorporation of more pasture, of crop trash and of green manure;
 - * negatively through more cultivation passes for weed control purposes.
- c) Nutrient losses - organic management seeks to reduce runoff losses through;
- maintaining cover on soils;
 - reduced leaching of nitrates and potash:
- * fodder crop use;
 - * increased straw incorporation.
- d) Pollution from pesticides is less or non-existent, whereas the pollution potential can be considerable under some conventional arable production conditions.
- e) Weeds are controlled principally through:
- * the establishment of stale (weedseed free) seed beds;
 - * the use of mechanical weed control e.g. Tyne weeders.
- Some weeds remain a problem under organic management due to their rapid growth and competitive effects on crops as well as the potential to contaminate crop products.

ORCHARDS

- a) Soil losses are reduced through:
- mulch use;
 - * ley/pastoral cover;
 - * contour plantings;
 - * ecozoning according to slope or aspect; and
 - * shelter.
- b) Soil structure is better because:
- less heavy machinery is used for herbicide application resulting in less surface soil compaction;
 - reduced surface cultivation;
 - pastoral/ley and mulch use increases surface soil organic matter and earthworm activity.
 - maintaining pastoral cover reduces the platy structure of surface soil evident on some herbicide treated orchard soils.

- c) Runoff nutrient losses are reduced by:
- better soil cover which reduces leaching losses by pasture root presence;
 - * Legume added N is argued as being less subject to runoff and leaching than is soluble N fertiliser;
 - * Added compost, straw, ley detritus, and low soluble rock P and K can all reduce the excess of soluble nutrients and the potential for leaching.

- d) Pest, Disease and Weed Management:
Conventionally managed orchards use relatively high levels of pesticide on small areas, resulting in potentially high environmental contamination.

Organic orchardists use a range of strategies to minimise chemical input.

Some organic orchardists make limited use of approved chemical inputs, some of which can lead to negative environmental effects eg the use of copper for disease control and its negative influence on earthworms and other soil biota when used in high concentrations.

Weeds are controlled through a number of ways including;

- grazing
- steam or flame weeding
- the use of mulches
- cultivation and mowing

VEGETABLES

- a) Soil losses - Organic practice pays great attention to:
- * soil cover, with green crop and mulch use and small spaces between plants;
 - * slope management with up and down cultivation of slopes; and
 - * shelterbelt protection;
 - careful use of irrigation.

- b) Soil structure under organic production is characterised by:
- compost, crop trash and green manure incorporated which improves soil structure;
 - extra cultivation to control weeds will cause structural decline.

The comparisons by Reginold et al (1993) indicated greater soil organic matter content and improved assessed soil structure on organic vegetable farms, but the organic farms were not better than conventional ones for all measured structural parameters.

- c) Nutrient losses are reduced by the same management approaches as used by organic orchardists. Additionally, more soil cover via green manure use between crops and more weed cover between plants minimises leaching on organic properties.
- d) Pest, Disease and Weed Management - the same remarks apply as for orchard management.

8.4 Appendix 4: Organic Produce as a Percentage of Total Exports

Workings:

1. New Zealand organic produce exports as a percentage of total New Zealand exports:

Value of annual organic produce exports (1997) = \$20,000,000

Value of total annual exports (1996) = \$20,549,500,000

$$(20,000,000 / 20,549,500,000) * 100$$

$$= 0.097 \%$$

$$= 0.1 \%$$

2. New Zealand organic produce exports as a percentage of New Zealand agricultural exports:

Value of annual organic produce exports (1997) = \$20,000,000

Value of total annual agricultural exports (1996) =

Dairy	2,998,100,000
Meat	2,655,300,000
Wool	1,115,600,000
Fruit	817,300,000
Hides	728,800,000
Vegetables	290,300,000
Animal originated products	<u>273,600,000</u>
	\$8,879,000,000

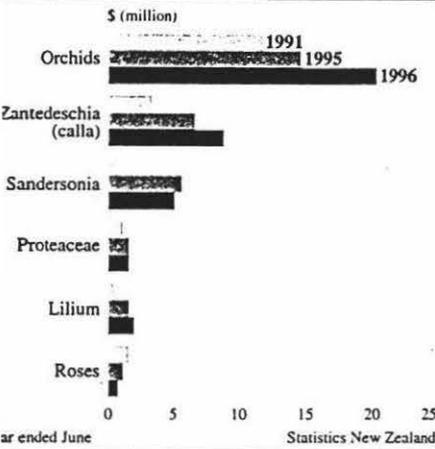
(See New Zealand Official Yearbook 1997 excerpt over page)

$$(20,000,000 / 8,879,000,000) * 100$$

$$= 0.2 \%$$

LOWER EXPORTS

by variety



In the June 1996 year, New Zealand had a balance of merchandise trade deficit of \$631.5 million, compared to the \$336.0 million deficit for 1995. The larger deficit is a result of a 1.0 percent fall in the value of exports and a 0.4 percent rise in the value of imports.

25.2 Exports

Exports are valued at fob (free on board) which represents the transaction price of goods and includes costs incurred in delivering the goods on board ships and aircraft at New Zealand ports of export. In this chapter the export values include re-exports which are goods imported into New Zealand and then exported later without being significantly altered. Typical re-exports are aircrafts and heavy machinery.

Exports in the June 1996 year totalled \$20,549.5 million, 1.1 percent lower than the June 1995 year total of \$20,924.9 million. Increases in paper and paperboard (up 21.1 percent), mineral fuels (up 12.0 percent), fruit and nuts (up 11.2 percent) and works of art (up 11.1 percent) were offset by decreases in organic chemicals (down 54.4 percent), wool and animal hair (down 16.8 percent), vegetables (down 9.2 percent) and wood and wood articles (down 6.9 percent). New Zealand's two largest commodities, dairy products and meat and edible offal, rose 8.5 and 1.6 percent respectively. Exports of mechanical machinery rose fractionally (up 0.0 percent), while exports of aluminium and articles fell (down 5.9 percent).

25.2 MAJOR COMMODITIES EXPORTED*

Commodity	Value of exports† (fob)			Percentage of total exports† (fob)		
	1991	1995	1996	1991	1995	1996
	\$(million)					
Dairy produce; birds' eggs;						
natural honey; edible products						
of animal origin, nei	2,014.9	2,758.1	2,998.1	12.8	13.3	14.6
Meat and edible meat offal ...	2,588.3	2,613.6	2,655.3	16.4	12.6	12.9
Wood and articles of wood;						
wood charcoal	798.6	1,645.7	1,531.4	5.1	7.9	7.5
Fish and crustaceans, molluscs						
and other aquatic invertebrates	748.4	1,117.8	1,147.4	4.7	5.4	5.6
Wool, fine or coarse animal hair;						
horsehair yarn and woven						
fabric	1,051.3	1,340.3	1,115.6	6.7	6.4	5.4
Nuclear reactors, boilers,						
machinery and mechanical						
appliances; parts thereof ...	577.7	854.9	855.2	3.7	4.1	4.2
Fruit and nuts, edible; peel of						
citrus fruit or melons	791.8	735.6	817.8	5.0	3.5	4.0
Aluminium and articles thereof	779.8	868.3	817.3	4.9	4.2	4.0
Raw hides and skins (other than						
furskins) and leather	559.5	665.0	728.8	3.5	3.2	3.5
Albuminoidal substances;						
modified starches; glues;						
enzymes	465.7	591.6	649.6	3.0	2.8	3.2
Electrical machinery and						
equipment and parts thereof;						
sound recorders and reproducers,						
television image and sound						
recorders	263.6	511.4	532.3	1.7	2.5	2.6
Paper and paperboard; articles						
of paper or paperboard	368.2	436.2	528.0	2.3	2.1	2.6
Pulp of wood or other fibrous						
cellulosic material	398.0	499.6	477.1	2.5	2.4	2.3
Mineral fuels, mineral oils and						
products of their distillation;						
bituminous substances;						
mineral waxes	576.5	333.5	373.4	3.7	1.6	1.8
Natural or cultured pearls,						
precious, semi-precious						
stones, precious metals,						
imitation jewellery; coin ...	119.5	322.9	312.2	0.8	1.6	1.5
Vegetables and certain roots						
and tubers; edible	195.8	319.6	290.3	1.2	1.5	1.4
Works of art; collectors'						
pieces and antiques	325.6	253.8	282.0	2.1	1.2	1.4
Organic chemicals	149.7	599.9	273.8	0.9	2.9	1.3
Animal originated products;						
nei	208.8	262.0	273.6	1.3	1.3	1.3
Plastics and articles thereof ..	138.2	270.7	272.8	0.9	1.3	1.3
Other nei	2,648.6	3,784.5	3,617.5	16.8	18.2	17.6
Total exports	15,768.4	20,784.9	20,549.5	100.0	100.0	100.0

* Year ended June.

† Includes re-exports.

New Zealand's TNC

In the list of top 100 Transnational Corporations (TNCs) ranked by foreign assets in 1993, the Fletcher Challenge (New Zealand) was listed at number 91 with foreign assets of US\$4.8 billion, but ranked at 30 out of 100 on the 'index of transnationality'. This is calculated as the average of foreign assets to total assets, of foreign sales to total sales, and of foreign employment to total employment.

Source: "World Investment Report 1995: Transnational corporations and competitiveness," published by the UN Conference on Trade and Development (UNCTAD). However, there were no New Zealand companies listed in the 1996 edition of the report.

Meat and edible offal

In the June 1996 year exports of meat and edible offal rose 1.6 percent to \$2,655.3 million, 12.8 percent of total exports. This follows a 9.1 percent fall in the June 1995 year.

8.5 **Appendix 5:** Comparing Adjectives in Three Languages

	English	Putonghua	Japanese
123	Absolutely perfect		
118			<i>Subarashiku yoi</i>
117	Superior		<i>Taihen subarashii</i> <i>Ichiban yoi</i>
115	Superb		
113		<i>Jui dui di wan mei de</i>	
110			<i>Kanari yoi</i>
109	Tremendous		<i>Jitsu ni yoi</i>
108	Excellent		
106	Perfect		<i>Suteki de aru</i> <i>Taihen yoi</i> <i>Shibaraku yoi</i> <i>Subarashii</i> <i>Hijoo ni yoi</i> <i>Sugurete iru</i> <i>Totemo yoi</i>
105			
102	Extremely good		
101	Outstanding		
100	Terrific First rate Exceptionally good		
98		<i>Jie chu de</i>	
97	Fantastic		<i>Manzoku de aru</i> <i>Reigai teki ni yoi</i> <i>Kokoro yoi</i>
94			
93	Remarkably good		
92	Wonderful	<i>You xie de</i>	<i>Nattoku de aru</i>
91	Delightful	<i>Te bie di hao de</i>	<i>Yoi</i>
89		<i>Liao bu qi de</i>	
87	Great	<i>Jing zhi de</i>	<i>Yoroko bashii</i>
86	Very good	<i>Li wai di hao de</i> <i>Ge wai di hao de</i> <i>Fei chang hao de</i> <i>Fei chang di hao de</i> <i>Di yi ji a</i>	
85		<i>Di yi ji a</i>	
84	Unusually good	<i>You xiu de</i>	
83		<i>Hsiang dang di hao di</i>	
81	Quite good	<i>Wan quan de</i>	
80			<i>Tadashii</i>
78			<i>Sansei da aru</i>
77		<i>Xiang dang di hao de</i>	
76		<i>Zhang zhe de</i>	
75	Moderately good		
74	Stupendous		<i>Hantai dekiru</i>
72	Good	<i>Fei chang da de</i> <i>Man yi de</i>	
70	Pleasant	<i>Heng hao de</i>	<i>Chyoodo ii</i> <i>Nattoku dekiru</i>
69		<i>Shi du hao de</i>	
67	Reasonably good	<i>Yu kuai de</i>	<i>Sansei dekiru</i>
65	Nice		
64	Slightly good	<i>Hao de</i>	
63	Fairly good		<i>Sukoshii yoi</i>
63	Satisfactory	<i>Ji duan de</i>	

(Continued)

Table III.
Table of adjective
equivalency

	English	Putonghua	Japanese
58			<i>Heikin teki de aru</i> <i>Yoku mo waruku mo nai</i>
56		<i>You dian hao de</i>	
54	Fine	<i>Gong pin de</i>	<i>Dochira to mo ie nai</i>
53		<i>Heng de</i>	
52	Average		
	All right		
50	Neutral	<i>Jibu shi hao ye bu</i>	<i>Ya ya yoku nai</i>
	Fair	<i>shi huai de</i>	
	So so	<i>Ma ma hu hu de</i>	<i>Ma ma</i>
	Acceptable		
48	OK	<i>Pi jun de</i>	<i>Ya ya otoru</i>
47	Neither good nor bad	<i>Ke jie shou de</i> <i>Pu tong de</i> <i>Zhang li de</i>	
45	Mediocre		
43			<i>Sore hodo yoku nai</i>
41		<i>Shao wei cha de</i>	
39		<i>You dian cha de</i>	<i>Sansei shi kaneru</i>
34	Moderately poor		
	Slightly poor		
32		<i>Bu fei chang hao de</i>	
31	Not very good		
	Fairly poor		
30	Unsatisfactory	<i>Dian de</i>	<i>Sore hodo yoku nai</i>
	Reasonably poor		
28	Unpleasant		<i>Yoku nai</i>
26		<i>Bu man yi de</i>	
24	Bad	<i>Shi du di cha de</i>	
	Poor		
	Quite poor		
22		<i>Ling ren bu yu kuai de</i> <i>Cha de</i>	
21			<i>Warui</i>
20	Remarkably poor	<i>Huai de</i>	<i>Hantai de aru</i>
		<i>Ling ren yu kuai de</i>	
19	Very poor		<i>Hi joo ni yoku nai</i>
18			<i>Totemo yoku nai</i>
16	Unacceptable		<i>Hi joo ni waruku nai</i>
	Atrocious		<i>Fuyu kai</i>
15	Unusually poor	<i>Bu neng jie shou de</i>	<i>Toozen warui</i>
14	Extremely poor	<i>Hsiang dang di cha de</i>	<i>Totemo warui</i>
13	Very bad	<i>Xiang dang di cha de</i>	
12	Dreadful	<i>Hen huai de</i>	<i>Taihen warui</i>
	Exceptionally poor	<i>Fie chang cha de</i> <i>Te bie di cha de</i> <i>Heng cha de</i>	
11	Terrible		<i>Hidoku warui</i> <i>Mondai gai de aru</i> <i>Hidoi</i>
10	Awful		<i>Hi joo ni hidoi</i>
9	Horrible	<i>Ling ren kong bu de</i> <i>Kong bu de</i> <i>Ge wai di cha de</i>	<i>Hi joo ni warui</i>
7/8		<i>Fei chang ke pa de(7)</i>	<i>Jitsu ni hidoi(8)</i>

Table III.

8.6 **Appendix 6:** The Survey Questionnaire

(A copy of the English and Japanese versions of the questionnaire completed by the survey respondents)



**MASSEY
UNIVERSITY**

Private Bag 11222
Palmerston North
New Zealand
Telephone 0-6-356 9099
Facsimile 0-6-350 5608

**FACULTY OF
BUSINESS STUDIES**

DEPARTMENT OF
MARKETING

May, June, 1997

Dear Madam/Sir,

As a postgraduate student from Massey University in New Zealand, I am in Japan to do research for my masterate thesis. The objectives of the research are to determine the level of awareness, perceptions, and attitudes of Japanese people towards organic produce, and to determine whether these relate to actual purchase behaviour.

This research will help the New Zealand organic industry to better understand the Japanese market for organic produce, and you, as a consumer, are a part of this market. The information gathered could lead to New Zealand exporting both a larger quantity, and a wider variety, of organic fruits and vegetables in the future.

I would really appreciate it if you could assist me by completing this questionnaire, and answering the questions as honestly as you can. Your answers will remain totally confidential, and you will see that the code number at the top of the questionnaire will prevent your name from being identified. Please hand the questionnaire back to the person who delivered it to you *as soon as you possibly can*.

Enjoy the questionnaire, and thank you very much for your co-operation.

Yours sincerely,

Kerry Betteridge.

To answer these questions, please tick (✓) a box or boxes, or write in the space provided. *Please tick more than one box in any one question if necessary.* Enjoy the questionnaire, and thank you for your help.

MEANING OF “ORGANIC”

To begin with, I would like to ask a few questions about what the word “organic” means to you.

1. When fruit and vegetables are labelled “organic”, what does this mean to you?

PLEASE TICK AS MANY AS APPLY

Produce grown using **traditional** farming techniques
(An example of this is rotations)

Produce grown using **“mystical”** farming techniques
(An example of this is adherence to lunar cycles)

Produce grown using **only** natural fertilisers

Produce grown using **low levels** of pesticides, herbicides, or chemical fertilisers

Produce grown without using **any** pesticides, herbicides, or chemical fertilisers

Produce that is **additive-free**

Nothing/don't know what organic means

2. Which of the following types of “organic” fruit or vegetables have you ever bought?

PLEASE TICK AS MANY AS APPLY

Low chemical

Chemical-free

Additive-free

Natural

Labelled organic from overseas

Other _____

None -----→ PLEASE GO TO Q. 21

PURCHASES OF ORGANIC PRODUCE

Now I would like to ask about your purchases of organic fruit and vegetables. From here on, please assume that the word "organic" refers to all of the following: low chemical, chemical-free, additive-free, and natural, as well as the recognised labels for imported produce.

3. Which of the following types of **organic** fruit and vegetables have you **ever** bought.

PLEASE TICK ALL THAT APPLY TO YOU

Fresh organic vegetables

Canned organic fruit

Frozen organic vegetables

Organic vegetable juice

Fresh organic fruit

Organic fruit juice

Frozen organic fruit

Other _____

Canned organic vegetables

None of these -----> PLEASE GO TO Q. 21

4. How often do you buy **fresh organic vegetables**?

Every day

Three or four times a week

One or two times a week

Two or three times a month

Once a month

Less than once a month

Never -----> PLEASE GO TO Q. 6

5. In the last **three months**, which of the following fresh organic vegetables have you bought?

Onions

Squash

Green peppers

Carrots

Sweet potatoes

Broccoli

Potatoes

Asparagus

Egg plant

Salad vegetables

Cauliflower

Green beans

None of these

6. How often do you buy **fresh organic fruit**?

Every day

Three or four times a week

One or two times a week

Two or three times a month

Once a month

Less than once a month

Never -----→ PLEASE GO TO Q. 8

7. In the last **three months**, which of the following **fresh organic** fruit have you bought?

Kiwi fruit

Apples

Peaches

Oranges

Strawberries

Manderins

Cherries

Pears

Other _____

8. How often do you buy **frozen organic vegetables**?

Every day

Three or four times a week

One or two times a week

Two or three times a month

Once a month

Less than once a month

Never -----→ PLEASE GO TO Q. 10

9. In the last **three months**, which of the following **frozen organic vegetables** have you bought?

Mixed Vegetables

Squash

Green peppers

Carrots

Sweet potatoes

Broccoli

Potatoes

Asparagus

Green beans

Cauliflower

Green peas

Other _____

10. When you buy **frozen vegetables**, what size packet do you prefer to buy them in?

250 g

500 g

750 g

1 kg

11. How often do you buy **canned organic fruit or vegetables**?

Every day

Three or four times a week

One or two times a week

Two or three times a month

Once a month

Less than once a month

Never -----→ PLEASE GO TO Q. 13

12. In the last **three months**, which of the following **canned organic fruit or vegetables** have you bought?

Asparagus

Peas

Pears

Mixed vegetables

Cherries

Fruit salad

Green beans

Apples

Peaches

Corn

Oranges

Mandarins

Carrots

Strawberries

Other _____

13. How often do you buy **organic fruit juice or vegetable juice**?

Every day

Three or four times a week

One or two times a week

Two or three times a month

Once a month

Less than once a month

Never -----→ PLEASE GO TO Q. 15

14. In the last **three months**, which of the following **organic fruit juices or vegetable juices** have you bought?

Kiwi fruit juice

Apple juice

Tomato juice

Orange juice

Cherry juice

Vegetable juice

Tropical fruit juice

Carrot juice

Grape juice

Other _____

15. Where do you usually buy your organic fruit and vegetables from?

PLEASE TICK AS MANY AS APPLY

Grocery store

Convenience store

Market

Supermarket

Co-op

Direct from a grower

Direct from a friend

I grow my own

Other _____

16. In the last seven days, how much have you spent on organic fruit and vegetables for your household?

PLEASE FILL IN THE APPROXIMATE AMOUNT UNDER THE FOLLOWING HEADINGS.

<i>Fresh</i>	<i>Frozen</i>	<i>Canned</i>	<i>Juice</i>
Y_____	Y_____	Y_____	Y_____

17. If locally grown organic fruit and vegetables are the same price, which would you buy?

Local produce

Imported produce

18. Please write the reason for your choice in Q.17. in the space provided

19. The following is a list of countries that supply organic fruit and vegetables to Japan.

PLEASE LOOK AT THIS LIST AND RANK THE COUNTRIES IN ORDER OF PREFERENCE AS A SUPPLIER OF ORGANIC PRODUCE.

PLEASE WRITE '1' BESIDE THE COUNTRY YOU WOULD MOST PREFER TO BUY IMPORTED ORGANIC FRUIT AND VEGETABLES FROM, AND '2' BESIDE THE NEXT MOST PREFERRED AND SO ON.

	<i>Ranking from 1 - 6.</i>
Australia	_____
Canada	_____
China	_____
England	_____
Germany	_____
New Zealand	_____
USA	_____

20. Thinking about the country you ranked first in Q19., why would you most prefer to buy imported organic produce from this country?

- (a) Trust that country
- (b) Water, air, and soils are clean
- (c) Tastes good
- (d) Close relations with, and understanding of the country
- (e) Cheap
- (f) Other ()

21. When buying organic fruit and vegetables, how important to you are the following factors?

	Very Important		Indifferent		Very Unimportant	Don't know/ Can't choose
(a) Price	1	2	3	4	5	8
(b) Size Uniformity	1	2	3	4	5	8
(c) Shape Uniformity	1	2	3	4	5	8
(d) Wide Availability	1	2	3	4	5	8
(e) Free from skin blemishes	1	2	3	4	5	8
(f) Guaranteed safety	1	2	3	4	5	8
(g) Imported or local produce	1	2	3	4	5	8
(g) Regular supply	1	2	3	4	5	8

OPINIONS OF ORGANIC PRODUCE

22. *Now I would like to ask about your opinions of organic fruit and vegetables.*

The following are some things that people have said about organically grown fruit and vegetables compared to those not grown organically. How much do you agree or disagree with each statement?

PLEASE CIRCLE THE NUMBER IN EACH ROW THAT BEST DESCRIBES YOUR OPINION.

Do you agree or disagree that organic fruit and vegetables:	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Don't know/ Can't choose
a) taste better	1	2	3	4	5	8
b) are usually more expensive	1	2	3	4	5	8
c) are more nutritious	1	2	3	4	5	8
d) are often misshapen	1	2	3	4	5	8
e) are not as widely available	1	2	3	4	5	8
f) do not generally look as good	1	2	3	4	5	8
g) are safer to eat	1	2	3	4	5	8
(h) are environmentally friendly	1	2	3	4	5	8

23. *There are differing opinions about organic fruit and vegetables. These next questions are concerned with how much you agree or disagree with the following statements.*

PLEASE CIRCLE THE NUMBER THAT MOST APPLIES TO YOU.

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Don't know/ Can't choose
a) I don't buy organic fruit and vegetables if they have rough patches or spots on the skin.	1	2	3	4	5	8
b) I don't buy fresh organic fruit or vegetables if they are a little misshapen.	1	2	3	4	5	8
c) The range of organic fruit and vegetables available is very limited.	1	2	3	4	5	8
d) There are not enough places from which I can buy organic fruit and vegetables.	1	2	3	4	5	8
e) The legal level of pesticide residues allowed on conventional fruit and vegetables is too high.	1	2	3	4	5	8
f) Although trace quantities of some pesticides are found on conventional foods, these don't harm people.	1	2	3	4	5	8

	Strongly Disagree	Neither Disagree	agree nor Disagree	Agree	Strongly Agree	Don't know/ Can't choose
h) I don't normally buy organic fruit and or vegetables because the prices are too high.	1	2	3	4	5	8
i) Conventional growing methods have little effect on the natural environment	1	2	3	4	5	8
j) Organic growing methods are more environmentally friendly than conventional growing methods.	1	2	3	4	5	8
k) Excessive use of fertilisers and pesticides in food production can cause allergies in children.	1	2	3	4	5	8
l) Conventionally grown fruit and vegetables are just as nutritious as organically grown fruit and vegetables.	1	2	3	4	5	8
m) I would always choose to buy locally grown organic fruit and vegetables over imported organic produce.	1	2	3	4	5	8
n) I am not be confident about the safety of imported organic fruit and vegetables.	1	2	3	4	5	8

24. Now I would like you to consider the 500g packet of chemical-free frozen mixed vegetables (carrots, peas, and corn). A conventional packet usually retails for about 350 yen.
PLEASE RECORD YOUR ANSWERS BY CIRCLING THE APPROPRIATE NUMBER IN EACH OF THE FOLLOWING COLUMNS.

How likely are you to buy one packet per month, at the following prices:

	Column A Y 400	Column B Y 450	Column C Y 500
10 - Certain, practically certain (99 in 100 chance)	10	10	10
9 - Almost certain (9 in 10)	9	9	9
8 - Very Probable (8 in 10)	8	8	8
7 - Probable (7 in 10)	7	7	7
6 - Good Possibility (6 in 10)	6	6	6
5 - Fairly Good Possibility (5 in 10)	5	5	5
4 - Fair Possibility (4 in 10)	4	4	4
3 - Some Possibility (3 in 10)	3	3	3
2 - Slight Possibility (2 in 10)	2	2	2
1 - Very Slight Possibility (1 in 10)	1	1	1
0 - No chance, almost no chance (1 in 100 chance)	0	0	0

ABOUT YOURSELF

So that I can be sure I have a good cross section of people in my survey, would you please answer the following questions about yourself and your household. Remember that all responses will remain **strictly confidential**.

25. In what year were you born?

- | | |
|------------|-----------|
| 1900-1910 | 1941-1950 |
| 1911-1920 | 1951-1960 |
| 1921-1930 | 1964-1970 |
| 1931-1940 | 1971-1980 |
| 1981- 1990 | |

26. What is your sex: Male
 Female

27. **Including yourself**, how many people are there living in your household?

Total number: _____

Number of children under 15: _____

28. Are you the person in your family who usually does the food shopping?

Yes

No

29. In the **last seven days**, including eating out, **approximately** how much have you spent **in total on all types of food** for your household?

Y _____

30. What is your highest level of education?

Junior high school

Senior high school

Polytechnic

College

University

31. What is the **combined total annual income after tax** for your household?

Less than 200 man yen

500 man 1 - 600 man yen

200 man 1 - 300 man yen

600 man 1 - 700 man yen

300 man 1 - 400 man yen

More than 7,000,000 yen

400 man 1 - 500 man yen

If you have any other comments you wish to add, on any of the topics raised in this questionnaire, please write them in the space provided below:

I am very grateful for your help. Please return your questionnaire either in the stamped addressed envelope provided, or to the person who delivered it to you as arranged.



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FACULTY OF
BUSINESS STUDIES

DEPARTMENT OF
MARKETING

1997年4、5、6月

関係各位

有機果物、及び有機野菜に関する消費者意識調査について

拝啓 時下ますます御清栄のこととお喜び申し上げます。

私はニュージーランドの大学院生で、現在日本で有機果物、有機野菜に関する消費者の意識と消費実態を研究しています。お忙しいところ誠に恐縮ですが、同封のアンケートにご協力していただきたくお願い申し上げます。

このアンケートは、日本の有機農産物の質や価格、及び消費者の購買力などに関するもので、日本における有機農業の実態を知る上で大変重要な資料となります。ご記入になりましたアンケート用紙は、同封の返信用封筒に入れて投函していただくか、アンケート用紙を受け取られた方にお渡しく下さい。アンケートの記入にはコード番号を使用し、個人の情報は厳重に守られますのでご安心下さい。

今回の調査の結果は、より質の高い、より種類の豊富な有機果物、有機野菜を日本に供給するために、ニュージーランドの有機農産物生産者、及び輸出業者に有用な情報として利用される予定です。ご多用中のところ恐縮ですが、よろしくご助力下さいますようお願い申し上げます。

敬具

ケリー・ベタリッジ

個人番号: _____

日本における有機農産物の 消費者意識と実態

1997年4・5・6月実施

回答者のお名前は、調査報告はもとより、日本及びニュージーランドのいかなる場合に於いても公表しないことをお約束致します。

ニュージーランド
マッセー大学
パーマストン・ノース校

アンケートの記入のしかた

質問にお答えになる際は、記号に○を付けて頂くか、下線欄にご記入下さい。
もし必要なら、二つ以上の項目を選んでいただいても結構です。正確には答えられないような質問項目に関しては、大体で構いませんのでお答えください。

「有機」とは？

まず最初に、「有機」という言葉についてお尋ねします。

- 1、果物や野菜に「有機」という表示があったら、どんなことを思いうかべますか。
(いくつでも選んで下さい。)

- ア) 伝統的な農業方法による栽培 (例: 輪作)
- イ) 秘法的農業による栽培 (例: 太陰暦)
- ウ) 自然な肥料だけによる栽培
- エ) 少量の農薬、化学肥料を使った栽培
- オ) 農薬、化学肥料を全く使わない栽培
- カ) 添加物を一切使用しない栽培
- キ) なし(「有機」とは何か全く分からない)

- 2、あなたは今まで、どんな種類の“有機野菜”や“有機果物”を買ったことがありますか。(いくつでも選んで下さい。)

- ア) 農薬を控えた野菜や果物
- イ) 農薬を使用しない野菜や果物
- ウ) 無添加の野菜や果物
- エ) 自然な野菜や果物
- オ) 「有機」と書いてある海外からの野菜や果物
- カ) その他 ()

キ) 買ったことがない-----> 質問21に進んで下さい。

有機農産物の購入

次に有機農産物の購入に関してご質問します。これからは、次の定義にもとづいて、アンケートにお答え下さい。

「有機」とは: ①化学薬品の使用を控えている ②化学薬品を全く使っていない
③自然な ④海外からの農産物で、「有機」と表示してある
ということである。

- 3、次の有機野菜や有機果物のうち、どんな農産物を今まで買ったことがありますか。(当てはまる項目をいくつでも選んで下さい。)

- | | |
|------------|-------------|
| ア) 新鮮な有機野菜 | カ) 缶詰の有機果物 |
| イ) 冷凍有機野菜 | キ) 有機野菜ジュース |
| ウ) 新鮮な有機果物 | ク) 有機果物ジュース |
| エ) 冷凍有機果物 | ケ) その他() |
| オ) 缶詰の有機野菜 | |

コ) どれも買ったことがない-----> 質問21に進んで下さい。



4、 どのくらいしばしば新鮮な有機野菜を買いますか。

- ア) 毎日
- イ) 週に3、4回
- ウ) 週に1、2回
- エ) 月に2、3回
- オ) 月に1回
- カ) 月に1回未満

キ) 買わない -----> 質問6に進んで下さい。

5、 過去三ヶ月間に、次のどの新鮮な有機野菜を買いましたか。

- | | | |
|-----------|-------------|-----------|
| ア) 玉ねぎ | イ) (西洋)カボチャ | ウ) ピーマン |
| エ) にんじん | オ) さつまいも | カ) ブロッコリー |
| キ) じゃがいも | ク) アスパラガス | ケ) なす |
| コ) カリフラワー | サ) いんげん | シ) サラダ野菜 |
| ス) その他 | | |

6、 どのくらいしばしば新鮮な有機果物を買いますか。

- ア) 毎日
- イ) 週に3、4回
- ウ) 週に1、2回
- エ) 月に2、3回
- オ) 月に1回
- カ) 月に1回未満

キ) 買わない -----> 質問8に進んで下さい。

7、 過去三ヶ月間に、次のどの新鮮な有機果物を買いましたか。

- | | | |
|------------|--------|--------|
| ア) キウイフルーツ | イ) りんご | ウ) モモ |
| エ) オレンジ | オ) いちご | カ) ミカン |
| キ) さくらんぼ | ク) なし | ケ) その他 |

8、 どのくらいしばしば冷凍有機野菜を買いますか。

- ア) 毎日
- イ) 週に3、4回
- ウ) 週に1、2回
- エ) 月に2、3回
- オ) 月に1回
- カ) 月に1回未満

キ) 買わない -----> 質問10に進んで下さい。



9、過去三ヶ月間に、次のどの冷凍有機野菜を買いましたか。

- | | | |
|-------------|-----------|-----------|
| ア) (西洋)かぼちゃ | イ) ピーマン | ウ) カリフラワー |
| エ) にんじん | オ) さつまいも | カ) ブロッコリー |
| キ) ジャがいも | ク) アスパラガス | ケ) いんげん |
| コ) グリーンピース | サ) ミックス野菜 | シ) その他 |

10、冷凍野菜を買う時、どのくらいの重さの商品(袋詰め)をよく買いますか。

- ア) 250 グラム
イ) 500 グラム
ウ) 750 グラム
エ) 1 キログラム

11、どのくらいしばしば缶詰の有機野菜や有機果物を買いますか。

- ア) 毎日
イ) 週に3、4回
ウ) 週に1、2回
エ) 月に2、3回
オ) 月に1回
カ) 月に1回未満

キ) 買わない -----> 質問13に進んで下さい。

12、過去三ヶ月間に、次のどの缶詰の有機野菜や有機果物を買いましたか。

- | | | |
|-----------|------------|------------|
| ア) アスパラガス | イ) グリーンピース | ウ) なし(梨) |
| エ) ミックス野菜 | オ) いんげん | カ) フルーツサラダ |
| キ) コーン | ク) りんご | ケ) オレンジ |
| コ) にんじん | サ) さくらんぼ | シ) イチゴ類 |
| ス) ミカン | セ) モモ | ソ) その他 |

13、どのくらいしばしば缶詰の有機野菜や有機果物のジュースを買いますか。

- ア) 毎日
イ) 週に3、4回
ウ) 週に1、2回
エ) 月に2、3回
オ) 月に1回
カ) 月に1回未満

キ) 買わない -----> 質問15に進んで下さい。

14、過去三ヶ月間に、次のどの有機野菜や有機果物のジュースを買いましたか。

- | | | |
|------------------|-------------|------------|
| ア) キウイフルーツジュース | イ) りんごジュース | ウ) トマトジュース |
| エ) オレンジジュース | オ) ぶどうジュース | カ) 野菜ジュース |
| キ) トロピカルフルーツジュース | ク) にんじんジュース | ケ) その他 |



15、ふだん、どこで有機野菜や有機果物を買いますか。(いくつ選んでも構いません。)

- ア) 八百屋
- イ) 食料品店
- ウ) コンビニストア
- エ) 市、又は露店
- オ) スーパーマーケット
- カ) コープ(生協)
- キ) 直接生産者から
- ク) 友人から
- ケ) 自分で栽培
- コ) その他 ()

16、過去一週間に、いくらぐらい有機野菜や有機果物に使いましたか。(それぞれの項目に大体の金額を記入して下さい。)

ア) 生鮮 イ) 冷凍 ウ) 缶詰 エ) ジュース
_____円 _____円 _____円 _____円

17、国内産有機野菜、果物と輸入有機野菜、果物の価格が同じだとしたら、どちらを買いますか。

ア、国内産 イ、輸入品

18、17の選んだ理由をお書き下さい。

19、次に示されている国々は、日本が有機野菜や有機果物を輸入している国々です。その輸入農産物が日本政府の適正基準に合格しているものとしてお答え下さい。

有機野菜や有機果物を購入する際に、どの国の農産物を買いたいと思いますか。いちばん買いたいと思う国から順に、1～7の番号を記入して下さい。
(順位1～7)

アメリカ _____
イギリス _____
オーストラリア _____
カナダ _____
ドイツ _____
ニュージーランド _____
中国 _____

20、質問19で、いちばん農産物を買いたいと答えた国(順位1をつけた国)に関して、どうしてそう思うのか理由を選んで下さい。

- ア) 信頼がおける
- イ) 水、空気、土壌がきれい
- ウ) おいしい
- エ) 国に親近感がある
- オ) 安い
- カ) その他(理由:)



2 1、有機野菜や有機果物を購入するとき、あなたにとってどんな点が重要ですか。
ふさわしい数字に○をつけてください。

	全く重要 ではない	重要では ない	気にし ない	重要であ る	とても重 要である	分からない・ 選択不可
ア) 価格	1	2	3	4	5	8
イ) 大きさがそろっているか どうか	1	2	3	4	5	8
ウ) 形が揃っているかどうか	1	2	3	4	5	8
エ) 種類の豊富さ	1	2	3	4	5	8
オ) きずがないかどうか	1	2	3	4	5	8
カ) 安全性	1	2	3	4	5	8
キ) 国内産か輸入品か	1	2	3	4	5	8
ク) いつも購入できるかどう か	1	2	3	4	5	8

有機栽培に関する意見

2 2、次に有機野菜と有機果物についてご意見をお聞かせ下さい。
次の意見は有機野菜や有機果物が、有機農法によらない農産物と比較し
て一般に優れていると言われている点です。
あなたはどの程度、以下の意見に賛成しますか。 ふさわしい番号に○を付
けて下さい。

有機野菜や有機果物は 普通の農産物と比較して	全く反対	反対	賛成でも 反対でも ない	賛成	全く賛成	分からない・ 選べない
ア) 味がいい	1	2	3	4	5	8
イ) 一般的に値段が高い	1	2	3	4	5	8
ウ) 栄養がある	1	2	3	4	5	8
エ) 形がゆがんでいる	1	2	3	4	5	8
オ) 簡単に手に入らない	1	2	3	4	5	8
カ) 一般的に見た目が悪い	1	2	3	4	5	8
キ) 安全である	1	2	3	4	5	8
ク) 環境保全に役立つ	1	2	3	4	5	8



23、有機野菜や有機果物に関して様々な意見があります。あなたは、以下の意見に対してどの程度賛成しますか。ふさわしい番号に○を付けて下さい。

	全く反対	反対	どちらでもない	賛成	全く賛成	分からない
ア) 有機野菜や有機果物に斑点やきずがあったら買わない	1	2	3	4	5	8
イ) 新鮮な有機野菜や有機果物の形がゆがんでいたら買わない	1	2	3	4	5	8
ウ) 有機野菜も有機果物も種類が少ない	1	2	3	4	5	8
エ) 有機野菜や有機果物を買える店が少ない	1	2	3	4	5	8
オ) 普通の野菜や果物の、殺虫剤の残留許容値は高すぎる	1	2	3	4	5	8
カ) 普通の農産物からわずかな殺虫剤は検出されるが、人体には害はない	1	2	3	4	5	8
キ) 有機野菜と有機果物は一般的に値段が高すぎる	1	2	3	4	5	8
ク) 従来の栽培方法は自然環境にほとんど影響を及ぼさない	1	2	3	4	5	8
ケ) 有機栽培方法は従来の栽培方法に比べ自然環境にとって良い	1	2	3	4	5	8
コ) 農産物における過度の農薬や殺虫剤の使用は、子どもにアレルギー(特にアトピー皮膚炎)を引き起こす	1	2	3	4	5	8
サ) 従来の野菜や果物は、有機野菜や有機果物と同じくらい栄養がある	1	2	3	4	5	8
シ) 有機野菜と有機果物を購入する時は、輸入品より国産品を買う	1	2	3	4	5	8
ス) 輸入された有機野菜と有機果物は信頼していない	1	2	3	4	5	8



24、500g入りの無農薬の冷凍ミックスベジタブル(ニンジン、グリーンピース、スイートコーンなどが入った)があるとします。
 次の値段だったらあなたはどの程度購入されますか。(普通の500g入りの冷凍ミックスベジタブルは350円くらいです。) 当てはまる数字を○で囲んでください。

	400円の場合	450円の場合	500円の場合
必ず買う -----	6	6	6
大体買う -----	5	5	5
たまに買う -----	4	4	4
あんまり買わない -----	3	3	3
ほとんど買わない -----	2	2	2
決して買わない -----	1	1	1

あなた自身についてご質問します。

この調査による正確な分析のために、あなたとあなたの家庭についてお答え下さい。
 (この情報は、統計的データを得る以外には決して使いません。)

25、あなたの年齢

- | | | |
|--------|--------|----------|
| ア) 10代 | エ) 40代 | キ) 70代以上 |
| イ) 20代 | オ) 50代 | |
| ウ) 30代 | カ) 60代 | |

26、性別 ア) 男 イ) 女

27、あなたを含め、家族は何人ですか。

全家族数: _____人

(そのうち、15才未満の子供の数: _____人)

28、あなたが普段、食事の買い物をしますか。

- ア) はい イ) いいえ

29、過去7日間に、家計の中から大体いくらぐらい食費に使いましたか。(外食も含めた全ての食品の費用をお答え下さい。)

約 _____ 円



Summary of Comments regarding the questionnaire

(These comments were taken from the very last section of the questionnaire, and only those comments concerning the actual questionnaire, its content and format, were translated and included here).

Would like to see a copy of the results * 4

Number 19 hard to understand

Easy to answer - not too long

City people are more concerned with organic food than rural people

There was a problem in question 10, no option for those who don't buy frozen produce

Question 1 and 2 were hard to answer

Question 22 and 23 were hard to answer * 3

Question 21, 22 and 23 were hard to answer

Question 19, 22 and 23 were hard to answer

Question 19 was hard to answer

Question 23 was worded a little strangely therefore a little hard to answer

Question 21 - 23 was worded a little strangely therefore a little hard to answer

Questions 19 and 20 were hard to answer - I couldn't answer them

Question 19 was nonsense, very very hard to answer

I didn't like questions 30-31

I would pay 450 yen for frozen organic sweet corn, but not for organic mixed vegetables

The questionnaire was hard to answer * 7

The questionnaire was hard to answer as much as possible I don't buy imported food

As I don't buy frozen or canned vegetables the questionnaire was hard to answer

The questionnaire was hard to answer as I don't know much about this subject * 4

There were many irrelevant questions - should have been more focused * 3

There were too many repetitive, and too many difficult questions

The questionnaire was too long

It was a very enjoyable questionnaire * 2

It was a very enjoyable questionnaire and it taught me a lot

It would be good if this questionnaire was being done by a Japanese person rather than a New Zealander

I would be happy to eat imported organic food, although I did not answer as such in question 17

I would buy either imported or local organic produce so long as it looked good * 2

I would prefer to buy imported organic produce, as Japan does not have very good standards

People do not like frozen packages food, it does not have a 'green' image, it is not fresh

If can establish a good name/brand (e.g. Dole) for imported organic produce, then Japanese people may be more likely to buy it

Don't know the difference between organic and chemical free- only the farmer really knows what he has done, if we don't know in Japan, then we have no idea at all about imports.

I think that there should be co-operation between New Zealand and Japan

Don't know to what extent I can trust organics.

Japanese organic standards are unclear compared to overseas standards

There were many questions that I didn't know how to answer as I hadn't thought about it before (i.e. I haven't ever had to buy organic food from a shop)

The labelling concerning chemical use on imported organic produce is not good enough

8.7 Appendix 7: The Personal and Group Interview Schedule and Transcripts

Q1. What image do you have of organic produce?

Q2. Is the difference between organic, chemical-free, and reduced-chemical produce?

Q3. If you had the choice of buying an organic, chemical-free, or reduced chemical carrot, which would you choose?

Q4. What are the barriers to you buying more organic food than now?

Q5. Do you buy many frozen vegetables/fruits?

Q6. Do you buy many imported frozen vegetables/fruits?

Q7. Do you buy many fresh imported vegetables/fruits?

Q8. Do you trust the labels on organic produce grown in Japan?

Q9. Do you trust the labels on organic produce imported from overseas?

Q10. What is your image of NZ?

Q11. Do you trust the labels on the organic produce imported from NZ?

Q12. What does healthy mean?

Q13. What does safe to eat mean?

Q14. A kiwifruit is normally grown using chemical fertilisers and pesticides. If a kiwifruit grown this way had no chemicals at all remaining on or in it, would you buy it?

Q15. Would you pay a higher price for it than you would for a normal kiwifruit?

Q16. Would you pay as much for it as organic kiwifruits?

Q17. Do you think that the popularity for organic food will continue in the future?

Q18. Do you think that you will buy more organic food in the future than you do now.

Interview Transcripts : Typical Consumers

Interview 1 : Chioko san

Q1. What image do you have of organic produce

Safe

(Taste?) I haven't tasted it to compare, so I don't know

I would feel safer about eating it if it is a bit dirty or strange shaped. If perfect, I would be suspicious

Good for our bodies

Q2. Is the difference between organic, chemical-free, and

Yes

(Please explain)

Reduced-chemical is where chemicals are reduced, chemical-free is where chemicals are not used at all, but I am not so sure about organic. organic does use chemicals doesn't it, but the fertilisers are different?

Q3. If you had the choice of buying an organic, chemical-free, or reduced chemical carrot, which would you choose?

Reduced-Chemical

Q4. What are the barriers to you buying more organic food than now?

Price.

(Other than that?)

(Shape?) No problem,

(Do you trust the labels?) Not always.

(Is it ever unavailable?) Yes, but this is not a barrier to me, if I wanted a good supply of organic food, I would grow it myself, but I don't know how, and there is not much in the shops in this area...

Q5. Do you buy many frozen vegetables/fruits?

No. Because I don't need to buy them, there are shops very close to me here, so I can buy them whenever I want to.

Q6. Do you buy many imported frozen vegetables/fruits?

-

Q7. Do you buy many fresh imported vegetables/fruits?

Maybe without knowing I do. No, actually I don't hardly ever buy them.

(Why?) Because recently I saw on TV that in Costa Rica and Indonesia, they put so much chemicals on the bananas they grow and export. And also, because in Japan, from long ago, it has been said that it is best to buy food that has been grown close to where you live, as this is the safest.

Q8. Do you trust the labels on organic produce grown in Japan?

-

Q9. Do you trust the labels on organic produce imported from overseas?

No

(Why?)

Because, again, (TV has had a big influence on me here,)I seen on TV all the chemicals that farmers use, and so don't trust them . Even if the food is labelled? Yes, no difference.

(Does it depend on the country?)

Yes, NZ is probably fine, but not USA.

Q10. What is your image of NZ?

Much nature
An agricultural country

Q11. Do you trust the labels on the organic produce imported from NZ?

-

Q12. What does healthy mean?/ Q13. What does safe to eat mean?

I don't think that (organic produce) is good for us, but I think that it is safe. Meanings (safe and healthy) are different. Doesn't really do anything good for us.

Q14. A kiwifruit is normally grown using chemical fertilisers and pesticides. If a kiwifruit grown this way had no chemicals at all remaining on or in it, would you buy it?

-

Q15. Would you pay a higher price for it than you would for a normal kiwifruit?

-

Q16. Would you pay as much for it as organic kiwifruits?

Can't trust it. Even with a label can't trust. But it depends on the place. I don't think that one can ever say that this is completely safe. But then, even if more expensive than normal kiwi, I think that I would buy this safer kiwi.

Q17. Do you think that the popularity for organic food will continue in the future?

-

Q18. Do you think that you will buy more organic food in the future than you do now.

Organic will increase. If there is the demand from consumers, and there are good labels, and I think there will be, then it will increase. I think that the Government standards for imports will become stricter, then consumers will be happier buying imports, but I'm not really sure about whether it will become stricter or not.

Interview 2 : Hatano san and two friends I

Q1. What image do you have of organic produce

Price is expensive. I think that they are safe, but I am not really sure. I am interested in it. If there is organic food on the shelves by the normal food, I will buy it. But I will not make the effort to go somewhere especially to buy it.

I don't really know the difference between chemical-free and organic, and they have the image of being safe, but as of yet, they have not come into my life.

Healthy, safe.

Q2. Is the difference between organic, chemical-free, and reduced-chemical produce very big?

We do not know.

Q3. If you had the choice of buying an organic, chemical-free, or reduced chemical carrot, which would you choose?

Two would buy chemical free. One would buy organic.

Q4. What are the barriers to you buying more organic food than now?

Price is too high. Limited range. Unless you actually join a group of some sort, that has interests in organic food, in Japan, there is not really that much available in the shops.

The outward appearance of it is not a problem. One person though does not like it at all if there are insects in the produce. She is also wary that those insects are not good for our bodies.. .

Q5. Do you buy many frozen vegetables/fruits?

No, no, yes (mixed vegetables)

Q6. Do you buy many imported frozen vegetables/fruits?

No

Q7. Do you buy many fresh imported vegetables/fruits?

Yes,(grapes, and cherries), but I am still nervous, don't know what has been used on them, chemicals etc. the standards may be different to Japan. And I do not eat the

skins. But because the skins touch my mouth I worry. Bananas etc. are okay, as skins can be peeled. Does not depend on the country, all foreign countries are lumped together in my head. Because I simply do not know, I would rather eat food from my own country. (Others agree).

Q8. Do you trust the labels on organic produce grown in Japan?

Two trust them. One does not trust it if from the normal shops, but if get directly from the farmer etc. then I trust it totally.

Q9. Do you trust the labels on organic produce imported from overseas?

Yes we guess, but not really.

(Does it depend on the country?)

No, they are all the same.

Q10. What is your image of NZ?

Island country. Farms everywhere. I wonder even if there are any towns even...!

Q11. Do you trust the labels on the organic produce imported from NZ?

Not really.

Q12. What does healthy mean?/ Q13. What does safe to eat mean?

(Here I explain what the differences between definitions are. They had no idea).

Chemicals are not good for our bodies, and it is something that I feel will gradually build up. Its fine to just eat sometimes, but not all the time. I worry about it.

But living would become very expensive if everything was organic.

I was bought up on a farm, and when I went for a walk, I would see signs on the roads etc. to not enter here because chemicals had been sprayed, so I have a feel for the dangers of chemicals. And therefore understand the benefits of organic food.

Q14. A kiwifruit is normally grown using chemical fertilisers and pesticides. If a kiwifruit grown this way had no chemicals at all remaining on or in it, would you buy it?

Yes.

Q15. Would you pay a higher price for it than you would for a normal kiwifruit?

Yes, for a kiwifruit, because you eat it raw.

Q16. Would you pay as much for it as organic kiwifruits?

Yes

Q17. Do you think that the popularity for organic food will continue in the future?

-

Q18. Do you think that you will buy more organic food in the future than you do now?

For things like soyasauce and tofu, I will buy organic if it is lined up there with conventional food, even if a little more expensive. Will not make a special trip to buy it.

(How much more would you pay for it?)

Organic food sells for up to three times more than normal food. We would pay that much more only if it is cheap to begin with. So depends on the produce.

Interview 3 : Hatano san and two friends II

Q1. What image do you have of organic produce

Safe. Tastes like it did a long time ago (ie20yrs ago). The tastes of what food was like when we were children.

Delicious

Short supply.

Difficult, hard to grow.

Expensive.

My hometown is in Sendai. I lived there until I was 30, and have been in Osaka for 13 years. There is a big difference between Sendai and Osaka. In Sendai, there is no organic vegetables really, everything is grown naturally, pick in the morning, eat that day. The organic vegetables that sell in the shops in Osaka are not fresh. The price is expensive. The costs of producing organic vegetables in the big cities like Tokyo and Osaka is high, and I do not want to eat organic produce that sells in these cities at all.

Although organic farming methods are more popular now, the cost of doing so is high.

Q2. Is the difference between organic, chemical-free, and reduced chemicals very big?

We don't really know the difference. If something is said to be chemical free, we are not clear if it is totally chemical free. We are not clear on the exact rules and standards used.

Q3. If you had the choice of buying an organic, chemical-free, or reduced chemical carrot, which would you choose?

Person 1: Chemical-free

Person 2: Chemical-free

Person 3: Organic

Q4. What are the barriers to you buying more organic food than now?

Trust

The appearance is not a problem, strange shaped vegetables are natural.

Hard to buy and find

Do you trust the labels? I don't really know if we can trust them, but we have to trust them. It also depends on the shop.

Q5. Do you buy many frozen vegetables/fruits?

No
 I buy them now, sometimes, for the last 2 years
 So do I.
 For e.g. corn, potatoes, and carrots, etc.

Q6. Do you buy many imported frozen vegetables/fruits?

I bought nice beans and small potatoes from China recently.
 The other two did not.

Q7. Do you buy many fresh imported vegetables/fruits?

No
 But then we think that there are many vegetables from other countries selling among the other vegetables, and we don't know where they are from, so unknowingly we probably buy them. They are not labelled. I can tell immediately whether something is Japanese or imported, because the Japanese vegetables are much far more nicer tasting than imported ones.

Q8. Do you trust the labels on organic produce grown in Japan?

Person 1: 70%.
 Person 2: 50%
 Person 3: 50%

(What does that depend on?)

Because we can not know for certain what the farmers standards are. (We can't tell just by looking at the supermarkets, but when we eat them, I can tell).

Q9. Do you trust the labels on organic produce imported from overseas?

Not America. Maybe okay is Australia and NZ. We often see food from these countries in our shops, but not much from America. For e.g. dairy products, ice-cream.

I don't buy imports much because the prices are higher, and I am limited in what I buy, by trying to spend not much money.

When I feed my granddaughter, I look for a well labelled food, but for myself I don't really care.

Each country area that grows food has a different taste, i.e. Italy, France etc., but I haven't tasted that yet so I don't know. But NZ and Australia, I have, and it is nice, it suits my tastes.

(Does it depend on the country?)

-

Q10. What is your image of NZ?

Blue sky, beautiful, small mountains, a nice place to be, wild, countryside wildness, like Hokkaido, sheep, I want to go to NZ and Australia.

Q11. Do you trust the labels on the organic produce imported from NZ?

There are many imports from NZ and Australia, but we haven't seen any organic imports.

(The organic labels in New Zealand are not Government ones, is this a problem?)

In Japan, if certified by the G, I would trust it 90%

(For NZ?)

I don't really know, I haven't thought about it.

Q12. What does healthy mean?/ Q13. What does safe to eat mean?

We don't know if in 10 or 30 years something bad will happen to us because of the chemicals we are eating now. But if it tastes nice, I still eat it. Because chemicals build up in our bodies, I only trust produce 20% that it is safe. They are always saying afterwards that this was bad. By then its too late.

Japanese standards and overseas standards are not the same. We don't know how they are different.

(Is healthy and safe the same?)

No. Healthy is something that is a plus for the body. Whereas safe just means that it is not a minus for the body, and therefore makes no really difference.

Q14. A kiwifruit is normally grown using chemical fertilisers and pesticides. If a kiwifruit grown this way had no chemicals at all remaining on or in it, would you buy it?

There are fruits from America that say that there is no chemical remaining, although they were grown in the conventional way. I don't know what I think of that, but I will try it once, and see how it is. If I like it, I will trust it. But can not trust it by just looking at the labels the first time. It is still very new this importing of food from overseas, its not that I don't trust it, I'm just wary. I must try it first.

Q15. Would you pay a higher price for it than you would for a normal kiwifruit?

-

Q16. Would you pay as much for it as organic kiwifruits?

Yes

Q17. Do you think that the popularity for organic food will continue in the future?

If there is a demand it will increase. The supply depends on the weather. Can't maintain a stable supply. Can't get much. When the supply is low, the price is high. We all think that organic food will not increase in the future.

Q18. Do you think that you will buy more organic food in the future than you do now.

The price problem. Expensive.

We won't go looking for organic foods, but if it is easy to find, among the normal foods, then we will buy them. But there is not much.

If the price does not fluctuate during the year, we will buy more, but it is always changing.

(None of Hatano san's friends really care. If it is there they will buy it sometimes. But they are not too concerned.)

Interview 5 : Ono-san

Q1. What image do you have of organic produce

Healthy
 Little expensive
 Limited availability
 Good taste
 Safe

Q2. Is the difference between organic, chemical-free, and

I don't know. I only know chemical-free and organic.

Q3. If you had the choice of buying an organic, chemical-free, or reduced chemical carrot, which would you choose?

-

Q4. What are the barriers to you buying more organic food than now?

Not sold in very many places, unavailable
 Price is not a barrier
 Shape: don't care
 Dirty: don't care

Q5. Do you buy many frozen vegetables/fruits?

No, because it doesn't taste good

Q6. Do you buy many imported frozen vegetables/fruits?

-

Q7. Do you buy many fresh imported vegetables/fruits?

No

(Why?)

I want to buy food that has been made in Japan. Because its fresh.

Q8. Do you trust the labels on organic produce grown in Japan?

Not 100% trust. There are areas that I can't trust.

Q9. Do you trust the labels on organic produce imported from overseas?

Maybe.

(Does it depend on the country?)

China is good I think, as it doesn't use much chemicals.

(Do you trust imports more than Japanese organic?)

Yes, I think that foreign countries are more honest maybe.

Q10. What is your image of NZ?

Farming (sheep cow) country.

A relaxed country.

I remember Kerry.

Q11. Do you trust the labels on the organic produce imported from NZ?

Does New Zealand organic food come into Japan? (Yes). Then I trust it.

Q12. What does healthy mean?

...Because agricultural chemicals are not used. If used, I may get sick.

Q13. What does safe to eat mean?

Same as healthy

Q14. A kiwifruit is normally grown using chemical fertilisers and pesticides. If a kiwifruit grown this way had no chemicals at all remaining on or in it, would you buy it?

I think I would trust it and buy it.

Q15. Would you pay a higher price for it than you would for a normal kiwifruit?

Yes, if the taste was good.

Q16. Would you pay as much for it as organic kiwifruits?

-

Q17. Do you think that the popularity for organic food will continue in the future?

Young people today are all busy, and therefore buy the closest and most convenient foods, and the cheapest. So I don't think that natural organic type foods will increase very much.

Q18. Do you think that you will buy more organic food in the future than you do now.

(Do you buy them?)

I want to, but there is nowhere nearby that sells it.

Interview 6 : Mastumoto san

Q1. What image do you have of organic produce

Healthy and delicious
 More expensive than conventional
 Readily available
 Appearance is a little bad

Q2. Is the difference between organic, chemical-free, and

Yes, chemical-free produce is sweeter and softer - better to eat than reduced-chemical and organic food. Organic vegetables are a little bitter, and a little hard.

What is organic?

(Growing vegetables in ground that has had no chemicals etc. on it for 3 years.)

Chemical-free?

(Grown using absolutely no chemicals.)

Reduced-chemical?

(Grown using the guidelines set by MAFF, using only those chemicals that MAFF suggests.)

Q3. If you had the choice of buying an organic, chemical-free, or reduced chemical carrot, which would you choose?

Chemical-free. Although it is double the price of conventional foods.

Q4. What are the barriers to you buying more organic food than now?

The variety is limited. Not much variety.
 And the volume is low, - not much in terms of quantity is sold

(What about appearance?)

I don't care about that.

(Price?)

I care about that, but, because it tastes good delicious, I will buy it.

Q5. Do you buy many frozen vegetables/fruits?

No. They taste bad. When I buy them, I don't eat them, so in the end I just have to throw them out.

Q6. Do you buy many imported frozen vegetables/fruits?

-

Q7. Do you buy many fresh imported vegetables/fruits?

No, because I get rice and vegetables sent to me from my parents, that they have grown.

Q8. Do you trust the labels on organic produce grown in Japan?

Yes, almost. However, I do not trust the (conventional) vegetables that are sold very cheaply in the bargain bins. I would think that they have been grown using a lot of chemicals. I think this because I know how vegetables are grown, as my parents grow vegetables without using chemicals.

(Do you trust the Japanese labels more than you do overseas ones?)

Yes

(Does that depend on the country?)

No, all are the same.

Q9. Do you trust the labels on organic produce imported from overseas?

(Is it enough for imported organic produce to have just a label on it, or is it better to also have an explanation of how it was grown.)

Explanation needed too.

(What about a photo?)

Yes, that is better too.

Q10. What is your image of NZ?

Mild climate, and an easy place to live in. A fun/enjoyable place to live.
Natural place, houses are surrounded with greenery.

Q11. Do you trust the labels on the organic produce imported from NZ?

I haven't really ever seen them.

(If you saw them would you trust them?)

I think so. I've only ever really seen kiwifruit.

Q12. What does healthy mean?

Means the same as safe.

Q13. What does safe to eat mean?

(Organic produce is safe;) it doesn't do anything bad to the body.
Chemicals build up in your body and when you get old it will be a problem.

(Is it good for us?)

Yes, it means the same as safe.

Q14. A kiwifruit is normally grown using chemical fertilisers and pesticides. If a kiwifruit grown this way had no chemicals at all remaining on or in it, would you buy it?

But I think that surely the chemicals will remain a little anyway, so I would not trust them.

(But surely it must be better than normal kiwifruit)?

Ahh, is it possible that no chemicals would remain? If that is the case, maybe it would be a good thing...

Q15. Would you pay a higher price for it than you would for a normal kiwifruit?

Yes, I would pay up to 50% more.

Q16. Would you pay as much for it as organic kiwifruits?

-

Q17. Do you think that the popularity for organic food will continue in the future?

Surely it will continue to increase. In order to do that though, we should decrease the amount of produce that is grown with chemicals, so as to increase organically grown ones, so that the price will come down.

Q18. Do you think that you will buy more organic food in the future than you do now.

(Any comments?)

I would like to see more NZ produce coming into Japan, as I would like to taste them. Imports now are mostly from the US and China.

(But you would still like to buy Japanese food in preference to imports?)

Yes, especially as my family grows food, I am aware of the importance of supporting and maintaining Japans agriculture. Farmers now do not get much income, so its very hard.

(But you would buy imports sometimes?)

Yes.

Interview 7 : Mizuno san

Q1. What image do you have of organic produce

Safe, healthy, expensive.

Q2. Is the difference between organic, chemical-free, and reduced-chemical big?

There is a small difference.

Q3. If you had the choice of buying an organic, chemical-free, or reduced chemical carrot, which would you choose?

Chemical-free

Q4. What are the barriers to you buying more organic food than now?

Person one: price is not a barrier, I will buy even if expensive, as long as it is fresh.

Person two: price is a barrier

Person three: it depends on the vegetable (whether or not price is a barrier). I will buy vegetables that are eaten raw, if they are expensive. But for other things, I will buy the cheaper ones. However, with things like the long white radish i.e. root vegetables, if they are covered with dirt, I will not buy them, I don't like that, even if it is organic - it does not look nice.

We don't really care about the shape

(What about the size?)

Person one: I don't really care

Person two: I care if the fruit is too small, because it is a nuisance when preparing them

Person three and four: I don't like it when onions and potatoes are too small, they are a nuisance when preparing them. I also don't like it if kiwifruit are too small. They are harder to eat and prepare.

(How is organic and chemical-free different?)

Chemical-free has no chemicals used at all, but organic doesn't use chemicals, but uses natural/organic fertilisers and things etc.

(Which is the strictest?, chemical-free or organic?)

Chemical-free

Q5. Do you buy many frozen vegetables/fruits?

Person 1: No I don't think that the condition is very good, i.e. if you boil them, they become too soft, and if you put them in the microwave they don't turnout very good.

Person two: I buy them. Especially root vegetables such as long white radish, potatoes, and sweet potatoes.

Person 1, 3, 4, So do I

(What about green peas and green beans?)

Person 1,2,3,4, Yes, and also carrots, and pumpkin, although pumpkin goes too soft when cooked.

Person 1: I also buy corn.

(If you had the chance, and if they were the same price as normal foods, are there any organic fruits or vegetables that you would buy more of than you are now? What are they?)

Person 1: Produce that can be eaten raw. E.g. tomato, lettuce, cucumber

(If they were more expensive than normal foods?)

Person 1: If they were only a little more expensive, I would buy them

(Is there any difference between fresh (organic) and frozen imports?)

Person 1: Yes, but there is also a difference in Japan.

(Which do you have the most trust in?)

Person 1; Fresh.

(Even imports?)

Person 1: Yes.

(Does it depend on the country?)

Person 1; Yes, I do not trust China so much..

Q6. Do you buy many imported frozen vegetables/fruits?

(Do you buy frozen organic/chemical free vegetables?)

I haven't really seen them.

(If they were there and you could find them, would you buy them?)

Yes I would.

(Even if the price was expensive?)

Only if the price was a little expensive!

(Is there any difference between fresh (organic) and frozen imports?)

Person 1: Yes, but there is also a difference in Japan.

(Which do you have the most trust in?)

Person 1; Fresh.

(Even imports?)

Person 1: Yes.

Q7. Do you buy many fresh imported vegetables/fruits?

I do buy grapefruit and pumpkin etc., Yes and also broccoli. Not organic broccoli
I will buy imported vegetables when they are out of season in Japan.
If I have no choice of buying food in Japan, I will buy that.

Q8. Do you trust the labels on organic produce grown in Japan?

(Would you buy organic/ chemical; free produce produced in Japan, that did not have an organic label on it? i.e. if someone just said that it was organic but it had no label.)

Person 1: it would depend on the person saying it.

(Would you buy organic produce with an organic label that you have never seen before?)

Person1: I wouldn't know the labels anyway so I don't know.

(Do you trust the labels?)

Only about 80% trust.

(Does that also depend also on the shop they are sold in?)

Person 1: Yes, and also the company, depending on the company, the labels used on agricultural produce are not very reliable. Therefore I only trust 80%.

Q9. Do you trust the labels on organic produce imported from overseas?

(What about imported organic food, Do you trust the certification labels?)

Person 1: Only about 70%!

(Why is that?)

Q10. What is your image of NZ?

-

Q11. Do you trust the labels on the organic produce imported from NZ?

I trust it.

Really because N.Z has been selling kiwifruit in Japan for a long time and although I don't eat Kiwifruit myself, when I buy it for my family, I buy N.Z Kiwifruit.

Even America, I have less trust in it than in N.Z.

Q12. What does healthy mean?

Person 1: Good for the body. Produce that uses a lot of agricultural chemicals, when you eat it, it builds up in your body, cancer, or sickness comes.

Also allergies...

Q13. What does safe to eat mean?

Person 1: The same as healthy, there is no difference.

Q14. A kiwifruit is normally grown using chemical fertilisers and pesticides. If a kiwifruit grown this way had no chemicals at all remaining on or in it, would you buy it?

Yes, but even if it has a label, and is from overseas, they are suspicious, but if from Japan, they are not so suspicious.

Q15. Would you pay a higher price for it than you would for a normal kiwifruit?

-

Q16. Would you pay as much for it as organic kiwifruits?

-

Q17. Do you think that the popularity for organic food will continue in the future?

-

Q18. Do you think that you will buy more organic food in the future than you do now.

That depends on the price, no matter what, organic food is more expensive in Japan, if it becomes cheaper, I (and many others), will buy more.

(And if the price does come down?)

Again, that depends on the freshness of the produce etc.

(So it won't really change from now?)

No

(Do you think that this is a fairly common way of thinking throughout Japan?)

Yes, but then there are those people who will buy organic food no matter what, and most of what they buy is organic.

(Do you think that the price of organic food will come down in the future?)

That depends on the needs of the consumers. But about 10 years ago they had only just started coming into the supermarkets, and people's interest has increased a lot in the last few years. And because the number of people that buy organic food is increasing I think that the price will probably come down.

(But even if the price does not come down, do you think that the number of consumers who buy organic food will continue to increase?)

Well, there is the worry about health these days, so it must increase... Although it is increasing now, I think that it will increase even more in the future.

Interview 8 : Ochiai-san and friends

Q1. What image do you have of organic produce

Safe, healthy, expensive, delicious, poor appearance

Q2. Is the difference between organic, chemical-free, and

Only small quantities available, can't trust the labels

Q3. If you had the choice of buying an organic, chemical-free, or reduced chemical carrot, which would you choose?

-

Q4. What are the barriers to you buying more organic food than now?

Price, unreliability, can't trust the labels

We do not care about the shape, or size of the produce. We only care about price, taste, and safety.

Q5. Do you buy many frozen vegetables/fruits?

We do not really have them here in the shops, do we? I have not bought or seen any. Yes there are, there is pumpkin, corn, peas etc.

We do not buy them, well, sometimes we do, (I) buy Hokkaido pumpkin in winter, because I want to eat Hokkaido pumpkin.

Q6. Do you buy many imported frozen vegetables/fruits?

No, because we do not trust them, and they do not taste very good.

(What about imported organic vegetables?)

We have not seen any around.

Q7. Do you buy many fresh imported vegetables/fruits?

-

Q8. Do you trust the labels on organic produce grown in Japan?

-

Q9. Do you trust the labels on organic produce imported from overseas?

No, because although the growing process may be organic, when they come into Japan, there is a post-harvest application of chemicals, which we therefore do not trust.

Q10. What is your image of NZ?

-

Q11. Do you trust the labels on the organic produce imported from NZ?

-

Q12. What does healthy mean?

To not become sick, we don't think that chemicals are very good for our bodies.

Q13. What does safe to eat mean?

Same as 'healthy'.

Q14. A kiwifruit is normally grown using chemical fertilisers and pesticides. If a kiwifruit grown this way had no chemicals at all remaining on or in it, would you buy it?

Person one: I think that I would like to buy them, but I can not say with total certainty.

Person two: Yes

Person three: I can not trust Japanese or foreign labels.

Is it true that chemicals not allowed in Japan, are sometimes used overseas? If so, and that produce is then sold to Japan, of course, I am worried. That is also a problem.

(Does it depend on the country?)

Yes, but we have not really thought about it, because we do not really buy imported food anyway. Imported food has a rough, not delicate taste. Each country has a different taste tendency, what they like is different to what another country likes.

Q15. Would you pay a higher price for it than you would for a normal kiwifruit?

-

Q16. Would you pay as much for it as organic kiwifruits?

-

Q17. Do you think that the popularity for organic food will continue in the future?

-

Q18. Do you think that you will buy more organic food in the future than you do now.

Yes, if the above is correct (i.e.. taste, price, freshness, etc. is good).

Interview 9 : Naito san and son

Q1. What image do you have of organic produce

Good taste,

Want to eat/use, but when we go to the market, there is not much there

Expensive

Not much available

Safe

I (son) am living alone, so I do not buy organic food because I think that it will go off quickly if I do not eat it on the day that I buy it)

There are often insects on the leaves, we must be careful, or we will eat them.

We do not care about the shape, or whether the produce is covered in dirt.

Q2. Is the difference between organic, chemical-free, and reduced-chemical

I can not tell by the taste alone

I do not really know the difference in terms of how they are produced, but just hearing the names, I can guess.

Q3. If you had the choice of buying an organic, chemical-free, or reduced chemical carrot, which would you choose?

Person one: Organic

Person two: Chemical-free

Q4. What are the barriers to you buying more organic food than now?

Price

Not much available (quantity or variety)

Q5. Do you buy frozen vegetables/fruits?

Sometimes

Q6. Do you buy many imported frozen vegetables/fruits?

There is not much imported food available, oh, but there is New Zealand pumpkin, which I have bought. We do not really mind if we buy imported or Japanese food. We have seen frozen imported foods such as corn, and broccoli - I often buy frozen corn. It depends on the shop, as to whether it stocks imported food or Japanese food. The shop near my (son) house only stocks Japanese food, so that is what I buy.

Q7. Do you buy many fresh imported vegetables/fruits?

-

Q8. Do you trust the labels on organic produce grown in Japan?

We can trust those produce that are labelled, and have a photograph of the farmer above them.

Q9. Do you trust the labels on organic produce imported from overseas?

We have not seen any, but if there was Japanese and imported organic food together on the shelf, we would probably trust and buy the Japanese ones.

(Does it depend on the country?)

We are not sure, but for example, imported bananas, have the image of being sprayed again when they enter Japan, so we are therefore more comfortable eating the food that has been produced locally.

Q10. What is your image of NZ?

Lots of nature

We feel attached to it and want to visit it many times

Q11. Do you trust the labels on the organic produce imported from NZ?

We are not really worried about New Zealand foods, if they are available - "Oh I have found some!" - is how I think when I find New Zealand food.

Q12. What does healthy mean?

Chemicals that we do not need build up in our bodies, and this scares me. Also, it (organic) is good for the environment I think, for the ground and soil etc.

Q13. What does safe to eat mean?

The same as healthy. One's own body is safe, as is the environment.

Q14. A kiwifruit is normally grown using chemical fertilisers and pesticides. If a kiwifruit grown this way had no chemicals at all remaining on or in it, would you buy it?

Yes

Q15. Would you pay a higher price for it than you would for a normal kiwifruit?

Person one: no

Person two: because the quantity of kiwifruit that we usually eat is quite small compared to food like rice, potatoes, and cabbage, which we eat every day, I would probably buy the safer, more expensive kiwifruit. Although, if the organic kiwifruit are small, and I wanted to eat a lot of them, I would probably buy the big conventional ones.

Q16. Would you pay as much for it as organic kiwifruits?

-

Q17. Do you think that the popularity for organic food will continue in the future?

Now that everyone is considering the safety of what they eat, and this is just starting, if safe foods were readily available, I think that people would use them more. There is a truck that comes to our neighbourhood once a week selling safe foods, or something, but as I don't have time to go to it, if I see this sort of food in the supermarkets, I would want to buy it. If there was more variety in the shops, more people would buy organic food I think.

I have a friend nearby who grows rice, and he has a small section of his paddy that he does not put so much spray on, that he eats for himself, as well as giving some to us. But this makes me worried, to think how much spray he must be using that he won't even eat it himself.

Q18. Do you think that you will buy more organic food in the future than you do now.

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Interview Transcripts : co-operative members

Interview 10 : Seikatsu Club Ustunomia

Q1. What are the weekly activities of Seikatsu club?

We take very good care of/treat well, our members.

Our members look at these catalogues, and fill in an order form one month in advance. This give the farmers time to plan ahead, so as to minimise inefficiency, and maximise flexibility. Members receive food twice a week.

We get food such as pork and eggs directly from the farmer. The milk comes from a factory that processes especially for Seikatsu club. We can save money by going direct.

Q2. Is it like coop?

No. It is a different organisation
The activities are a little different.

Q3. Do you have a shop?

No.

Q4. How much does it cost to join?

Y1000 to join, and then Y1000 each month. When a member leaves, the initial Y1000 is returned to them.

Q5. How many members are there here/nation-wide?

Here in Tochigi Prefecture there are 2600 members, or 400 groups.

It is a nation-wide organisation, with its headquarters in Tokyo. There are 230,000 members nation-wide. But they are not everywhere, mostly just Kanto. (Also Hokkaido).

Q6. Why do people join?

Because the food is safe and tastes good.

Q7. Is the food organic?

There is some organic food, but mostly its more additive free food. Mostly additive free processed food. Pork, milk. There is no actual organic food, some is chemical-free, but most is additive-free.

Q8. What about in the future, will you sell more chemical-free or organic food?

The present system of standards is quite confusing, so its difficult to know, however, as much as possible, we want to sell as close as possible to chemical-free, in the future.

Q9. Is there any standards for organic agriculture in Tochigi as there is in Hyogo?

No. However there are guidelines produced by MAFF in Tokyo (others expressed surprise at this), they were not even sure if there were any in Tokyo. They said it was very confusing and a mess. (One lady thinks that if she eats something, she can tell if it is organic or reduced etc. or not!)

Q10. How do you trust the farmers?

Meeting farmers at producer co-operation meetings, by speaking with farmer, viewing their farms, writing contract etc. So of course don't need a label.

Q11. What image do you have of organic produce

I want to think they are safe
Taste good
Funny shapes, but that is okay, the vegetables the club sells are mostly strange shapes

Q12. Is the difference between organic, chemical-free, and

-

Q13. If you had the choice of buying an organic, chemical-free, or reduced chemical carrot, which would you choose?

-

Q14. What are the barriers to you buying more organic food than now?

-

Q15. Do you buy many frozen vegetables/fruits?

They don't buy can food at all. Sometimes buy frozen. But young working mothers would buy frozen often.

Q16. Do you buy many imported frozen vegetables/fruits?

-

Q17. Do you buy many fresh imported vegetables/fruits?

We import bananas, organic soyasauce, soybeans, (which is presently 98% imported) etc. but basically we are looking at Japan-made where possible.

Q18. Do you trust the labels on organic produce grown in Japan?

-

Q19. Do you trust the labels on organic produce imported from overseas?

Depends on the shop in which it is sold. Generally we don't really trust what is sold in the normal shops, but To an extent we trust the imported organic food that Seikatsu club imports. Depends on who checked it, on how much trust the labels have in the home country..

Q20. What is your image of NZ?

Far away, few people, many sheep, beautiful, (can't hear)
Want to go. New Zealand has a very good image amongst Japanese people. Nature, very good tourist places, mountainous so not much wide open spaces as in US or Australia, so its harder to grow organic food..

Q21. Do you trust the labels on the organic produce imported from NZ?

We have no idea about New Zealand. We have to be shown what standards are used in New Zealand, an explanation, before we can trust what we buy. If the labels and standards are set out in an easy to understand way, its okay, but because we know nothing, we don't know if we can trust it or not.

Q22. What does healthy mean?

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Q23. What does safe to eat mean?

-

Q24. A kiwifruit is normally grown using chemical fertilisers and pesticides. If a kiwifruit grown this way had no chemicals at all remaining on or in it, would you buy it?

-

Q25. Would you pay a higher price for it than you would for a normal kiwifruit?

-

Q26. Would you pay as much for it as organic kiwifruits?

If we could see how they are grown, if knew who grew them, and what chemicals were used, maybe would trust. how can we trust something like this that was grown in such a far away place.

Q27. Do you think that the popularity for organic food will continue in the future?

-

Q28. Do you think that you will buy more organic food in the future than you do now.

-

Q29. What do you think of genetically engineered soybeans?

Bad. Don't want to eat them.

Q30. Is the food you sell here more expensive than normal shop food?

Yes a little, but then the prices are fixed for the year, and so do not change, so overall not too bad. About the same as normal shops but without the sales.

They also recycle many things like glass bottles, paper, egg trays...

With our ordering system, we make everyone order parts of the pig and cow equally, they can't just always chose to best parts, this avoids wastage.

Today's meeting is to sort out all the individual orders, and to fill out the group order forms.

The leaders here (about 20 altogether) are all volunteers, and are very enthusiastic about what they do. Many young mothers.

Interview 11 : Tochigi Coop

Background Information

The Tochigi Co-operative has 134,000 members, and its headquarters is in Utsunomiya. There are 19 Co-operative shops of various sizes in Tochigi prefecture, and the Co-operative is independent from other coops in Japan.

We deliver to han groups, of which there are 1700 in Nishinasuno, and 10,000 in Tochigi Prefecture, in total. (There are 5-6 people in each han group).

We deliver once a week, and each week an order form is filled in from the catalogue, for the following week. We all sorts of foods, and clothes etc. (See copy of catalogue).

Q1. Why do people join?

Co-operative food is safer than conventional food, as they use low-chemical, additive-free food mostly, or sometimes chemical-free. That depends on the food, mostly low or reduced chemical, and some organic and chemical-free food (but the shops don't have much of this). They have a list of what additives and chemicals they can and can not use. The list is longer and stricter for home deliveries than for what sells in the shops.

Food is bought by the co-operative directly from farmer and sold to the consumers. The co-operative visits, talk to farmers, makes a contract; it is a trust relationship.

We also import frozen vegetables, and canned food (this does not sell well). 10-20% of food we sell is imported. Also organic soybeans, and some reduced-chemical, and chemical-free fruit - but not organic.

The fee to join the co-operative is ¥5000, and there is no monthly fee. This money is returned when a person leaves the coop.

The future for the Tochigi Co-operative: we will maybe sell up to 20% organic food in the future but no more. 2-3 coops in Japan have up to 50% already, but that is rare. Tochigi co-operative also tries hard to not to let any post harvest sprays in when importing food.

We try to support Japanese agriculture, but this is hard. We think that imports will increase in the future.

Q2. Are the prices set?

No, they change through the year. In general though, prices are cheaper, depending on the good.

Q3. How is your organic produce labelled?

In the shops, the bags are not labelled, but there above food there is price and explanation and label.

In the catalogue, for the teikei han groups, if something is organic etc. it is labelled in the advertisement as such.

Q. What is the consumer movement like in Japan?

Less power than in the past. Tochigi coop not really, only a small one. Tokyo and Kobe have more power maybe. Nothing is being done about the genetic engineering.

Interview 12 : Japan Organic Agricultural Association (JOAA) members

Q1. How many members does JOAA have?

Fifty four people. In this group in Hyogo, although there are many more groups around Japan, we don't know how many members nation wide.
But there are many groups like ours in Hyogo, only our small group is 54 people.

Q2. How much does it cost to become a member?

To join is Y1000. Every month we pay Y400.

Q3. Why do people join?

Because we want to eat organic vegetables. We want to eat safe food. We don't know if the organic food in the supermarkets is really organic or not. But in our group, we know the face of the farmer who grew the vegetables, and we know how they grew them. We can trust that what we eat is good.

Q4. What does this group do every week?

The 54 people are split into two groups, and each group gets vegetables once a week. One group on Monday, one on Friday. So the farmers are also split into two groups.

Q5. Does this group do anything else?

There is a meeting twice a month. Just for the leadership, which is 7-8 people. (Kaneko san is the top leader).

This group eats only organic food, not chemical-free.

Q6. How many farmers supply group with produce?

Four farmers mostly, but we get our fruit etc. from elsewhere.

Q7. Do you get anything other than fruit and vegetables?

Yes, things like soyasauce.

(How do you choose, or trust the farmers you buy from?)

We first meet them, talk to them, look at the farm.

Q8. Do you often go to meet them?

We sometimes go to help out, with weeding and harvest. We can easily trust them, with this system.

(Do these four farmers only sell to this group?)

The new farmers do, but the older, more established farmers sell to other groups also.

(So they don't sell to coop or supermarkets?)

No.

Q9. Is the price much higher than conventional food?

Well, the prices at the supermarkets are always changing, depending on the supply. However, in our case, the price is decided at the start of the year, and does not change. So the price does not increase when supply is low, or decrease when supply is high. But if we have to say one way or the other, our way is a little more expensive. Of course the costs of growing organic are higher, as more labour is required.

Q10. How much of the fruit and vegetables that you eat are organic?

We only eat the fruit that is in season at the time. And organic eggs. The meat we buy at the supermarket, sometimes there is organic meat, but not very often. Vegetables not 100%, because they are not always in season, so maybe only 80%. Because fruit is harder to grow organically, we don't think that there is any totally organic fruit. As for organic milk, that is another group, this group is only produce. (They may be in that other group also). Organic milk is quite uncommon though, and is expensive.

Q11. Why do you eat organic food?

Safety, as allergies may develop because of chemical use. Organic vegetables are good for children.

Q12. What image do you have of organic produce

Safe

Tastes good

We don't care about how they look.

Q13. Is the difference between organic, chemical-free, and reduced chemicals very big?

-

Q14. If you had the choice of buying an organic, chemical-free, or reduced chemical carrot, which would you choose?

Q15. What are the barriers to you buying more organic food than now?

-

Q16. Do you buy many frozen vegetables/fruits?

We have done so. Only buy them sometimes. When I can't go shopping the next day, and want vegetables for the next day.

Q17. Do you buy many imported frozen vegetables/fruits?

We haven't seen them.

Q18. Do you buy many fresh imported vegetables/fruits?

Yes, for example, pumpkin from NZ.

Q19. Do you trust the labels on organic produce grown in Japan?

-

Q20. Do you trust the labels on organic produce imported from overseas?

(Does it depend on the country?)

We don't know. We can't trust with total certainty. And it makes no difference if it is approved by the foreign government.

Q21. What is your image of NZ?

Beautiful

Q22. Do you trust the labels on the organic produce imported from NZ?

Don't know.

Q23. What does healthy mean?

We don't like chemicals to come into our bodies, so organic is the closest to nature. More than it is good for our bodies, is that we don't want to eat something that is bad for us.

Q24. What does safe to eat mean?

Organic food doesn't mean that our bodies will become good, it just means we are not eating anything bad.

Q25. A kiwifruit is normally grown using chemical fertilisers and pesticides. If a kiwifruit grown this way had no chemicals at all remaining on or in it, would you buy it?

We think that there will be some chemicals remaining, and that it is not natural. We would not buy it. I do buy NZ kiwifruit though, (conventional).

Q26. Would you pay a higher price for it than you would for a normal kiwifruit?

-

Q27. Would you pay as much for it as organic kiwifruits?

-

15. What of the future?

It (organics) will increase a little, but because there is not much profit in organic farming, there is a limit to how much it will grow. It is still very difficult to grow. Genetically engineered organically grown food may increase, but they do not think that this is very good at all. It's scary, as now in Japan they can sell without any labelling saying what they are.

Interview 13 : Sapporo Co-operative

Q1. What image do you have of organic produce?

Safe, healthy, expensive, good for the environment

Q2. Do you think that the difference between organic, chemical-free, and reduced-chemical very big?

I think that organic produce not only has the image of being grown with reduced, or no chemicals, but also that it tastes better.

Organic food has an image to the average consumer of having been grown without chemicals. But for chemical-free or reduced-chemical food, the image is that not many chemical have been used.

I think that organic is equivalent to chemical-free (and not reduced-chemical), in that organic methods are good for the soil and soil life, and the plants that grow in that ground are good for the soil, insects, and soil organisms.

If it is chemical-free, or reduced-chemical, there is still the issue of chemical fertilisers versus organic fertilisers.

To make a very good soil, grow plants so as not to deplete or harm the soil insect populations, therefore it is a good thing not to use agricultural chemicals.

Organic production uses a variety of composts etc.

If we do not use chemicals, then there is not enough food to feed the world's population.

If everyone went organic, then there would be an income problem, as organic food is expensive, and there would not be enough money to buy it.

I wonder if it is really chemical-free or not, knowing how hard it is to grow vegetables in my own garden without using chemicals.

I know a farmer who grows chemical-free apples, and the quantity produced is small, and the apples are very small and blemished. And they sell for 5-6 times the price of normal apples. So from an economic base, even if they think that it is good, it is hard for the average consumer to buy them.

It is very hard for an organic producer to be financially sustainable.

Q3. If you had the choice of buying an organic, chemical-free, or reduced chemical carrot, which would you choose?

That depends on the price. If it was the same price as a conventional carrot, all would buy it. If price was 20% higher, 90% of interviewees would buy it. If it was 40% higher, nobody would buy it.

Q4. What are the barriers to you buying more organic food than now?

High price premiums.

Availability is good, but there is not a wide range of varieties.

It must be fresh. If imported, it will not be as fresh as locally produced, no matter what.

Shape and size are not important.

It depends on the vegetable, as to whether dirt is an issue. If buying vegetables in a shop, they will buy the clean ones, but if they come directly to their houses from the producer, then they do not mind about the dirt. They will not buy carrots and sweet potato etc. with dirt on them, because they will (supposedly) go rotten more quickly that way. Shops have a clean image, so they will not want dirty produce tainting that image.

If the produce is misshapen, irregular in size, or is dirty, many people will not buy them, only a small segment of society.

Q5. Do you buy (many) frozen vegetables/fruits?

No we don't ... but we do buy frozen carrots, potatoes, pumpkin, corn, peas, green beans sometimes.

Q6. Do you buy (many) imported frozen vegetables/fruits?

Yes. But of course Japanese food is preferable to imported food.

But I think that from now on, the situation with frozen vegetables will change, with the time available for cooking being less than in the past, and with there being a better understanding of how to cook frozen foods well.

I often feel torn between imported food which is cheaper, and Japanese food which is expensive, I feel sorry for the Japanese food..

Q7. Do you buy many fresh imported vegetables/fruits?

In the off-season, of course... e.g. onions, New Zealand pumpkin.

Q8. Do you trust the labels on organic produce grown in Japan?

Yes, the ones that we deal with, as we deal directly with these farmers, being co-operative representatives ourselves. They have to adhere to the co-operative standards. We are very dubious of organic food if we do not know the producers.

Q9. Do you trust the labels on organic produce imported from overseas?

No

(does it depend on the country?)

Yes

(which countries do you not trust?)

We do not know...

America, I have heard that if a food is labelled organic in America, and this is a lie, then a fine is imposed.. so I trust America.

Q10. What is your image of NZ?

Very few people

I like New Zealand beef and lamb

(Do farmers still have to use chemicals in New Zealand, where there is so much green open space?)

Yes

(I guess they have to for economic purposes, to get the produce ready fast etc.)

Yes

Aren't New Zealand people worried about using chemicals, and don't they want to go organic?

(Not really.)

If New Zealand people are not even concerned, can I trust the organic food that they export> I think that most New Zealand people should eat and grow organic food first for themselves, and then say how good it is, and then export it.

There is no organic meat or mild in Japan. Is there in New Zealand?

Yes. (They are surprised... 'how can an animal farm be organic...).

There is even organic shampoo in Japan.!

Q11. Do you trust the labels on the organic produce imported from NZ?

From today I trust it!

There is the problem of produce being sprayed when it comes into Japan, this worries me, so I do not trust it.

I want to trust it, because New Zealand as a natural image.

Q12. What does healthy mean?

They are worried about eating chemicals - this is bad - organic food has the image of there being no chemicals to eat.

Q13. What does safe to eat mean?

-

Q14. A kiwifruit is normally grown using chemical fertilisers and pesticides. If a kiwifruit grown this way had no chemicals at all remaining on or in it, would you buy it?

Yes

Q15. Would you pay a higher price for it than you would for a normal kiwifruit?

If 10% higher, only 6 (out of 13) would buy it

If 20% higher, no one would buy it

Q16. Would you pay as much for it as organic kiwifruits?

No

We do not need fruit. Those that like it eat it. If there were no kiwifruit, then that would be okay. Therefore, if fruit is expensive, consumers will not buy it. On the other hand, we need vegetables, and we want to feed our children vegetables that are safe, and highly nutritious, so we will choose to buy organic vegetables.

Q17. Do you think that the popularity for organic food will continue in the future?

-

Q18. Do you think that you will buy more organic food in the future than you do now.

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Interview Transcripts : Industry

Interview 14 : Jusco (supermarket)

In a very noisy cafeteria, so very hard to hear on the dictaphone. I have therefore missed out on some information.

Q1. How many Jusco supermarkets are there nation-wide?

About 370.

Q2. What percentage market share do you have?

That is a very hard thing to answer, but I can say that we are number three in the country, after Dai-ei, and Izoyako.

Q3. What is your stance on organic food?

As you know there are different types of standards for organic etc. in Japan, organic being the strictest. But they aren't so strict in that we just trust somebody, if they say that this is organic, then we must simply choose whether or not to believe them.

The first bonus of organic food is that it is good for the environment. Secondly it is nutritious, and even if a funny shape, still tastes good. Thirdly, the most important thing at present, is food safety, and this is perhaps foremost in a consumers mind as they buy their food now. ...

Q4. What is the consumers' position on price for organics?

Jusco's organic food is about 10-20% more expensive than conventional.

Q5. Does organic sell well?

About the same as conventional food.

This year organic sales are about 70,000,000 yen (\$823,529). Next year, the future? Within three years, we hope to get organic/chemical-free sales of about 350,000,000 yen (\$4,117,647). We predict and hope for this amount of growth.

Q6. If it grows as you say, what percentage of all food will it be?

For fresh produce, it will be about 25%. Now it is about 5%. (Includes reduced-chemical, chemical-free, and, organic).

Q7. Is what you sell most of chemical-free?

Well, no, organic food has become more common.

Q8. Do you get your organic food from Japan?

Yes, but we also import from overseas. However, as you know, fresh organic imports are often sprayed upon arriving in Japan, and so we can no longer really say that these are organic.

Q9. What about frozen organic vegetables?

We have started, but it still has a very small share.

Q10. How about dairy food and meat?

We import organic pork and chicken, and beef, Japan and overseas. No dairy food yet.

Q11. How much of your food is imported?

About 20%.

(What about the future for this?)

I don't think that the rate will rise that much in the future.

(It is a worry that many consumers now have is that imports will increase and self-sufficiency will decrease. What does Jusco think?)

(Hard to understand his answer. He thinks more than this being a problem, it is more a business decision to go into farming or not... however he doesn't think that the rate of imports will increase much in the future, and neither will it decrease.)

Three points about importing food: we can get food that we can't or don't produce in Japan, i.e. banana, out of season food,

Q12. What countries do you import from?

USA, Australia, and China, are the biggest three.

Q13. What countries do you import organic food from?

USA. Although we are looking at Europe too.

Q14. In the future would it be good to see that there is only one definition, organic?

Yes, although that is only an ideal. I don't think that it will ever completely come to that.

Q15. What about government backing?

If there was governmental backing, it would be easier to get it into the country.

Q16. How do you market organic food?

We have a chemical-free, and an organic label, an explanation, a photo, the address of the maker.

Q17. How do you choose your producers?

We have a check-list of guidelines (based on MAFF's) that we go through,

Q18. What are the main barriers that prevent consumers from buying more organics than they do now?

The MAFF guidelines are unclear, and they should be clearer and more detailed. Also the price is quite expensive. To bring the price down, we need more variety and volume of organic food.

Q19. Why does Jusco want to get more into selling organic food?

For environmental reasons, and because the consumers say that they want it.

Q20. Who has the most power, out of the supermarkets the manufacturers, and the consumers?

The consumer.

Q21. How are they strong, in what way do they exert their power?

If they don't like something it won't sell.....couldn't understand.

Q22. Nation-wide, what do you think is the potential market share for organics?

I don't know.

Q23. In the future, would you like to import every type of organic food?

There is no organic food that we would not like to import, if there was not that problem of spraying upon entry to Japan.

Q24. Are there any countries that you can't trust?

No. But more than countries, its the individual farmer, and the land and facilities that they use.

Interview 15 : Takanashi Milk Products (food importer)

Q1. What sort of company is this?

Dairy milk products manufacturer. We do milk, yoghurt, jelly (dessert), cream, ice cream, juice, organic juice, butter -from 1 pound to 25 kilo blocks, not much cheese though, see pamphlet.

We manufacture for retail/general consumers (to supermarkets, convenience stores, and catalogue sales-the coop is just one of these), as well as wholesale for restaurant/hotel use.

Although the latter is only about 10% of the consumer/retail sales, in terms of volume.

We import a lot of our cheese from Australia, cream cheese, camembert, mild, etc., although not cheeses that have a strong smell, such as blue vein - Japanese people don't like a strong cheese smell. Butter from France.

Our company has most of the Kanto area. We are number one here. About an 80% market share.

We have about 100 types of ice cream. In Japan there are three categories; ice cream, ice milk, (high fat, medium fat, low fat). The end consumer is not aware of these differences. We import ice cream from NZ, and the US.

Q2. How do you fit in the distribution chain?

We do direct sales to the supermarket. There are two of us, Takanashi milk products (which is us here now, only manufacturing), and Takanashi milk product sales. So we go through Takanashi milk product sales direct to the supermarket.

Q3. This is unusual in Japan isn't it, to go direct?

Yes. Because our company started long ago, and was one of the original ones, we would just supply the next door restaurants directly. That was common long ago, for companies who just supplied the local area, to do it directly. A nationwide company would be much more likely to use the channels.

Q4. If a company was to start up today, to service the local area, would it use direct channels?

It could do either. Direct or not. It depends on the company policy. For us, by doing it directly, the consumer response time (information return/feedback) is relatively much shorter, and by being able to discuss issues directly with the

consumer, our development and planning time is much more speedy. And it is less likely to get changed along the process like in Chinese whispers.

On the other hand, to go nation-wide, it would be very difficult to maintain a direct sales system.

Q5. What are your future plans? Do they include going nation-wide?

Yes. Bit by bit.

Q6. When did this company get established?

1946. It started with a farmer, which eventually turned into a company.

Q7. Who do you buy your products from?

We have our own supplying factories, which are fed into by local farms, around Hokkaido and Honshu (see pamphlet)

Q8. Do you sell organic food?

No organic milk. We want to, and we want to produce our own standard, like New Zealand's Biogro, so that we can..

Q9. Do you think that you will in the future?

Maybe, its hard in Japan, as there is limited land, and the climate is difficult.

Q10. Do you want to import organic milk?

That is very difficult with fresh milk. Freshness is the most important thing to consumers, so if possible, to keep it within Japan, locally produced.

(What about organic cheese or butter?)

Not from Japan, but from US yes. Also organic ice cream from NZ.

In the last year or so, the interest in organics, chemical-free, reduced-chemical etc., has really increased in Japan.

Q11. Why is this?

Because lately there has been a lot on the mass communication systems about the negative affects of things (e.g. chemicals) on the environment in Japan. However, although everyone has interest in it, they are not yet buying it. Its hard to sell. This is because organic food is expensive.

Q12. Do you think that the price will come down in the future?

Yes, at the moment the organic market is small, as are the organic farms in Japan. If we could get the organic market to increase, then the price would fall. Our focus at present is this, to increase the supply of organic. Not just pure organic foods, but also those which have a percentage of organic ingredients are fine.

Q13. How do you market your organic food?

By providing explanations of what it is on the packaging, on the labelling above the product, and by doing in store promotions. A reason why we don't do mass communication, is that we do not have enough supply to satisfy the resultant demand. It is a niche market. But we want it to get bigger. Maybe 10% would be optimal. Now its not even 1%. The present system in Japan is very unclear and hard to understand. As much as possible, we want to see it go close to organic as poss. Consumers can't remember so many different names and definitions.

Q14. Do you sell chemical-free or reduced-chemical food?

No, only organic, as we get it from overseas.

Q15. What is your position on importing food, in relation to the low self-sufficiency rate in Japan?

We import organic food because there is no such system that we trust in Japan. If Japan got its act together and made clear good standards, we would probably buy from Japan rather than import.

Q16. What about non-organic imports?

We support Japanese farmers where we can, but they can't always provide us what we want when we want, so we import to supplement this.

Q17. Do you think that government backing of organic produce labelling is best?

(I think he said yes). Certainly he said that it is best to have a nation-wide standard, and not a state by state one as in the US. Also a problem is that each respective country is a little different in their standards, and he would like to see one world-wide standard under IFOAM. He thinks that the average consumer would also be happier with government backing from a country.

Q18. How do find China?

Quite a worry, in that I can't really trust it.

Q19. How much is your mark-up?

On our juice products, about 20-30% higher. But it depends, because orange juice is about twice the price.

Q20. Does the organic food you sell now sell well?

Not really. Our organic food really is only available at the high class supermarkets and department stores. I think that it sells best at the restaurant markets, and this is the market that we should concentrate on first, before the consumers.

Q21. Perhaps chemical-free vegetables sell better?

Yes, the price is only 10-20% higher, and sells better I think.

Q22. What are the barriers to consumers buying more organic food than they do now?

Price is the biggest one.

Q23. Who holds the power in Japan, the supermarkets, the manufacturers, or the consumers?

The supermarket. It has very strong buying power.

Q24. Additional comments?

Organic honey is also something they are very interested in.

He thinks that in about 2-3 years this market will REALLY take off.

Interview 16 : Nissho Iwai (multinational conglomerate)

Background Information

A huge multinational trading company, with many many business activities and fields of interest. Ranges from Europe, to US, to Asia. Headquarters here in Tokyo, with 150 offices around the world. Machinery, oil , All the food they deal with is imports. Raw and processed. (See brochure). Mostly from US. They have recently bought out Growers in NZ. 1996.

Nissho Iwai and Nichirei (biggest frozen vegetable company in Japan), together hold 80% of the market share for organic frozen vegetable in Japan. Nissho Iwai has about 40% by itself. Watties Frozen Foods is separate, it goes through the Mitsubishi Group.

We are trying to find more organic suppliers in NZ, because, according to our study, NZ is a big potential supplier for organics to Japan.

Q1. What do you think of the potential for the organic market in Japan?

I think it is very promising. Maybe up to 30-40% of vegetable may be organic in future.

Presently Japan imports around 200,000 metric tonnes of frozen vegetable from around the world. Of this, Nissho Iwai imports around 4,000 tonnes.

Q2. Who do you sell to?

Mainly the retail markets. Supermarkets etc.

Q3. Who holds the power in Japan, the supermarkets, the manufacturers, or the consumers? (Question was unanswered).

As you know, the supermarkets are very interested in organics. For the last 4-5 years, Japan has been in a recession, and so consumers want to buy cheap goods if possible. So supermarkets have had to reduce the selling price of their goods. But they don't want to do this, so they are looking for a new market, like organics, so that they can increase their selling price. Every retail store wants to sell organics. But now, the supply is very limited.

(Is that the biggest problem that you see now?)

Yes. So if NZ can increase its supply, and have that supply be more reliable, then NZ would be able to get more share in the Japanese market.

Q4. Do you trust the standard/quality of NZ organic produce?

Yes.

Q5. Would it help to have government backing?

Well, maybe Biogro is enough. But although Biogro is a member of IFOAM, it is not an accredited member.

Q6. Is there a good future for dairy foods in Japan?

Yes I think so.

Q7. Is there a future for organic meat?

Yes, we have started to import organic chicken and beef, which is used for the baby food industry.

Nissho Iwai is probably going to change soybean suppliers, from US, to Australia, because they don't like the genetically engineered soybeans.

Q8. What is the average mark-up for organic food?

Of course it depends on the food, e.g. soybeans is twice as expensive, vegetable about 50%,

Q9. Does the G have any importing standards for organic food?

No, but it probably will in the future. It can't now, because there are so many opinions on the matter. Maybe there will be a single organic standard in Japan, in about 10 years?!

Nissho Iwai is involved in setting up a nation-wide private organic certification organisation. (Next year will start it).

Q10. Does organic have a high turnover rate?

I think maybe, at least higher than conventional products.

Q11. What are the main barriers to consumers buying more organic food than they do now?

Price

Poor quality reliability.

People will be willing to pay a maximum of 30% higher than conventional food.

Q12. Do you have any additional comments?

I think that the government people in NZ, should promote healthy, safe, clean, organic etc., to the Japanese market. You should produce and supply what consumers in Japan want. Advertise a unique point of NZ, as distance is a disadvantage.

Interview 17 : Taneyama ga Hara Co., Ltd. (organic food importer)

Q1. What countries do you import from?

N.Z (Heinz Watties, Canned corn)
 US of course, 50-60% of our products are from the US.
 Italy, Pasta
 Germany, burio, soup concentrate
 Australia, potato chips

Q2. Is It an American based company?

No, this is a Japanese company.
 So we import and distribute, that's all.

Q3. So, who do you distribute to?

Well there are other wholesalers, and to high end retail. High-end grocery stores, and department stores.

Q4. How long have you been importing organic food - Is it always been organic food imported?

Almost everything we import is organic. or made with certified ingredients, and we've also been importing seriously for about six years. Before that, about four years was just getting started. Really it's just been the last couple of years that it's just taken off.

Okay, so is that because there has been a change of market, or because....

Well I think its because the market has gotten so big. And a lot of the retailers here mimic, or copy, or follow what the US does, looking for a new market, so this is a new market.

(So it's the supermarkets in Japan that are...)

I think that what we are seeing in Japan, is driven by the retailers. Not by the consumers. Consumers follow a different... the organic in Japan is basically a community supported by agriculture, where they either buy direct, or they buy through a distributor. By mail order, they order, and it is delivered to their house once a week, or regularly, once a month or something. So that way you have some connection with the farmer, whereas if you go to a shore you don't have that.

The majority of the market is soybeans. The whole organic here is Tofu, soyasauce, miso, nutto. The big players are Tofu, miso and natto.

Q5. Do these companies import much of that or is it locally?

Totally imported. The certified organic soybeans are imported, either from the US or China.

Q6. Have they started importing the genetically engineered soybeans to Japan yet?

Yes

Q7. What's the situation with labelling these now, what's happening, do you know?

In fact I do, nothings happening. As far as the government goes, they really have no choice, or they think they have no choice. They perceive the situation as the US is the largest supplier of soybeans, and since the US agricultural policy is not to separate the two. Some of the big coops also but a lot of the soybeans, so they couldn't say, hey you can't do this because they couldn't have anything to sell. So, that's where it is, so now people are regrouping, and some players are seeing it as a market opportunity, to be able to market non-genetically engineered soybeans.

The government policy is, it's okay.

Q8. So you don't get very much influence from the actual customers about anything, it's all from the supermarkets?

Oh that's not completely true, I was saying that in general, why our market is increasing, and I was just saying why our retailers are looking for a new market, and it's time for organic. We sell to a lot of small mum and pop stores.

(And the consumer Co-operatives?)

Co-operatives have their own import section, they buy it themselves. When your talking about co-operatives your talking about big, big retailers here.

Q9. What about when your importing organic foods, what does the government look for, i.e. what are the standard for imported organic food?

There are none, so regarding organic there are no regulations. Just the standard importing regulations.

Q10. Do you see that changing in the future? Becoming more strict?

Once they get that organic certification , what their putting together, in line, then I think that would change.

Q11. Is there a reason why you are not in fresh produce at all? Is it more difficult?

Well yeah, this company started as some ones hobby, and somebody liked organic, and the president , his idea was that Japan needed organic certification, at some point of time, and so he wanted to introduce high quality, certified

processed foods, to show people that this is what, you can do this. Here's something to strive for. And so that's why we started this. We could do fresh foods but you'd have to pull it in by air., and deliver it to the distributors, so it really doesn't pay, unless you're just doing that, you'd have to own your own you own truck etc.

But that's another big part of the market, mixed frozen vegetables

Q12. Are there many other importers of organic food in Japan? Like this? Is there much competition...?

Up until recently, there has only been a few, two or three. One is WW traders, one is Alushon(?) and we work with Alushon pretty closely, we carry some of their products, they carry some of ours. That's Tokyo. As far as Osaka goes, I don't know Osaka, Kobe,...

Q13. Do you just work in Tokyo?

Until recently, in January, we got into (Ameijis?) distribution centre, so now we're nation-wide through that.

Q14. Do you have to go through all the normal distribution channels, or can you by-pass them like a lot of the organic industry does?

You know the going through the channels, what it means is that you have a retailer, who has many accounts, maybe 4-500. One of the ways to keep that down is to get other small people like us to go through a distributor. But since we had organic from the beginning, a lot of distributors didn't want to carry organics, so in the beginning, it was really difficult for us to get into those stores what you do is you go to the store, you introduce your product, They introduce you to the distributor, and you sell to the distributor. But if it's not a product that moves very fast, like some big name product, then they don't sell anything. But if it's moving you get a lot of pull through from that. So now we're getting a lot of pull-through. But at the time we weren't. So we ended up getting a lot of accounts, directly with the retailers. So for a company this size, we have a lot of accounts. So the short answer is yes, we go direct.

Q15. How big is this company? How many products do you sell?

We import 73 types of products. We sell 110. In that we buy from the other importers/distributors.

Q16. So how many people work here?

There are two at the distribution centre and there are five here.

(And the distribution centre is somewhere else?)

It's North, about 200km.

Q17. When you import the products, does the extra costs of importing bring the price of products up importing bring the price of products up higher than competing Japanese products?

Well there are no competing products. For two reasons, one is that there are no organic standards, so there are no organic processed foods in Japan. Second is these are all imported so they have a different taste, and are really a different product category. You don't find any canned soups in Japan. You don't also find some of these other products, some of the dressings, or some of the juices, the pickles, the corn chips. So in that sense, there isn't any competition. Yet.

Q18. Is it increasing, the competition?

Yes, so the next move is to have organic foods produced by foreign ingredients. The first is obviously soyasauce, natto. We will just keep doing this business as we are now, and focus on the smaller customers.

Q19. How do you market these things?

Well we market the same way most other distributors do, we have in store promotions, give a sale price to the buyer, or we have store tastings, we have a sales person with the tastings. And the trade shows.

Q20. Do you have photos above the product?

No we don't do that because there would be 100 farmers behind one can of tomatoes.

Organics is just like any other food business, it's just that the quality of the ingredients is higher.

Q21. Is the government planning to do anything for the certification problem at present, is there going to be any change?

Yeah, they are working on it, at the moment they have guidelines, they have five categories for labelling produce. One is organic, the second is chemical-free,?? and low spray, but low spray depends on where it is from. Because prescribed levels in one place are different to spray levels to another place. It's quite confusing to a consumer. These are labelling guide lines, they are not production standards. They don't have the farm production standard, which I take it, their working on.. And then, obviously, they need livestock standards, and processed food standards, but I don't think they've thought that far through.

Q22. So what do you think will happen in the future, do you think organics will increase?

Oh yeah, what's happening right now is kind of a novelty, you have a lot of interest from the retailers, and importers, the food manufactures, they want to

jump up and get into it, because the US market they say, has been growing 20% pa, they've heard that enough to think that maybe that will happen to Japan. So there's an idea that if we push these products they will sell, But it remains to be seen if they will sell. So it's just kind of happening now, as we speak. So, this part of it, I don't think will continue very long. Maybe a year, maybe less. Then what will happen is that the local organic will benefit from that, for a certain time, and like what's happening in other countries, they have boom and bust based on food scares. Like we've seen in Osaka, after the food poisoning scare, people have started to eat more nutto in the Kansai area, traditionally they don't eat nutto there. So that was one thing, that pushed up sales of organic produce, now we have the genetically modified soybeans, and that will make people more aware of labelling, and so now we'll get better labelling etc. But I think the overall trend will be with the local farmers and the direct delivery system, and that the importers will start importing more from Australia, New Zealand, China, and Vietnam.

The idea of organic here doesn't have anything to do with production, its more safety.

To make the claim of organic, really just means that there won't be any residues, or that its completely safe, that just fantasy really, there's residues everywhere. Whereas customers get confused, and think that because its organic, there won't be any residues.

Q23. What are the biggest problems that you face?

Number one, there aren't many imported products here, that don't already have offices in Japan, two, the low understanding of organics, and all the different certification standards.

Q24. Do you think that once the government gets sorted out here, that it will require the backing of the foreign countries' government, for its organic exports?

IFOAM or the government, well I don't know. In America there is a national board that is developing national standards now...

Q25. Do you know much about the Japanese consumer movement? What sort of power does the consumer have?

Well, I think they have a lot of power with the manufacturers. Manufactures are afraid of consumers, they don't want any complaints, they don't want their products or their companies to be seen in a bad light.

Q26. So there are channels for the consumer to complain...

Well they complain about our stuff all the time. There's something wrong with the food, the lid, something here, there... Sometimes they just don't know what the product is. Sometimes there is actually something wrong...

Interview 18 : Kiwifruit Marketing Board (Tokyo)

Background Information

Last season we had about 400,000 trays of organic. For organic your biggest size is 25 fruit per tray (a 25 count). And then you've got your 27, 30, 33, 36, and 39 counts. With your regular you've also got 18 and 22, which are pretty big. Usually your most common sizes are 36 and 39s. Smaller sizes, which we don't bring into Japan, they go to other markets, but this year, because there is such a shortage of organics, we're also bringing 42s here. So this year we'll do about 500,000 trays. But a fairly high proportion of that is turning into 42s. And the price for 42s is lower than for the larger fruits. And we generally don't like to sell them, cause if you're selling 42s, you lower the value of the bigger sizes, because people buy the smaller cheaper fruits. So we don't sell regular 42s. If you sell your 42s, you can't sell your big sizes, you have to discount them. But this year everything is down in size.

About 80% of organic kiwifruit comes to Japan. 95% of kiwifruit that we sell in Japan is not organic. This year we'll do 500,000 trays of organic, and 10,000,000 trays of regular fruit, and 100,000 of jumbos, (22s). Last year we did 11,000,000 trays of regular, and 400,000 trays of organic. So organic is increasing every year. But this year, because our growing season was colder, we have smaller sizes, so we've really had to limit our customers. All our customers want it, and we just can't give it to them. We had to ration it down to big customers, that have a big chain.

In the long term (10-20 years) all kiwifruit will be organic.

Q1. Who are your customers?

Every major supermarket in Japan. And every wholesaler. You won't go into a supermarket in Japan, from July to November, and not see NZ kiwifruit. From May until January, you've got a very good chance of seeing it. May, June and early July it may be Chilean. From November, until about April, domestic fruit comes in. Chilean fruit sell at the same time as ours, but they only do 10% of what we do, this year only 1,100,000 trays. I don't know of them doing any organic.

Q2. Are you planning to do more organic in the future?

Yes, we're going to do a lot more, there's more going on-stream all the time. Ours (kiwifruit marketing board) must be the strictest system in the world for any fruit or vegetable for organic. Stuart Abbott set it up, and now its just snowballed and taken off, and the requirements to get in you need at least three years ... and we can guarantee at this end that there will be absolutely no residues. And that will cause the fruit to be much better. Japanese people are buying organic kiwifruit mostly for the wrong reasons, which are for better taste

and better shelf-life. The environmental factors don't really come into it. People would like to buy it, but they're not prepared to pay more for it. So if it was only environmental, I don't think we would sell it. But because it tastes better, and has a better shelf life, people are willing to pay a premium.

Q3. How much is the premium?

200 yen/tray. So if your average price for a regular tray is 1200yen, then an organic one is 1400yen.

Q4. How long has organic kiwifruit been coming to Japan?

Its really been increasing for about 3-4 years. And in little dribs for a lot longer than that. And every year its really increasing, big time.

What's your predictions for the next few years?

There'll be a 2,000,000 trays within the next 3 seasons. And as long as we don't get caught out for any reason, like get any residues from growers or anything, then it'll keep growing.

Q5. What is "kiwi green"?

From this year, *all* NZ kiwifruit is 'kiwi green' (this is chemical-free). There is no such thing as regular kiwifruit, and what kiwi green means, its the first in the world to do this for anything, and I know that ENZA and Dole are both looking at it, what it means, is that if you've got a block of fruit, and you find an insect in this area, you only spray in that area, and leave the rest alone. And you don't blanket spray. You only spray as needed. Minimum residue. Don't spray for the sake of it, but wait until it needs it. Its full time checking all the leaves all season for all the different types of insects (above the tolerance level), under microscope. Every week you check, and you spray as needed.

Labour increases a lot, spray decreases a lot, and the fruit is much healthier.

Q6. How do you market this?

We have what we call kiwi information, which we send out to all our customers, which is hundreds of them, the trade knows, through our marketing, our literature, that it is a very very healthy fruit. We are not going to teach the final consumer about kiwi-green, we teach them about the nutritional benefits of kiwifruit, through adverts, and the flyer etc. (I was given one), and its just filtering through from the trade. Its a very very long difficult process to educate the consumer about what it is. So you just implant the image of healthy, and it will slowly filter through. We do a big trade presentation annually, in the main centres in Japan, and we invite the press, the traders etc., and tell them what we're doing.

There's 10 people here, which is our national office, and one person in Kansai. But Dole Japan does all our sales. We are purely operations and marketing and promotion.

Q7. What do you see in terms of market trends for organic in general?

People are aware of organic, but at the moment it still seems to be a trendy word in Japan. It's a good thing to follow, and it's great to say "yes organic", but when it comes down to dollars versus dollars, my personal opinion is, that the majority of consumers won't buy it. There's always a leader group, that go out and buy it, but the general public, although the awareness seems to be there, and that's great, it's still something that happens to other people. And a lot of people disagree with me, but I personally think that it's still going through a trendy phase. It's going to increase. Without a doubt, in ten years, it's going to be pulled, I mean it's being pulled now, especially our product, it's going to be pulled more. We can't even supply those trendy outlets yet. You need 2,000,000 trays before we can even saturate that market, then we can move onto the wholesalers. Those that want them most are the expensive supermarkets, department stores, Co-op Kobe (they are really strong, we've had them out to NZ twice this year), those that want the best. Organic fruit is totally separate from normal kiwifruit, it's classed as a separate product.

Japan pays twice the money than any other market. It's a risk, converting to organic, three year transition, lose money in the process, but the returns are very big. There's always the risk of being kicked out of the market, if there is any residue ever found on the fruit, but I don't think that that will happen.

Q8. What about the fumigation of imported fruit at quarantine?

It's an issue we're trying to work through at the moment. This season all fruit is coming in on containers, only because last season, containers had a lower fumigation rate. This year's bad for no reason at all, 25% has been fumigated. There's nothing we can do about that, so we're looking at ways to change it in the future, so that we either put a label that says "organic when left NZ", or the ones that aren't fumigated, label them here, which is incredibly expensive. So we've got this season to work it out. Japan's the only country in the world that fumigates. So, they're not going to stop it in the short term, and it's a long slow Japanese process. So they're the two options. Organically grown in NZ is a waste, as between 75 and 95% will not be fumigated.

Q9. Is this fumigation likely to stop in the future?

Yes, one day, it's not just us, everyone puts a lot of pressure on them. It's very political. It's a non-tariff trade barrier. And it helps to keep the perception that Japanese food is best. The horrible chemicals that they put on overseas. It's just a way to increase our costs, decrease our shelf-life. It makes it a lot more

expensive. If it gets too high, we'll just talk to our embassy, and they'll ring the Plant Quarantine, and talk to them, and it will come down for a few weeks. Its a very very political thing.

That is our biggest negative about organic at the moment. Also, there's bound to be a few insects getting in, and if they see anything that moves, they nuke it, even though it may not even be on the list that says what you can spray or not.

Interview 19 : Professor Yasuda (Kobe University Department of Agricultural Economics)

Interview with Professor Yasuda, of Kobe University.

Q1. What percentage of Japanese agriculture is organic?

I do not know, you should ask MAFF when you go.

Q2. Which of organic, chemical free, and reduced chemical is the most common?

I do not know.

Q3. There are a number of different standards for organic aren't there, no one set nationwide standard?

Yes, except that for organic there are set standards, set by MAFF. Same as in NZ, can't use any chemicals for 3 years. But I don't think that there is chemical free or chemical reduced in NZ.

And mostly in the shops what we see is chemical free and reduced chemical. That's right. A few years ago I was on the MAFF committee as an advisor, at the time when they made these chemical-free and reduced-chemical standards, and I was very against it. I do not think they are very good standards at all.

Q4. So there are actual standards for all categories, put out by MAFF?

Yes. Reduced-chemical is to cut chemicals by half. But there is no 3 year limit. So the farmer can use a lot of chemicals at the seedling stage, and then the next day cut chemicals by half, and sell them as reduced-chemical. So I don't like this at all. Chemical-free is the same, farmer may use much chemicals at early stage, and then stop all use from the next day onwards, and sell as chemical-free. The consumers think it is safe, but they do not know how much chemicals were used in the early stages. Consumers do not know about this, awareness is low. I told MAFF that we do not need these other standards, only need organic, like in other western communities, but the other MAFF committee members did not agree. So in the world, Japan has a unique standard system.

Q5. Even so, I have noticed that many farmers just do what they want to anyway, and have agreed with their buyers.

That's right

Q6. Do you think that there will be a more strict, nation-wide standard in the future?

The MAFF standards as they are now, will probably not change, so to get a nation-wide standard like you suggest, will be very difficult. It is up to each respective area, prefecture, to make their own standards. In Hyogo Prefecture, we are making organic standards which measure up to international standards. Now in Hyogo Prefecture, there is only organic farming, not chemical-free or reduced-chemical. We are trying to educate consumers, so that they know this mark, and what it stands for.

Q7. Who make these standards?

The Hyogo Prefectural government, and I am on their advisory committee. Okayama Prefecture, Gifu Prefecture. Plus 3 others. This will increase.

Q8. Do the consumers know about this?

Not enough. We are doing it bit by bit.

(How are you doing this/telling them?)

We give pamphlets to consumer groups, I go to various groups and places and explain it, but it is not yet enough. There are 30,000 farmers in Japan growing organically. But this is not many, as there are 3,500,000 farmers in Japan. But I think that the number of organic farmers in the future will increase.

Q9. Does anyone from the Hyogo government go to inspect these organic farms?

Yes, myself and another person visits each organic farm in Hyogo about once a year. As well as someone who advises on techniques. So there is not much room to make mistakes, and therefore we can trust the produce. There are about 100 organic farmers in Hyogo prefecture.

Q10. Is there any subsidy from the government for farming organically?

No.

(What about in the future?)

Not direct subsidies, but .. there are a number of different means to subsidise farms.. e.g. the government will subsidise a little, the facilities needed to make compost, and for produce distribution centres.. vehicles.. machines.. the amount of subsidies has decreased in recent years, because of GATT, in the past farmers received direct subsidies.

Q11. What do you think about Japan's own food subsistency, and how this does not fit in with free trade and the theory of comparative advantage?

It is important that we have our own food to live off, but it is also important to trade in order to keep world peace. If all our food is imported, Japanese agriculture would not survive. Also, in the case of an earthquake, like in the Kobe earthquake, our farmers were immediately able to supply food to victims. Therefore producing our own food is a very important thing. We need a balance between this, and international trade - to keep world peace. I do not agree with the GATT ideas that there should only be the trade focus.

Q12. What is the Japanese government's position on organic food?

For a long time they were opposed to it. In 1990 they said that organic agriculture was important. So that is not even 10 years ago. The guidelines were produced in 1992. I was on the committee at that time. But still just a little.

Q13. What about the future, (in regards to the government)?

I think that MAFF will put more effort into organic farming.

Q14. What would more government effort mean to farmers?

A little more subsidies.

I have been in the organic agricultural movement since 1971. In Hyogo Prefecture there are 120,000 farmers in total, with only 250 of those being organic. 26 years ago, there were none. Maybe only about 10% of farmers would ever become organic.

(Why is this?)

One, because most farmers are also 'salary men', i.e. they are Sunday farmers. Organic farming must be done enthusiastically and wholeheartedly, or it will fail.

Q15. What do you think about the possibility of using chemicals to grow kiwifruit, that are residue-free at the point of sale?

It would be safe to eat, that is fine, but there is more to organic food than that, it is also about environmental safety.

But I think that it would be extremely difficult for all agriculture to go organic.

I think that organic imports will continue to increase. Especially the demand from restaurants, the number of restaurants using organic imports has increased recently. Restaurants do not trust the Japanese organic system, so like to use

imports, the consumers however, can see the farmer, and buy directly from him, so prefer not to buy imports.

Japan has a total self sufficiency rate of only 40%. I think that food imports will continue to increase, but I am trying hard to keep them from increasing (the government does listen to Professor Yasuda).

Q16. What is the system for organic groups like here?

In Hyogo Prefecture, we formed the organic group (JOAA) in 1973. At that time, co-operatives had no interest in organics. Although we talked to them, they were against the idea. The supermarkets had no interest either. So we formed the group, and contacted the farmers directly. There are about 100 farmers now in this 'teikei' system, with us in Hyogo. And about 10,000 consumers. So this teikei system is one group. Another group is the Radish Boys, they deliver to individual consumers, but is much smaller than the co-operatives. Thirdly, there is the Co-operatives, which includes the Seikatsu Club, and fourthly the supermarkets, who think now that if they do not sell organic food, they will lose customers. And so that the consumers can trust what they buy in the supermarkets, we have developed that organic label. About 200 farmers attach this label to their produce.

Q17. Is the number of people in the teikei system is less than it was in the past?

Yes, most members are now older, and young people are not joining. They are not interested. That is a big problem. Twenty years ago, those who joined were all young, but now they are old, and young people are not joining. Now people have money, and consider a luxury life to be the best, they want things now, not later. Whereas the teikei system requires more work, waiting and effort. If they want organic food, they can just go to the supermarket. The Radish Boy membership has also decreased. What is increasing now, is the co-operatives, and the supermarkets.

Q18. Is the increase of supermarkets and co-operatives compensate for the decrease in Radish Boys and Teikei membership?

Yes, but the increased interest in supermarkets and co-operatives are not young people, but people of about 50 years.

Q19. Tell me about the consumer movement.

The consumer movement was at its strongest in 1975, because of the bad air and sea pollution. But these things are still a big problem now, but those who are most involved are all older people! For example, if a price becomes too high, they will complain (this is the old type of consumer group). Our group however, is

more concerned about food quality than its price. This biggest issue amongst consumer groups now is genetic engineering. Both group types, (the new and the old), are concerned. There is no question about turning back on importing this, so the focus is on getting them labelled. The government is now considering this. I don't know what the result will be.

Interview 20 : Ministry of Agriculture, Fisheries and Forestry (Tokyo)

Q1. How many organic, reduced-chemical, or chemical-free farms are there in all of Japan?

That is a very hard question to answer, as we do not really have any system in place to know, unlike in New Zealand. To take an estimate, I would say maybe about 1% are reduced-chemical, chemical-free, or organic, at the most, 2-3%.

Q2. Do consumers find it difficult to understand all the different definitions of organic?

Yes, so we have produced a number of pamphlets to distribute around, so as to increase understanding.

Q3. How do you, and who do you, distribute these pamphlets (to?)

To all the Prefectural governments, to various producer and consumer groups

Q4. Do you think that the present system of organic will change in the future?

Yes

(How?)

Firstly, to follow the international Codex guidelines, secondly, as New Zealand, Australia, and the US etc., Japan also would like to come to a stage where there is only one standard, and that is 'organic'.

Q5. How long do you think that this will take?

Two to three years. Unlike Australia and the US, which are large dry countries, Japan is hot and wet, so the organic standards are seen as very strict for Japan, and very difficult to comply to. Which is also why organic farming in Japan has not taken off as it has in these countries. In these countries, where the water supply is controlled in the form of irrigation, by humans, this is best suited to organic farming, I think.

Of course it is best to have just one standard, as this is much easier for the consumer to understand.

Q6. In the future, in Japan, to what percentage do you think that organic farming will grow to? Is there a limit?

Yes, there is a limit. In the US, because the weather and environmental conditions are well suited to organic farming, they say that there it could grow to 1-1.5% of all agriculture. But in Japan, I think maybe only 0.5%.

Q7. How about organic imports?

There are not very many organic imports at present, as there are a number of problems that must be overcome. The distance is a problem, for fresh produce. If there is no post harvest spraying, then it is a risk to us, that insects may come in. So organic food is better suited to export, if they are frozen, canned, or juice.

Q8. Is the Japanese government happy with any amount of food imports? Is there a limit?

We can not really say no to importing food, for we need to trade... (could not hear the rest).

Q9. GATT is very strong towards free trade, so how does that affect Japan, and its self-sufficiency rate? What is a good balance?

That is a very difficult issue. Japan's agricultural output is ever decreasing, but when you look at how expensive it is, compared with Australia, or the US, which is maybe 1/5th or 1/7th of the cost of producing in Japan....

A good thing about producing in Japan, is that it is fresh. But with the cost of producing it, Japan will always lose. Of course I would like it if Japan's self-sufficiency rate was as close to 100% as possible, but that is not ever going to happen.

Q10. Is there any subsidy for agriculture in Japan?

Yes, but unlike Europe and the US, it is not a direct subsidy. In Japan, we subsidise those farm systems that are very difficult, rather than those that are easy to farm. I do not think that there is a subsidy for organic farming yet.

Q11. For organic imports, do you think that it is satisfactory not to have any backing from the foreign government?

Of course it is best for dealings like this to be made government to government, and in the future this may become a reality. For now however, this is still just in the future, and private organisations are fine for now.

Q12. Are there any controls in place to check the organic food imports that come into Japan?

No. Neither are there any for locally-grown organic food.

Q13. Do you think that the popularity of organic food will increase in the future?

Yes, I think so.

Q14. Why is this?

Because consumers are becoming increasingly concerned with safety, health, trust in the producers, and the environment. Awareness is increasing.

Q15. What about the price premiums of organic produce... ?

A number of surveys have indicated that consumers are happy to pay up to 30% more for organic food. Something that is twice as expensive as normal is too expensive. Once a month maybe, but not everyday.

Q16. Who is pushing organics in Japan? Whose strength is it?

We hear the consumers' voice, via consumer groups. For example, they tell us to set one standard, as in the West, this way, they say, they will be able to have much more faith and trust in the organic system in Japan. The middlemen also have a lot of power.

Q17. Does the average consumer have much power?

Groups like the housewife Federation, and the Consumer Co-operatives voice their opinions. They are quite strong, and have influence.

Interview Transcripts : organic farmer

Q1. Description of farm.

Grows 150t of onions, red onions, and carrots. (Produced about 200t before turned organic).

Farm of 5 ha.

Just outside of Sapporo

Average gross profit of ¥15,000,000/yr. Costs are 70% of this.

Before went organic, profits were very up and down, very unstable. Could not control this at all. Now however, he has more control himself (partly because he can make a contract with his buyers), and the profits are much more stable. Although the yields per hectare are lower. The price per onion is higher than before. And before, the price would go up and down.

Q2. Why did you decide to go organic?

I was in a group (Japan organic research group) that was interested in these things, and I started reading a book about organic growing methods. At that stage I didn't know anything about it yet, didn't do anything but read about it. I was then introduced to a group in Hokkaido. I set aside a 300m² patch of my field, for experimentation in organic growing. I did this for 2 years. I didn't think that it was possible to grow onions without chemicals, but I found out that I could.

Then a Seikyo coop person came to me, a buyer, someone I did not know at all, to inquire about the chemical-free onions that I was growing. I don't know how he found out.

Since then each year, I gradually increased the amount of organic produce that I was growing.

The original experiment was about 20 years ago, so since then...

At the beginning it was just onions, but gradually, became to include onions, carrots, and red onions. At the start I was just growing onions year after year, with no rotations. However I now rotate onions with carrots. In autumn I apply compost etc. (I use pig manure, and pasture grass that has sat for 3 years, from a nearby farm), and I also use a little chemical fertilisers. Because otherwise the yields are very low.

How much fertiliser do you use?

Hard to say, about half that of what normal farmers use. I use 10:15:10 (100kg N, 150kg P, 100kg K per ha).

I don't use herbicides to kill my weeds, but I pull them out by hand. There are many weeds. So it costs lots of money, as I must hire people to help me weed.

Q3. Is what you grow organic, chemical free, reduced chemical or what?

It is reduced chemicals. The carrots are chemical free, the onions are reduced chemical.

It depends on a number of things, for example, the weather. Growing management changes depending on these things, i.e. if it rains, I must use more chemicals than if it does not rain.

Q4. Are there any standards by which you use as guidelines for growing?

No. My aim really is only to move towards organic where possible. Even if just a little. I say this to the buyer, tell him what I am doing, and what my aims are, and the buyer then tries to convey to the consumer the situation and feelings and aims of the producer. Its a matter of co-operation between the producer and consumer. There is also a consumer producer co-operation group/organisation, and a system whereby the consumer helps the producer with the management of the fields. They actually come and help with the harvesting of onions and carrots. These consumers are coop members.

So its not really a problem of whether or not chemicals have been used...

Q5. Do consumers have a strong influence on you?

Producers don't know who their consumers are do they. Who actually eats the food? The food I grow, that anyone grows, is not a 'product' that is consumed, it is something that someone actually eats. It has a more significant value than simply a cold commodity.

Consumers and producers have a friendly relationship based on trust. I can't use bad chemicals etc., as that would make me feel bad, and would break their trust.

Farming is not making products, it is (I believe) important to produce food that is healthy for the body. Before I came to this way of thinking, I thought it was simply okay to just provide the markets with their demand for produce that looked good.

Q6. Does the coop have a big influence on you?

In winter, we have the co-operation meeting with the producers and consumers, and in summer, the coop members come and help with the harvest and with the weeding.

More of a co-operation and understanding relationship, than a big brother influence.

Q7. Do the supermarkets have a big influence on you?

I don't sell to the supermarkets. (Although co-op Seikyo appears as a supermarket to us, it strictly is not one).

Q8. Do you sell anything as frozen?

No, if you freeze vegetables they do not taste very nice. Oh but they sell mixed vegetables don't they. (They do in NZ too..)

But lately we're getting a lot of imported produce from overseas. Onions and carrots from New Zealand...

I don't think that carrots taste very nice if they are frozen.

Q9. Who do you sell to?

Seikyo Co-operative, natural food shops, directly to people.

Q10. Do you put any labels of any sort on the produce that you sell, to show that it is organic?

I sell my vegetables in a box which has my own original label and name on it.

Q11. Do you abide by any rules in particular in regards to growing organics?

Although MAFF does put out standards, I do not follow them. They are just guidelines, and it is not expected that I must follow them. No laws to say that I should. It just depends on the understanding that we have with the coop etc.

Q12. Does anyone come to your farm to inspect what you are doing?

No, because we operate on a trust relationship. They just ask what we do, how we do it, and we tell them.

(I explain here about NZ organic system, and they are surprised at its strictness).

Q13. What sort of aesthetic requirements and standards are there for what you produce? i.e. size, colour, etc.

It doesn't really matter about the size or shape of the produce, so long as it is not rotten, and has no bad patches.

Q14. Is it easy to sell organic vegetables?

Not really, they are expensive. It is a supply and demand problem, when supply is up, they sell quickly as the price is lower. Organic food has an expensive image. And there is recession at present.

Q15. What is the biggest challenge that you face?

Labour problems. We need labour to pull all the weeds out. No one wants to do that sort of job.

Q16. What will happen in the future?

There will be many more imports from NZ!
I think that the number of allergy cases amongst children will increase. But I think organic farming will not increase too much more in Japan, because of the labour problem. As well, the farmers can't supply too much more than they are now. There is also a lack of good land.

Q17. What images do you have of NZ?

Many sheep, surrounded by sea, fish, good place, want to go there.

8.8 Appendix 8: Summary of the Personal and Group Interview Results

Table A1. Images of organic products

(Actual number of respondents; n=11)

Safe	11
Don't care about shape	9
Expensive	8
Tastes good	7
Don't care about dirt	7
Healthy	6
Often unavailable or in short supply	4
Appearance is not so good	2
Doesn't taste nice	2
Readily available	1
Difficult to grow	1
Good for environment	1
Insects on leaves - be careful when eating	1

Organic produce was perceived to be safe by each respondent. Most perceived it to be expensive, healthy, and to taste good. The majority of respondents appeared not to be concerned about surface dirt or produce shape.

Forty percent of respondents believed that there is a big difference between organic, chemical-free, and low-chemical produce. Sixty percent said they did not know (see Table 2).

Table A2. Is the difference between organic, chemical-free, and low-chemical big?

Yes	4
No	-
I don't know	6

Table A3. Which of organic, chemical-free, and low-chemical would you choose to buy, assuming the prices were the same?

Organic	3
Chemical-free	8
Low-chemical	-

Table A4. What are the barriers to you buying more organic produce than you do now?

Unavailable/limited range	7
Expensive	7
Can't trust labels/produce	3
Unreliable	1

The comments received concerning the respondents' image of organic produce are presented in Table A1, in rank order of frequency mentioned. This question, was open-ended, so the answers recorded are those that were stated; it can not be assumed that the respondents voiced all images held regarding organic produce.

When asked what barriers prevent respondents from purchasing more organic food they presently do, 64% pointed to limited range and unavailability. The higher prices demanded by organic produce was also found to be a common barrier. Over 30% of respondents presented lack of trust and unreliability of organic labels and produce as being a barrier (see Table A4).

Sixty percent of the respondents in the personal interviews were found to often purchase fresh conventional produce imports; approximately 30% of respondents claimed to often purchase frozen produce imports. Over 60% of respondents said that they often, or sometimes, made purchases of frozen conventional produce in general. Those adverse to such purchases gave the reasons that it does not taste good, that it is of poorer quality and goes soft on cooking, and that fresh produce can easily be purchased so there is no need for frozen produce (see Table A5).

Table A5. Interviewee purchase behaviour
(n=11; actual number of responding groups)

Variable	Comments	Yes	No	Sometimes
Do you often buy imported fresh produce?	-	6	4	-
If no, why not?	<ul style="list-style-type: none"> • Want to buy Japanese food-fresh • Believe they use many chemicals 			
Do you often buy imported frozen produce?	-	2	6	1
Do you often buy frozen produce?	-	2	4	5
If no, why not?	<ul style="list-style-type: none"> • Tastes bad • Poor quality; goes soft quickly • Can easily buy fresh food 			
Do you trust organic or chemical-free produce imported from overseas?	-	-	3	8
Do you trust organic or chemical-free produce grown in Japan?	-	4	1	4

Table A6. What does 'good for your health' mean (in regards to organic produce)?

We won't get sick from chemicals residues, which build up in our bodies over time	8
I don't think that it is healthy	1

Table A7. What does 'safe' mean (in regards to organic produce)?

Safe is not a 'minus' for the body, (healthy is a plus for the body) makes no difference either way, to us.	3
-------------------------------------------------------------------------------------------------------------	---

Table A8. Does 'good for your health' mean the same as 'safe', (in regards to organic produce)?

Yes	5
No	3

When asked to comment on the image of New Zealand, the most common replies were that it is a beautiful, green and natural place; a farming country with many sheep. Almost half of respondents said that they would trust organic produce imported from New Zealand, one said that they would not, while the remainder were unsure.

Table A9. What image do you have of New Zealand?

Natural/green place	6
Farming country/sheep	5
Beautiful	4
Relaxed	3
A nice place to be	3
Small population	2
Island country	1
Wild/countryside wilderness	1
I want to go there	1
Mild climate	1
Blue sky	1

Table A10. Do you trust organic produce imported from New Zealand?

Yes	4
No	1
Don't know	5

Zespri International, New Zealand, has implemented in 1997 a system whereby all its Kiwifruit are grown under 'eco green' guidelines; meaning that minimal chemicals are used on the fruit and that residues are low. In this context, interviewees were asked of their opinions of this new 'eco green' kiwifruit. Over 69% of respondents said that they would or may trust the fruit, while 33% said that they would not. Almost 90% of respondents said that they would buy the fruit, while less than 10% said that they would not. Almost 90% of respondents said that they would be willing to pay more for an eco-green kiwifruit than they would for a conventional one (see Table A11).

Table A11. Kiwifruit are usually produced with the aid of agricultural chemicals. If this was so, buy there was no trace of chemicals left on the fruit at the point of sale;

	Yes	No	Sometimes
Would you believe/trust it?	3	3	3
Would you buy it?	7	1	1
Would you buy it if it cost more than a conventional kiwifruit?	6	1	-

General Comments

The respondents were also asked in the personal interviews to comment on the future of organic produce in Japan, and on their own probable future behaviour in this area. Most

respondents thought that the demand for organic foods in Japan will increase in the future, provided that supply is large and stable, prices are cheap, and that the products are safe and trustworthy. Actual comments are presented as follows:

Young people today are so busy, so buy the closest, most convenient, and cheapest food, therefore I don't think that natural organic type foods will increase very much.

I will buy more organic food in the future than I do now for things like soy sauce and tofu if it is lined up with everything else, even if more expensive. I will not make a special trip to do so though.

I will pay up to three times more for organic produce, only if it is cheap to begin with. It depends on the product.

I will buy more organic produce than I do now, if the price and taste is good, it is safe, and I can trust the labels.

I am more likely to buy (or pay more for) organic food if it is something eaten raw, like fruit or salad vegetables.

I trust fresh produce more than frozen produce - even for imports

I will buy more organic produce than I do now, if the price becomes cheaper (assuming that it is fresh).

I think that the trend in Japan will be that organic produce will become increasingly popular - even if it more expensive, as people are very health conscious.

It will not really increase in the future, as a stable supply can not be maintained, and therefore prices will remain high.

We will not buy more than we do now, because the prices are too high. Although we may buy it if it is there, we will not go looking for it.

Need not just a label, but a photo, and an explanation about how it was grown too.

I think it will increase, but in order for this to happen, there must be more supply so that the price will come down.

I would like to see more imports coming from NZ, although I would only buy these sometimes - I still would support Japanese farmers mostly though.

Organic will increase, so long as there is demand from consumers, and that there is a good labelling system. If the government standards for imports become stricter, consumers will be happier buying imports.

If there was more variety in the shops, more people would buy it. Everyone is considering their safety and health now.

Only a small segment of society will buy organic vegetables if they are misshapen or dirty.

I think that frozen foods will become more popular, as cooking/preparation time gets shorter, and people learn how to cook them.

We do not need fruit, but we do need vegetables. Therefore consumers will not buy fruit if it is expensive, but they will buy vegetables if they are expensive.

Organics will increase a little, but because there is not much profit in organic farming, there is a limit to how much it will grow.

8.9 Appendix 9: Observation Schedule and Results Summary

1. Shop number:
2. Shop name:
3. Shop type:
4. Shop size:
5. Description of organic section or organic produce available:
6. Position of organic section or produce in shop:
7. Ease to find organic section or produce:
8. Range and variety of organic produce available

Observation Study; Findings

Of the nine supermarkets observed, all but one sold “organic” produce of some description. The most commonly sold category was chemical-free. A wide range of fresh ‘organic’ vegetables were sold, the most common being carrots, potatoes, cucumbers, and onions. Frozen ‘organic’ pumpkin was observed in three shops, and frozen ‘organic’ mixed vegetables in two. The ‘organic’ produce available in the supermarkets was generally difficult to find, and often difficult to distinguish from conventional produce, or between the organic, chemical-free, and low-chemical categories. Explanations of the labelling and growing methods were found in four of the supermarkets. Promotional signs and photographs of the farmer and the growing process of the organic produce were observed in three supermarkets; this is a very common practice in supermarkets for conventional produce, and is an important vice used to connect the consumer to the farmer, thus helping to engage a trust relationship. The only supermarket that had no ‘organic’ produce of any description, was a cheaper discount supermarket (see Table Ob1).

Table Ob1. Summary of the Observation Study

Factors Observed	Frequency Observed
Category sold:	
Chemical-free	6
Organic	3
Low chemical	2
Additive free	1
None of the above	1
Type of "organic" produce sold:	
Carrots	4
Potato	4
Cucumber	3
Onion	3
Frozen pumpkin	3
Frozen mixed vegetables	2
Ginger	2
Kiwifruit	2
Sweet Potato	2
Tomato	2
Banana	1
Cabbage	1
Frozen corn	1
Frozen peas	1
Grapefruit	1
Ice cream	1
Lemon	1
Pumpkin	1
Spring onions	1
Packaging and Promotion:	
Good explanations of labels and growing methods	4
Clear plastic bags, with in-store 'organic' label	3
Photographs of farmer, and/or 'organic' growing fields	3
'Organic' promotional signs	3
Difficult to find amongst other produce	5
Easy to find amongst other produce	3

8.10 Appendix 10: Price Elasticity for Frozen Organic Mixed Vegetables

As revealed in the Figures A1 and A2, at a price of 400 yen, most 'general public' group respondents said that they would often, or would be quite likely to purchase organic frozen mixed vegetables. At 450 yen, the most common response was that they would sometimes make a purchase, and at 500 yen, the response was that such a purchase would almost never be made. The probability of purchase elasticity for a price increase of 400 to 450 yen is -1.5, and of 450 to 500 yen, is -2.

Respondents from the organic group were generally less inclined to make such a purchase, with the median response being that purchases would be made sometimes at a price of 400 yen, seldom at 450 yen, and almost never at 500 yen. The probability of purchase elasticity for a price increase of 400 to 450 yen is -2.9, and of 450 to 500 yen, is -2.4.

The graphs also reveal the 25th and 75th percentiles about the median for each respective price. Both samples exhibit a wider inter-percentile range, or a lower concentration about the median, as the price becomes cheaper.

Data from the general public sample reveal that the responsiveness of the scale of probability of purchase used is that a 1 unit increase in the price of a 500g bag of organic frozen mixed vegetables from 400 and 450 yen will result in a 1.5 unit in the probability of purchase; an elasticity of -1.5. A 1 unit increase in price from 450 to 500 yen will result in a 2 unit decrease in the probability of purchase; an elasticity of -2. This represents a fairly elastic relationship between price and the probability of purchase.

Data from the organic groups sample reveal that the responsiveness of the scale of probability of purchase used is that a 1 unit increase in the price of a 500g bag of organic frozen mixed vegetables from 400 and 450 yen will result in a 2.9 unit decrease in the probability of purchase; an elasticity of -2.9. A 1 unit increase in price, from 450 to 500 yen will result in a 2.4 unit decrease in the probability of purchase; an elasticity of -2.4.

This represents a fairly elastic relationship between price and the probability of purchase, more so than that of the general public.

Figure A1
Price Elasticity
'General Public'

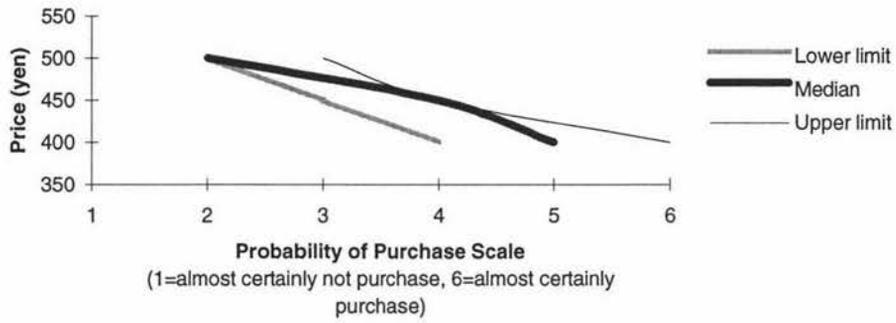


Figure A2
Price Elasticity
Organic Groups

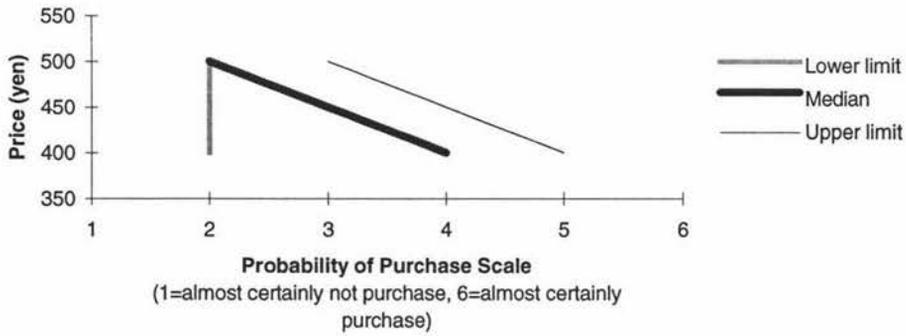


Table PE1 The probability of purchase at different price levels; a 500g bag of frozen organic mixed vegetables

Price of 500g bag of frozen organic mixed vegetables	'General Public' Median n=309	Frequency of 4 - 6 n=309 %	Organic Groups Median n=189	Frequency of 4 - 6 n=189 %
400	5	78	4	57
450	4	52	3	45
500	2	22	2	23

Note: 1. A scale of 1-6 was used in regards to the probability or extent that consumers would purchase at each respective price; 1=definitely not, 2=almost never, 3=seldom, 4=sometimes, 5=often, 6 = definitely would

8.11 Appendix 11: Weekly Expenditures: Distributions

General Public

Descriptive statistics of weekly expenditures

	N	Minimum NZ\$	Maximum NZ\$	Mean NZ\$	Standard Error
Weekly expenditure on organic produce	451	0	380	20	1.65
Total weekly food expenditure	409	0	972	201	7.47
Weekly expenditure on fresh organic produce	429	0	380	14	1.3
Weekly expenditure on frozen organic produce	429	0	127	2	0.34
Weekly expenditure on canned organic produce	430	0	38	1	0.14
Weekly expenditure on organic juice	428	0	69	4	0.44

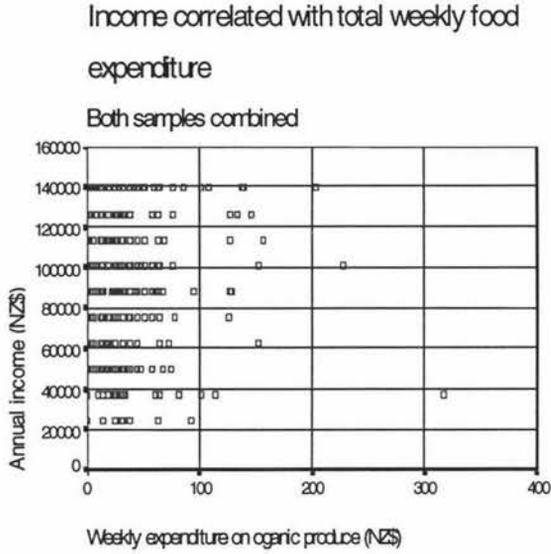
Organic Groups

Descriptive statistics of weekly expenditures

	N	Minimum NZ\$	Maximum NZ\$	Mean NZ\$	Standard Error
Weekly expenditure on organic produce	221	19	1139	257	9.2
Total weekly food expenditure	248	0	278	41	2.9
Weekly expenditure on fresh organic produce	241	0	253	37	2.6
Weekly expenditure on frozen organic produce	243	0	82	0.89	0.38
Weekly expenditure on canned organic produce	243	0	25	0.53	0.19
Weekly expenditure on organic juice	242	0	89	4	0.67

8.12 Appendix 12: Annual Income versus Weekly Expenditure on Organic Produce

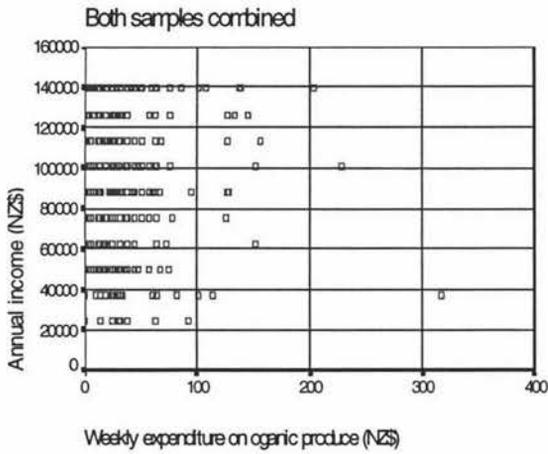
(‘General Public’ and Organic Groups combined)



Correlations

		INCOME	ORGWKEXP
Pearson Correlation	INCOME	1.000	.054
	ORGWKEXP	.054	1.000
Sig. (2-tailed)	INCOME	.	.244
	ORGWKEXP	.244	.
N	INCOME	466	465
	ORGWKEXP	465	465

Income correlated with total weekly food expenditure



Model Summary^{a,b}

Model	Variables		R	R Square	Adjusted R Square	Std. Error of the Estimate
	Entered	Removed				
1	INCOME ^c	.	.054	.003	.001	34.6628

- a. Dependent Variable: ORGWKEXP
- b. Method: Enter
- c. Independent Variables: (Constant), INCOME
- d. All requested variables entered.

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1632.826	1	1632.826	1.359	.244 ^b
	Residual	556299	463	1201.510		
	Total	557932	464			

- a. Dependent Variable: ORGWKEXP
- b. Independent Variables: (Constant), INCOME

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	21.078	4.672		4.512	.000
	INCOME	5.5E-05	.000	.054	1.166	.244

a. Dependent Variable: ORGWKEXP

Relationship between total weekly food expenditure and weekly expenditure on organic produce ('General Public' and Organic Groups combined)

Descriptive Statistics

	Mean	Std. Deviation	N
TOTEXALL	231.9253	144.8817	595
ORGWKEXP	25.1648	33.8153	594

Descriptive Statistics

	Mean	Std. Deviation	N
TOTEXALL	231.9253	144.8817	595
ORGWKEXP	25.1648	33.8153	594

Total weekly food expenditure versus weekly expenditure on organic produce

