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THE PROFITABILITY OF
BEEF PRODUCTION
ON
SOME NEW ZEALAND
SHEEP FARMS

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CHAPTER ONE

I N T R O D U C T I O N

New Zealand sheep farmers are currently receiving product prices which, when considered in relation to their farm costs, are the lowest they have been for many years. Wool prices appear unlikely to recover to levels experienced ten years ago and many sheep farmers are still relying on wool as a major source of farm income.

There is an increasing awareness that beef animals can no longer be regarded as aids to good sheep husbandry and instead, must make a direct contribution to farm income. The increasing acceptance of animals of dairy origin as beef-producers, and continued confidence in the long-term market for beef, have helped provide a climate for large-scale moves toward beef-production on many New Zealand sheep farms.

As a consequence, there has been a rapid increase in demand for economic information on all aspects of beef production and particularly with relation to established sheep enterprises. It is intended that this thesis should go some way towards meeting this demand.

1.1 THE SCOPE OF THIS THESIS

It would be impossible in a study of this nature to attempt a detailed investigation of all possible beef-production methods over a wide range of farm environments. For this reason, the investigation will be directed toward sheep farms which could fulfil the following conditions:

- (a) The farm environment should be conducive to intensive sheep-farming in breeding-ewes, with a winter carrying capacity of about five ewes per acre, 100 per cent lambing, and all lambs fattened.
- (b) The farm environment should enable an intensive beef-production system to be successfully implemented. Beef-animal carcass weights of the order of 400 lb should be possible at 18 - 20 months of age.

These conditions do not require that previous animal performances have reached the levels suggested, merely that they are feasible. The results of this study then, will be relevant to an audience which includes most New Zealand fat-lamb farmers, but excludes dry-sheep farmers and those whose climate or contour would not allow the production levels considered in this study.

The study is further limited by excluding consideration of all beef-breeding policies. It was felt that for the audience outlined above, fattening rather than breeding policies would be of interest. The inclusion of breeding policies would complicate the analysis and lessen the attention which could be given to close examination of beef-fattening policies.

1.2 THE PRESENT BEEF INDUSTRY

The beef industry in New Zealand has been described and documented by many workers, (36, 39 and 50). Comments by these workers highlight the fact that prior to the mid-1950's, cattle were regarded essentially as implements for pasture management and roughage control and beef production was merely an ancillary to the financially more attractive specialised industries of sheep farming and dairying.

Since 1948, a noticeable growth in female breeding stock has been observed, together with a decline in the importance of older, heavier beef cattle. In 1950, steers two years old and over made up 21.8 per cent of the national beef herd, with steers under two years representing 20.7 per cent. By 1969 the proportions had changed to 10.8 per cent for steers over two years and 27.8 per cent for steers below this age. The increased retention of dairy-bred animals for slaughter would have contributed towards this change.

The general trend, particularly within the last five years, has been towards slaughter at an earlier age. This is in keeping with the changing role of beef animals associated with recognition of their potential profitability as meat-producers.

Johnson (36) assessed likely future trends in beef production, and considers that expansion in the beef industry will be at the maximum biological rate, (i.e. a seven per cent long-term growth-rate of the beef breeding herd), with only moderate increases in sheep numbers. Animals from the National Dairy Herd have also been projected to play a major role in the New Zealand Beef Industry.

McClatchey (50) considers there is no reason why, at some time in the future, much more of New Zealand's pastured land could not be devoted to beef production if changes in relative market prices for the various alternative products were to warrant such a change in output proportions.

1.3 BEEF RESEARCH REQUIREMENTS

Research into the economics of beef production prior to the 1950's was almost neglected. The recent increase in demand for

economic information on all aspects of beef production in relation to the established sheep and dairy enterprises has revealed a lack of physical information on the subject.

Joblin (35) points out some of the research work required, and mentions

- (a) detailed research on the feed requirements of the various classes of cattle at various production levels;
- (b) a more thorough investigation of our feed resources, including possible yields and feeding values of grass, crops or fodders in various environments;
- (c) an investigation based on (a) and (b) of a wide range of possible management systems.

The information problems encountered in this study indicate that Joblin has accurately pinpointed the critical gaps in our present knowledge of beef production.

1.4 REASONS FOR THIS STUDY

As a Farm Advisory Officer with the Department of Agriculture the author was in contact with an ever increasing number of sheep farmers looking to beef production as a means of combatting falling sheep returns and rising farm costs.

Many of these sheep farmers occupy farms part or all of which would be suitable for beef production. It is perhaps ironic that in many areas such as the fertile Manawatu river-flats, the initial decision to adopt a breeding-ewe and fat-lamb enterprise rather than dairying on some farms was made solely because the farm area was large enough to make this type of sheep farming economic. Smaller farms, perhaps next door, became dairy enterprises because of the higher pre-acre returns. With

falling sheep returns and the currently attractive dairy returns, dairy farms are more profitable than the larger sheep farms. It is these farmers, ideally suited in terms of farm environment and economic climate, who could quickly and successfully adopt an intensive beef production system.

The lack of physical and economic data on beef production and the wide variety of cattle performances resulting from the various systems adopted by farmers highlighted the need for a thorough investigation into beef-production systems.

1.5 AIMS OF THE STUDY

The aims of this study are two-fold

- (a) to investigate various aspects of beef-producing systems and find which system is likely to return most net profit to the farmer;
- (b) to compare beef-production systems with sheep-farming on a profitability basis.

The results will apply to any farm where beef cattle performances described in this study are feasible. The beef policies examined will be those where animals are purchased as weaners or 18-month cattle, and sold for slaughter.

1.6 METHODS OF APPROACH TO THE STUDY

Initially, a budgeting technique was considered, as the aim was to conduct an analysis readily understood by farmers. However, it soon became apparent that budgeting techniques were inadequate and that linear programming was quite capable of giving results easily translated so as to be accepted by a farmer audience.

Any analysis is limited in reliability according to the physical information on which it is based. Much of the time spent in this study was used to find or compile the required physical information. To this end, information was gathered from farmers, research stations and the literature from New Zealand and overseas. Throughout this thesis, a constant theme is "feed-budgeting" or the science of matching feed requirements and feed availability to maximise returns on the farm.

Two Case Farms will be examined in detail. These two were purposively selected to represent different farm conditions. The fact that both analyses gave the same broad guide-lines for an optimum beef system reinforces the view that the results are applicable to a wide variety of farms.