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**AN EVALUATION OF PEST AND DISEASE
CONTROL PRACTICES IN FIELD PROCESS
TOMATOES IN HAWKES BAY AND
OPPORTUNITIES FOR IMPROVED PEST
MANAGEMENT**

A thesis in partial fulfilment
of the requirement for the degree of
Master of Horticultural Science
at Massey University

**Susanne Bland
February 1992**

ABSTRACT

The spray practices of seven process tomatoes growers in the Hawkes Bay were evaluated during the 1990/1991 season by analysis of spray diaries, field surveys, and weather data. In very few instances were calendar spray systems, weather or insect thresholds used to determine spray scheduling. Use of monitoring and forecasting systems already available will help decrease the number of sprays applied providing adequate research is done to adapt them to local conditions. It is concluded that there is potential for pest management and integrated pest management systems to be introduced into the process tomato crops.

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TABLE OF CONTENTS

ABSTRACT

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1.0 INTRODUCTION 1

CHAPTER 2.0 LITERATURE REVIEW 3

2.1 Pest Management 3

2.1.1 Factors that regulate pest number
(pest population dynamics). 5

2.1.2 Pest damage thresholds and
economic thresholds. 9

2.1.3 Monitoring of pests and natural enemies. 13

2.1.4 A decision making framework to
determine action to be taken. 16

2.1.5 Methods of selectively manipulating
pest populations. 16

2.1.5.1 Pesticides. 16

2.1.5.2 Biological control. 17

2.1.5.3 Plant resistance. 18

2.1.5.4 Pheromones. 19

2.2	Key pests and diseases of process tomatoes in the Hawkes Bay and potential monitoring systems that could be used.	20
2.2.1	Tomato fruit worm (<i>Helicoverpa armigera</i>).	20
2.2.2	Bacterial speck (<i>Pseudomonas syringae</i>).	22
2.2.3	Early blight (<i>Alternaria solani</i>).	24
2.2.4	Late blight (<i>Phytophthora infestans</i>).	26
 CHAPTER 3.0 PROFILE OF PROCESS TOMATO GROWING IN THE HAWKES BAY.		 28
3.1	Soils.	28
3.2	Tomato Varieties and areas grown.	28
3.3	Seasonal calendar.	29
3.3.1	Propagation.	29
3.3.2	Planting.	30
3.3.3	Pest and disease control.	30
3.3.4	Irrigation.	30
3.3.5	Harvest sample.	30
 CHAPTER 4.0 METHODS.		 31
4.1	Grower survey.	31
4.2	Spray diaries.	31
4.3	Paddock selection.	34
4.4	Weather.	36
4.5	Development of field monitoring sheet.	36

4.6	Insect and disease assessments.	41
	4.6.1 J.Wattie Foods method.	41
	4.6.2 Author's method.	41
4.7	Comparison of monitoring techniques.	46
4.8	Insect identification.	46
4.9	Pre-harvest samples.	47
4.10	Spray application.	49
	4.10.1 Insecticide application.	49
	4.10.2 Fungicide application.	49
4.11	Intervals between sprays.	49
4.12	Relationship between sprays frequency and yield.	50
4.13	Rainfall.	50
4.14	Comparison of survey results with investigated data.	51

CHAPTER 5.0 RESULTS 52

5.1	Grower's perceptions of pest and disease problems.	52
5.2	Spray costs.	52
5.3	Comparison of pest and disease assessments.	52
5.4	Insect counts.	54
5.5	Insect identification.	57
5.6	Spray diaries.	58
5.7	Insecticide application.	59

5.8	Fungicide application.	60
5.9	Pre-harvest samples.	61
5.10	Weather.	64
5.11	Spray determinants used by growers.	65
CHAPTER 6.0 DISCUSSION		73
CHAPTER 7.0 CONCLUSION		81
CHAPTER 8.0 REFERENCES		82
APPENDIX		90

LIST OF TABLES

1	Factors influencing pest populations.	7
2	The study of a pest situation.	8
3	Equation predicting threshold populations of <i>Pseudomonas syringae</i> that may be applicable for commercial use in tomatoes.	24
4	Tomato varieties grown in the 1990 / 1991 season (approximate areas).	29
5	Grower survey sheet used in interviews with Hawkes Bay tomato growers.	32
6	Layout of spray diary sheet used by growers.	33
7	Location classification of tomato growing areas.	34
8	Initial survey sheet used in the 1990/1991 fields survey of process tomato crops in the Hawkes Bay.	37
9 (a)-(b)	Revised survey sheet: Side one.	38
10	Tomato crop monitoring form used by J.Wattie Foods.	40
11	Growth stages of tomato plants (personal view).	42
12 (a)-(b)	Arbitrary classification of insect density in relation to plant growth stages (mean number of insects on 15 plants).	45
13	Pre-harvest sample sheet.	48

14	Pests and diseases that process tomato growers perceive a major problems, those they spray for regardless of incidence.	53
15	Summary of spray costs as a percentage of total production costs, as given by process tomato growers.	54
16 (a)-(e)	Insect infestation levels in process tomato paddocks at five growth stages in the 1990/1991 season.	55
17	Identification of commonly occurring insects in process tomato crops.	58
18	Average number of fungicide and insecticide applications for the 1990/1991 season.	59
19	Fungicide application in relation to rainfall.	60
20	Chance occurrence of fungicide application after >2mm rainfall with paddocks sprayed on a calendar schedule.	61
21	Pre-harvest defects.	62
22	Major defects identified in surveyed paddocks from pre-harvest samples.	63
23	Fungicides used for final sprays.	64
24	The theoretical number of fungicide sprays that should have been applied in the 1990/1991 season.	65
25	Determinants that growers indicated they used for spraying.	67

LIST OF FIGURES

1	Factors involved in the decision making process of whether to apply a pesticide.	10
2	Procedure for sampling of <i>Heliothis zea</i> in process tomato crops.	21
3	Map showing geographical location groupings of process tomato crops as defined in table 7.	35
4 (a)-(e)	Photographs showing the five growths stages of tomato plants as described in table 11.	42
5	Time interval between spray applications over all growers for the 1990/1991 season.	67
6 (a)-(f)	Grower spraying frequencies.	68
7	Rainfall threshold related to plant growth stage.	74
8	Example of graph depicting true calendar spray timing.	75
9	Example of a graph where calendar based spraying appears to be the objective.	76
10 (a)-(d)	Rainfall thresholds as applied to Napier, Hastings, Havelock North, and Waipawa rainfall data.	90

CHAPTER 1

Introduction

A noticeable factor determining the need for pest control in many vegetable crops is the consumer's demand for high quality produce. This has led to lower tolerance by growers of any insect pest or disease in their crops. Often, increased pesticide usage has been seen as the answer to this problem, but with increased pesticide usage a number of new problems have arisen:

- Arthropod (and more recently pathogen) resistance to pesticides.
- Secondary outbreaks of arthropods other than those against which control was originally directed.
- Rapid resurgence of treated species necessitating repeated insecticide application.
- Increased pesticide residues on produce.
- Hazards to insecticide handlers and to persons, livestock, and wild-life subjected to contamination by drift.
- Legal complications from suits and other actions pertaining to the above problems.

The development of methods that will decrease our dependence on pesticides is becoming increasingly important. Consumer concern about residue levels and knowledge of the effects of pesticides in the environment has brought about calls for reduced pesticide usage.

Reducing spray usage is important to New Zealand in both the short the long term with respect to pesticide residue constraints in our overseas markets.

The aim of this thesis was to determine the spray practices of process tomato growers in the Hawkes Bay, the factors that stimulate growers to spray, and to determine whether there is potential for improved pest management and integrated pest management in this crop.