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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

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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 in 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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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.