



**Report to: New Zealand Asparagus Council  
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## **Pest Management on Asparagus**

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## Introduction

In 1991 the Research and Development Committee of the New Zealand Asparagus Council asked us to begin research into ways of reducing thrips and aphid problems on export asparagus. Red-legged Earth Mite (RLEM) was added to the list later as a result of USDA concerns about the possibility of the occurrence of the pest on asparagus moving into the USA, either for sale or for transshipment in Hawaii for the Japanese market. In 1991 the USA market was important to some exporters but the ability to tranship in Honolulu en route to Japan is absolutely essential for exporter flexibility.

In 1991/92 we have concentrated on method development, literature review and discussions with growers and exporters over the scope of the RLEM problem.

## Background

The occurrence of thrips and aphids on asparagus is well known (Watson & Townsend 1981) and can be controlled postharvest by the use of Hortigas or controlled atmospheres if infestation levels are not too high. RLEM occurs on light soils in the North Island that are favoured asparagus production zones in some regions. At high density it kills spears. A great deal of research on the pest has gone on in Australia (Ridsill-Smith 1991) where it is a pest of field crops, legumes and some horticultural crops such as grapes. Much of what we need to know can be found out in Australia but will need adapting to the more maritime climate of New Zealand.

## Results

### 1. Monitoring thrips and aphids

Yellow sticky traps were imported from the USA and found to give good indications of thrips and aphid numbers. Blue traps did not work despite being described as specially for thrips. The traps are cheap and easy to use. Attempts to attract thrips with pheromones - nicotinic acid and anisaldehyde, and food sources - fruit juice and sugar, have been unsuccessful. Wind vane traps used for lucerne aphids have been obtained and are being renovated for evaluation over the next twelve months.

2. Effect of cultural practices on thrips and aphids levels

Visiting growers on the Rangitikei River has given some insight into likely causes of infestation. The most common situation is that asparagus is surrounded by pasture and has some weeds present. We believe that grazing will disturb insects in pasture and cause them to move en mass to the asparagus. This type of phenomenon is well understood in floriculture where lawn mowing on a fine day will cause insects to move into greenhouses through open vents leading to major control problems. Watson & Townsend (1981) commented on the effects of weeds on insect levels. That information should be well known to growers, yet for many export production blocks there are areas of weed infestation on the headlands that will act as insect sources, especially for thrips. It is not clear why aphid infestations occur the way they do.

3. Chemical control

A trial has been set up in Hawkes Bay to evaluate several potential chemicals for red-legged mite control. Some are applied in summer in an attempt to control diapausing eggs, the next application will be in May to control the first postdiapause generation and the last applications will be in August prior to harvest commencing.

A separate report on this trial will be forwarded after it has been completed in October.

**Future research**

- (a) To develop methods of predicting insect and mite infestation so that appropriate management methods can be used to ensure product can still be exported.
- (b) To develop management approaches that minimise the occurrence of insect and mite problems on asparagus.