Blue-Green Lucerne Aphid

INSECTICIDAL CONTROL OF BLUE-GREEN LUCERNE APHID

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Summary

A field trial in Nelson in 1976 showed that yield increases of lucerne (*Medicago sativa*) could be as high as 84% when a single spring application of the insecticide thiometon was applied against the blue-green lucerne aphid (*Acyrtosiphon kondoi*) before the first cut. Lower rates and another insecticide, acephate, produced slightly lesser yield increases.

INTRODUCTION

This trial was carried out primarily to obtain registration data on the efficiency of two chemicals, thiometon and acephate, against the blue-green lucerne aphid. Both are already noted to have activity against a wide range of other aphid species including the green peach aphid (*Myzus persicae*) and the potato aphid (*Acyrtosiphon solani*).

METHOD

The trial was laid down in four blocks in a lucerne paddock in Nelson. Treatments were randomly arranged in 10 m² plots in each block. The chemicals were applied by knapsack on 18 August using sufficient water to give thorough coverage. Ten lucerne stems from each plot were visually assessed at 14, 21, 28, 35 and 42 days after treatment, using the following scale:

- 0 = zero aphids per stem
- 1 = 1-4 aphids per stem
- 2 = 5-10 aphids per stem
- 3 = 11-20 aphids per stem
- 4 = 21-50 aphids per stem
- 5 = more than 50 aphids per stem

On 26 October, when the lucerne was ready for harvesting, 1 m² was cut to ground level from the centre of each plot and weighed.

RESULTS AND DISCUSSION

When assessing the trial, one plot receiving the highest rate of acephate (0.375 kg/ha) showed high numbers of aphids, not significantly different from the control. Three plots in this treatment showed excellent control, indicating that the other had probably been missed in spraying. In calculating significance, data to determine a missing figure was used for this plot.

The population increased rapidly in the untreated plots during the trial with the first alate aphids appearing at the 28 day count.

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Due to the fact that the alates were not flying, excellent 6 week control was given by acephate at 0.375 kg/ha and thiometon at 0.1 and 0.2 kg/ha (Table 1). This control resulted in a yield increase of up to 84% which would indicate that a spring application of insecticide when aphids are first noticed would be very beneficial.

TABLE 1: The mean aphid score per stem and lucerne yield following treatment

Treatment Rate kg/ha	Days after treatment					Lucerne Yield	
	14	21	28	35	42	Mean plot kg/m ²	% Increase over untreated
acephate 0.075	0.3	0.8	1.2	1.6	3.5	1.46 cd	18
acephate 0.112	0.4	0.4	0.3	1.0	2.9	1.62 c	31
acephate 0.187	0.02	0.2	0.3	0.5	1.2	1.97 b	60
acephate 0.375	0.06	0.1	0.1	0	0.5	2.0 b	62
thiometon 0.05	0.1	0.1	0.4	0.5	1.7	1.95 b	58
thiometon 0.1	0.07	0	0.02	0.2	0.5	2.05 ab	66
thiometon 0.2	0.2	0	0	0.2	0.2	2.28 a	84
untreated control	1.1	1.6	1.9	2.4	4.8	1.23 d	0
CV%						12	

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