PORINA CONTROL IN CANTERBURY 1967

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Summary

Two trials of porina control conducted in Canterbury in 1967 are reported. The first trial was designed to evaluate a new formulation of trichlorphon. The trichlorphon emulsion was significantly better than the soluble powder at the same application rate, but not as effective as fenitrothion and trichloronate. *Wiseana cervinata* was present in the first trial while *Wiseana despecta* was present in the second, which confirmed the recommendation of using fenitrothion in place of trichlorphon during the winter months.

INTRODUCTION

THE AIM of the following trials was to evaluate new insecticides and formulations. In both trials all chemicals were applied at the rate of 1 lb (all rates in active ingredients per acre).

TRIAL 1. METHVEN

(Wiseana cervinata)

Treated: April 19, 1967. All sprays applied in the morning with one exception.

Formulation: All sprays.

Application: Knapsack sprayer with the spray applied in two directions at right-angles. 30 gal water per acre.

Pasture: White clover/ryegrass sward; height 1 in.

Soil: Lyndhurst silt loam.

Weather: Fine at the time of application with no wind. On the morning of the 20th a strong nor'wester developed. April 21—strong nor'westerly wind, fine. April 22—strong nor'westerly wind, fine.

Replications: 5. *Plot size:* 1/160th acre.

Pretreatment sampling: 6 to 14 caterpillars per square foot.

Assessed: Caterpillar counts—May 20 and 21, 1967; 6 sq. spades per plot.

Pasture response—Assessed visually by independent observers, May 22, 1967.

Pasture damage was evident at the time of treatment and the caterpillars were well grown (1½ in.).

CATERPILLAR COUNTS

Trichloronate and fenitrothion were both significantly better at the 1% level than the other treatments. There was no significant difference in caterpillar counts between the morning and afternoon sprays of trichlorphon emulsion. However, the trichlorphon emulsion sprays were both significantly better at the 1% level than the trichlorphon soluble powder.

TABLE 1: ASSESSMENT DATA, TRIAL 1

<i>Treatment</i>	<i>Porina</i>		<i>% Pasture Cover</i>	
	<i>Stat. means</i>	<i>Sign. cf. control</i>	<i>Stat. means</i>	<i>Sign. cf. control</i>
fenitrothion	0.81	**	72.3	**
trichloronate	0.81	**	68.6	**
trichlorphon emulsion (a.m.)	1.74	**	66.7	**
trichlorphon emulsion (p.m.)	2.02	**	66.5	**
trichlorphon SP	3.08	**	57.4	**
Bayer 5691	3.94	**	49.8	**
Untreated	4.86	—	32.8	—
Least significant differences:				
5%	0.63		5.9	
1%	0.85		8.1	

NOTE: The trichlorphon formulations used in the trials were obtained from Germany. Other trichlorphon preparations available may have given different results.

PASTURE COVER

In terms of pasture cover, there was no significant difference at the 1% level between trichloronate, fenitrothion and the trichlorphon emulsion sprays. However, at the 5% level, fenitrothion was significantly better than the other treatments, with the exception of trichloronate.

Surface counts of caterpillars were made for two mornings following treatment. No reliance can be placed on this method for assessing final kill. For example, very few caterpillars were found on the surface of the fenitrothion treated plots.

TRIAL 2. TIMARU

(*Wiseana despecta*)

Treated: July 5, 1967.

Formulations: Sprays and granules.

Application: Small plot boom sprayer, 30 gal/acre. Granules applied via hand shaker in two directions at right-angles.

Pasture: Predominantly ryegrass with white clover. Height 1 to 3 in.

Soil: Waitohi silt loam.

Weather: Fine, slight north-easterly breeze. 9 successive frosts followed treatment.

Replications: 5. *Plot size:* 1/160th acre.

Pretreatment sampling: 2 to 8 caterpillars per square foot.

Assessed: Caterpillar counts September 14, 15, 20, 1967, 6 square spades per plot. Pasture cover September 21, 1967. Assessed visually by 3 independent observers.

TABLE 2: ASSESSMENT DATA, TRIAL 2

<i>Treatment</i>	<i>Porina</i>		<i>% Pasture Cover</i>	
	<i>Stat. means</i>	<i>Sign. cf. control</i>	<i>Stat. means</i>	<i>Sign. cf. control</i>
fenitrothion 5% granules	2.14	**	72.3	**
fenitrothion sprays	3.30	**	66.8	**
trichlorphon 5% granules	3.40	*	59.8	*
trichlorphon spray	3.48	*	58.1	*
Bayer 5860 5% granules	3.93		54.7	
Bayer 5861 5% granules	4.04		51.5	
propoxur 5% granules	4.42		57.5	
propoxur spray	4.53		51.7	
Untreated	4.54		49.1	
Least significant differences:				
5%	0.86		8.10	
1%	1.16		10.90	

TABLE 3: WEATHER DATA

<i>Date</i> <i>July 1967</i>	<i>Frost Reading</i> <i>(°F)</i>
5	7.2
6	8.4
7	11.2
8	9.8
9	9.4
10	5.0
11	6.6
12	1.6
13	4.6
14	8.0

RESULTS

Fenitrothion granules and spray were both significant at the 1% level compared with control in caterpillar counts and pasture cover, while trichlorphon spray and granules were significant in both counts at the 5% level. Fenitrothion granules were significantly better than the spray at the 5% level.

Propoxur, Bayer 5860 and 5861 granules all utilized pumice as the carrier.

It is the writer's opinion that a pumice is not suitable for porina control as the release of chemical is too slow.

This trial confirms preference for fenitrothion rather than trichlorphon in Canterbury during the winter months.

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