

POTATO BROAD MITE AND ITS CONTROL.

In Queensland, *Hemitarsonemus latus* (Banks) has been recorded on the following cultivated plants: beetroot (*Beta vulgaris* L.), capsicum (*Capsicum frutescens* L. var. *grossum* L. H. Bail.), dahlia (*Dahlia pinnata* Cav.), French bean (*Phaseolus vulgaris* L.), gerbera (*Gerbera jamesonii* Bolus), papaw (*Carica papaya* L.), potato (*Solanum tuberosum* L.), rhubarb (*Rheum rhaponticum* L.) and silver beet (*Beta vulgaris* L. var. *ciela* L.).

Although known for many years to be present in potato fields, this mite in the autumns of 1955 and 1956 caused considerable damage to potato crops in parts of the Lockyer and Fassifern Valleys.

During the fourth week of March, 1955, and the first week of April, 1956, about 12 weeks after planting, randomised block insecticide trials were set out in Sebago potatoes. Plot size was 12 ft. of row, and buffer rows were used. Pest survival was assessed as the numbers of mites recovered from random samples of leaflets, 15 per plot for the first trial, and 30 per plot for the second. The samples were washed into formalin, filtered with a 7.5 cm. Buchner funnel, and counts made on two 5 cm. \times $\frac{1}{2}$ cm. strips on each filter paper.

Treatment details and results are given in Tables 1 and 2.

Table 1.

RESULTS OF 1955 TRIAL.

Treatment*.	At 1 Day.		At 7 Days.		At 12 Days.	
	Mean†.	Equiva- lent. (%).	Mean†.	Equiva- lent. (%).	Mean†.	Equiva- lent. (%).
DDT 0.1%	48.6	56.2	18.1	9.6	35.5	33.7
Dieldrin 0.05%	23.2	15.5	14.6	6.4	23.1	15.4
BHC 0.03%	31.7	27.6	43.4	47.2	33.9	31.1
Parathion 0.01%	52.6	63.1	37.3	36.7	36.4	35.2
Lime sulphur 1 : 80	31.5	27.2	14.6	6.4	17.8	9.3
Wettable sulphur 3 lb./100 gal. ..	27.9	21.9	13.6	5.5	23.7	16.2
Nicotine sulphate 0.08%	27.8	21.8	32.3	28.6	36.7	35.7
Control	(98.0)	..	(38.7)	..	(39.6)
Necessary differences for significance	}	5%	17.5	13.5	11.8	
		1%	24.5	18.5	16.2	

* Spray strengths as active ingredients.

† Post-treatment counts as percentages of pre-treatment counts—inverse sine transformation.

Table 2.

RESULTS OF 1956 TRIAL.

Treatment*.	At 7 Days.		At 13 Days.	
	Mean†.	Equivalent (%)	Mean†.	Equivalent (%)
DDT 0.1%	26.8	20.4	41.9	44.6
Dieldrin 0.05%	14.8	6.4	15.8	7.4
Lime sulphur 1 : 80	27.1	20.7	21.6	13.6
Wettable sulphur 3 lb./100 gal.	31.9	27.9	30.0	25.0
Sulphur dust	20.6	12.4	29.2	23.8
Control	(84.7)	..	(69.4)
Necessary differences for significance	} 5%	8.0	10.9	
		} 1%	11.2	15.3

* Spray strengths as active ingredients.

† Post-treatment counts as percentages of pre-treatment counts—inverse sine transformation.

Foliage damage by this mite was severe, obvious and patchy throughout the fields, and trial insecticide applications were delayed until the pest was established. Applications of dieldrin, lime sulphur or sulphur reduce the mite populations appreciably but not to the extent usually required of a satisfactory miticide.

In the planning of future investigations with potato pests, and in Departmental extension literature, priority is being given to preventive measures for the control of potato broad mite.

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