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INSECTICIDE TAIN T TRIALS IN TOBACCO, 1963-1966

By I. C. CUNNINGHAM, B.Sc.Agr.

SUMMARY

Undesirable tainting in cured tobacco leaf was produced by azinphos-methyl as a wettable powder, "Birlane", "Cidial CE", carbaryl and "S.D. 9129" as emulsifiable concentrates and methidathion as a concentrate solution.

Introduction

As part of a continuing examination for leaf-tainting propensity of insecticides likely to be of value against tobacco pests, three trials were conducted at Parada Research Station in North Queensland over the period 1963-1966.

Materials

Azinphos-methyl.—A wettable powder containing 25.0% w/w active constituent; used at 0.1%.

"Birlane".—An emulsifiable concentrate containing 24.0% w/v of combined isomers of 2-chloro-1-(2, 4-dichlorophenyl) vinyl diethyl phosphate; 0.05%.

Carbaryl.—An emulsifiable concentrate containing 60.0% w/v active constituent; 0.1%.

"Cidial CE".—An emulsifiable concentrate containing 50.0% dimethyl S-(phenylethoxycarbonyl methyl) phosphorothiolothionate; 0.05%.

"*Cyolane*".—An emulsifiable concentrate containing 24.0% w/v 2-(diethoxyphosphino-thioylimino)-1, 3-dithiolane; 0.1%.

Dimethoate.—A concentrate containing 30.0% w/v active constituent; 0.05%.

Endosulfan.—An emulsifiable concentrate containing 35.0% w/v active constituent; 0.075%.

"*Matacil*".—An emulsifiable concentrate containing 20.0% w/v 4-dimethylamino-m-tolyl methylcarbamate; 0.05%.

Methidathion.—(a) A concentrate containing 40.0% w/v active constituent; 0.05%.

Methidathion.—(b) An emulsifiable concentrate containing 20.0% w/v active constituent; 0.05%.

Mevinphos.—A concentrate containing 60.0% w/v active constituent; 0.05%.

Parathion-methyl.—An emulsifiable concentrate containing 58.0% w/v active constituent; 0.058%.

"*S.D. 9129*".—An emulsifiable concentrate containing 35.0% w/v 3-(dimethoxyphosphinyloxy)-N-methyl-crotonomide; 0.05%.

Trichlorphon.—A wettable powder containing 80.0% w/v active constituent; 0.1%.

Methods

In these trials the routine overall application of non-tainting insecticides was terminated 1 month before the trial treatments were applied. In the 1963-64 and 1964-65 trials, the layouts comprised 6 x 4 randomized blocks and the 1965-66 trial was of 8 x 6 randomized blocks. In all trials the unit plot comprised 30 plants and treatments were made 5 or 6 days before harvest.

The treatments gave a thorough leaf coverage of spray on all plants. Applications were by a power sprayer in 1963-64 and by hand-operated knapsack sprayers in the 1964-65 and 1965-66 seasons. Screens and guard rows prevented spray drift between plots.

Leaf was harvested and cured in the usual way, with trashy and damaged leaf being removed at grading. A 2-lb sample was then taken from the yield of each plot, wrapped in plastic sheets with an identifying number and submitted for taint testing according to the procedure outlined by Saunders and Bengston (1961).

Results and Discussion

Results of the three trials are detailed in Table 1

TABLE 1
RESULTS OF TAINT TRIALS, 1963-1966

Treatment	No. of Samples Tested	Taint Results No. of Samples with:—			Percentage of Samples with Distinct Taint
		Nil	Slight	Distinct	
Azinphos-methyl 0.1%	6	4	1	1	16.6
“Birlane” 0.05%	6	3	2	1	16.6
Carbaryl E.C. 0.1%	6	5	..	1	16.6
“Cidial CE” 0.05%	6	2	4	..	Nil
“Cyolane” 0.1%	6	6	Nil
Dimethoate 0.05%	10	2	5	3	30
Endosulfan 0.075%	4	4	Nil
“Matacil” 0.05%	6	5	1	..	Nil
Methidathion (a) 0.05%	4	1	2	1	25
.. .. (b) 0.05%	6	3	3	..	Nil
Mevinphos 0.05%	4	3	1	..	Nil
Parathion-methyl 0.058%	6	5	1	..	Nil
“S.D. 9129” 0.05%	4	2	1	1	25
Trichlorphon 0.1%	6	5	1	..	Nil
Untreated	16	15	1	..	Nil

In a previous series of taint trials (Davis and Saunders 1963), the BHC formulation available proved unsatisfactory as a standard for comparison. For this reason azinphos-methyl, which had earlier caused distinct tainting in samples (Saunders and Bengston 1961), was included as the standard in the 1963-64 trial. The tainting caused by this wettable powder formulation was not comparable to that of the emulsifiable concentrate used in the earlier trials. Dimethoate was used for this purpose in the 1964-65 and 1965-66 trials.

In the present series of trials undesirable tainting in the cured tobacco leaf was produced by azinphos-methyl as a wettable powder, “Birlane”, “Cidial CE”, carbaryl and “S.D. 9129” as emulsifiable concentrates, and dimethoate and methidathion as concentrate solutions.

REFERENCES

- DAVIS, J. J., and SAUNDERS, G. W. (1963).—Insecticide taint trials in tobacco. *Qd J. Agric. Sci.* 20:519-21.
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The author is an officer of the Entomology Section, Division of Plant Industry, Department of Primary Industries, and is stationed at Mareeba.