

## TECHNICAL NOTES

### BANANA RUST THRIPS AND SCAB MOTH CONTROL TRIALS IN NORTH QUEENSLAND

The banana rust thrips, *Scirtothrips signipennis* Bagn., is a persistent pest of bananas in North Queensland, causing skin blemish which may seriously impair market value. The scab moth, *Nacoleia octasema* (Meyr.), is of less importance but may occasionally cause serious damage within a plantation: the larvae feed on the skin of the fruit and as with rust thrips market value is reduced.

The control of banana rust thrips has been given considerable attention, mostly in south Queensland, by several authors (Girault 1925; Veitch and Simmonds 1929; Smith 1933, 1934; Veitch 1934; Caldwell 1938, 1946; Smith 1947; Smith and Weddell 1949; and Saunders 1961). Results were adapted to northern conditions (unpublished records of the Department of Agriculture and Stock), and eventually a DDT/BHC dust was recommended for the control of both rust thrips and scab moth.

During March 1959 two trials were established at East Palmerston, via Innisfail, North Queensland, to compare the efficacy of the standard dust with those of other materials which in recent years have been given some local publicity.

The materials used were:

*Lindane*.—An emulsifiable concentrate containing 16 per cent. w/v active ingredient.

*DDT*.—An emulsion concentrate containing 25 per cent. w/v *p.p'* isomer.

*DDT/BHC*.—A dust containing 2 per cent. *p.p'* isomer DDT, 2 per cent. BHC (0.26 per cent. gamma isomer) and an inert filler.

*Diieldrin*.—An emulsifiable concentrate containing 15 per cent. w/v active ingredient.

*Methoxychlor*.—An emulsifiable concentrate containing 22.5 per cent. w/v active ingredient.

"*Telodrin*" (*WL1650*).—An emulsifiable concentrate containing 15 per cent. w/v active ingredient (1, 3, 4, 5, 6, 7, 8, 8—octachloro—3a, 4, 7, 7a—tetrahydro—4, 7—methanophthalan).

*Thiodan*.—An emulsifiable concentrate containing 20 per cent. w/v active ingredient.

The field layouts were 10 x 4 randomized blocks with single-plant plots. On each trial site mature plants (see Figure 1) which had not thrown bunches were selected in four rows. As the bunches appeared in the throats of the plants the first treatment applications were made. Each treatment with the exception of Treatment 5 was applied weekly for the first three weeks, then at fortnightly intervals until harvesting. In Treatment 5 the entire pseudostem and the emerging bunch were sprayed once only.

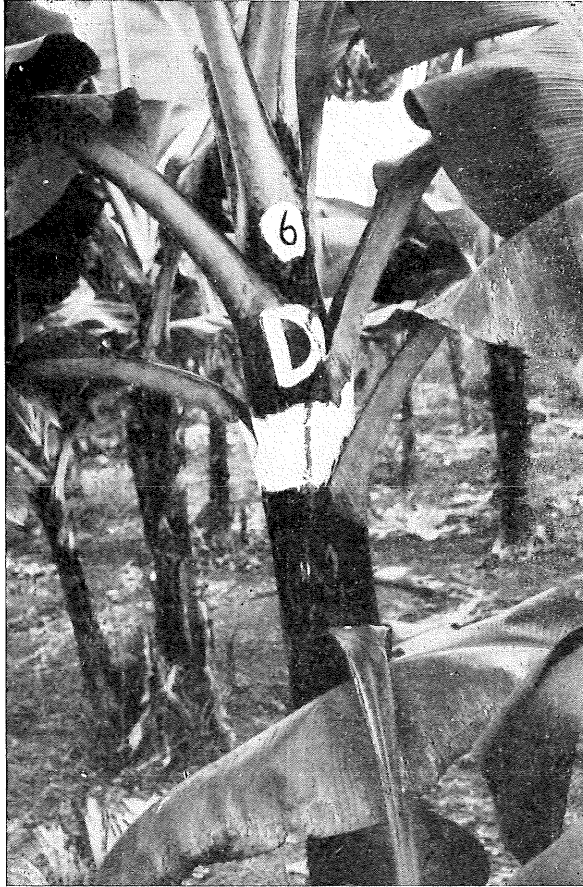


Fig. 1.—Type of Cavendish plant used in trials at East Palmerston, 1959.

Spray applications were carried out to visible wetness with a Junior knapsack sprayer. The dust treatment was applied with a hand duster, and although care was taken to avoid heavy accumulations of dust on the fruit some did occur.

At harvesting (July-October 1959) the hands were removed from the bunches, and each finger rated for damage, the ratings for rust and scab moth being made separately. The following ratings, as percentage skin surface damaged, were used: 0, clean; 1, 1 to 25; 2, 26 to 50; 3, 51 to 75; 4, 76 to 100.

The percentages of fingers exhibiting either insecticide burn or spotting were recorded, and with other results are presented in Table 1.

**Table 1**

TRIAL RESULTS : INSECT DAMAGE AND PHYTOTOXICITY RATINGS

Treatment*	Trial 1			Trial 2		
	Average Rating		Fruit Burnt or Spotted (%)	Average Rating		Fruit Burnt or Spotted (%)
	Rust	Scab Moth		Rust	Scab Moth	
1. Standard, DDT-BHC dust .. .. .	0	0	0	0.01	0	4.2
2. DDT spray 0.1 .. .. .	0	0	0	0.04	0.01	0
3. Lindane spray 0.04 .. .. .	0.03	0	0	0.03	0.01	7.5
4. Dieldrin spray 0.05 .. .. .	0.01	0	0	0.02	0.08	30.3
5. Dieldrin spray 0.05 .. .. .	1.02	0.10	4.8	1.60	0.35	0
6. Methoxychlor spray 0.06 .. .. .	0.05	0.41	10.7	0.10	0.05	39.9
7. Thiodan spray 0.06 .. .. .	0.42	0.07	66.5	0.78	0	82.8
8. "Telodrin" spray 0.1 .. .. .	0.48	0	51.6	0.73	0.01	85.6
9. (10) Check .. .. .	1.52	0.82	0	2.25	0.01	0

\* All spray strengths as per cent. active ingredient.

These results and observations of field practices over some years are the basis of the recommendations by Saunders (1961) for the control of banana rust thrips and scab moth in North Queensland. A change from the standard DDT/BHC dust is not warranted, although as an alternative a DDT spray, 0.1 per cent., may be used.

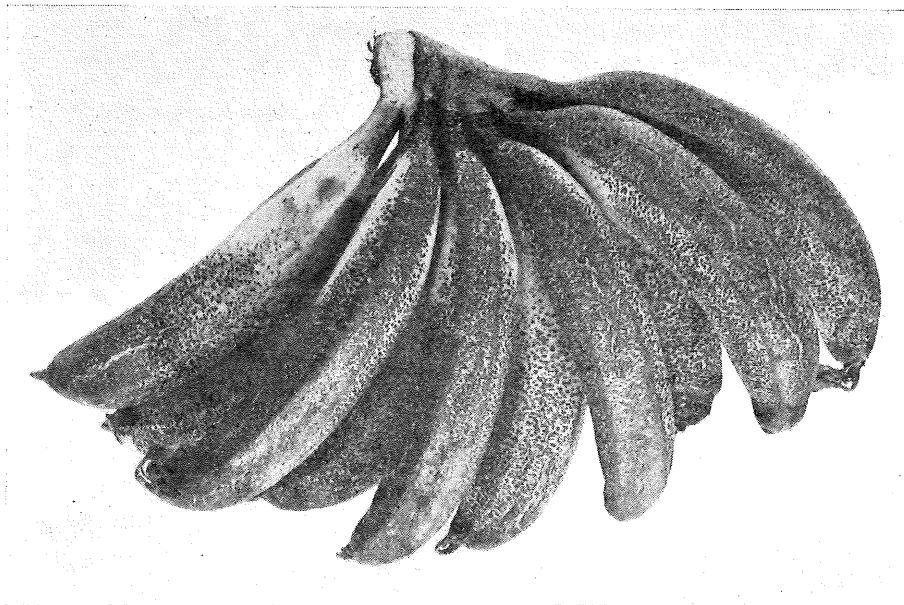


Fig. 2.—Burning and spotting caused by insecticide spray.

The application of dusts and sprays is hampered by wet weather at the time of the year when the pests are likely to be prevalent (Saunders 1961). Accordingly care is required in the methods used, and the manner in which the materials are applied. Severe burning and spotting of fruit (Figure 2) may follow the use of certain insecticides (see Table 1, Treatments 4-8) or the injudicious use of those insecticides recommended. Dusting machinery should ensure an even flow at the outlet so that caking of large deposits on the fruit is avoided (note Trial 2, where 4.2 per cent. of fruit was blemished). DDT spray should be applied to the fruit only, as continuous treatment of the leaves may cause build-up of red spider mites (Tetranychidae).

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