

Chemical control

Implementation

Codling moth, *Cydia pomonella*, Pear

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Discussion of a technique for determining residual control of certain products.

A trial sponsored by Gowan Chemical Co. was conducted in Mendocino county California to compare residual control of Azinphos both with and without oil.

Procedure:

Each treatment was applied to non randomized four tree plots on 7/22 via hand-gun at 250gpa.

On eight dates, beginning on the afternoon of 7/22 and then every 3-4 days (final date 8/15), fruit were infested as follows: Codling moth egg sheets containing ready to hatch eggs were cut into pieces containing 5-8 eggs. These pieces were attached to the calyx area of 20 fruit per treatment (from 2'-7') with a small adhesive tab. Paper cups with a 2.25" opening were then attached over the end of the fruit with masking tape. Fruit were picked 3-4 days following each infestation and brought to the lab. The cups were carefully removed and counts were made of the number of larvae stuck on either the tape or on the adhesive tabs, of the number of dead larvae in the cups or on the fruit surface, of the number of entries with worms and, by the 4th evaluation, of the number of feeding "stings" noted that had no worms. Each fruit and each entry was dissected.

Treatments:

- 1-Azinphos-M 50WSB 1.5lbai/ac
- 2-Azinphos-M 50WSB " + Gavicide Super 90
1.5gal/100gal
- 3-UTC

Conclusion: The number of worms hatched on each fruit averaged 4.3. Treatment 1 provided the best and most consistent control which lasted until 24 days. Treatment 2 worked until around day 21 after which it lost effectiveness rapidly.

Comment: The eggs came via federal express from Canada, and spent 2-3 days in shipment. Optimally, they would arrive on a Thursday and would be used for the next days (Friday) infestation and again the following Monday (two infesting days/shipment). However, there were times when they weren't ready to hatch on the correct date, or, in the case of one shipment, weren't in adequate concentration on the paper, and

older eggs were used. When this was necessary, more than 5-8 were used on the assumption that older eggs would be less viable.

These results shouldn't surprise anyone, but I felt that discussion of this technique might help in its improvement or adaptation to other studies or areas of research.

Credit to Lucia Varella and Robert Van Steenwick, University of California cooperative extension, for their experience and invaluable assistance in this work.

Average number of hatched larvae (stuck+dead+entries):

7/25	7/29	8/1	8/5	8/8	8/12	8/15	8/19
5	2.99	2.57	3.87	4.17	4.79	5.76	5.34

Percent control of 1st instar codling moth larvae using 20 infested fruit per treatment per date.

Trt#	7/25	Trt#	7/29	Trt#	8/1	Trt#	8/5
1	95 a	1	100 a	2	100 a	1	95 a
2	70 b	2	95 ab	1	95 a	2	80 a
3	0 c	3	0 c	3	50 b	3	35 b

Trt#	8/8	Trt#	8/12	Trt#	8/15	Trt#	8/19
1	70 a	1	85 a	1	80 a	1	80 a
2	65 a	2	70 ab	2	30 b	2	40 bc
3	0 c	3	0 c	3	30 b	3	5 d

Means followed by the same letter are not significantly different (P=0.05 DMRT)

Treatments:

- 1- Azinphos-M 50WSB 1.5lbai/ac
- 2- Azinphos-M 50WSB " + Gavicide Super 90 oil
at 1.5gal/100gal
- 3- UTC