

COMMERCIAL APPLICATION OF PHENOTHIAZINE FOR CODLING MOTH¹ CONTROL.

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Although phenothiazine had been used experimentally since 1934, not until 1945 was it applied on a commercial scale for codling moth control either in British Columbia or elsewhere as far as can be learned. Experimental work undertaken at Kelowna in 1937 by Ben Hoy³, District Field Inspector of Kelowna and continued by him and the Dominion Entomological Laboratory staff⁴ until 1944 produced very encouraging results.

In working with phenothiazine they found that the ordinary commercial grade used as an anthelmintic was not sufficiently toxic for codling moth control. When micronized, however, it was highly effective. In fact micronized phenothiazine proved to be about five times as effective as either lead arsenate or cryolite. They also found that if applied late in the season, either as late first brood cover sprays or second brood sprays phenothiazine interfered with normal coloration of red varieties of apples. Furthermore, if applied during hot weather it was capable of causing quite serious skin burning on the spray men. Since the material is not wetted by water it is necessary first to wet it with oil, then to disperse the oil-wetted phenothiazine in water by means of a substance such as casein-lime spreader. Because ordinary summer oil resulted in a heavy deposit that could not be removed, stove oil was used as the wetting agent.

As a result of this work the writer in

1945 undertook to test the value of micronized phenothiazine on a commercial basis at Penticton, B.C. Four orchards that were heavily infested by codling moth in 1944 received early first brood sprays of three-fourths pound micronized phenothiazine per hundred gallons wetted by one quart of stove oil which, in turn, was emulsified by approximately two ounces of casein-lime spreader. About 50 acres were involved and approximately 1,300 pounds of micronized phenothiazine used in the treatment. Each orchard received a calyx spray of either cryolite or lead arsenate, and first, second and third cover sprays of micronized phenothiazine. The fourth and fifth cover sprays were of cryolite-casein-lime and second brood applications were either of fixed nicotine or cryolite-casein-lime. With the exception of one property which was improperly sprayed the orchards showed marked improvement in codling moth control. Results are summarized herewith:

Orchard	1944 Infestation Per Cent	1945 Infestation Per Cent
No. 1	60	4.3
No. 2	50	8
No. 3	No record, but only portion of crop picked, due to codling moth infestation.	12
No. 4	28	24

Because 1945 was a year during which infestation in the Okanagan Valley as a whole showed general increase in spite of the heaviest spraying on record, these results are gratifying. It is anticipated that upwards of fifteen tons of micronized phenothiazine will be used for codling moth control in British Columbia during 1946.

¹ *Carpocapsa pomonella* L.

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³ Hoy, Ben, 1943. Phenothiazine as a codling moth insecticide. Ent. Soc. Brit. Columbia, Proc. 40:11-12.

⁴ Marshall, J., 1945. Phenothiazine in codling moth control. Scientific Agriculture 25 (9):543-550.

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