

PROGRESS REPORT ON RESEARCH IN BLACK VINE WEEVIL CONTROL

"Our research has shown that potential larvicides are mostly ineffective. Drenches with high concentrations of Orthene and Pydrin, products proven effective against adults, have been ineffective against large larvae (fourth through sixth instars). Reasons for these failures have been blamed on (1) larvae established beneath the center of the crown where insecticide does not penetrate well, (2) larvae were too large when the treatment was applied (small larvae are much easier to kill with toxicants), or (3) black vine weevil larvae are inherently resistant to chemicals that are highly toxic to other insect larvae."

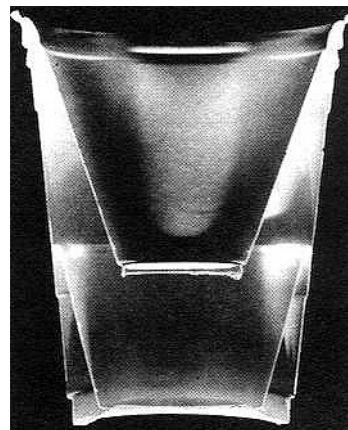
"Studies with adulticides have been more promising. The experimental pyrethroids are extremely toxic to black vine weevil adults and surprisingly residual on taxus foliage. Ficam, an experimental carbamate, and Orthene (already registered for use on some woody ornamentals) appear promising candidates as black vine weevil adulticides. Adulticide evaluation in 1977 corroborated previous studies. Ficam provided complete control for 1 week, while Vydate and Orthene were effective for 3 days. Pydrin was 100 percent effective for at least 10 weeks. Guthion was excellent for 4 weeks. Pydrin is an experimental insecticide without EPA registration and not yet available to production agriculture. Guthion has been used safely and effectively on orchard crops and ornamentals for a number of years."

Prescription

"On the basis of this research, the following black vine weevil control strategy was suggested to Ohio nurserymen for 1978. Hopefully, similar steps can be taken in other states as soon as products receive Federal registration.

Tactic 1. Install pit-fall traps in plantations suspected of harboring a black vine weevil infestation. (Fig. 1). Traps should be inserted in the ground so their upper lip is just beneath the soil surface. They should be located within the row and several rows apart just inside the border of fields suspected of harboring infestation. If a "hot spot" is suspected within a planting, other pit-fall traps should be placed there. Traps should be

Figure 1 -Pit-fall trap consists of an outer container and an inner funnel coated with Fluron to channel black vine weevil adults downward into the collection cup.



placed in a location convenient for checking at weekly intervals beginning in late May in northeastern Ohio, 3 weeks earlier in the latitude of Cincinnati. Record first trap capture.

Tactic 2. The first insecticidal spray should be applied 3 weeks after the first weevil is captured. Remember, the maturation feeding study demonstrated that at least 30 days of feeding are required before adults can produce eggs. Thus, effectiveness of a single insecticidal spray can be maximized and the number of sprays required to achieve control can be reduced by permitting emergence to continue for 3 weeks before application.

Guthion 50 WP (or Orthene 75 SP, if approved) can be used at rates previously indicated. With either material a thorough coverage hydraulic spray must be used. Control is directly related to thoroughness of coverage. Since Guthion persists 4 weeks, reapplication may not be required for 7 weeks, (4 weeks residual effectiveness + 3 weeks of maturation feeding for adults emerging after effective period of Guthion.) Pit-fall traps can be used to determine if a second application is necessary. Two thorough applications of Guthion should provide excellent control of black vine weevil.

Orthene is effective for 2 or 3 days so its residues should kill all adults that have emerged by the time of application. A second application will be required in 3 weeks and a third 6 weeks after first application (or 9 weeks following first adult capture). Additional sprays are needed only if new adults are captured 3 days or more following the third treatment.

If insecticides are alternated and Guthion is used first, Orthene should be applied once 6 to 7 weeks after Guthion. A third spray would be used 3 weeks later only if new adults are captured in pit-fall traps.

If Orthene is used first, Guthion would follow in 3 weeks, followed by a second application of either material, provided new adults are captured in pit-fall traps after the expected residual effectiveness of the insecticide used last.

At this time, we are confident that this adulticide strategy can be used to prevent infestation and/or reinfestation. If Pydrin becomes registered for use against black vine weevil, a single application may provide season-long protection."

Pesticide Use - Due to constantly changing laws and regulations, no liability for the suggested use of chemicals in this Newsletter is assumed by the ONW Newsletter. Pesticides should be applied according to label directions on the pesticide container.

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