

White Pine Weevil_Gallatin Valley_check for larvae (immatures) in terminals

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Some samples have come into the Schutter Lab from the Gallatin Valley with white pine weevil damage. It is very common in blue spruce. The larvae or immatures are still underneath the bark right now in the Gallatin Valley, which is important for management (see below).

When temperatures start to warm (mid-March to early May), the weevil adults (Fig 1) become active and seek out spruce trees. They feed on the main branches near the leader and insert eggs into feeding cavities that are formed. Eggs hatch in about 2 weeks, and the larvae will tunnel under the bark (Fig 2, 3).

Feeding by the developing insects causes the top terminal to suddenly wilt and die in early summer. Only the top leader and upper branches are affected by the insect. Once the top leader is killed, some side branches will change their growth habit and will grow upward to replace the killed leader. This is often referred to as a “shepherd’s crook” type of appearance (Fig 4).



Figure 1. White pine weevil adult



Figure 2. Larvae or immatures underneath the bark.



Figure 3. More larvae underneath the bark.



Figure 4. Shepherd's crook on the leader.



Figure 5. White pine weevil larva.

Management:

Non-chemical: In general, you can clip the infested terminal (two whorls) and train a new leader by tying (not tightly) it to a vertical stake. It's a pretty common practice and works fine. You have to do this when **the larvae are still inside the branch (will be for a couple of weeks before emerging as adults-need to check for presence)**. Terminals should be cut only as far down as necessary to remove the weevil larvae. Destroy the pruned terminals, as the insects can complete their development in the pruned terminals. Rake up the needles and debris under the tree (to remove overwintering stage) in the fall. Since the top leader and upper branches are the only parts of the tree affected by the insect, non-chemical controls are perfectly suitable to control this insect; you just have to keep an eye on the “wilting” in the early summer and prune accordingly.

Chemical options are recommended only if absolutely necessary. Contact insecticides can be sprayed on the terminal in spring to try to kill the egg-laying females before laying eggs on the terminal. Some of these products include the active ingredients bifenthrin, permethrin, or cyfluthrin. Contact insecticides will not be as effective once the eggs have hatched and the larvae have burrowed underneath the bark. A systemic can be applied as a soil drench in the fall (active ingredient such as imidacloprid) followed by several days of watering to allow for root uptake. Please follow the label to protect both the applicator and pollinators. If needing to apply controls this time of year, contact insecticides could be targeted at the terminal but would not be as effective as in the spring. A systemic could also be applied, but the adult weevils might have emerged by the time the systemic reaches the upper terminal.

Disclaimer:

These recommendations are provided only as a guide. It is always the pesticide applicator's responsibility, by law, to read and follow all current label directions for the specific pesticide being used. Due to constantly changing labels and product registration, some of the recommendations given in this writing may no longer be legal by the time you read them. If any information in these recommendations disagrees with the label, the recommendation must be disregarded. No endorsement is intended for products mentioned. The authors and Montana State University assume no liability resulting from the use of these recommendations.