Sunflower

Sunflower Stem Weevil

Frank B. Peairs

Weevil adult, left; larva, right.

Field Biology and Identification

Adults are four to five millimeters (about 3/16 inch) in length and grayish-brown with varying shaped white spots on the wing covers and thorax. Mature larvae are five to six millimeters (¼ inch) long with a creamy white body and a small brown head capsule. Normally, larvae appear C-shaped when found in sunflower stalk tissue. Adults can be found on plants in June and July feeding on the epidermal tissue of the sunflower foliage. This feeding does not affect plant vigor. Eggs are deposited individually in the epidermal tissue of the stem. A single female may deposit up to 20 eggs per plant during a two-week period. Newly hatched larvae feed on leaf tissue, but latter stages move into the stalks from July to late September. A chamber is formed by mature larvae (fourth instar) near the base of the stalk where they remain all winter. The presence of larval chambers can weaken the stalk, causing infested plants to lodge as they dry down. Pupation occurs from May to June of the next year.

Plant Response and Damage

Adult feeding injury is considered insignificant. However, since the pathogen Phoma macdonaldii Boerma has been isolated from adults they are highly suspected of vectoring Phoma black stem disease in sunflower fields. Stem weevil larvae can cause serious stalk breakage. Considerably weakening of the stem can occur when larval infestations reach 25 or more per stalk. Breakage is most likely to occur when plants are under drought stress and/or during periods of high wind. Breakage due to stem weevil, typically occurs at or slightly above the soil line.

Management Approaches

Chemical Control

Scouting should start at 600 growing degree days (base 43◦F, starting January 1. When scouting, sample sites should be 75 to 100 feet from the edge of the field. Use an X-pattern and examine five plants per sampling site for a total of 25 plants at the eight to 14 leaf stage (developmental stages V-8 to R-1) in late June to early July. Determine the average number of adult weevils per plant. Keep in mind that the adults and difficult to see, and they have the habit of dropping to the ground and "playing dead" when disturbed. Insecticide applications are made to prevent the adults from depositing their eggs in the stalk. A treatment is probably justified when one or more adults are found per three plants from stage V-8 through R-1.

Product list for Sunflower Stem Weevil

Pesticide	**Product/Acre (Fl oz. or oz. product)**	**Preharvest Interval, remarks**
Asana XL[R,1]	5.8 - 9.6	28 days. Do not feed forage or fodder tolivestock **Extremely Hazardous to Bees!**
Furadan 4F[R]	16 (foliar)	28 days. Apply only before bloom. **Extremely Hazardous to Bees!**
	2.5 - 5.0 oz/1000 row ft (planting time)	
Baythroid XL[R,1]	2.0 – 2.8	30 days. **Extremely Hazardous to Bees!**
carbaryl[1,2]	See labels	60 days. 30 days to graze or forage. **Extremely Hazardous to Bees!**
chlorpyrifos 4E[R1,2]	16 - 24	42 days. Do not graze. Up to 2 lb preplant. Up t total AI/yr. **Extremely Hazardous to Bees!**
Delta Gold [R,1]	1.0 – 1.5	21 days to harvest. Do not apply more than 0.04 ai/acre/crop. Do not graze or feed treated forage livestock. **Extremely Hazardous to Bees!**
lambda cyhalothrin[R1,2]	2.56 – 3.84	45 days. Do not exceed 0.12 lb total AI/yr. **Extr Hazardous to Bees!**
Proaxis[R,1]	2.56 – 3.84	45 days. Do not exceed 0.06 lb total AI/yr. **Extr Hazardous to Bees!**

[R]Restricted use pesticide. [1]Labeled for chemigation. [2]Generic active ingredient, may be additional formulati

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