Sugarbeets XX-1-3

Cutworms

Gary L. Hein

Cutworm Adult

Cutworm Larva

Cutworms can be a devastating problem in seedling sugarbeet. The most important species of cutworms in this region overwinter as partially grown larvae or eggs and feed extensively early in the spring. Because sugarbeet emerge and grow slowly during early establishment, these actively feeding cutworms can quickly and severely reduce sugarbeet stand. Several species of cutworms can damage sugarbeet in this region, including the army cutworm (*Euxoa auxiliaris*), pale-western cutworm (*Agrotis orthogonia*), dark-sided cutworm (*Euxoa messoria*), variegated cutworm (*Peridroma saucia*), and perhaps others. Of these cutworms, the army cutworm most commonly is found damaging sugarbeet.

Identification (and life cycle/seasonal history)

Army cutworm moths have a wing span of about 1 1/2 inches and are typical of the “miller moths” that are commonly observed in the region. In the fall, females are attracted to bare areas such as over grazed pastures, alfalfa stubble, stressed grassy areas, and newly planted or tilled cropland (i.e., winter wheat) and lay their eggs directly in the soil. Females lay from 1000 to 3000 eggs from September until late October. Egg hatch is extended and often occurs shortly after the eggs have been exposed to moisture (i.e., rainfall). The result of this extended egg laying and hatching period is a great variation in larval size within fields the following spring. Larvae continue to feed as long as temperatures are favorable, and partially grown larvae overwinter in the soil. Larval feeding activity resumes in late winter or early spring (February-March) when soil temperatures increase. By late April and May, fully grown larvae will burrow into the soil, create an earthen chamber, and pupate. Adults emerge from the soil in May through early June to complete the life cycle. The adults migrate to higher elevations in the Rocky Mountains for the summer and return in the fall.

Larvae of the army cutworm have a pale grayish body color that is splotched with variable white or light markings. The upper surface is lighter with a narrow pale stripe along the center of the back. There is a lighter band along the side of the larvae below the spiracles. Larvae can be 1 1/2 to 2 inches long when fully grown.

Perhaps the second most important cutworm in sugarbeet is the pale western cutworm. Pale western moths begin to emerge in late August and lay eggs throughout September.

The moth flight coincides with tillage and planting of winter wheat. Moths are attracted to areas with loose soil and deposit their eggs in the upper 1/2 inch of soil. Eggs hatch early in the spring when temperatures at the soil surface reach 70^{O}F. This may occur from February through April. The pale western cutworm larva is pale with no distinct markings on its body and can be easily distinguished from other cutworms present early in the spring. When fully grown, the larva is about 1 1/4 inch long. Pale western cutworms feed through the spring and mature in May and early June.

Other cutworms that may be found in sugarbeet fields (e.g. dark-sided and variegated cutworms) develop later in the spring and summer and are normally less of a concern to sugarbeet. However, when populations are high, damage can occur to seedling beets and later to larger beets where they can feed on and damage the crown.

Plant Damage and Response

The army cutworm has an extremely wide host range. It feeds on nearly all field crops including alfalfa, barley, corn, oats, potato, sugarbeet, wheat, many vegetables and a number of grasses. Crops most often economically damaged are winter wheat and alfalfa because often they are the only crops growing in the early spring when army cutworm feeding is at its peak. Sugarbeet are often damaged when cutworms move from adjacent fields or grassy borders into emerging beet fields. More importantly, problems with army cutworms have resulted where winter cereal (primarily winter wheat) cover crops are grown through the winter and sugarbeet are planted directly into the cover crop. When the cover crop is killed the cutworms readily move to feed on the emerging sugarbeet.

The greatest potential for army cutworm damage to sugarbeet occurs in fields where plants are beginning to emerge and establish. At this time, damage can be severe because the insect’s consumption rate is high and the plant’s biomass is small. Very low densities (1 per 20 row feet) of cutworms can cause stand loss (5-10 percent) at this time. Damage symptoms at this time are difficult to notice. Often the only sign of cutworm damage is a reduction in stand. The large larvae can consume multiple plants each night, and if present in large enough numbers, they can completely destroy the sugarbeet stand in only a few nights. Damaged plants can be seen by scratching away the soil around the seedling to expose a stub cut back to just below the soil line. These plants will not recover because their growing point has been consumed by the cutworm. If plants were able to emerge before the cutworms began feeding or if smaller larvae were present, cutworm damage would appear as holes in the leaves, or perhaps, leaves or entire plants would be cut off.

Pale western cutworms also can damage sugarbeet where a small grain cover crop was used. Pale western larvae can survive up to a month without food. If present in the cover crop, they can survive the tillage and planting operations and attack emerging plants.

Management Approaches

There are few management options available to reduce the severity or damage potential of the army cutworm. Careful field scouting and assessment of the cutworm situation should be the first step. Sugarbeet planted into a winter cereal cover crop are at a high

risk for cutworm damage. Consideration should be given to treating the sugarbeet for cutworms when spraying herbicides to kill the cover crop. Sugarbeet should be scouted early and often during establishment so the extent of infestation and damage can be assessed. Because cutworms are difficult to detect, scouting must include some attention to the progression of emerging plants. If emergence or stand density starts to decline, the problem must be thoroughly evaluated and immediate action taken. In some years, movement of cutworms out of border grasses also can be significant. In these areas, scouting should include a check of border grasses for defoliation of new plant growth.

The most effective control can be obtained with a layby insecticide. Pyrethroid insecticides are the most effective treatment against cutworms. Only one granular planting-time insecticide has been shown to be effective on cutworms in sugarbeet. Lorsban 15G will provide reasonable cutworm control when applied at planting on sugarbeet; however, effectiveness will be poor or variable under dry conditions. Also when applied at planting, this product can have a significant phytotoxic effect on the beet. Placing this product to the rear of the planter press wheel will minimize, but not eliminate, this problem.

Product List for Cutworms:

Insecticide	**Product per Acre**	**Preharvest Interval, remarks**
Asana XL[R]	5.8-9.6 oz/A	Do not exceed 0.15 lb ai/A per season; PHI 21 days; REI 12 hours.
	0.45 oz/1000 row ft	Apply at plant in T-band or band over row.
	Note: Asana XL is labeled for in-furrow application at plant for cutworm control, but efficacy will be poor if the product is not applied to the soil surface.	
Methyl 4EC[R] (methyl parathion)	0.5-0.75 pts./A	PHI 20 days (60 days if tops fed to animals); REI 5 days.
Lannate WSP[R], LV[R]	WSP 0.5 lbs./A LV 1.5 pts./A	PHI 7 days; REI 48 hrs.
chlorpyrifos 4E[1] (Lorsban plus generics)	2.0 pt./A	PHI 30 days; REI 24 hrs.
chlorpyrifos 15G (Lorsban plus generics)	6.6-9.0 oz./1000 row ft.	Band at planting time; REI 12 hrs.
Mustang MAX[R] Section 24c label in NE, CO, WY, MT	4.0 oz/A	Apply 5-7 inch band or broadcast at planting. REI 12 hours.
Mustang MAX[R] Section 24c label in NE, CO, WY, MT	2.24-4.0 oz/A	Foliar applications. REI 12 hours; PHI 50 days.
Sevin[1] (carbaryl, multiple formulations)	See label for rates	PHI 28 days; REI 12 hrs.

[R]Restricted use pesticide [1]Labeled for chemigation.

Categories: Insects, Sugarbeets, Cutworms

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