

Cutworm Control in Oregon



Agricultural Experiment Station
Oregon State Agricultural College
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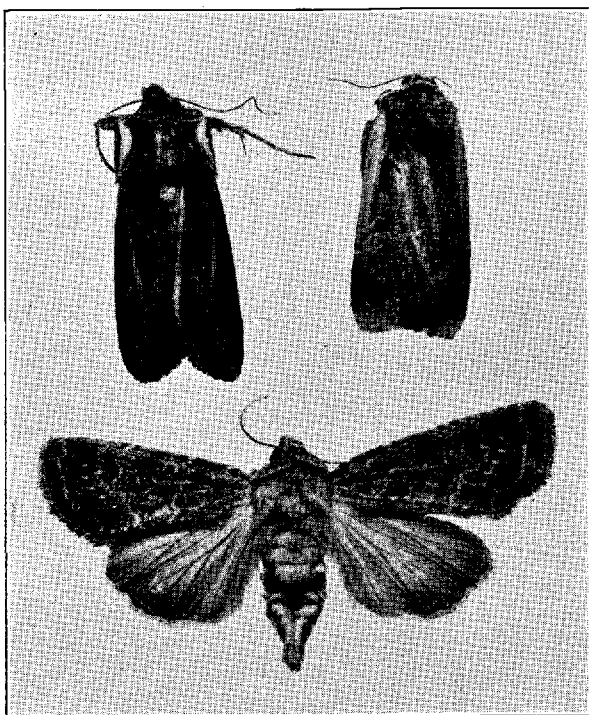


Figure 1. Adult moths. Enlarged.

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By

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MORE or less damage is done each year to truck and field crops in Oregon by cutworms. Some years the outbreak becomes serious and much damage is done. During these periods truck and garden crops suffer most, but a good deal of damage is also done to the foliage and fruits of trees, to shrubs, ornamentals, and field crops. Serious outbreaks of cutworms occurred in Oregon during the seasons of 1900, 1914, and 1925. Losses due to the variegated cutworm in 1900 in Oregon, Washington, and British Columbia are estimated at no less than \$2,500,000.

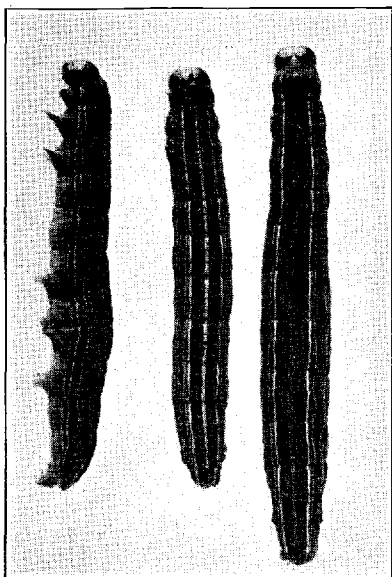


Figure 2. Olive green cutworm, larvae.
Enlarged

There are a great number of species of cutworms in Oregon. The most important are the variegated cutworm, *Lycophotia margaritosa* (Hubn.); the olive green cutworm, *Neurria procincta* (Grote.); the greasy cutworm, *Agrotis ypsilon* (Rott.); and the yellow-striped army worm, *Prodenia praefica* (Grote).

Seasonal history and habits. The life history varies with the species. In Oregon the general life history of the economic forms is about as follows: The winter is spent as half grown larvac in the soil. Some species pass the winter in the pupal stage in the soil. The larvac become active early in the spring, reach maturity during April and May and enter the soil, forming earthen cells in which the larvae change to pupae. From these pupae the parent or adult moths emerge during April, May, and June. These adults are

the common "millers" which are seen at light during summer evenings. The species differ somewhat in color but in general are of a dull grayish or brownish color (see Figure 1). The moths mate and soon after begin to deposit eggs. Each female lays from 200 to 500 or more eggs, either singly or in masses. The eggs are usually deposited in fields on or near the food plants of the larvac, but may be deposited on buildings, trees, fences, etc. One species, the variegated cutworm, seems to have a preference for milady's wash hanging on the line to dry. The eggs hatch in a few days into another generation of worms. This generation of worms reaches maturity during July and August, the adults of the second generation being present in the field from July until October. The eggs from

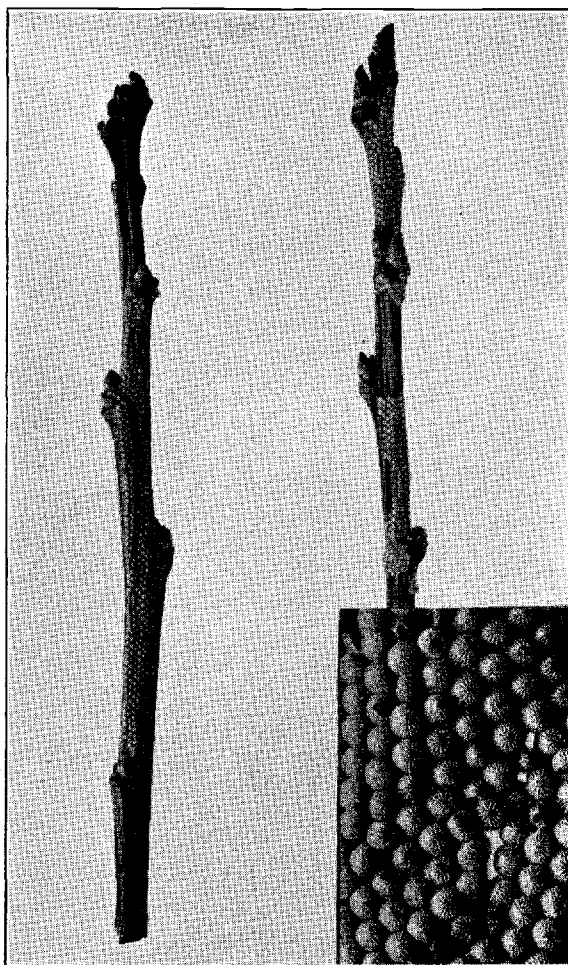


Figure 3. Variegated cutworm, eggs. Insert, eggs enlarged.

these adults hatch into the overwintering larvae, thus completing two generations a year.

The cutworms normally feed at night, cutting off the younger plants near the surface of the soil and climbing up and feeding on the foliage of the older plants. Heads of lettuce and cabbage are tunneled into and even the fruit of the tomato is attacked; in fact, cutworms are very general feeders, attacking almost any garden, truck, or field crop. In seasons of severe infestation trees and shrubs are climbed and defoliated. The day is spent beneath debris or in the soil just beneath the surface. Because of their resemblance in color to the soil they are often overlooked until the

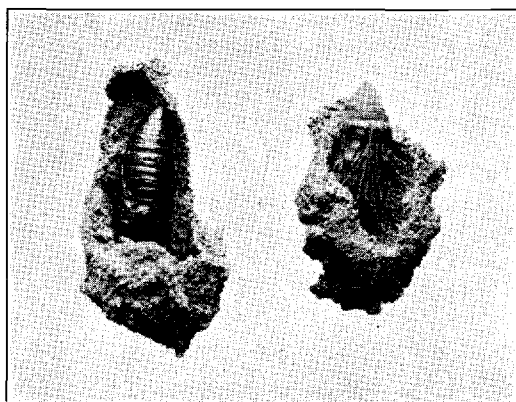


Figure 4. Pupae in earthen cells. Cells broken open to expose pupae.

damage becomes quite apparent. Prompt action at this time is necessary; a few days may mean the difference between a slight damage and total loss of the crop.

Control. Poison bran mash is the standard remedy for cutworms, and when properly prepared and applied gives excellent control. The Oregon Experiment Station has found the following baits to be equally effective:

No. 1. Coarse wheat bran.....	25 lb.
Salt	$\frac{1}{2}$ lb.
White arsenic or paris green.....	1 lb.
Sirup or brown sugar.....	1 pt.
Water to make a crumbly mash.	

The dry ingredients are first thoroughly mixed and the water and sirup added. If too much water is used the mash will be sloppy and hard to scatter. The material should be just wet enough so that it will fall apart readily after being pressed together in the hands. A half barrel, a large tub, or a water-tight box makes a good receptacle in which to mix small quantities of bait.

No. 2. Coarse wheat bran.....	16 lb.
Sodium fluoride	1 lb.
Molasses	2 qt.
Water about 2 gallons.	

Dissolve the sodium fluoride in the water, stir in the molasses and add to the bran. Mix thoroughly. This is the poison bait commonly used for earwigs. It can be purchased already mixed, with the exception of the water, from most dealers in insecticides.

The poison bait should be broadcast over the infested area at the rate of 12 to 15 pounds per acre as soon as the first cutworm injury is noticed. Chickens and other livestock should not be allowed in a treated field.

As the cutworms are usually present and active in the soil at the time the early gardens are planted, it is often advisable, as a matter of insurance, to broadcast the poison bait over the ground just before it is planted. Since little food is available at this time the worms will be hungry and take the poison readily, thus being killed before the crop is present for them to damage. A small amount of the poison mash placed about newly set plants will usually prove an efficient protection.

Yellow-striped army worm, *Prodenia praefica* (Grote). The true army worm, *Cirphis unipuncta* (Grote), has never been reported doing damage in Oregon, but the yellow-striped army worm, *Prodenia praefica* (Grote), has been found recently in Oregon doing damage to field and garden crops.

For several years this species has caused considerable damage in the southern part of the state. Recently it has been found as far north as Corvallis in the Willamette Valley, and in Central Oregon. It attacks various crops and has proved especially injurious to potatoes, alfalfa, and garden crops.

The mature caterpillars vary from 1½ to 2 inches in length. They are velvety black in color with two prominent and several fine bright yellow stripes on the sides.

The yellow-striped army worm differs from most cutworms in that it feeds during the day and rests at night. It spends the night well up on the plants, and as soon as it is warmed by the morning sun becomes active and feeds voraciously. As the food plants are eaten or dry up, the caterpillars migrate to other plants.

Since little feeding is done on the ground, this species is not effectively controlled by poison baits. Crops, such as potatoes with the inedible parts above ground, may be protected against this pest by a poison spray or dust. Calcium arsenate used at the rate of 3 pounds to 100 gallons of water may be used as a spray, or the calcium arsenate dust (70 per cent tricalcium arsenate) may be thoroughly mixed with an equal part of hydrated lime and applied as a dust. Great care should be exercised, however, in the use of any arsenical or other material that leaves a poisonous residue on the edible parts of vegetables. The treatment of vegetables should be so regulated that those parts to be eaten do not bear a poisonous residue. Application of these materials to leafy vegetables, spinach, asparagus, and the like that are to be eaten is not recommended.

Since most of the caterpillars of this species hatch out in uncultivated lands and later migrate to gardens, such areas may be protected by plowing a deep furrow around them with the steep side of the furrow next to the crop to be protected. A hole two or three feet deep is dug every twenty or thirty feet in the bottom of the furrow. These holes may be dug with an ordinary post-hole auger. They serve as traps and in heavy migrations soon become filled with caterpillars. These may then be killed by pouring a little crankcase oil or kerosene over them.

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