Fig. 1. Larvae of the green cloverworm.

Protecting Field and Forage Crops from Green Cloverworm

by Robert F. Ruppel, extension specialist and professor of entomology, and Kimberly A. Parker, intern, Cooperative Extension Service.

Extension Bulletin E-1793 (new)
April 1985
Cooperative Extension Service
Michigan State University

The green cloverworm feeds on a wide range of plants but is most commonly a pest of legumes. Its numbers vary widely from year to year in Michigan and it is only occasionally a pest. It has been most frequently threatening to soybeans and more rarely to dry beans. It can always be found in alfalfa and clovers but has not been abundant enough to threaten yields of these crops. The worms chew holes through the leaves of the crops and will chew on pods, especially soybeans.

The pest overwinters as adult moths or as pupae (cocoons) in the upper surface of the soil. The moths become active as temperatures rise in May. They are brownish with a wingspread of a little over 1 inch. They are active at night and spend the day in a variety of protected places. The female lays eggs singly on the undersides of leaves. The eggs laid by the first generation are placed mostly on the lush growth of forage crops. The larvae (worms) hatch from the eggs and feed from the undersides of the leaves and chew irregular holes through the leaves. The newly hatched worms are green and very small. Fully grown worms are up to 1½ inches long, have a definite head, six small jointed legs just behind the head, and four pairs of fleshy legs near their rear ends. They are green with a pair of white stripes down each side (Fig. 1). They move with a looping motion and will shake rapidly from side to side when disturbed.

The worms finish feeding in about a month. They then move into the upper surface of the soil and form pupae.

The new moths emerge from the pupae and the soil in about two to three weeks. These moths lay their eggs on many plants. There are two and perhaps three generations of the worm per year and worms can be found in the field until heavy frost kills them in the fall. The second generation damages soybeans and dry beans.

Control

Soybeans and dry beans are most susceptible to damage from the worms during pod fill. This occurs during the last part of July and August and, unfortunately, is the same time that the large second generation of worms feed on the plants. Check fields very carefully for holes in the leaves and for worms under the leaves from pod set until the pods start to mature. A spray of insecticide should be made if one-fourth of the foliage has been damaged, or if there are 15 or more worms per row foot during green pod stage. The insecticides Orthene and methomyl (Lannate, Nudrin) are systemics (absorbed and moved within the plant), and you need not cover plants with spray if you use these insecticides. Use drop nozzles to assure complete coverage of the leaves with the spray when you use the other, non-systemic insecticides.

Insecticides Recommended for Control of Green Cloverworm.

Insecticide	Amount per acre	Limits[a]
SOYBEANS AND DRY BEANS		
carbaryl (Savit, Sevin)	1 qt 4 lb/gal F 1¼ lb 80% WP 2 lb 50% WP	PHI 0 days.
Orthene	1 lb 75% WP	PHI 14 days. Do not feed vines.
Guthion	1 lb 50% WP 1 qt 2 lb/gal EC[b]	PHI 30 days dry beans, 45 days soybeans. Do not feed vines. Maximum 4 applications per season in dry beans.
ULV malathion[c]	½ pt 9.33 lb/gal liquid	PHI 1 day dry beans, 7 days soybeans.
SOYBEANS		
Lorsban	1 pt 4 lb/gal EC	PHI 14 days grazing, 28 days fodder and beans. Maximum 3 qt per acre per season.
Pydrin	5⅓ fl oz 2.4 lb/gal EC[b]	PHI 21 days. Do not feed vines. Maximum 42⅔ fl oz per acre per season.
permethrin (Ambush, Pounce)	3⅕ fl oz 2 lb/gal EC[b] 2 fl oz 3.2 lb/gal EC[b]	PHI 60 days. Do not feed vines. Maximum 2 applications per season.
methomyl (Lannate, Nudrin)	½ lb 90% WP 1 qt 1.8 lb/gal EC[b]	PHI 3 days forage, 7 days hay, 14 days beans.
Trithion	½ pt 8 lb/gal EC	PHI 7 days. Do not feed vines.
malathion	3 pt 5 lb/gal EC	PHI 0 days.

[a] *PHI (pre-harvest interval) is the minimum time allowed between application and harvest or other use of the crop.*

[b] *This is a restricted-use pesticide that may be purchased and used only by a certified pesticide applicator.*

[c] *An ultra-low-volume liquid concentrate of malathion for aerial application.*

MICHIGAN STATE UNIVERSITY
COOPERATIVE EXTENSION SERVICE

Issued in furtherance of cooperative extension work in agriculture and home economics, acts of May 8, and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Gordon E. Guyer, Director, Cooperative Extension Service, Michigan State University, E. Lansing, MI 48824.

1P-3M-5:85-UP, New, Price 25 cents. Single copy free to Michigan residents.

O-15488

FILE: 27.32