



Turf Tips

for the homeowner

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Sod Webworm: Biology and Control

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Sod webworms, the caterpillar stage of lawn moths, are the most destructive insect pests of bluegrass lawns in Michigan. Although there are several closely related webworm species which cause damage, the biology and control of the bluegrass webworm, *Crambus teterrellus* (Zincken), will be discussed in detail as representative of the group.

Hosts: Most turf grass varieties are susceptible to webworm damage but bluegrass and bentgrass lawns appear to be favored.

Damage Symptoms: Damage caused by sod webworms will show up as small brown patches of closely clipped grass which may coalesce to form large irregular dead areas.

Similar Damage: Damage to turf caused by other agents is often attributed to sod webworms. Grass killed by white grubs may be confused with webworm damage. However, grubs kill the grass roots so that the areas of damaged turf can easily be pulled up like a carpet to reveal the C-shaped larvae. Heat injury during very dry periods is also often attributed to webworm activity, especially when the grass is shallow rooted in thatch, or on clay.

There are also several lawn diseases which cause brown patches resembling webworm injury. In these cases, check for the presence of larvae or other diagnostic characters (See "How to Diagnose Webworm Damage" section).

Generally, if no feeding injury or larvae are found, the problem is likely due to some other agent, and insecticide applications will be useless.



Fig. 1. Sod webworm adult.



Fig. 2. Sod webworm larva. (Photo courtesy of Dr. H. Tashiro and G. Catlin, Cornell University, New York Agricultural Experiment Station, Geneva, New York.)

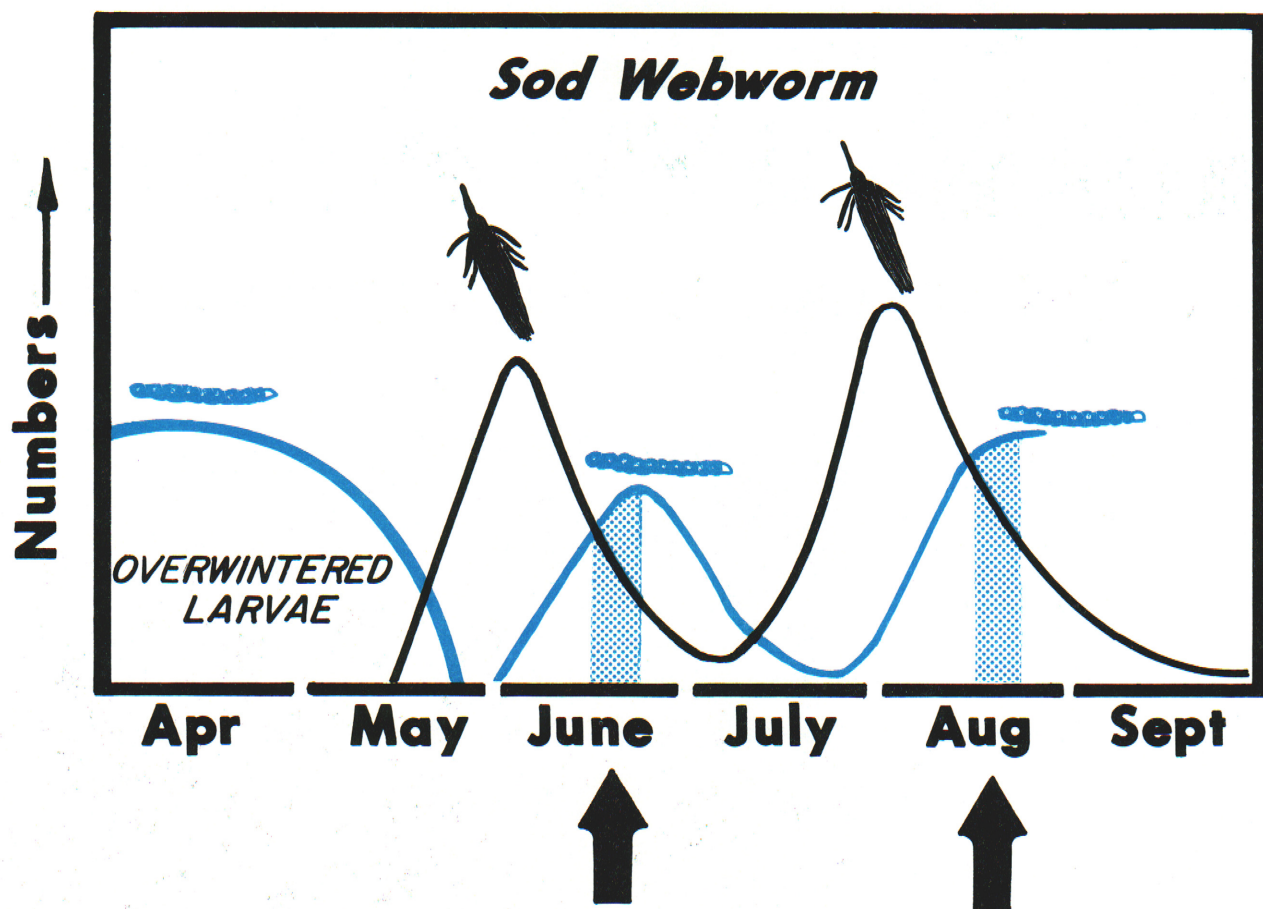


Fig. 4. Generalized life cycle of sod webworm in Michigan. Arrows indicate optimum time for control.

How To Identify

Adults (lawn moths): Greyish tan moths $\frac{1}{2}$ " - $\frac{3}{4}$ " long with two finger-like horns protruding from the head (Fig. 1). Adults are generally active in the evening and have a characteristic short zig-zag flight.

Larvae (webworms): Greyish-brown to dirty white larvae with 4 parallel rows of dark brown spots on the abdomen; $\frac{3}{4}$ -1 inch long when mature (Fig. 2).

Destructive Stages: Adults do not feed; all damage is caused by larvae feeding on grass blades.

Life Cycle: Nearly mature larvae (caterpillars) overwinter in the soil and resume feeding in the spring (late April-early May) as temperatures begin to rise. Occasionally, severe damage will occur in the spring from large numbers of overwintered webworms.

Adults begin to emerge in late

May and early June and can be seen flying across lawns at dusk or late evening. Adult moths rest during the day in deep grass, ground cover, or in shrubbery. Females may drop up to 200 eggs into the grass while they are flying.

Eggs hatch in 5-10 days and the young larvae begin feeding (skeletonizing) in the interveinal areas of grass blades. After a short time the larvae become large enough to consume small portions of the grass blade so that the damaged leaves may appear notched. Later, the more mature larvae construct silk lined burrows in the thatch and begin to chew grass blades off just above the thatch line and pull them into their tunnels to consume. Injury thus appears as small circular (quarter size) areas of closely clipped grass and exposed brown thatch (Fig. 3, Page 4).

Pupation takes place in late June to early July and second generation adults are usually observed shortly

afterwards (see Fig. 4). New eggs are deposited and second generation larvae reach peak activity in mid to late August. Most of the damage is caused by the second larval generation. As the temperatures drop in the fall, webworm larvae burrow deeper into the soil to overwinter. There are only two generations a year.

How to Diagnose Webworm Damage: When sod webworm injury is suspected (see Damage Symptoms above), check for the following:

- 1) Brown patches where grass blades are missing and not simply dead.
- 2) Presence of green fecal pellets (frass) in the thatch.
- 3) Presence of webworm larvae in the thatch residing in silk-lined tubes.

Often, numerous blackbirds will appear on the lawn pecking small holes in the turf as they seek out the

larger webworm larvae. The increased bird activity is often symptomatic of webworm presence, but is not always an accurate indication of a problem.

Larvae present in the lawn can frequently be brought to the surface by drenching the infested turf with a soap solution. This can be prepared by mixing 1-2 oz. of laundry detergent or liquid soap per gallon of water.

Mark off 2 to 3 sections of lawn 2 ft x 2 ft square in both damaged and undamaged areas of the lawn and evenly pour 1-2 gallons of the solution over each section. The soap irritates the larvae causing them to crawl to the surface in 5 to 10 minutes. Generally if more than 4-6 larvae/4 ft² of turf are found, treatment is advisable.

Control

The sighting of numerous webworm adults does not necessarily mean damage will occur. Harsh environmental conditions often destroy many eggs and young larvae before serious damage occurs. Wait approximately 2 weeks after peak moth activity is observed, and use the diagnostic procedure to check for larvae. If larvae are abundant (greater than 4-6/4 ft²), treat with one of the chemicals listed in Table 1.

When To Treat: There is overlap of webworm generations so that some larvae and adults will be present most of the summer. However, the optimum time for control in Michigan is from June 10 to 20 (1st generation) and August 10 to 20

Table 1. Insecticides for Sod Webworm Control¹

Chemical Name	Trade Name	Formulation*	Company Available From**
Acephate	Orthene	EC	Ortho
Aspon	Aspon	G, EC	Ortho
Carbaryl	Sevin	D; G; WP, EC	Blackleaf Bonide Faesy & Besthoff Ortho Pratt Science
Chlorpyrifos	Dursban	G, EC	Bonide Ortho Pratt Scotts
Diazinon	Diazinon or Spectracide	G, EC	Blackleaf Bonide Ciba-Geigy Faesy & Besthoff Ortho Pratt Science Scotts

*D = Dust
G = Granular
EC = Emulsifiable Concentrate (Liquid)
WP = Wettable Powder

**Companies listed are those whose products are commonly available in Michigan lawn and garden centers and their inclusion does not constitute an endorsement. Many of the same chemicals are sold by other formulators and will perform equally well. Additional companies were not listed here because of the unavailability of chemical labels.

(2nd generation) (see Fig. 4). These dates will be 1 to 2 weeks later in Michigan's Upper Peninsula.

How To Treat: Follow the steps below to insure optimum results.

1. Make certain sod webworm larvae are present and are the cause of the problem.

2. Mow the lawn first and remove clippings.

3. If the lawn is dry, water before applying the chemical.

4. Apply an insecticide (see Table

1) in the late afternoon or early evening.

5. Delay watering again until the next day.

6. Keep children and pets off of treated areas for 24 hours.

Sprays may be applied with a hose-end sprayer or compressed-air hand sprayer. Granular materials can be applied with a fertilizer spreader but should be watered lightly after treatment (see label instructions).



Fig. 3. Damage to lawn from sod webworms.

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