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Sod webworms

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What You Should Know

• Sod webworms are the most widely recognized turfgrass insect pests in Utah.

• Sod webworm larvae are the damaging life stage and feed on turfgrass blades.

• Heavy larval infestations can kill grass, with peak turfgrass injury occurring in late summer and early fall.

• Properly irrigated and fertilized turfgrass will outgrow sod webworm feeding damage.



Fig. 1. Common sod webworm adult.

The term "sod webworm" refers to an insect complex of more than twenty different grass-infesting species. Adult sod webworms are pyralid moths, but are more commonly referred to as "snout moths" because their mouthparts are projected forward (Fig. 1). Sod webworms are distributed through the U.S., and at least seven different species occur in Utah (Table 1). A closely-related subterranean webworm known as the cranberry girdler, *Chrysoteuchia topiaria,* is discussed in another fact sheet because its feeding habitat and appearance are somewhat different (ENT-42-07).

Table 1. Common sod webworm species found in Utah

Scientific Name	Common Name	Generations/year	Flight Period	Overwintering Stage
Agriphila ruricolella	Lesser vagabond sod webworm	1	Aug. - Sept.	immature larva
Agriphila vulgivagella	Vagabond crambus moth	1	Aug. - Sept.	immature larva
Crambus leachellus	Leach's crambus moth	2	June - Aug.	immature larva
Fissicrambus mutabilis	Striped sod webworm	2	June - Aug.	immature larva
Pediasia trisecta	Larger sod webworm	2	June - Aug.	immature larva
Tehamia bonifatella	Western lawn moth	2-3	----------	----------
Thaumatopsis pexellus	----------	1	Aug. - Sept.	immature larva

Note: Dashes indicate that information has not been assigned or established.

Sod Webworm Life Cycle

Sod webworms overwinter as immature larvae in silk-lined chambers in the thatch layer. As temperatures begin to warm in the spring, larvae become active and resume feeding on turfgrass blades at night. During the day, larvae will seek refuge in the thatch layer. After molting a total of 6-8 times, the fully grown larvae will pupate and form a silken cocoon in the thatch layer. In 7-10 days, sod webworm adults will emerge and begin mating. Adults are also nocturnal and can be seen flying low over turfgrass and feeding on plant dew. Mated females will drop eggs over the turfgrass; females produce about 60 eggs per day for 14 days. Eggs hatch in about 7 days during hot weather and larvae feed for another 4-7 weeks. Although most sod webworms have two generations per year, some only complete one per year and others have up to four per year (Table 1). Utah's climate greatly impacts the life cycle, and generally two generations per year is the maximum.

Sod Webworm Description

Although there are several different sod webworms in Utah, most look very similar. Eggs are tiny and oval-shaped with longitudinal ribbing, and are completely dry and non-sticky. Eggs are difficult to find in turfgrass but larvae are more obvious and curl into a ball when disturbed. Larvae have a brown head but can display various body colorations, including beige, grey, brown or green (Fig. 2). Most larvae are covered with dark, circular spots and coarse hairs. Full-grown larvae range in size from ⅝-1", but most are ¾". Pupal cases are tan to dark brown and range from ⅜-½". Sod webworm adults are small, dull-colored moths with a wing span of ¾-1" (Figs. 3-5). In addition to the adults having a snout projecting forward, the wings are held tube-like over the back, making them distinctive moths. The hindwings are usually white or grey, but the forewings can be striped with silver, gold, yellow, brown, and black.



Fig. 2. Common sod webworm larvae.



Fig. 3. Leach's crambus moth.[1]



Fig. 4. Lesser vagabond sod webworm.[1]



Fig. 5. Striped sod webworm.[1]

Plant Damage

Sod webworms prefer to feed on plants in the family Graminae, with turfgrass being the ideal food source. Larvae are the damaging life stage and clip turfgrass blades off just above the crown. Initially, sod webworm damage begins as a general thinning to a small area, followed by the presence of obvious brown patches. Severe infestations can cause large irregular patches throughout a lawn. Because sod webworms are feeding on aboveground plant tissue, the roots remain intact. Often sod webworms get blamed for turfgrass problems, but heavy infestation will not make sod unstable as occurs with white grub damage.

Scouting for the presence of sod webworm larvae is recommended if you notice swarms of nocturnal moths fyling over turfgrass or you suspect general thinning to the lawn. One way to flush larvae from the thatch layer is to pour soapy water (2 tablespoons liquid dishwashing detergent into 2 gallons of water) over a 1 ft^2 area on the turfgrass and watch for larvae to surface. The recommended treatment threshold for sod webworm larvae is 10-15/yd^2. Healthy turfgrass can tolerate low to moderate infestations of sod webworm if properly irrigated and fertilized.

Cultural Control

Parasitic wasps and flies and birds can be effective biological control agents for sod webworm larvae. Using broad spectrum insecticides for low densities of larvae is unnecessary and will reduce biological control. Using integrated pest management (IPM) strategies can reduce larval damage to tolerable levels in most cases. Implement the following cultural control methods to reduce sod webworm damage:

• Consider endophyte-infected perennial ryegrasses and fescues that are well adapted to Utah's climate to reduce larval damage.

• Overly maintained turfgrass can be an attractive place for adult females to lay eggs; keep plants healthy but be careful not to exceed recommended fertilization and irrigation schedules.

• Scout for adults in the summer by inspecting turfgrass at sunset and start monitoring for larvae in the early summer.

Control Options

In certain turfgrass situations where sod webworms are persistent over multiple years, a more aggressive control program can be initiated. Chemical control should be considered when cultural methods are not effective. Consider using "reduced risk" insecticides as an alternative to broad spectrum products because they preserve natural enemies and are less toxic to other animals. Spinosad (Conserve®) and *Bacillus thuringiensis* (Bt) (Deliver®) are reduced risk products available for sod webworm control in turfgrass. These products will be most effective against small larvae.

Entomopathogenic nematodes, such as *Steinernema carpocapsae* (Biosafe®, Biovector®, and Exhibit®), provide an alternative to chemical control. Apply nematodes in the early morning or in the evening to avoid direct heat and sunlight. Irrigate before and after the application to encourage movement through the thatch layer. Nematodes should be applied at a rate of 25 million/1000 ft^2 of turfgrass. Several applications may be necessary for adequate management.

There are more than 200 registered products for sod webworm control. Examples of currently registered products in Utah include: beta-cyfluthrin, carbaryl, chlorpyrifos, and trichlorfon. Here are some guidelines for effective chemical control in turfgrass:

• If the thatch layer exceeds ½", use a light aerification to enhance soil penetration.

• Apply ½" of water 48 hours before application to bring feeding larvae closer to the soil surface.

• Immediately apply ½ - ¾" of water after application to push the chemical down to the root zone.

• Mow the lawn to about 1½" to improve penetration.

• Repeat irrigation every four or five days to continue chemical movement in the soil.

[1] Image courtesy of Jim Vargo, North American Moth Photographers Group (http://mothphotographersgroup.msstate.edu/Files/Live/Species/5000/5000.shtml).

Precautionary Statement: All pesticides have benefits and risks, however following the label will maximize the benefits and reduce risks. Pay attention to the directions for use and follow precautionary statements. Pesticide labels are considered legal documents containing instructions and limitations. Inconsistent use of the product or disregarding the label is a violation of both federal and state laws. The pesticide applicator is legally responsible for proper use.

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