**Pear Fruit Sawfly**

*Hoplocampa brevis*

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**Do You Know?**

- The common name given to *Hoplocampa brevis* is pear sawfly. Because another pear sawfly (*Caliroa cerasi*, also known as pear slug) is common in Utah, we will refer to this species as pear fruit sawfly.
- Pear fruit sawfly is an infrequent pest of pear in Utah, first identified in the state in 2015.
- It causes damage when larvae tunnel through developing pears in spring.
- Injured fruits are deformed and drop prematurely.
- Management is by applying an insecticide plus oil at the delayed-dormant application.

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**DESCRIPTION AND LIFE CYCLE**

The pear fruit sawfly adult is a small, fly-like wasp that is reddish-yellow in color. It measures about 3/16-inch long. The adult population is mostly female, with males being uncommon. The females reproduce parthenogenetically (without mating).

Adults start emerging from the soil starting at the pear pre-bloom stage, with a majority of the population emerging over a 5 to 7 day period. During the day, they can be found feeding on pollen and nectar in the flowers. Eventually, each female lays a single egg within the flower epidermis, toward the center of the calyx, repeating the process on up to 40 flowers.

After one to two weeks, the larvae hatch and then tunnel into the developing pear fruitlet to feed on the flesh and to consume the seeds. Larvae are cream to yellowish-grey, with a red-brown to dark black head. When mature, they measure 1/3-inch long. One larva can enter and exit multiple fruits over a period of 20 to 34 days, passing through five instars. Once fully mature (late May to mid June), the larvae drop to the ground, burrow into the soil, and form a silky cocoon. There they remain until the following spring, when they pupate and emerge as adults. Approximately 25% of larvae remain in the soil an additional year. There is one generation per year.
Pear fruit sawfly larvae feed exclusively within pear fruitlets. Symptoms of pear fruits with a larva tunneling inside include:

- deformed and swollen shape
- blemished skin
- round hole located near the calyx, accompanied by black decay and wet frass
- premature fruit drop

Orchard or tree injury fluctuates from year to year. The insect population size and amount of damage depends upon the previous year’s damage level, the timing of adult flight to pear bloom, the level of fruit set, and overwintering conditions. In Utah, losses have been minor, but in highly infested areas of Europe, growers have reported up to 70% loss, primarily on orchard borders. Early-blooming varieties are more susceptible.

**HOSTS**

Pear

**SYMPTOMS**

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**MANAGEMENT**

**Monitoring**
Start monitoring the pear orchard for adult sawflies in March or April at three-day intervals, and continue
through bloom. Shake branches over white cardboard or a cloth tray to determine their presence. After fruitlets form, inspect them for holes, oozing, and/or for frass caused by sawfly larval feeding.

**Treatment Decision-making**

No treatment threshold for adult presence or fruit damage has been determined. In general, treatments should be implemented based on the previous year’s damage, the current crop load, and the presence of adults at flowers. If the crop load is high, anecdotal evidence suggests that damage from pear sawfly will be “absorbed” by crop thinning, and therefore, intervention may not be necessary. If the crop load is light, the injury could cause a greater negative impact.

**Treatment with Insecticides or Nematodes**

If treatment is necessary, the target stage using insecticides is the adults, and the timings are at pre-bloom (delayed dormant) and/or petal fall. Nematodes target the larvae in the soil, and the timing is mid to late spring.

**Conventional**

In Utah, there are no products specifically labeled for this pest, but typical delayed-dormant or petal-fall treatments for other pests have been shown to be effective in Ontario.

**Organic**

For organic control, use oil alone at the delayed-dormant stage. Alternatively, the use of entomopathogenic nematodes may be used. Italian researchers found that applying a mix of *Heterorhabditis bacteriophora* and *Steinernema carpocapsae* to the soil just before larval drop (late May to early June) resulted in zero adult sawfly emergence the following year, as compared to 20 adults in the untreated control. Nematodes require consistent soil moisture, so this practice may not be effective in Utah.

**Cultural Control**

Where applicable, autumn plowing and diskig between tree rows can kill larvae in the soil that are preparing for overwintering.

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**REFERENCES**


Photo Credits:

1 Agrologica. Information About Hoplocampa spp.; H. brevis, H. minuta

2 Kamil Holy

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Fact Sheet Series: Tree Fruit Insects

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