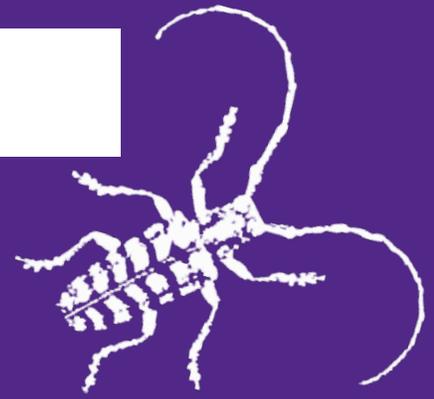


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News Corner

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NEWS CORNER

Bagworms

We are approaching that time in the growing season when the 1/8 to 1/4 of an inch bag of the bagworm, *Thyridopteryx ephemeraeformis*, caterpillar (larva) will be present on broadleaf and evergreen trees and shrubs. Therefore, you should be ready to “take action” against bagworms when they are observed on plants. Bagworm caterpillars (larvae) feed on conifers but they also feed on a wide range of broadleaf plants, including: elm, flowering plum, hackberry, honey locust, linden, maple, oak, rose, sycamore, and wild cherry. Apply insecticides when bagworms are 1/4 of an inch long or less (Figure 1) to maximize effectiveness of insecticide applications and reduce plant damage.



Figure 1. Young bagworm caterpillar (larva) feeding on plant foliage (Raymond Cloyd).

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There are several insecticides labeled for use against bagworms; however, the insecticides recommended to manage bagworm populations early in the season are *Bacillus thuringiensis* subsp. *kurstaki* and spinosad. These active ingredients are commercially available and sold under various trade names. The bacterium, *Bacillus thuringiensis* subsp. *kurstaki* (Figure 2) kills young bagworm caterpillars that have consumed or ingested the bacterium. Hence, thorough coverage of all plant parts and frequent applications are required. The insecticide is sensitive to ultra violet light degradation and rainfall, which reduces residual activity (persistence). Spinosad is the active ingredient in several homeowner products, including Captain Jack's DeadBug Brew (Figure 3) and Monterey Garden Insect Spray. Spinosad works through contact and ingestion; however, spinosad is most effective when ingested by young bagworm caterpillars. Managing bagworms with these insecticides involves applying the insecticides early and making frequent applications to kill the young caterpillars feeding on plant foliage. Apply the insecticides weekly for three to four weeks when bagworms are first noticed to avoid problems later in the growing season.

Bagworms typically start feeding on the tops of trees and shrubs. Consequently, thorough coverage of all plant parts and frequent applications are important in managing bagworm populations. Multiple applications are usually required because bagworm caterpillars do not emerge (eclose) from eggs simultaneously but emerge over time depending on temperature. In addition, young bagworms may be 'blown in' (called 'ballooning') from neighboring plants on silken threads. If left unchecked, bagworms can cause substantial plant damage that will ruin the aesthetic quality of plants (Figure 4). In addition, bagworms can kill plants (especially newly transplanted small evergreens) because evergreens do not usually produce another flush of growth after being fed upon or defoliated by bagworms.



Figure 2. Product containing *Bacillus thuringiensis* subsp. *kurstaki* as the active ingredient (Raymond Cloyd).



Figure 3. Product containing spinosad as the active ingredient (Raymond Cloyd)

For more information on bagworms, you can access and read the following extension publication:

Cloyd, R. A. 2019. Bagworm: Insect Pest of Trees and Shrubs. Kansas State University

Agricultural Experiment Station and Cooperative Extension Service. Kansas State University; Manhattan, KS.

MF3474. 4 pgs.

<http://www.bookstore.ksre.ksu.edu/pubs/MF3474.pdf>

Raymond Cloyd – Horticultural Entomology/Plant Protection

HOME

European Pine Sawfly

We have received several inquiries regarding European pine sawfly, *Neodiprion sertifer*, larvae feeding on pine trees. Young larvae that look like caterpillars are 1/4 of an inch (6.3 millimeters) in length, olive green, with a black head (Figures 1). Mature larvae are >1.0 inch (25.4 millimeters) long with green stripes. Larvae feed in groups on the needles



Figure 1. Young European pine sawfly larvae (Raymond Cloyd)

of a variety of pines, especially mugo, red, and Scotch pine. When disturbed, each individual larva will arch their head

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and abdomen (last segment of an insect body) back, forming a “C-shape” (Figure 2), which is a defensive posture to ward off predators. The larvae will strip the needles of mature foliage, leaving only the central core, which is white and then turns brown (Figure 3). In general, larvae complete feeding by the time needles emerge from the candelabra. Therefore, those needles are not damaged. There is only a minor threat of branch or tree death resulting from sawfly larval feeding. However, the loss of second and third year needles will be noticeable in landscape trees; thus ruining their aesthetic appearance. In late spring, larvae fall onto the soil and pupate in brown, leathery cocoons located at the base of trees. Adults, which look like wasps, emerge in the fall and lay eggs in needles before the onset of winter. European pine sawfly overwinters as an egg inside needles. There is one generation per year in Kansas.

Sawfly larvae look like caterpillars but they are not caterpillars (Order: Lepidoptera). Sawflies are related to ants, bees, and wasps (Order: Hymenoptera). The way to distinguish a sawfly larva from a caterpillar is: 1) sawfly larva have prolegs (fleshy abdominal legs) on every abdominal segment whereas caterpillars are missing prolegs on the abdomen and 2) caterpillar larva have hairs or crochets on their feet whereas sawfly larva do not have hairs or crochets on their feet.



Figure 2. European sawfly larvae in a defensive posture--arching head and abdomen back (Raymond Cloyd)

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Since sawfly larvae are not caterpillars, the microbial insecticide, *Bacillus thuringiensis* subsp. *kurstaki*, will not kill sawfly larvae. Managing sawfly larvae involves hand removing or dislodging larvae from plants using a high pressure water spray. There several insecticides that may be applied to manage European pine sawfly populations including: acephate (Orthene), azadirachtin, carbaryl (Sevin), spinosad (Captain Jack's DeadBug Brew), and any pyrethroid insecticide (e.g., bifenthrin, cyfluthrin, and lambda-cyhalothrin). Always read the insecticide label to make sure that sawflies are listed. For more



Figure 3. Feeding damage to pine caused by European pine sawfly larvae (Raymond Cloyd)

information regarding managing European pine sawfly larval populations contact your county or state extension specialist.

Raymond Cloyd – Horticultural Entomology/Plant Protection

HOME

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