



UConn Home & Garden Education Center



Bagworm Moth

Thyridopteryx ephemeraeformis (Haworth)

The Bagworm moth is in the family Lepidoptera, genus Psychidae, and is named for the case that the caterpillar (larval) stage hide in. It is a serious pest of ornamental trees and shrubs in the eastern part of the United States, in particular the conifers arborvitae, cedar, juniper, and pine and the deciduous species boxelder, linden, locust, maple, and sycamore. The adult worm-like female lacks eyes, has only vestigial wings, functional legs, and mouthparts. The sooty black adult male is moth-like with nearly transparent scaled wings and underdeveloped mouthparts. The dirty gray mature larvae are spotted with darker markings toward the head and are about $\frac{3}{4}$ to 1" long when it is time to pupate.

Life Cycle

Bagworm larvae hatch from late May through early June from the 500-1000 smooth and cylindrical eggs that were laid by the adult female the prior fall. The larvae are 7/100ths of an inch long and disperse by spinning a silken thread that allows them to balloon on the wind to nearby plants. The larvae begin to feed and as they do so they construct their own bag out of twigs, leaves and the same silk. The larvae carry this bag around with as they feed with only their head and thorax sticking out of the bag. As the larvae grow through 7 instar stages they enlarge the bag to almost 2" long to accommodate their size. At the end of the summer the bagworm larvae stop feeding, securely attach their bag to a stem, twig or other structure and seal the bag shut. This bag (or case) is the most recognizable aspect of the bagworm as it hangs from the branch of the host tree.



The pupal stage lasts for 4 weeks until September and early October. At this point the wingless adult female moth will not leave the bag but will release a pheromone that will attract the male moth. The winged adult male moths will emerge from their bags and fly around to locate a female. Once found, the male moth will insert his abdomen into the bag containing the adult female for fertilization. Once the female has mated she will stop producing the pheromone, deposit her egg mass inside of the bag, and will either stay within the bag to die or drop to the ground. Due to underdeveloped mouthparts that prevent them from feeding, the adult males survive only long enough to reproduce. The eggs remain in the bags on the trees till the following spring and hatch about mid-June to start the cycle over.

Damage

Young bagworm larvae feed on the upper epidermis leaves and needles, often leaving small holes in the foliage. The

mature larvae will do more extensive damage, particularly to evergreens. Bagworm infestations can go unnoticed until the damage has already been done and the bags become apparent. Deciduous trees can recover defoliation in the following year although as the bagworm larvae do not travel very far from their hatching bag the same plant may experience bagworm issues in consecutive years. It is a good idea to check plants that have already had bagworm populations in consecutive years.



Control Measures

- Scout trees and shrubs (especially those that have had a prior infestation) for the bags or pods.
- Bags hanging on the trees in the fall and winter contain the eggs for the next generation.
- Remove from small trees by hand and discard any time before June.
- Crush and dispose of the bags to keep the bagworm from re-infesting an area.
- Handpicked bagworms can be placed in a bucket with soapy water or a sealed bag.
- Caterpillars emerge from overwintering eggs within the bag in June.
- *Bacillus thuringiensis* must be applied between mid-June and mid-July because it works well only on young bagworm
- In certain weather conditions, entomopathogenic nematodes (esp. *Steinernema carpocapsae*) have been shown to provide control of bagworm larvae.
- The common bagworm is attacked by at least 11 species of parasitic wasps including the ichneumonid parasitoid wasps *Pimpla disparis*, *Itoplectis conquisitor*, and *Gambrus ultimus*.
- Predators of bagworms include white footed mice and sparrows.
- Chemical control becomes less effective as the season progresses because of the increased size of the larva and its bag.
- Insecticide should provide control if applied thoroughly to all infested plant foliage after July 15

Despite good cultural practices, pests and diseases at times may appear. Chemical control should be used only after all other methods have failed. READ THE LABEL on each pesticide container before each use. Apply as directed. Heed all warnings and precautions. Store pesticides in their original labeled containers out of reach of children, irresponsible people and pets, preferable under lock and key. Dispose of empty containers safely.

For pesticide information please call UConn Home and Garden Education Center weekdays, in Connecticut call toll free 877-486-6271. Out of state call 860-486-6271.

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