

Gardening Basics

Bagworms



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Although bagworms create a silken sac woven with fragments of leaves, twigs, and bark, they certainly aren't welcome ornamentation on our trees and shrubs. Several species of bagworms are found in Texas, but each of them has different habits and lifecycles which affect the timing of control.

The **evergreen bagworm** (*Thyridopteryx ephemeraeformis*) is found in east-central Texas, from the Red River down to the Gulf Coast and feeds on evergreen trees and shrubs. Eggs are laid in the fall, hatch in the spring, and pupate in August/September. The **live oak bagworm** (*Oiketicus abbotii*) is found in the south-central part of the state where the caterpillars grow through the spring, pupate, and become adults in April/May. In the Trans Pecos area, the **desert bagworm** (*O. townsendi*) has a similar life cycle to the live oak bagworm.

Lifecycle

Several species' caterpillars build sacs, but bagworms are the only species that add plant debris for strength. For the evergreen bagworm, females lay eggs inside their sac in the fall and then they fall to the ground and die. The eggs winter over inside the sac. Both sexes emerge as tiny (1/25") hatching caterpillars and spin a single thread of silk. The wind may catch the silk threads and carry them to other host plants where they create their own sac which they then decorate. The sacs elongate as the caterpillars grow, reaching 1 ¾ - 2 inches long by ½ inch wide. Bagworms carry the sacs with their feet or drag by an attached silken thread as they move along twigs and foliage, foraging by emerging from the sac. When ready to pupate, the caterpillar attaches the sac to a twig or an object. After pupating, the males emerge as a hairy black moth with transparent wings (1" span) and feathery antennae. Adult females resemble maggots, without eyes, legs, or antennae and only partially emerge from the sac, giving off a pheromone to attract males. After mating they lay their eggs inside the sac then fall to the ground and die, leaving the eggs in the sac to start the cycle over.



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Plant Damage

Bagworms feed on evergreen trees and shrubs (arborvitae, cedars, cypress, junipers, pines, and spruce) and broadleaf plants (apple, basswood, black locust, box elder, honey locust, Indian hawthorn, maple, various oaks, persimmon, sumac, sycamore, wild cherry, and willow).

Severe infestations without control can defoliate trees and shrubs. Caterpillars feed on the leaf tissue, and because the females cannot fly, they remain on the host plant, becoming abundant enough to defoliate and kill the plant.

Control

Natural predators like birds, insect predators, and insect parasites can reduce the infestation. However, this control may not be enough to eliminate damage to the plant.

Hand picking is the most cost-effective (and satisfying!) method of control. Remove the sacs anytime but especially in the winter and discard them in the trash. If the detached sacs are left on the ground, a new population will emerge and re-infest the plants.

Insecticide application is the last resort and is only effective if the eggs have hatched or the larvae are small. The application timing can be determined by collecting some sacs in the winter in a jar or bag, storing them out of direct sun, and monitoring when they hatch, usually in April or May. Once you see they've hatched, don't delay applying an insecticide labeled for bagworms. Infestations in a tree's canopy should be treated by a certified arborist with the training and equipment to do this safely. Find a certified arborist that services your area from the ISA website: <https://www.treesaregood.org/>

All insecticides have the potential of being hazardous to human and pet health. Always read the product label carefully and follow the application and safety precautions.

Resources:

"Bagworms," Texas A&M AgriLife Extension, retrieved from The OAKtrust Digital Repository:

https://oaktrust.library.tamu.edu/bitstream/handle/1969.1/87551/pdf_2601.pdf?sequence=1&isAllowed=y

"Bagworm," Field Guide to Common Texas Insects, Texas A&M AgriLife Extension:

<https://texasinsects.tamu.edu/lepidoptera/bagworm/>

"Bagworms", Landscape IPM, Texas A&M AgriLife Extension:

<https://landscapeipm.tamu.edu/ipm-for-ornamentals/bagworms/>

"Thyridopteryx ephemeraeformis", Bugguide.net:

<https://bugguide.net/index.php?q=search&keys=Thyridopteryx+ephemeraeformis&search=Search>