



BUG BIZ

Pest Management and Insect Identification Series



Thyridopteryx ephemeraeformis, Evergreen Bagworm Moth (Lepidoptera: Psychidae)

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Description

Twenty-eight species within 14 genera represent the moth family Psychidae in North America. Of these, *Thyridopteryx ephemeraeformis* is the most commonly encountered species and the only one considered to be a pest. Members of this family are most commonly identified by bags housing the larvae and adult females. Larvae build these bags using leaves from their host plant that are lined with silk. On evergreen host plants, the bags are covered with a distinctive arrangement of short needles cut from the host plant. Bags of larvae feeding on nonevergreen plants are more irregular in appearance. They are carried by the larvae for protection as they feed, leaving only the head and thorax exposed. The entire larva can withdraw into the bag when disturbed. The adult males and females strongly differ in appearance (sexual dimorphism). Males of the evergreen bagworm moth are typical moths, with two pairs of wings that completely lack scales and are transparent. Wing spans vary between four-tenths of an inch to an inch and a half (12 to 36 mm). By contrast, females remain within the larval bag after pupation and resemble little more than pale, egg-filled sacks lacking wings. Larvae of the evergreen bagworm moth are plump caterpillars, up to 1 inch (25 mm) in body length, with cream-colored or tan foreparts of the body mottled with black spots and darker brown or gray abdomens. Pupae are typical of other moth pupae, brown in color and completely enclosed in the larval bag that serves as a cocoon.

Life Cycle and Ecological Significance

Young larvae hatch from eggs enclosed within the dead female's bag and disperse by crawling on branches or ballooning into the wind after spinning a silken balloon strand during early spring. After settling onto a host plant, the larvae continually add to the bag by spinning a silk inner lining and attaching pieces of host plant material to the outer surface. Larvae undergo several growth stages

(instars) between molts before maturing and pupating inside the larval bag, which serves as a cocoon. After males emerge from cocoons, they search for females by following pheromones that are dispensed by the completely sedentary female. Mating is achieved with the female still in the bag. After mating, females lay eggs inside their bags, which serve as protection until the larvae hatch. Eggs from the late-season generation overwinter as eggs in the bags.

The evergreen bagworm moth occurs throughout the eastern United States, with records as far west as New Mexico. The species has an extremely broad host plant range, but it is particularly common on ornamental evergreen trees and shrubs. In Louisiana the evergreen bagworm moth has two generations annually, one during spring from overwintering eggs, and a second during late summer and fall. The second generation typically reaches larger population densities.



Male evergreen bagworm. Pennsylvania Department of Conservation and Natural Resources Forestry Archive, Bugwood.org.

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Damage and Control

Damage caused by evergreen bagworms is done by larvae feeding on leaves of various trees and shrubs, particularly ornamental evergreen shrubs. When abundant, these larvae can defoliate trees leading to unthrifty plants, a decrease in plant photosynthesis and reduced plant vigor. In extreme cases or after multiple heavy infestations, this can result in plant mortality.

Manually picking the bags can be an efficient method of control, especially during late fall, winter and early

spring before larvae have hatched. Various natural control agents such as birds, small reptiles and insect parasitoids may also keep infestations under control. Enhancing plant diversity in garden beds by planting ornamental forbs may increase parasitism rates by natural enemies by providing protective plant cover for dispersing adult parasitoids and predators. Chemical control may be required as a last resort when severe defoliation is observed.

Table 1. Chemical control recommendations for bagworms from the LSU AgCenter’s Louisiana Insect Pest Management Guide for 2020.

Host and Pest	Pesticide	Rate	Remarks
CEDAR			
Bagworms	Acelepryn	1.0-2.0 ounces/100 gallons	
	Orthene TTO/75S	1/3 pound/100 gallons	Spray foliage in early June when bags are small; repeat in 10 days; handpick older larvae; spray in late afternoon.
	97S	4.0 ounces/100 gallons	
	Scimitar GS, CS	1.5-5.0 ounces/100 gallons	
	°Spintor 2	3.0-8.0 ounces/acre	
	Battle WP	1.2-4.8 ounces/100 gallons	
	°B.t.		Same as ash.
	Malathion 57% EC	2.0 pints/100 gallons or 2.0 teaspoons/gallon	
	Carbaryl	2.0 pounds/100 gallons	
	Carbaryl 50WP	2.0 tablespoons/gallon	
	Dylox 80% SP	20.0-30.0 ounces/100 gallons	
JUNIPER			
Bagworms	Acelepryn	1.0-2.0 ounces/100 gallons	
	Permethrin SFR	4.0-8.0 ounces/100 gallons	
	Confirm	2.0-8.0 ounces/acre	
	°Condor XL	0.75-1.75 pints/acre	
	°Dipel	2.0-4.0 tablespoons/gallon	
	Orthene TTO/75SP	1/3 pound/100 gallons	
	97SP	4.0 ounces/100 gallons	
	Dylox 80% SP	20.0-30.0 ounces/100 gallons	
	LS	2.0-3.0 pints/100 gallons or 2.0-3.0 teaspoons/gallon	
	°Spintor 2	3.0-8.0 ounces/acre	
	Scimitar GS, CS	1.5-5.0 ounces/100 gallons	
	Battle WP	1.2-4.8 ounces/100 gallons	
	°Crymax	0.5-1.5 pounds/acre	
	Malathion 57% EC	2.0 pints/100 gallons or 2.0 teaspoons/gallon	

*Professional use only, °Biological.

Ultra-Fine Oil or Ultra-Pure Oil can be used with insecticides to enhance control of many tree insects and mites. Always check label for special recommendations and personal protective equipment.



Eggs inside female evergreen bagworm bag. Lacy L. Hyche, Auburn University, Bugwood.org.



Evergreen bagworm larva. Connecticut Agricultural Experiment Station Archive, Connecticut Agricultural Experiment Station, Bugwood.org.

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Contact Us

For advice about arthropod identification or diagnosis, contact the LSU AgCenter Department of Entomology. Reach the department through the Contact Us webpage:

<https://bit.ly/36c4awm>

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PUB 3743 online 5/20
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