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HOUSE AND LANDSCAPE PESTS

The Walnut Caterpillar

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The walnut caterpillar, *Datana integerrima* Grote and Robinson, feeds on a wide range of deciduous trees and woody shrubs. Primary hosts include pecan, black walnut, Japanese walnut, Persian walnut, butternut and hickory. Other host plants include birch, oak, willow, apple and honey locust.

The walnut caterpillar is indigenous (native) to North America from the eastern United States and as far west as Minnesota, Oklahoma, Kansas and Texas.

Biology

The walnut caterpillar overwinters as pupae in the soil under and around the host plants. Adult moths emerge during the late spring with females ovipositing (depositing eggs through an organ called an ovipositor) masses on the undersides of leaves. These egg masses are laid in a single layer and are free of scales or hairs. Each female moth will deposit one egg mass containing 600 eggs or more.

After approximately 9 days, larvae emerge from the eggs and begin feeding on the foliage. Young larvae skeletonize the leaf by feeding only on the leaf surface, while older larvae feed on the entire leaf, leaving only the leaf petiole (stalk). Larvae feed for approximately 23 days, during which they go through five instars (stages).

Unlike the larvae of some leaf-feeding caterpillars, larvae of the walnut caterpillar do not construct webs. During the first four larval stages, the reddish brown larvae feed as a colony, so damage will likely be localized on a few branches. It is not uncommon to find several hundred larvae feeding on a single terminal. When the larvae are ready to molt to the fifth instar, the colony moves to the tree trunk or a main scaffold limb to molt as a group. This molt results in a patch of cast skins remaining on the tree trunk or limb.

The fifth instar larvae are black with long white hairs. After molting they return to the canopy (foliage) to finish feeding. During this

Figure 1. Walnut caterpillar egg mass with larvae emerged and leaf skeletonized from larval feeding.

Figure 2. Fifth instar walnut caterpillar.

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3- to 5-day feeding period, the larvae will consume approximately 80 percent of the foliage they will consume during their life. The larvae then leave the host plant to pupate (go through the pupal stage between larva and adult) in the soil.

In Texas the walnut caterpillar can produce two or three generations per year. Two generations will occur where there are fewer than 245 frost-free days, while three generations can occur in areas where there are more than 245 frost-free days.

Figure 3. Walnut caterpillar larvae feeding on pecan.

Control

During most years, natural predators and parasites keep walnut caterpillar populations in check. Several species of wasps and flies parasitize egg masses and larvae, and many insects and spiders prey upon larvae.

Figure 4. Walnut caterpillar larvae preparing to molt on side of tree.

The homeowner can achieve some control of walnut caterpillars on small trees by removing egg masses from leaves and larvae from the branches. For large trees or for large acreage, an insecticide application is the most practical method to prevent damage.

Recommended insecticides include those products containing *Bacillus thuringiensis*, for example Dipel® or tebufenozide (Confirm®). These insecticides are selective for lepidoptera larvae (caterpillars) and have a high degree of safety. To increase the effectiveness of an insecticide application, apply treatments when the larvae are small and cover the entire canopy.

Insecticide labels are subject to change, so users should always consult the label for target pests, application rates and safety precautions. The user is responsible for the effects on his or her own plants, as well as problems caused by drift onto adjacent properties.

Figure 5. Young colony on pecan leaf.

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