Grape Insect IPM
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climbing cutworms

INTRODUCTION

The name "cutworm" is applied to a large number of larvae of lepidopterous species in the family Noctuidae. The moths are night flyers and the larvae are night feeders. Both stages hide during the day. Many of the cutworm species are rather general feeders on many herbaceous plants but some climb woody plants including grape vines and feed on buds and young leaves. This group is referred to as the climbing cutworms.

Climbing cutworms are frequently a problem in vineyards. At least a dozen species of cutworm larvae can be found in vineyard soils; one common climbing species is the spotted cutworm, *Amathes c-nigrum* (Linnaeus). This cutworm is an important grape pest in New York, Pennsylvania, Michigan, California, and Washington. The following is a description of the life stages, injury, and control of the spotted cutworm and is representative for other cutworms found in vineyards.

THE ADULTS

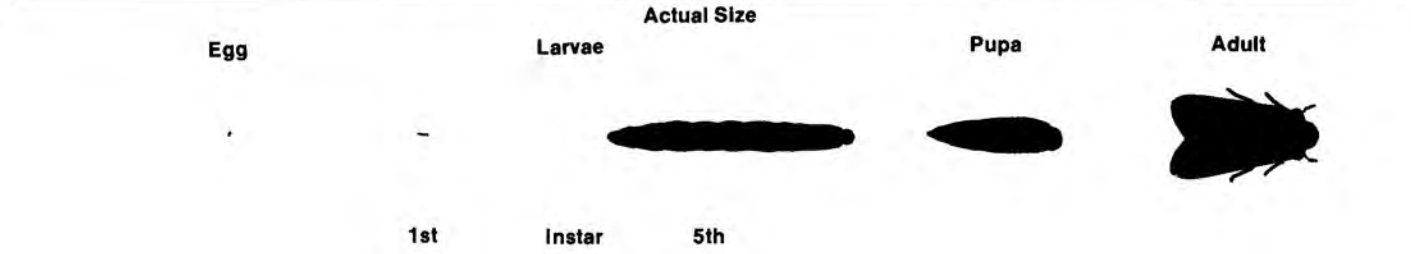
The adults are medium sized moths with a rather heavy body and a wing spread of from 30 to 40 mm. The forewings of the female are medium to dark brown (Fig. 1), whereas those of the male are usually light to medium brown. In both sexes the hind wings are much lighter than the forewings. The key marking for both sexes is the conspicuous triangular-shaped spot on the anterior margin of each forewing. The head and thorax are dark gray, approaching black.

THE EGGS

The egg is off-white in color and nearly spherical in shape, having a slightly greater width (0.65 mm) than height (0.55 mm). It is sculptured with numerous distinct ridges (Fig. 2). The egg changes with age from off-white to pink and eventually, before hatching, turns almost black. The eggs are laid singly, in rows or in patches of one hundred or more, mostly on the leaves of its host plants.

THE LARVAE

Fully-grown larvae are 30 to 36 mm long and 6.5 mm wide (Fig. 3). Spring and fall caterpillars are dull gray, whereas those of the summer brood are dull gray-brown or earth color. There are a series of black trape-



zoidal markings on the posterior body segments and they increase in size towards the rear. The last and largest one is on the eighth abdominal segment. Larvae feed during the night and hide during the day in the soil or debris. When fully grown the larvae pupate in an earthen cell 5 to 10 cm below the soil surface.

THE PUPAE

The pupae are about 18 mm long, smooth, and reddish brown (Fig. 4). There are four long spines on the tip of the abdomen which aid the pupa in working its way out of the soil.

INJURY

Although the spotted cutworm larvae are present in vineyards and surroundings throughout the growing season, the greatest economic injury occurs during bud enlargement in the spring. Larvae feed on the buds from full bud swell through bud break (Fig. 5) and until the shoots are 10 to 15 cm long. They also feed on the young leaves (Fig. 6).

This feeding results in the loss of primary and in some instances loss of secondary and tertiary buds. Grapevines do compensate, at least to some extent, for primary bud loss through production of secondary buds. However, shoots from such buds are less fruitful than those from primary buds. When both primary and secondary buds are damaged the tertiary buds produce only a shoot but no fruit (Fig. 7).

Vineyards on light-textured soils are often the most heavily infested. Bud injury due to cutworm feeding is very similar to that caused by adult flea beetles in the spring. However, attack by flea beetles begins earlier at the beginning of bud swell. Presence of either species in the vineyard should help in the identification of the cause of bud injury.

CONTROL

Timing of spray treatments is very important since cutworm larvae, once they have become active in the spring, can cause serious bud damage in a short time. If bud damage reaches one to two percent, it is justifiable to apply one or more insecticide treatments.

Poison baits show promise for control of cutworms in vineyards. This control method is usually more effective under dry weather conditions since rain can cause break-down of the bait.

GUIDE TO STAGES

STAGE	TIMING	WHERE TO LOOK
Adult (moth)		
1st flight	From mid-May to mid-July.	Flying at night and resting during the day in shelter.
2nd flight	From early August to as late as early November.	Same as above.
Eggs	Laid during time of moth flights.	Leaves of host plants; single or in masses.
Larva		
overwintering	Overwinters as half-grown larva; begins feeding on vines in early May.	Vineyard soil and in weed clumps beneath debris and stones.
summer	1st generation feeding in early June.	Weeds, grasses and on grape foliage.
	2nd generation feeding from about mid-August until ended by low temperature.	Same as above; on grape foliage; also found in clusters.
Pupa		
spring	From early May to early July	In soil and about roots of clumps of grasses.
summer	From mid-July to September.	Same as above.

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