

green fruitworm

Orthosia hibisci (Guenee)

INTRODUCTION

The larvae of several Lepidoptera are collectively called green fruitworms because of their general appearance and tendency to damage apple and pear fruit. One species, *Orthosia hibisci*, which will be referred to as the green fruitworm (GFW), is currently a serious pest in commercial orchards. It is native to and a pest of deciduous fruits across North America. The larvae feed on a variety of deciduous shade, forest, and fruit trees and shrubs. The GFW has only one generation annually.

THE ADULTS

GFW adults are night fliers. Their flight closely parallels apple bud development. It begins at about green tip, peaks at tight cluster, and is completed by the pink stage.

GFW adults are about 16 mm in length (Fig. 1). The forewings are grayish pink; each is marked near the middle

with 2 purplish gray spots, outlined by a narrow pale border. The hindwings, which are not visible when the moth is at rest, are slightly lighter in color than the forewings.

Females begin egg laying on twigs and developing leaves when apples are in the half-inch green stage. A female is capable of laying several hundred eggs, but normally deposits only 1 or 2 at any given site.

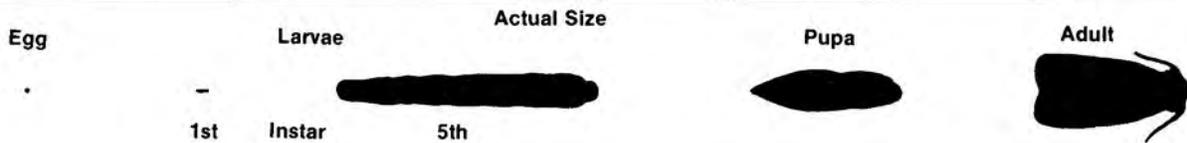
THE EGGS

GFW eggs are about 0.8 mm in diameter and 0.5 mm in height. Freshly laid GFW eggs are white with a grayish tinge and have numerous ridges radiating from the center. Shortly before hatching the egg takes on a mottled appearance (Fig. 2).

THE LARVAE

GFW larvae pass through 6 instars. Newly hatched larvae are 2-3 mm in length and have a grayish green body with a brown head and thoracic shield. Mature larvae are 30-40 mm in length and have a light green body and head. Several narrow white stripes run longitudinally along the top of the body and a slightly wider, more distinct white line runs along each side. The green areas between the stripes are covered with numerous white speckles.

Young larvae feed on new leaves and flower buds and can often be found inside a rolled leaf or bud cluster (Fig. 3).



Older larvae damage flower clusters during bloom and continue to feed on developing fruit and leaves for 1-2 weeks after petal fall (Fig. 4). They then drop to the ground, burrow 50-100 cm beneath the soil surface, and pupate.

THE PUPAE

The GFW overwinters 50-100 mm (2-4 in) underground in the pupal stage. The pupae are dark brown and about 16 mm in length.

INJURY

Most flower buds and blossoms damaged by GFW larvae abort. Most fruit damaged just prior to and shortly after petal fall also drop prematurely. Some, however, remain at

harvest and exhibit deep corky scars and indentations (Fig. 5). This injury is indistinguishable at harvest from that caused by the overwintering larvae of the obliquebanded leafroller.

CONTROL

Several parasites attack GFW larvae, but do not adequately control this pest in commercial orchards. An insecticide may be applied at the half-inch green stage of apples and at the bud burst stage of pears to control adults and young larvae. If necessary, a spray can also be applied at the pink bud stage of apples and white bud stage of pears, and again at petal fall to kill the larger larvae before they seriously damage fruit. Consult your local recommendations to determine which insecticides are most effective in your area.

GUIDE TO STAGES

| Stage | Timing | Where to Look |
|-------------------|---|--|
| Adults | Green tip through pink | Nocturnal flier. |
| Eggs | Half-inch green through pink | Twigs and developing leaves, deposited singly or in pairs. |
| Larvae (Small) | Tight cluster through bloom | Terminal leaves and flower clusters. |
| (Large) | Bloom through 30 days past petal fall | Flower cluster and developing fruit. |
| Pupae | Late June through the next season's green tip | Beneath soil surface, 50 to 100 mm. |