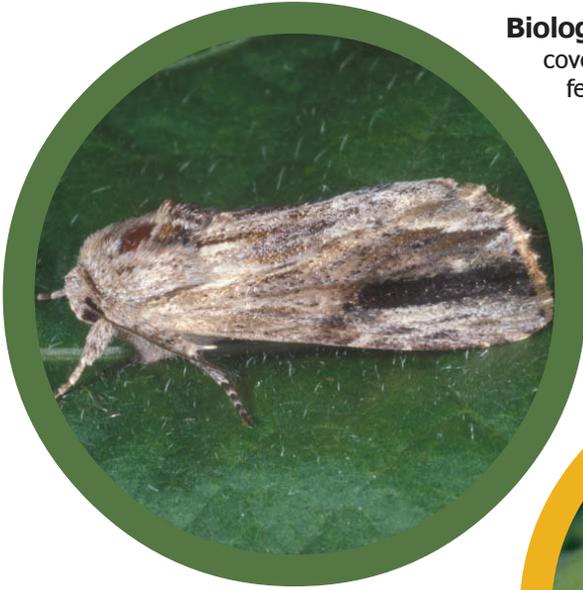




Southern Armyworm: *Spodoptera eridania*



Biology & Lifecycle: Female adults lay clusters of greenish-white eggs and cover them with hair like scales from their bodies (**Figure 3**). Hatching larvae feed gregariously, leaving the upper leaf surface intact and forming “windows.” Older larvae disperse throughout the same and adjacent plants and eat holes in leaves, resulting in a shot hole appearance. Mature larvae drop to the soil, often on the edge of the plastic mulch covering the production beds, and form a cell about 2-5 inches deep and pupate inside. The egg to adult period lasts about 4-6 weeks.

Environmental Factors: The southern armyworm is active year round, but is usually more abundant in tomato and pepper during warmer months in both the spring and fall.

The insect may over summer on volunteer plants and numerous weed species, especially pigweed (*Amaranthus* spp.) and pokeweed (*Phytolacca americana*).



Adult: Moderate sized nocturnal moths with a wing span of about 1¼ to 1½ inches. Front wings are gray and brown, with an irregular banding pattern, and may have either a bean shaped white spot in the middle or a black band extending from the center to the edge (**Figure 1**).

Larvae: Orangish heads and green to black-green bodies with three narrow yellow or white stripes on the dorsal surface (**Figure 2**). A broader yellow stripe on the side is broken by a black spot on the first, often swollen, body segment behind the true legs.

Host range: The southern armyworm has a very wide host range and can be a pest of many vegetable crops, including both tomato and pepper; however, the pest is often more abundant on tomato.

Damage to Tomato: Larvae may complete development on foliage (**Figure 5**) but inflict most damage when they feed on fruit, causing shallow holes or gouges (**Figure 4**). Damaged fruit are rendered unmarketable and may rot due to invasion of secondary microorganisms.

Figure 1. Southern armyworm adult female. Photograph by: Lyle Buss.

Figure 2. Southern armyworm larva. Photograph by: David Schuster.

Figure 3. Armyworm eggs on pepper leaf. Photograph by: David Schuster.

Actual Size:



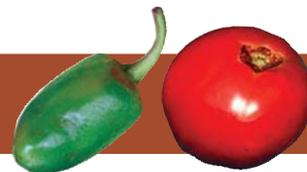
Larva
<2 inches

Monitoring:

Scouting: The whole plant (when small) or the terminal three leaflets of the 3rd or 7th leaf can be examined for the presence of eggs. Newly damaged foliage can be examined for the presence of larvae. A sample of 10 fruit is examined for damage and the presence of recent damage.

Action Thresholds: one larva per 6 plants pre-bloom
one egg or larva per 6 plants post-bloom

Southern Armyworm: *Spodoptera eridania*



CULTURAL CONTROLS:

Start Clean: Tomato and pepper fields should not be planted near or adjacent to old, infested fields.

Field Manipulations: Fields should be destroyed immediately after final harvest by applying a foliar herbicide to destroy infested plants and by deep disking to destroy pupating larvae.

Volunteer plants and weed hosts should be destroyed during the summer off season by frequent disking.

CHEMICAL CONTROLS:

- Insecticides should be applied when the action threshold is reached.
- Insecticides should be timed to treat eggs and hatching larvae for best control. Older larvae may be more difficult to control.

RESISTANCE MANAGEMENT:

- No resistance has been reported to any insecticide in Florida. Chemicals of different classes, especially the newer reduced risk insecticides, should be rotated.

NATURAL ENEMIES:

- The most important species of parasitic wasps observed attacking larvae include *Meteorus autographae*, *Cotesia marginiventris* and *Chelonus insularis*.
- Generalist predators, including big-eyed bugs (*Geocoris* spp.), damsel bugs (*Nabis* spp.) and minute pirate bugs (*Orius* spp.) may attack eggs and young larvae.
- Natural enemies can be conserved by avoiding broad spectrum pyrethroid, organophosphate and carbamate insecticides.
- Fewer insecticide applications and applications of new, reduced risk insecticides can also enhance biological control.



Figure 4. Shot hole damage to fruit by southern armyworm larvae. Photograph by: David Schuster.

Figure 5. Early instars feeding. Photograph by: Lyle Buss.



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