

## Pepper maggot

(Order: Diptera, Family: Tephritidae, *Zonosemata electa* (Say))

### Description:

*Adult:* Male flies are about 6.5 mm long and females about 7.5 mm. The head, abdomen and legs are pale yellow. The thorax is bright yellow with brownish stripes. The last abdominal segment has a pair of small black spots. The transparent wings have dark bands, with the bands forming a 'V' shape near the wing tips. The eyes are green.

*Immature stages:* Eggs are primarily oval but with one end narrowed, tapered, and curved, with an overall shape similar to a crooked-neck squash. Larvae reach a maximum length of about 12 mm and are shaped similar to a house fly larvae, with a cylindrical body that is wide at the posterior end and tapers to a pointed head. Larval color changes from white to yellowish as it matures. The pupal stage occurs in the soil. Pupae are yellowish-brown to brown, oval, flattened and 6-8 mm long.



Pepper maggot adult on left compared to house fly on right (Image from NCSU).

### Biology:

*Life cycle:* There is one generation of pepper maggot each year. Females emerge, mate, and lay eggs in June-July (possibly a little earlier in Georgia). They insert eggs into the flesh of fruit. The stalk of the egg may be visible with close examination of the oviposition slit. Eggs hatch in 8-10 days. The larvae feed inside the fruit for about 18 days, then exit the fruit, drop to the soil and pupate, usually within the top 5-10 cm of soil. The puparium persists from late summer or autumn until the next summer.

*Seasonal distribution:* This pest has one generation per year, with the larval stages reported to occur June - September. This is considered a minor pest in Georgia, but has been reported from peppers.

**Damage to Crop:** The crops damaged are pepper and eggplant. Tomato can also be damaged, but this is rare. Oviposition occurs on small fruit, usually with a diameter of 1-3 cm. The area around the oviposition site forms a shallow dimple as the fruit grows. Larvae feed inside the fruit, typically with one larva per fruit in pepper, but several may occur in individual eggplant fruit.



Pepper maggot in a pepper pod (Image from NCSU).

### Management:

This is a sporadic to rare pest in Georgia. Yellow-sticky traps can be used to monitor for adults, but are not a reliable indicator of density. Larvae are difficult to detect in fruit until they produce an exit hole at maturity. Fruit production in Georgia generally occurs prior to (spring production) or after (fall production) reported activity periods for pepper maggot. Good sanitation practices, particularly after the spring production season, with elimination of plants and fruit are recommended for prevention of future infestations.