Golden twin spot *Chrysodeixis chalcites*

Golden twin spot is an exotic moth that feeds on leaves and fruits of many herbaceous plants. It is also a greenhouse pest. If introduced into Michigan, this insect potentially poses a threat to vegetable, fruit, flower and greenhouse producers.

Michigan risk maps for exotic plant pests.

Other common names

tomato looper, green garden looper

Systematic position

Insecta > Lepidoptera > Noctuidae > *Chrysodeixis chalcites* (Esper)

Global distribution

The insect is native to Mediterranean regions and tropical Africa. It also occurs in greater parts of Europe through migration and as a greenhouse pest. The moth is also reported in Australia, India and Southeast Asia (Engle et al. 2008).

Quarantine status

This insect is listed as an exotic organism of high invasive risk to the United States (USDA-APHIS 2008). One specimen has been found on *Pelargonium* (geraniums) in an Ohio greenhouse (USDA-APHIS-PPQ). No further infestation has been detected.

Plant hosts

The moth is a general feeder on many herbaceous weeds and crops including vegetable, fruit and ornamental hosts. Its crop hosts include cauliflower, chrysanthemum, corn, crucifers, geraniums, greenhouse crops, legumes, soybeans, potato, strawberries and tomatos (USDA APHIS PPQ).

Adult. (Photo: P. Mazzei, Bugwood.org)

Larva. (Photo: P. Mazzei, Bugwood.org)

Biology

Female moths lay eggs singly or in small clusters on various objects. Larvae feed on leaves and fruit of their host plants. Pupation occurs in a silken cocoon often attached to the underside of leaves or any suitable objects. Adults can be observed any time of year. Flights occur at dusk and moths are attracted to lights.

Identification

- **Adult**: About 40 mm wingspan and 15-18 mm long; forewing gold to bronze in ground color and has two silver oval spots that are similar in size (hence the common name golden twin spot); wings fold over the body at rest giving a tent-like appearance.
- **Larva**: Up to 38 mm long; body pale green with a light longitudinal stripe along each side; head green; moves like an inch-worm.
- **Pupa**: About 20 mm long; body pale green ventrally with a dark brown dorsal stripe, or body entirely brown.

The larvae of the golden twin spot look similar to those of the native noctuid moth, the soybean looper (*Pseudoplusia includens*).

Signs of infestation

- Presence of larvae on food plants.

Prepared by T. Noma, M. Colunga-Garcia, M. Brewer, J. Landis, and A. Gooch as a part of Michigan State University IPM Program and M. Philip of Michigan Department of Agriculture.

Pupa in cocoon. (Photo: P. Mazzei, Bugwood.org)

- Presence of pupae in cocoon attached to underside of leaves.
- Skeletonized leaves by larval feeding.

Management notes

The moth is noted as a greenhouse pest infesting flower and vegetable crops in Poland and the Netherlands where the insect cannot survive the winters outdoors (Napiorkowska-Kowalik and Gawlowska 2006). Sex pheromones have been identified.

Economic significance in Michigan

With its wide host range, this insect is a concern for a variety of fruit, vegetable and ornamental commodities. Furthermore, the insect seems to adapt well to greenhouse environments, extending its pest potential to greenhouse horticulture crops.

Likely pathways of entry in Michigan

Importation of fruit, flowers and live plants.

If you find something suspicious on a susceptible host plant, please contact MSU Diagnostic Services (517-355-4536), your county extension office, or the Michigan Department of Agriculture (1-800-292-3939).

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