Light Brown Apple Moth

*Epiphyas postvittana*

Photo: Donald Hobern, 2008 wikimedia commons
Light Brown Apple Moth

• Native to Australia

• First U.S. detection was in CA in 2006

• Pest of ornamental plants, crops, and plantation trees.

Photos: (Top) - Todd Gilligan, CSU, Bugwood.org #5482456; (Bottom) - Department of Primary Industries and Water, Tasmania Archive, Bugwood.org #5385954

Damage on apples
Sampled but not found

Intercepted or detected, but not considered established

Considered established by USDA APHIS in parts of the state

Map courtesy of Pest Tracker, National Agricultural Pest Information System (NAPIS)
Host Plants

Generalist

- Serious pest of stone and pome fruits
- Adds 1.3% to management costs
- Untreated, can result in 70% crop loss

Florida hosts can include:

- **Ornamental**: cassia, cypress, geranium, passionflower, pine, rose
- **Agricultural**: avocado, blueberry, cabbage, carrot, citrus, broccoli, cucumber, loquat, mango, strawberry
- **Endangered** native species

Larva on young apples

Photos: Department of Primary Industries and Water, Tasmania Archive, Bugwood.org #5385957
Identification: Eggs

- 20 - 50 laid on upper surface of leaf or fruit
- 0.84 - 0.95 mm long
- Pale white to green
  - Black or brown when parasitized

Photos: Top – Todd Gilligan, CSU Bugwood.org #5495358; Department of Primary Industries and Water, Tasmania Archive, Bugwood.org #5385952
Identification: Larvae & Pupae

• Positive ID with molecular methods only

Photos:
- (Top Left) Department of Primary Industries and Water, Tasmania Archive, Bugwood.org #5385959;
- (Bottom Left) - Wikimedia Commons;
- (Right) - Todd Gilligan, CSU, Bugwood.org #5495362

Pupa

larva
Identification: Adults

- About 1cm in length
- Broad, brown, overlapping wings
- Thin antennae
- If microscope available
  - Forward-facing palps
  - Proboscis free of scales

Photos: Top - Julieta Brambila, USDA 2011; Bottom - Natasha Wright, FDACS 2008
Identification: Adults

• ID requires expert species level confirmation by dissection of genitalia or molecular methods

• Highly variable forewing coloration & pattern
  – NOT a reliable diagnostic tool.

Photos: Todd Gilligan, CSU, Bugwood.org #5482458
Life cycle

- Eggs hatch in 8-9 d
- Larval stage ≈ 25 d
- Pupation lasts 10 d
- Females lay eggs in 6-10 d

Photos:
- Department of Primary Industries and Water, Tasmania Archive, Bugwood.org #5385950 (adult); #5385952 (eggs); Todd Gilligan, CSU, Bugwood.org #5495359 (larvae); #5495362 (pupae)
Damage

- Leaf-roller moth (construct tent)
- Feed on underside of leaves
- Scar exterior surface of fruit
- Older larvae burrow into fruit

Photos: Department of Primary Industries and Water, Tasmania Archive, Bugwood.org #5385955; #5385954
Monitoring

Scouting
  • Look for leafrollers

The USDA eradication program
  • Traps baited with LBAM lure
  • Sterile males
  • Quarantines
  • Ground based & Aerial treatments
  • Biocontrols

Photos: Julieta Brambila, USDA 2011
Author

Andrew Derksen, M.S.

Pest Survey Scientist/Biological Scientist II, Florida Department of Agriculture and Consumer Services, Division of Plant Industry
Editors

Matthew D. Smith, Ph.D.
Postdoctoral Associate, Department of Entomology and Nematology, University of Florida

Stephanie Stocks, M.S.
Assistant-In, Extension Scientist, Department of Entomology and Nematology, University of Florida

Keumchul Shin, M.S.
Graduate Research Assistant, Doctor of Plant Medicine program, University of Florida
Reviewers

Peter T. Oboyski, Ph.D.
Essig Museum of Entomology, University of California, Berkeley

Jim Hayden, Ph.D.
Florida Department of Agriculture and Consumer Services, Division of Plant Industry

Jerry Powell, Ph.D.
Director Emeritus, Essig Museum of Entomology, University of California, Berkeley
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References


Plant Epidemiology and Risk Analysis Laboratory, Center for Plant Health Science and Technology. 2009. APHIS Draft Response to Petitions for the Reclassification of Light Brown Apple Moth [Epiphyas postvittana (Walker)] as a Non-Quarantine Pest. United States Department of Agriculture Animal and Plant Health Inspection Service Plant Protection and Quarantine.

