

Pests and Fungal Organisms Identified on Olives (*Olea europaea*) in Florida¹

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Olive (*Olea europaea*) production in Florida has increased over the last few years. Most of this production is on small farms, but larger areas are being planted as well. As trees become available in nurseries many homeowners are planting them in their landscapes. Fortunately, olives are a relatively pest-free species, but some occasional invaders can be a nuisance or cause lasting harm. A few plant pathogens that may infect olives also can lead to a decline in overall plant health, fruit yield, or the visual appearance of plants.

Following correct cultural practices when growing olives can reduce your chances of tree loss from pests and diseases. Nearby crops and weeds can build up or harbor potential pests of olives. Research is ongoing to determine what pests from citrus, corn, and solanaceous weeds and crops (e.g., nightshade, tomato, pepper, and eggplant) can move into olive production areas. This information will be helpful for future site selection for olive producers.

A survey of olive production and interviews with Florida growers in 2014 identified the pests and diseases described below. Links to more specific pest information on biology, behavior and control are provided when available.

Occasional Pests

Leaffooted Bugs and Stink Bugs

These true bugs (Order Hemiptera) are known fruit, seed, and vegetable pests in Florida. Olive growers have reported seeing leaffooted bugs (Fig 1.) and stink bugs feeding on fruit and causing damage. Management of these pests can be difficult, but if you do not use pesticides for insect management, then natural enemies like parasitic flies and predatory stink bugs can help manage populations.



Figure 1. Leaffooted bug, *Leptoglossus phyllopus*, on an olive tree in Marion County, Florida.

Credits: Sandra A. Allan, USDA-ARS-CMAVE

For more information on leaffooted bugs, pest stink bugs and beneficial stink bugs, please visit [ENY718/IN534 Stink Bugs and Leaffooted Bugs Are Important Fruit, Nut, Seed and Vegetable Pests](#) by Mizell.

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Glassy-winged Sharpshooters

A native pest, the glassy-winged sharpshooter (*Homalodisca vitripennis*, Fig. 2) has been reported by growers as feeding on olive trees in Florida. This pest can vector the plant pathogen *Xylella fastidiosa*, which causes Pierce's disease of grape. *Xylella fastidiosa* will cause a rapid decline in olive tree health. This pathogen is known in Florida but has not been isolated from olive trees. If you suspect you have the glassy-winged sharpshooter and damage from *Xylella fastidiosa*, please contact the authors.



Figure 2. Adult glassy-winged sharpshooter, *Homalodisca vitripennis*. Credits: Lyle J. Buss, UF/IFAS

For more information on this pest, please visit [EENY274/IN552 Glassy-Winged Sharpshooter, *Homalodisca vitripennis* \(=coagulata\) \(Germar\) \(Insecta: Hemiptera: Cicadellidae: Cicadellinae\)](#) by Conklin and Mizell. To learn more about Pierce's disease and leafhoppers, please visit [EENY 683/IN174 *Xylella fastidiosa* Diseases and Their Leafhopper Vectors](#) by Mizell, Andersen, Tipping and Brodbeck.

Ants

Ants can be a sign of a bigger problem in your grove. Ants crawling on tree trunks (Fig. 3) and branches can indicate a scale insect problem. If you find ants, you should check the tree for scale insects or signs of scale insects like sooty mold (described below). Although not usually damaging to plants, fire ants can be a nuisance and a danger for workers.



Figure 3. Ants on an olive tree trunk in Marion County, Florida. Credits: Sandra A. Allan, USDA-ARS-CMAVE

Fire ant management can be achieved with several methods described by [Collins and Scheffrahn](#).

For more information on fire ant management, please visit [EENY195/IN352 Red Imported Fire Ant, *Solenopsis invicta* Buren \(Insecta: Hymenoptera: Formicidae: Myrmicinae\)](#) by Collins and Scheffrahn.

Defoliators

Grasshoppers and Katydid

Growers have reported minor chewing and defoliation damage from grasshoppers and katydids (Fig. 4) on olive trees in Florida. Katydids can also prove a nuisance when they lay eggs in leaf margins (Fig. 5). At this time managing grasshopper and katydid populations can only be achieved by maintaining a weed-free environment in and around groves or by applications of insecticides.

For more information on grasshoppers please visit [SP98/IN010 Common Grasshoppers in Florida](#) by Capinera.

For more information on katydids and crickets please visit [ENY813/CH056 Grasshopper, Katydid and Cricket Pests of Florida Citrus](#) by Fasulo and Brooks.



Figure 4. Immature katydid (*Scudderia* sp.) on an olive tree in Marion County, Florida. Credits: Sandra A. Allan, USDA-ARS-CMAVE



Figure 5. Hatched katydid eggs. Eggs deposited in an olive leaf between the upper and lower leaf surface along the leaf margin. Collected in Brevard County, Florida. Credits: Lyle J. Buss, UF/IFAS

Hornworms

Members of the family Sphingidae, hornworms (Fig. 6) have been found defoliating olives in Florida. Their damage is apparent when an olive branch appears to be stripped of leaves. If you look below the branch, you will find the frass (excrement, Fig. 7) from these caterpillars. Many growers report success with hand removal of these pests.



Figure 6. Larva of hornworm, family Sphingidae, on an olive tree in Volusia County, Florida.

Credits: Rik Davis, Certified Crop Advisor



Figure 7. Frass of hornworm, family Sphingidae, collected from under an olive tree in Alachua County, Florida.

Credits: Jennifer L. Gillett-Kaufman, UF/IFAS

For more information on similar pests, please visit [EENY031/IN158 Tobacco Hornworm, *Manduca sexta*](#) (Linnaeus), and [Tomato Hornworm, *Manduca quinquemaculata*](#) (Haworth), (Insecta: Lepidoptera: Sphingidae) by Villanueva.

Olive Shootworm

The olive shootworm, *Palpita persimilis* (Fig. 8), has been found in central and southern Florida on various plants, but it has not been reported on olive in Florida. The larvae (Fig. 9) can cause defoliation of new growth. The larvae tie leaves together with silk to make nests on shoot tips. Feeding damage can be just on the epidermis of the leaf, or as larvae age they will chew holes in leaves. This insect is most

commonly found feeding on Japanese privet (*Ligustrum japonicum*). Please let the authors know if you find this pest in your olive grove. We are trying to map its range distribution in Florida.

For more information on this pest, please visit [EENY556/IN995 Olive Shootworm, *Palpita persimilis* Munroe](#) (Insecta: Lepidoptera: Crambidae) by Hayden and Buss.



Figure 8. Olive shootworm, *Palpita persimilis*, adult.

Credits: Lyle J. Buss, UF/IFAS



Figure 9. Olive shootworm, *Palpita persimilis*, larva, about 2 cm long.

Credits: James E. Hayden, FDACS DPI

Scale Insects

Black Scale

Many scale insects can survive on olives. In Florida, black scale (*Saissetia oleae*, Fig. 10) has been identified from several olive groves. Black scale is also a pest of citrus in Florida, so if you have olives planted near citrus orchards, you should monitor vigilantly for these pests. As mentioned above, ants can be an indicator of a scale infestation, as can sooty mold (mentioned below). Not all scale infestations require management, but they should be monitored for the presence of parasites. Parasites will leave a distinctive hole in the shell of the scales, as seen in figure 11.

For more information about scale pests you might encounter, please visit [ENY814/CH059 Scale Pests of Florida Citrus](#) by Fasulo and Brooks.



Figure 10. Black scale crawlers, nymphs and adults on an olive tree in Marion County, Florida.

Credits: Lyle J. Buss, UF/IFAS



Figure 11. Black scale with a parasite emergence hole. Olive sample collected in Marion County, Florida.

Credits: Lyle J. Buss, UF/IFAS

Fungi

Sooty Mold

Honeydew (a form of excrement) is produced by aphids, mealybugs and some scales. Sooty mold (Fig. 12) is a fungal organism that lives on honeydew. If you find sooty mold in your orchard, you should look closely for the insects that are producing the honeydew. Sooty mold can reduce the photosynthetic ability of the leaves, but it is not known to



Figure 12. Sooty mold on an olive branch with black scale in Marion County, Florida.

Credits: Lyle J. Buss, UF/IFAS

invade the plant tissue. If you find sooty mold, you need to manage the insects that are excreting the honeydew; once they have been eliminated, the sooty mold will eventually flake off of the leaves.

For more information on managing this fungal problem, please visit [PP248/MG441 Guidelines to Identification and Management of Plant Disease Problems: Part I. Eliminating Insect Damage and Abiotic Disorders](#) by Elliott, Pernezny, Palmateer and Havranek.

Olive Anthracnose

Fruit damage known as olive anthracnose (Fig. 13) is a common problem reported by homeowners with olives in their landscape. Mainly caused by *Colletotrichum acutatum*, olive anthracnose should not be a major problem for growers, but you should be aware of the problem. Increased presence on flowers and fruit in the grove could warrant application of a fungicide. Olive anthracnose can lead to fruit drop, and fruit drop can lead to a mess in the landscape, especially near impervious surfaces like sidewalks and paved driveways. The damage on the fruit can cause the fruit to be more attractive to insects like fruit flies. Research is underway to determine whether olive anthracnose might lead to damaging levels of fruit fly infestations. Fruit flies are known to lower the quality of oil produced from infested olives.

For more information on managing anthracnose on other crops, please visit: http://edis.ifas.ufl.edu/topic_colletotrichum.



Figure 13. Olive anthracnose on fruit from Marion County, Florida.

Credits: Jennifer L. Gillett-Kaufman, UF/IFAS

Not Here Yet

Olive Fruit Fly

The olive fruit fly, *Bactrocera oleae* (Fig. 14), is a non-native pest of olives that has not been reported in Florida. This is a serious pest of olives in California and Mediterranean olive-producing areas.

For more information on this pest please visit [EENY113/IN270 Olive Fruit Fly, *Bactrocera oleae* \(Rossi\) \(Insecta: Diptera: Tephritidae\)](#) by Weems and Nation.



Figure 14. Third instar larva of the olive fruit fly, *Bactrocera oleae*. Credits: Giancarlo Dess, Istituto Professionale Statale per l'Agricoltura e l'Ambiente "Cettolini" di Cagliari

Conclusion

If you are producing olives and encounter a pest or disease that is not listed here, please contact your local county Extension office for assistance with identification and management. This sheet will be updated regularly as information becomes available on new olive pests and diseases in Florida. To suggest an addition, please contact the authors.

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References

Capinera, J. L. 1992. *Common grasshoppers in Florida*. University of Florida Institute of Food and Agricultural Sciences. SP98/IN010. <http://edis.ifas.ufl.edu/in010>

Collins, L., and R. H. Scheffrahn. 2001. *Red imported fire ant*, *Solenopsis invicta* Buren (Insecta: Hymenoptera:

Formicidae: Myrmicinae). University of Florida Institute of Food and Agricultural Sciences. EENY195/IN352. <http://edis.ifas.ufl.edu/in352>

Conklin, T. and R. F. Mizell. 2002. *Glassy-winged sharp-shooter*, *Homalodisca vitripennis* (=coagulata) (Germar) (Insecta: Hemiptera: Cicadellidae: Cicadellinae). University of Florida Institute of Food and Agricultural Sciences. EENY274/IN552. <http://edis.ifas.ufl.edu/in552>

Elliott, M., K. Pernezny, A. Palmateer and N. Havranek. 2008. *Guidelines to identification and management of plant disease problems: Part I. Eliminating insect damage and abiotic disorders*. University of Florida Institute of Food and Agricultural Sciences. PP248/MG441. <http://edis.ifas.ufl.edu/mg441>

Fasulo, T. R. and R. F. Brooks. 1994. *Grasshopper, katydid and cricket pests of Florida citrus*. University of Florida Institute of Food and Agricultural Sciences. ENY813/CH056. <http://edis.ifas.ufl.edu/ch056>

Fasulo, T. R. and R. F. Brooks. 1993. *Scale pests of Florida citrus*. University of Florida Institute of Food and Agricultural Sciences. ENY814/CH059 <http://edis.ifas.ufl.edu/ch059>

Hayden, J. E. and L. J. Buss. 2013. *Olive shootworm*, *Palpita persimilis* Munroe (Insecta: Lepidoptera: Crambidae). University of Florida Institute of Food and Agricultural Sciences. EENY556/IN995. <http://edis.ifas.ufl.edu/in995>

Mizell, R. F. 2004. *Stink bugs and leaf-footed bugs are important fruit, nut, seed and vegetable pests*. University of Florida Institute of Food and Agricultural Sciences. ENY718/IN534. <http://edis.ifas.ufl.edu/in534>

Villanueva, R. 1998. *Tobacco hornworm*, *Manduca sexta* (Linnaeus), and *tomato hornworm*, *Manduca quinquemaculata* (Haworth), (Insecta: Lepidoptera: Sphingidae). University of Florida Institute of Food and Agricultural Sciences. EENY031/IN158. <http://edis.ifas.ufl.edu/in158>

Weems, H. V. and J. L. Nation. 1999. *Olive fruit fly*, *Bactrocera oleae* (Rossi) (Insecta: Diptera: Tephritidae). University of Florida Institute of Food and Agricultural Sciences. EENY-113/IN270. <http://edis.ifas.ufl.edu/in270>