

2026–2029 Florida Citrus Production Guide: Melanose¹

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Management of melanose, caused by the fungus *Diaporthe citri*, is often necessary in mature groves where fruit is intended for the fresh market, particularly if recently killed twigs and wood are present because of freezes or other causes. Melanose management is not usually needed in groves under 10 years old or in those where fruit is intended for processing. As a caveat, more dead wood is present in canopies of young trees because of huanglongbing (HLB) than historically was the case. Growers should monitor young groves for dead wood and start applications before melanose becomes economically damaging. Grapefruit is especially susceptible to melanose, but all citrus may be damaged by the disease.

Spores produced by *D. citri* in the asexual stage are the primary inoculum of this fungus. The sexual stage is relatively unimportant for routine disease management. The asexual spores are produced in flask-shaped structures embedded in dead twigs of 1/8 to 1/4 of an inch diameter (3 to 6 mm) in the tree canopy, especially those twigs that died within the last several months. In addition to producing spores on melanose-affected twigs after they die, *D. citri* can colonize dead twigs that were originally healthy and can produce inoculum on them as well. Spores are produced during wet periods and dispersed to young, susceptible fruit, leaves, and twigs by rain splash. No spores are produced from symptomatic leaves, fruit, or living twigs. At 75°F–80°F (23.8°C–26.7°C), 10–12 hours of leaf wetness are required for infection, and at lower temperatures, up to 18–24 hours may be needed. These leaf wetness periods are not uncommon in Florida.

The sexual stage spores for *D. citri* are important for longer-distance spread of the pathogen. This becomes important for management when there is a young grove where the pathogen is absent or at low levels. These spores occur on larger-diameter twigs or twigs that are no longer producing the asexual spores. A common source of the sexual spores are brush piles or burn piles if they are present for long periods. It is advisable to make sure they are disposed of as soon as it is practical.

One or two applications are sufficient for melanose control on oranges and most tangerines unless the trees have abundant dead wood, as in a year after a freeze. Grapefruit is susceptible to melanose infection from fruit set until it reaches 2.5–3.0 inches (6.4 cm–7.6 cm) in diameter,

normally in late June or early July. Fungicides are effective for only short periods when applied to rapidly expanding fruit or leaves. Because April is usually a low-rainfall month and fruit is small and growing rapidly, the first spray for melanose control is not usually applied until mid- to late April. For fresh-market grapefruit, the first application should be made when the fruit reaches a diameter of 0.25 inch to 0.5 inch (0.64 cm–1.3 cm) (about mid- to late April depending on local conditions). With average-quality copper products, usually about 2 lb/acre of metallic copper are needed for each 3-week period. If using a calendar application schedule, applications should continue until the fruit become resistant. Rates can be reduced if applications are made more frequently or increased if applications are made less often. For melanose control on large trees, no more than 8 lb–12 lb metallic copper are needed per year even if copper is also used for the control of scab, canker, or greasy spot.

Copper residues are reduced with fruit expansion and rainfall. The [Citrus Copper Application Scheduler](#) is a model that estimates whether residues remaining on fruit are sufficient to control the disease. It is based on fruit growth models, the rate and time of the last application, and rainfall since the last application. It has proven helpful for optimizing the timing of applications for melanose control. More information about the model is available in UF/IFAS publication [PP289](#), "A Web-Based Tool for Timing Copper Applications in Florida Citrus."

An early-June application of copper to manage late melanose damage will serve as the first greasy-spot spray. However, applications of copper in hot, dry weather may cause fruit spotting or darken existing blemishes. If copper fungicides are applied from May to September, they should be applied when temperatures are moderate (<94°F) at rates no more than 2 lb of metallic copper per acre, without petroleum oil, and using spray volumes of at least 125 gal/acre.

The strobilurin-containing fungicides Amistar Top, Gem, Headline, Pristine, and Quadris are also effective for melanose control and can be used at any time for disease control. Copper fungicides are more economical and are most important for melanose control. However, because copper fungicides applied in hot weather can damage fruit, use of strobilurin-containing fungicides at that time will

avoid phytotoxicity and control greasy spot as well as melanose. Strobilurins appear to have lower residual activity for melanose control than do copper fungicides. Thus, applications may have to be made at shorter intervals, especially when rainfall is high.

Fungi may develop resistance to strobilurin fungicides. These materials (FRAC 11) should never be used more than twice in a row, and no more than two strobilurin-containing applications should be used for melanose control.

Web Addresses for Links

Citrus Copper Application

Scheduler: <http://agroclimate.org/tools/citrus-copper-application-scheduler/>

UF/IFAS publication PP289, "A Web-Based Tool for Timing Copper Applications in Florida

Citrus": <https://doi.org/10.32473/edis-pp289-2012>

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