

Florida foliar disease outlook for 2025

By Megan Dewdney

As I write this article in January 2025, the world is a chilly place, and it is hard to imagine warm and wet weather in Florida. The predicted weather pattern from now until flowering is moving from La Niña toward neutral. This is predicted to bring above-average spring temperatures with reduced rainfall. This is a hopeful sign that disease pressure will be minimized by the weather. However, as this January cold snap is reminding me, a weather pattern is a general trend and tells us nothing about specific weather events.

So, we could be caught off guard by something like an unexpected, ill-timed rainfall event that causes greater disease than anticipated.

POSTBLOOM FRUIT DROP

For the last two years, despite the weather conditions not being particularly conducive for postbloom fruit drop (PFD), there have been pockets of the disease. It is prudent to regularly scout groves that stay wet or tend to have fog frequently. These are the areas from where we get the most reports. It is recommended to use the Citrus



Postbloom fruit drop

Advisory System (agroclimate.org/tools/cas) through AgroClimate to time applications for the most favorable infection conditions. The system uses Florida Automated Weather Network data, so if you are far from a tower, or it is known that a site is wetter, it may be

wise to treat if the disease risk index is near (0.18 to 0.19) the threshold of 0.20 in areas with frequent PFD.

Remember that an application of a strobilurin-containing product [Fungicide Resistance Action Committee (FRAC) 11] means that there are only three more that can be used for the rest of the season. It is best not to treat when unnecessary. Not many fungicides are effective against the fungus responsible for PFD, and few are likely to be registered in the future. Furthermore, at some point, resistance to strobilurin fungicides will occur. Rotate your products. See the Florida Citrus Production Guide (edis.ifas.ufl.edu/publication/CG007) for more details.



Citrus canker

CITRUS CANKER

Do not neglect to do at least the minimum amount of canker suppression this season. The last two seasons, we have seen fruit damage by canker that likely caused much of the fruit to drop. This is expensive and avoidable. The weather was not highly favorable, but inoculum left over from Hurricanes Ian and Nicole may have contributed to the outbreaks. The hurricane season of 2024 will not have improved the situation, and even more stem lesions will have formed.

Those stem lesions can ooze bacteria for up to four years, leading to more fruit infection and yield loss than otherwise expected. This is more problematic in young trees, because these branches are a large proportion of the canopy, but canker can affect any size tree. You can protect young trees with products such as Actigard (FRAC P 01) that are effective against stem lesions and keep the foliage infections to a minimum. See application and rate details in the Florida Citrus Production Guide



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(edis.ifas.ufl.edu/publication/CG040).

It is suspected that there were damaging rain events when the fruit size was most vulnerable to infection to cause such destructive lesions. The greatest yield loss in oranges comes from early-season infection events. Fruit is most vulnerable at 0.25- to 1.25-inch diameter for oranges and 0.5- to 1.5-inch diameter for grapefruit. Since Florida has multiple blooms, making fruit size variable, it is important to evaluate how big fruit are on average to best time any necessary copper (FRAC M 01) applications. Choose a good quality copper product and a maximum three-week interval for the best results in canker suppression on fruit. Injected oxytetracycline is not a substitute for a canker management program; the concentration in fruit peel is not high enough to be effective.

In damaged citrus under protective screen (CUPS), there have been canker outbreaks, but these can be controlled relatively easily once the structure is repaired. The advantage of CUPS is the lower wind speeds that cannot spread the bacterium far and wide or force it into vulnerable tissues. It is recommended to trim affected portions of trees and treat the tree and up to five trees in each direction surrounding the infected one. Monitoring for further symptoms and timely treatments will help keep this disease to a bare minimum.

GREASY SPOT

Greasy spot in the last five years has been challenging on young citrus trees with or without individual protective covers. While it may be tempting to ignore the problem, it damages young trees during the time when the trees should be directing resources to canopy production and root growth.

Several fungicides can be used for greasy spot management. Few fungicides are as economical as copper, which works for multiple diseases including greasy spot, melanose and canker, but not for PFD. Copper can cause fruit blemishes in high temperatures (greater than 94 degrees) and dry conditions and eventually can become toxic in the soil if overused. Be cautious when combining copper with petroleum oils or other products because burns can be devastating.



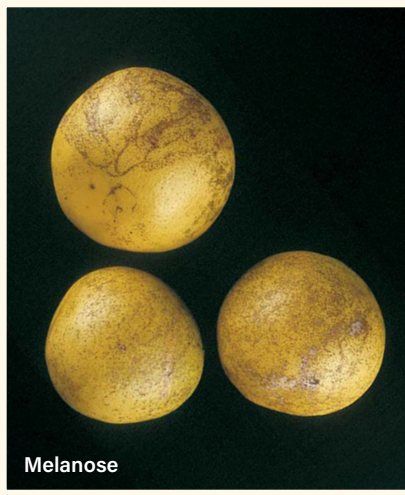
Copper should be applied on moderately warm days without additives, particularly oils, at 2 pounds per acre or less.

If you are worried about phytotoxicity, strobilurin-containing fungicides (FRAC 11) or the demethylation inhibitor fungicide Enable (FRAC 3) are effective control options with or without oil. See edis.ifas.ufl.edu/publication/PP275 for a summary of the recommended fungicides for all diseases. These fungicides are good melanose products as well and are useful in late May to early June.

Timing for greasy spot is key. The optimal period for applications is early June to early July. To keep processing orange leaves minimally infected, petroleum oils are a good option. Fungicide resistance is problematic with *Zasmidium citri-griseum*, the greasy spot causal fungus. Do not use two consecutive applications of a non-copper fungicide for greasy spot.

Greasy spot can be problematic in CUPS. It is important that leaf litter sanitation is conducted after the major leaf drop in the spring. The spores are formed within the decomposing litter. While not sufficient to eliminate the disease, it will reduce the disease pressure. Oil is not as effective as copper for suppressing rind blotch. Both products will blemish the fruit in high temperatures, so it is best to apply them in the

coolest part of the day. Efficacy of other fungicides with the CUPS system is not known at this time.



MELANOSE

If a freeze comes with the cold weather, smaller twigs may die. The greater than normal number of dead twigs will produce copious melanose spores. Melanose is more severe after periods of extended leaf wetness, needing only 10 to 12 hours at temperatures between 70 and 80 degrees to infect. In cooler temperatures, the fungus needs longer, up to 24 hours of leaf wetness. These are not unusual wetting periods in Florida. Leaf and fruit lesions are sterile and do not produce spores.

While long residual activity makes copper highly economical for melanose control, fruit expansion and rainfall erode the layer. On average, copper applications are needed every 21 days to maintain the protective coating from early May until fruit becomes resistant in early July. This is particularly true for grapefruit, the most susceptible cultivar. Copper applications in early June also serve as the first greasy spot application. Strobilurin-containing fungicides can be used if phytotoxicity is a concern but follow the same restrictions as greasy spot. The residual activity of strobilurins is shorter than copper, so more frequent applications are needed. 🌿

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Finding a Way

By Rick Dantzler, CRDF chief operating officer



“The industry needs a pep talk,” one of Florida’s citrus industry leaders told me shortly after Alico announced it would be winding down much of its citrus business. So, here goes.

I believe we are on the cusp of a resistant tree, not just a tolerant one. Data will be emerging in the next three months that will help growers decide for themselves. Breeders are understandably cautious, not wanting to create false hope that leads to disappointment and discouragement, but I think we are close.

Will the tree be a GMO or a non-GMO CRISPR-edited tree? We may have both. The company Soilcea has GMO and non-GMO CRISPR-edited trees in the ground that are growing nicely. I’ve seen pictures of them that look good compared to non-edited trees.

Scientists have found a *Bacillus thuringiensis* gene that works against diaprepes root weevil. It also kills progeny of adult psyllids quickly and adult psyllids over time.

New rootstocks and scions have been developed that are more tolerant. Validation is underway.

Of course, it could take up to five years for regulatory approval and scaling up mass propagation of these trees. So, what do we have that keeps you in the game until then?

We are heading into the third year of oxytetracycline (OTC) injections. Growers who have experimented with this for more than 10 years have said it takes three consecutive years of injections for the tree to get the full effect of the therapy. During the first two years, root mass is increasing, and leaf canopy is improving. More and better fruit follow.

In Brazil, researchers have created a tree that repels the psyllid, pushing the insects to the grove perimeter where an attractant orange jasmine trap crop is located and treated with insecticides to kill the vector. The only thing that remains to be discovered is at what scale the repellent citrus trees need to be planted to sustain the area-wide effect.

Gibberellic acid and 2,4-D can be used to synchronize flushing and keep fruit on trees until they ripen. The prescription is ready. Researchers have shown how strategic use of brassinosteroids can increase Brix levels.

An OTC formulation that has a pH of 7.5 while keeping the OTC in a soluble state has been found. It allows circulation throughout the tree, eliminating potential chloride phytotoxicity. A registrant is ready to commercialize the product.

A commercially available nutritional product containing zinc is significantly reducing citrus canker, even on highly susceptible grapefruit.

A new administration in Washington may make the regulatory environment easier to navigate.

The price of fruit is very high with no sign of coming down.

The Citrus Research and Field Trial Foundation, Natural Resources Conservation Service and Farm Service Agency assist growers seeking to plant trees, caretaker trees or recover from storms. There is a lot of money available to help.

Finally, there are many young citrus leaders emerging who are stars. They will find a way.



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