

# Phytophthora Treatments for Hurricane Damaged Groves

Megan Dewdney, [mmdewdney@ufl.edu](mailto:mmdewdney@ufl.edu)

We are all evaluating groves for damage and determining the best course of action going forward after the destruction of Hurricane Ian. One of the many considerations is the effect of flooding on root health, particularly if standing water has remained longer than 72 hours. The main diseases are phytophthora foot, crown, and root rot and fruit brown rot, which are all related. To further complicate things there are two fungal-like organisms, *Phytophthora nicotianae* and *P. palmivora* responsible for the diseases.

These organisms have spores that swim and are attracted to roots, particularly ones producing a lot of exudates, and fruit on the soil surface. They can also take advantage of flood waters if they are present prior to an event. After a hurricane, we commonly see toppled trees which maybe up righted. Be cautious because scion bark in contact with soil can develop lesions on scaffold limbs. Additionally, brown rot may become problematic for mid-season fruit if a lot of splash occurred in a grove with a history of phytophthora, particularly *P. palmivora* which can move more readily within the canopy.

Root damage becomes acute after 72 hours of flooding and makes the root systems more vulnerable to phytophthora infection. Phytophthora is unlikely to become a problem after flooding if you do not have a history of phytophthora with high propagule counts (10-20 propagules/cm<sup>3</sup> of soil). However, if you do have a history of phytophthora problems and flooding,

you should consider treating in the next 30 days as the soil dries. There are several products to choose for root rot as detailed in the Florida Citrus Production guide including the phosphite salts, Aliette, Ridomil, and Presidio. There is also the newer product, Orondis, that looks promising particularly for groves with high populations of *P. palmivora*. Keep in mind that some products require irrigation after application. Please consult the labels for specifics.

Remember, if you are choosing a phosphite product for root or foot rot, only a product labeled as a fungicide is legal to use for disease management and check the concentration to make sure you are getting the best efficacy for your expense. If you are already using a program, continue with your planned rotations of products to avoid resistance development. The treatments for root rot should also help with foot rot, although the scions tend to be more susceptible so products may not work as well on the root system.

If sufficient fruit remain for an application, it is probably too late to apply a phosphite fungicide or Aliette for brown rot if you have not already done so in August. Your better choices would be a foliar spray of a copper fungicide or some of the newer fungicides where we have had promising results. These are Orondis, Revus, and the premix Orondis Ultra, which can all be applied 0-1 days prior to harvest and can also be applied by air if there is an urgent need for speedy application.