

Summer is now upon us with its longer days, higher temperatures and humidity and hopefully frequent afternoon thundershowers. During the spring months, frequent irrigation was utilized to assure that drought stress did not negatively impact the rapidly expanding fruit and to minimize our typical June fruit drop. With the abundant afternoon thundershowers, the need for irrigation decreases.

Typical summer production tasks for mature trees include sprays to control various citrus pests including greasy spot, rust mites, psyllids, and weeds. Production practices for young trees include fertilization and controlling pests such as mites, psyllids, citrus leafminer and weeds. During the entire year, weather is a concern that growers must address.

WEATHER

Weather is always a topic of discussion whenever growers get together and is one of the major events that we have little ability to change. Growers will adopt a number of production practices to modify the local environment, thus minimizing the negative aspects of these weather events. Growers irrigate to overcome drought, drain soils when they become saturated, or use irrigation for cold protection. All practices, when successfully timed, aid in achieving maximum production and optimum tree growth.

The climate outlook for this summer indicates a La Nina condition in the South Pacific. Predictions from Phillip Klotzbach and William Gray of Colorado State University are for a very active 2006 hurricane season with 17 named storms and nine hurricanes, with five hurricanes being intense (category 3-4-5). They also predicted fewer major hurricanes making landfall than we experienced in 2004 and 2005.

Remember that last summer we ran through the entire hurricane alphabet and by fall, we were using Greek letters. We should have learned lessons from the multiple hurricanes of 2004 and 2005, and have developed plans to address disaster issues long before this year's hurricane season begins. These disaster plans need to be reviewed and updated to assure that if hurricanes impact the state, the plans can be quickly implemented to minimize potential damage and aid in the recovery operations.

The plans need to address critical energy needs, allowing fuel to be pumped and office equipment to be powered during times of power outage. Almost everyone within the state has experienced the lack of fuel and/or power during one or more of the recent hurricanes. Additionally, pesticide storage facilities, equipment, agricultural fertilizer and fuel tanks need to be properly secured.



PEST MANAGEMENT

FOLIAR DISEASES. The major foliar disease that affects all citrus cultivars during the summer is greasy spot. Management of greasy spot fungal disease must be considered in every grove whether the fruit is intended for processing or for fresh market. Greasy spot causes defoliation and dieback, reduces fruit yield, and weakens trees. All leaves are susceptible and remain susceptible throughout their life.

Two foliar spray applications are needed in many areas of Florida to control greasy spot. The spring flush leaves can be protected with a spray from mid-May to June at the start of the summer rains. The summer flush leaves should be protected as soon as they are fully expanded. Thorough coverage of the underside of leaves is very important for the control of greasy spot.

Copper fungicides are more effective when applied earlier in the season. Care should be exercised when using copper materials during hot dry periods of late spring and early summer due to the potential for fruit burn. Copper fungicides provide control of greasy spot, whereas citrus oil sprays suppress the development of symptoms. The strobilurin fungicides (Abound, Gem, Headline) can be used successfully to control greasy spot on any cultivar. They can provide effective control of the disease on leaves and fruit, with multiple applications per year being discouraged because of possible development of resistance. Addition of petroleum oil increases the efficacy of Abound, copper, Enable and Gem. For more information, go to <http://edis.ifas.ufl.edu/CG018>

FOLIAR MITES AND INSECTS. A good scouting program is an integral component of any successful mite and insect control program. Pests will vary with location, time and season; thus scouting will provide the current pest pressure for a given location and should allow for timely implementation of control strategies. While citrus oil, as discussed above, will provide some mite and insect control, other products may need to be included in the tank mix to broaden the pest spectrum or lengthen the control period.

In recent years, the citrus leafminer and citrus psyllid have become serious concerns for citrus growers. The citrus leafminer increases citrus canker infection in areas where canker is present, while the citrus psyllid is the primary vector of citrus greening, a phloem-inhabiting bacterium detected in Florida in late August 2005.

New control strategies must be considered for suppression of these two insect pests to minimize impacts of citrus canker and citrus greening. Citrus leafminer does not significantly affect growth and yield of mature trees. However, nursery stock,



Greasy spot

resets and young trees are very vulnerable to severe damage because of their frequent flushes, which are preferred feeding sites for leafminer larvae.

Residual activity of most pesticides during the summer is limited by rapid and frequent appearance of new unprotected flushes so that 2-3 weeks control is the best that can be expected. Therefore, scouting is necessary to determine peak periods of larval activity during flush periods to time control measures to maximize efficiencies.

The citrus psyllid is similar to the citrus leafminer in requiring young leaves for reproduction. However, unlike the citrus leafminer, adult psyllids can survive on hardened leaves and move to new flush as it becomes available. Young trees should be monitored early in flush cycles to detect aggregations of adults on expanding terminals. High populations of adults should be treated before they reproduce. Immature psyllid feeding on growing citrus terminals causes leaf distortion and curling of tender flush growth. Psyllid populations usually decline in the hotter summer months, but surveying for the pest should continue. For more details, go to <http://edis.ifas.ufl.edu/CG004>

WEEDS. Summer provides optimum conditions for weed growth due to long days, warm to hot temperatures and frequent rains. Weed growth around or under the trees should be killed by using either contact or translocated post emergence herbicide materials prior to the application of soil applied residual herbicides. The weeds should be killed first to allow the residual materials to be incorporated into the soil and activated by rain. If weed growth limits the ability



Apparatus for leaf-soil sampling

to get complete soil surface coverage, areas will remain untreated and thus allow weed seed germination and growth. Weeds in the row middles can be mowed or chemically mowed to reduce the regrowth. As with other pests, scouting provides an opportunity to fine tune the weed control program by knowing what weeds are present and to allow proper herbicide products to be selected and applied in a timely manner. For more details, go to <http://edis.ifas.ufl.edu/CG013>

LEAF AND SOIL SAMPLING

Optimum growth and yield of good quality fruit cannot be obtained without adequate nutrition. The most successful fertilizer program should be based on tissue and soil analysis combined with university recommendations.

LEAF SAMPLING. For reliable results, proper procedures for leaf sampling and sample handling must be followed. Improperly collected leaf samples will provide misleading information about the nutritional status of the trees. Leaf samples must be taken at the proper time because nutrient levels

within leaves are continually changing. However, spring flush leaf mineral concentrations of most nutrients are relatively stable within four to six months after emergence. Therefore, for mature tree blocks, the best time to collect four- to six-month-old spring flush leaves would be in July and August. Each leaf sample should consist of about 100 leaves taken from non-fruiting twigs of 15-20 uniform trees of the same variety and rootstock, and under the same fertilizer program.

SOIL SAMPLING. The accuracy of a fertilizer recommendation will depend on how well the soil sample represents an area of the grove. In Florida, if soil samples were to be collected once a year, the best time would be at the end of the summer rainy season and prior to fall fertilization, usually during September and October. However, soil sampling may be conducted at the same time as leaf sampling to save time and reduce cost.

Standard procedures for proper sampling, preparation and analysis have to be followed for meaningful interpretations of the test results and accurate recommendations. Each soil sample should consist of soil cores taken to a depth of six inches at the dripline of 15-20 trees within the area wetted by the irrigation system. The area sampled should be uniform in terms of soil and tree characteristics and correspond to the area from which the leaf sample was taken. For more details, go to <http://edis.ifas.ufl.edu/CH046>

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