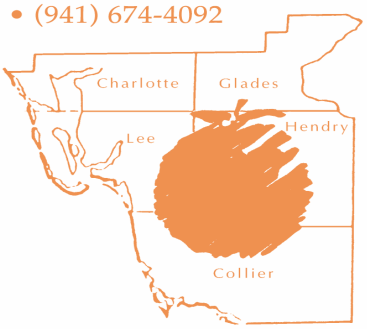
UNIVERSITY OF FLORIDA
EXTENSION
Institute of Food and Agricultural Sciences

Hendry County Extension • P.O. Box 68 • LaBelle, Florida 33975-0068 • (941) 674-4092

Flatwoods Citrus



Vol. 5, No. 3 March 2002

Dr. Mongi Zekri, Multi-County Citrus Agent

UPCOMING EVENTS

All seminars and workshops are held at the Immokalee IFAS Center.

Tuesday, March 19, 2002, 10:00 AM – 12:00 Noon
Precision Ag and application technology
Speakers: Neal Horrom, Mike Roberts and Keith Hollingsworth
Sponsor: Keith Hollingsworth, Chemical Containers
2 CEUs for Pesticide License Renewal
2 CEUs for Certified Crop Advisors

Following the seminar, we are planning a free lunch (Chemical Containers) for only who call Sheila at 863 674 4092 no later than Friday, 15 March.

Thursday March 7 & Friday, March 8, 2002

Indian River Citrus Seminar at Ft. Pierce

For more information on the seminar program see the enclosed brochure and/or call 561 468 3922 or 561 462 1660

Wednesday March 20 & Friday, March 22, 2002

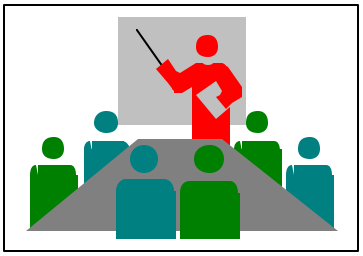
Collier County Annual Agricultural Bus Tours

For more information, call the Collier County Extension Office at 941 353 4244.

If you want to print a color copy of the Flatwoods Citrus Newsletter, get to the Florida Citrus Resources Site at http://www.fcprac.ifas.ufl.edu/
You can also find all you need and all links to the University of Florida Citrus Extension and the Florida Citrus Industry

Tuesday, April 16, 2002, 10:00 AM – 12:00 Noon
Grove replanting and resetting strategies and Diaprepes and canker update
Speaker: Jack Neitzke and Drs. Fritz Roka & Robin Stuart
Sponsor: Shelby Hinrichs, New Farm Americas, Inc.
2 CEUs for Pesticide License Renewal
2 CEUs for Certified Crop Advisors

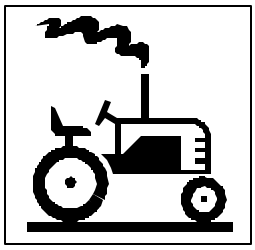
Wednesday, April 10, 2002 & Monday, April 22, 2002
Master Gardener Training in Lee County
Speaker: Dr. Mongi Zekri
Coordinator: Stephen Brown, Lee County Extension Office



Thursday, April 18 & 25, 2002
Master Gardener Training in Charlotte County
Speaker: Dr. Mongi Zekri
Coordinator: Ralph Mitchell, Port Charlotte County Extension Office

Tuesday, May 21, 2002, 8:30 AM –12:00 Noon
Greasy spot and other fungal diseases
Speaker: Drs. Pete Timmer and Pam Roberts
Sponsor: Mike Raines, Griffin LLC
2 CEUs for Pesticide License Renewal
2 CEUs for Certified Crop Advisors

Saturday, June 1, 2002, 7:45 AM – 2:45 PM
Farm Safety Day
Coordinator: Dr. Mongi Zekri
2 CEUs for Pesticide License Renewal



Tuesday, June 18, 2002, 8:30 AM –12:00 Noon
Update on new citrus cultivars and rootstocks
Speakers: Drs. Jude Grosser, Fred Gmitter, and Kim Bowman
Sponsor: Les Stephens, Duda Citrus Nursery
2 CEUs for Certified Crop Advisors

Wednesday, August 21 & Thursday, August 22, 2002
Citrus Expo in Fort Myers
For more information, call 941 658 3400 or 863 674 4092

Pesticide Applicator's License Training

Please take note of the upcoming opportunities for **obtaining a pesticide applicator's license** and/or earning CEUs for renewing a commercial/public pesticide applicator license for the Tree Crops, Row Crops, and Aquatic Categories on Tuesday and Wednesday, 9 & 10 April 2002. This program will be held at the Hendry County Extension Office in LaBelle. For more information, call 863 674 4092.

Special Thanks to these sponsors of the Flatwoods Citrus Newsletter for their generous contribution and support. If you would like to be among them, please contact me at Phone: 863 674 4092, Fax: 863 674 4636 or E-mail: maz@gnv.ifas.ufl.edu

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SALINITY

In Florida, salinity is becoming more and more of a problem in agricultural areas close to the coast.

What is salinity? Salinity is the amount of salts in the soil solution or irrigation water.

How does salinity affect my crop? High salinity can make plants spend more energy to absorb water, cause nutritional imbalances, and interfere with the intake of necessary nutrients.

How do salts build up in my soil? Salts build up in the soil by naturally weathering minerals, low-quality irrigation water, fertilizers, and upward migration of shallow ground water or salt water intrusion.

What are the signs that my fields are being affected by high salinity? For the most part, symptoms of salt injury are similar to drought conditions or water stress, which is reduced growth and reduced crop yields.

How can I determine if I have a salinity problem? One way soil salinity is measured is by how well an electric current can flow through the soil solution or irrigation water. Soil with little salt will have a lower electrical conductivity (EC) and soils with high salt concentrations will have a higher EC as the electricity is conducted by the salts. Salinity in measured with an electrical conductivity meter. Salinity is expressed in units of decisiemens per meter (dS/m) or millimhos per centimeter (mmhos/cm). Both are equivalent units of measurement and give the same numerical value. The total dissolved salts or solids (TDS) in part per million (ppm) can be estimated by multiplying EC in dS/m or mmho/cm by 700.

MORE DETAILED INFORMATION ON SALINITY AND CITRUS FOLLOWS

VERY IMPORTANT
INFORMATION
ON BURN PERMITS
FOR CITRUS GROWERS
IS ENCLOSED

Special Thanks to the following sponsors of the Flatwoods Citrus Newsletter for their generous contribution and support. If you would like to be among them, please contact me at Phone: 863 674 4092, Fax: 863 674 4636 or E-mail: maz@gnv.ifas.ufl.edu

SPRAY TANK MIXING

Tank mixing is a complex issue. Some tank mixes are beneficial, but others cause problems. As the number of ingredients increase in a tank mix, chances for incompatibility and phytotoxicity increase. Well water is better than ditch and pond water because it is cleaner. Ditch and pond water can plug up screens, pumps, and nozzles and be a source of inoculum for plant diseases. However, well water is alkaline, and it is believed that as the pH of the final spray mix increases, the effectiveness of some chemicals is significantly reduced.

Loading the spray materials into the spray tank should be done after the tank is at least half full with water. The agitation system should be operating to attain thorough mixing. This minimizes the risk for physical and chemical incompatibilities. Loading should be away from surface water. The handler should wear the required protection as indicated on the label. Remember that the more chemicals are used in the same mix, the more likely that an adverse effect on the crop will occur. Unless the pesticide labeling states, add pesticides to the water using the W-A-L-E plan: Dry formulations should be added to the tank first followed by the liquid formulations. To the water, first add **W**ettable powders, prills [(DF's, DG's, water-dispersible granules (WDG's)] and soluble powders. Second, **A**gitate thoroughly and add the remaining quantity of water. Third, add the **L**iquid products such as solutions, flowables, and adjuvants. Finally, add **E**mulsifiable concentrates (EC's) and oils last. Success with tank mixing is based upon slowly acquired experience. It is not possible to test the thousands of combinations that exist with tank mixing. Do the testing on a small scale and get information from reliable sources on tank mixing.

THE USE OF ADJUVANTS

Adjuvants are non-pesticidal chemicals, that when added to a spray mix, are supposed to enhance and improve its effect. Surfactants, spreaders, stickers, buffers, drift retardants, penetrants, and foam busters are examples of adjuvants. All surfactants are adjuvants, but not all adjuvants are surfactants. The significance of an adjuvant can be recognized by the fact that a pesticide formulated in the absence of an adjuvant may exhibit less than 20% of its potential biological activity. The importance on inclusion of an adjuvant in herbicide formulations has become an almost universal practice. The key to success with adjuvants is to use them at the recommended rate and as little as possible. At higher rates, adjuvants can cause damage to crops. Let the label be your guide in selecting adjuvants. The use of surfactants, oils, emulsifiers and fertilizer salts can enhance the activity of foliar-applied herbicides. Various advantages to the use of nitrogen-based fertilizers in herbicide tank mixes have been reported. The addition of ammonium sulfate to spray mixtures of certain foliar-applied herbicides enhances herbicide efficacy, including glyphosate. Surfactants enhance spray retention and penetration due to a number of surface properties, including reduction in surface tension and contact angle of spray droplet. Therefore, they may enhance cuticle retention, wetting and spreading on the leaf surface.

SALINITY & CITRUS

Introduction

Salts are a common and necessary component of soil, and many salts (e.g., sulfate and potassium) are essential plant nutrients. Salts originate from mineral weathering, fertilizers, soil amendments (e.g., gypsum, composts, and manures), and irrigation waters. The addition of most soluble materials will increase soil salinity. However, it is only when salts are present in relatively high amounts that crops are damaged or adversely affected.

Large amounts of arable lands are being removed from crop production every year due to increasing soil salinity. Salinity is even of increasing concern in Florida because of saltwater intrusion into groundwater in areas where citrus is grown. The ions in soil waters, which contribute significantly to salinity problems, are principally sodium, chloride, calcium, magnesium, sulfate, potassium, bicarbonate, carbonate, nitrate, and borate ions.

Salinity Measurement

Salinity of irrigation water is determined by measuring the electrical conductivity (EC) of the water, while soil salinity is determined by measuring EC of the solution extracted from a water-saturated soil paste with an EC meter. Salinity is expressed in units of decisiemens per meter (dS/m) or millimhos per centimeter (mmhos/cm). Both are equivalent units of measurement and give the same numerical value. The total dissolved salts or solids (TDS) in part per million (ppm) can be estimated by multiplying EC in dS/m or mmho/cm by 700.

Mechanisms of Salt Injury

Salt damage to plants is caused by the decrease in the water potential of the soil solution or by the toxicity of specific ions. Some researchers attribute most of the salt damage to osmotic stress. Others favor the idea that toxic effects of specific ions predominate in restricting crop growth and yield.

Osmotic Effect

Water is osmotically more difficult to extract from saline solutions. Salt addition is analogous to soil drying since both result in reduced water uptake. In extreme circumstances, salinity can prevent water uptake even when the soil is at field capacity.

Ion Toxic Effect

Ion toxic effect of salt is attributed to excess accumulation of certain ions in plant tissues and to nutritional imbalances caused by such ions. Salt damage to citrus has been mainly attributed to excessive accumulation of chloride and sodium in the leaves. High concentrations of

chloride in citrus leaves shorten the life span of leaves by increasing chlorosis (loss of chlorophyll and photosynthetic potential) and by promoting senescence and abscission. Accumulation of ions in large amounts in the leaves can also cause leaf burn and inhibit certain metabolic processes.

Sodium can also cause injury to plants through its deleterious effect on the soil. When the proportion of exchangeable sodium is relatively high, clay particles in the soil tend to disperse and block the pores through which water flows. This phenomenon decreases the hydraulic conductivity of the soil or water infiltration and drainage and causes poor aeration.

Nutritional Imbalance

Salt can also damage plants by causing nutritional imbalances. High sodium levels can reduce potassium, calcium and magnesium uptake and may lead to nutritional deficiencies.

Responses to Salinity

Salinity is known to adversely affect all stages of plant development such as seed germination, seedling emergence, root growth, and vegetative growth. Salinity can also depress chlorophyll content, photosynthesis, stomatal conductance, root conductivity, transpiration, flowering, fruit yield, and "pack out". Citrus is generally classified as a salt sensitive crop because physiological disturbances and growth and fruit yield reductions can occur at relatively low salinity levels.

Scion. Differences in salt tolerance among citrus cultivars or scions have been found, but with conflicting results between orange and grapefruit. Some researchers reported that orange is more tolerant than grapefruit. Others stated that lemon is more sensitive to salinity than orange, which is more sensitive than grapefruit. Salt tolerance decreases in the following order: Hamlin, Valencia, Pineapple and Navel orange.

Rootstock. Cleopatra mandarin and Rangpur are relatively salt-tolerant rootstocks. Carrizo citrange, Swingle citrumelo, Volkamer lemon, and rough lemon are intermediate and trifoliate orange and Milam are very salt sensitive.

Salt Exclusion. Rangpur and Cleopatra mandarin are chloride excluders. Trifoliate orange and its hybrids (Swingle and Carrizo) are sodium excluders. *Citrus macrophylla* is a boron excluder.

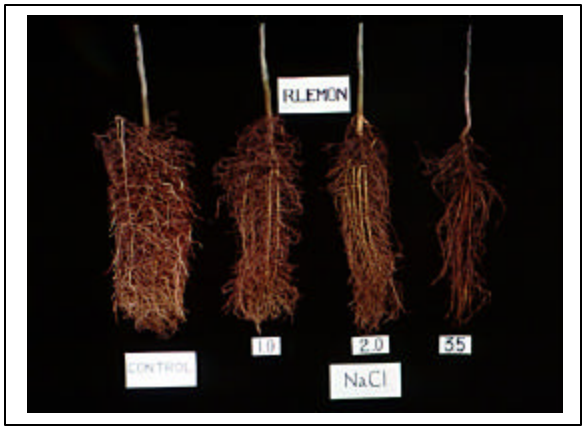
Ion concentration. Citrus tolerance to salinity is correlated with its ability to restrict the entry of ions and salt injury to citrus is mainly attributed to excess chloride accumulation in leaves. The critical chloride and sodium concentrations vary with many factors including climate, tree water use, scion/rootstock cultivar, and age.

Yield. Based on yield reduction, a leaf chloride concentration as little as 0.3% should be considered excessive. Citrus yield has also been related to salt concentration in the soil. The threshold salinity is an electrical conductivity of the soil saturation extract of 1.8 dS/m for oranges and grapefruit. Above this threshold, yield can be reduced at a rate of 16% per dS/m. Salinity may significantly reduce citrus yield without visual

symptoms. The use of moderately saline irrigation water (2.5 dS/m) was found to reduce orange and grapefruit yield by 20-30% without any visible leaf injury symptoms.

Leaf injury. Depending on climatic conditions, visible sodium toxicity symptoms may appear when leaf sodium levels reach 0.2-0.5% of leaf dry weight, while chloride toxicity symptoms usually appear when leaf chloride levels reach 0.5-0.7%. Salinity effects develop slowly so that leaf injury symptoms appear after a certain period of time. However, the length of this time period is shortened by higher salt concentrations. Young grapefruit trees grown in the field and irrigated with salt solutions of 2500 ppm showed no visible symptoms of salt injury during a one year period. Trees irrigated with 4000 ppm salt solution developed leaf bronzing within one month and marginal burning of the leaves within two months. Trees irrigated with 5000 ppm salt solution were completely defoliated within a one year period.

Salinity and high water table. Relatively few studies have been conducted to investigate the effects of a combination of water table and salinity on citrus even though this condition exists in Florida and many parts of the world. It was found that the rates of defoliation and twig dieback due to salinity were greatly accelerated by a frequently fluctuating water table.



Irrigation. As it was mentioned earlier, citrus is relatively sensitive to salinity. However, it can withstand relatively moderate salinity levels depending on the climate, scion cultivar, rootstock, and irrigation management. Good irrigation management should consider the salinity factor in the irrigation water, in the soil, and in the root zone. Methods of irrigation scheduling which do not account for salinity are not sufficiently accurate for scheduling irrigation in areas with a saline high water table. Irrigation water containing about 250 ppm chloride may reduce grapefruit yield by 30% when trees are irrigated at relatively long intervals. As soil dries, salts become concentrated in the soil solution, increasing salt stress. Therefore, salt problems are more severe under hot, dry conditions than under cool, humid conditions. Increasing irrigation frequency and applying water in excess of plant demand may be required during hot, dry periods to minimize salinity stress. Overhead sprinkler irrigation should be avoided when using water containing high levels of salts because salt residues can accumulate on the foliage and seriously injure plants. Citrus trees may accumulate injurious amounts of chloride and sodium from sprinkler-applied water having as

low as 700 to 900 ppm. Salt content of up to 1300 ppm may cause defoliation of sprinkler-irrigated citrus trees under dry weather conditions. Micro-irrigation enables the use of poorer quality water that cannot be tolerated with overhead sprinklers. Direct foliar uptake of salts, and hence leaf injury, is avoided with drip irrigation. Nevertheless, saline water cannot be used indiscriminately with micro-irrigation systems. Micro-irrigation at frequent intervals maintains a low soil water tension and prevents salt accumulation within the wetted zone. Consequently, water with moderate salinity levels may be used without significantly affecting the yield. However, salt accumulation under drip irrigation must be considered because salts may accumulate both at the periphery of the wetted zone and on the soil surface.

Some Strategies to Reduce Salt Damage

Genetic improvement. In recent years, adapting plants to saline environments through breeding and genetic manipulation have been progressing. The genetic basis for salt tolerance, using information from studies with whole plants, has allowed the identification of plants with increased salt tolerance. Another approach to increase salt tolerance through cell culture is being attempted.

Management. Not all water is suitable for irrigation use. Prior to implementing an irrigation management, the water source should be tested for water quality. The instructions for testing and the testing results may be obtained from any County Extension Office or an independent water analytical laboratory. The results of the test will determine if the water is suitable for irrigation or reveal if any special strategies will be required to alleviate some of the problems. Salinity is not cheap and easy to manage. The primary requisite for managing soil salinity is adequate drainage. When saline irrigation water is already a potential problem, foliar feeding using saline water should be avoided and fertigation (injection of fertilizer through irrigation water) should be managed properly. The frequencies of fertigation and dry fertilizer application have a direct effect on salt concentrations in soil solutions. A fertilizer program using frequent applications of relatively low fertilizer levels is recommended over a program using infrequent applications of high fertilizer (salt) concentrations. Selecting nutrient sources that have a relatively low salt index (the osmotic effect or stress that a material adds to a soil solution) can reduce salinity problems (See the Table below). Avoiding the addition of chloride from the application of muriate of potash (potassium chloride) and the addition of sodium from sodium nitrate and selecting nutrient sources that do not add a potentially harmful ion to already high salt levels in irrigation water and soil are also good strategies. It is recommended to routinely monitor the TDS of irrigation waters, to keep poor quality water off the leaves especially under dry weather conditions, and to keep the soil moist so that not to further increase its salt concentration.

SALT INDEX OF SOME FERTILIZER SOURCES

Material and Analysis	Salt Index per unit (20 lb) of plant nutrient
Nitrogen	
Ammonium nitrate, 33.5% N	2.990
Ammonium sulfate, 21.2% N	3.253
Ammonium nitrate, 20.5% N	2.982
Calcium nitrate, 15.5%	4.194
Sodium nitrate, 16.5% N	6.060
Urea, 46.6% N	**1.618**
Phosphorus	
Normal superphosphate, 20% P_2O_5	0.390
Concentrated superphosphate, 45% P_2O_5	**0.224**
Concentrated superphosphate, 48% P_2O_5	**0.210**
Monoammonium phosphate, 12.2% N, 61.7% P_2O_5	0.405
Diammonium phosphate, 18% N, 46% P_2O_5	0.456
Potassium	
Potassium chloride, 60% K_2O	1.936
Potassium nitrate, 13.8% N, 46.6% K_2O	1.219
Potassium sulfate, 46% K_2O	0.853
Monopotassium phosphate, 52.2% P_2O_5, 34.6% K_2O	**0.097**
Sulfate of potash-magnesia, 21.9% K_2O, 10.8% Mg	1.971

TOLL-FREE HOTLINE OFFERS CITRUS GROWERS POSTBLOOM FRUIT DROP (PFD) REPORTS

Growers can call a toll-free hotline sponsored by UCB Chemicals Corporation (**866-PFD-UFLA or 866 733 8352**) to find out the latest reports on PFD provided by Dr. Pete Timmer with UF/IFAS. The information will also be posted on a PFD website at: http://www.lal.ufl.edu/timmer/index.htm

Aquatic Weed Control Short Course Up to 28 CEUs
May 19-24, 2002
Fort Lauderdale Res. & Ed. Center
Early registration deadline: March 29
For more information, contact Dr. Vernon Vandiver
Phone: 954 577 6316
Fax: 954 475 4125
E-mail: vvv@ufl.edu
www.conference.ifas.ufl.edu/aw

Update on Alternaria Brown Spot

This fungal disease can cause severe leaf and fruit drop particularly in Minneola (Honeybell) and Orlando tangelos, Dancy tangerine, and Murcott (Honey tangerine). Alternaria must be controlled on these cultivars to obtain high yields of good quality fruit. The spores of this disease are air borne, but require moisture for germination and infection. Leaf tissue is susceptible until it is fully expanded and fruit is susceptible for about 3 months after bloom. When new groves of the above cultivars are planted, only disease-free nursery stock should be used. Trees should be spaced more widely than oranges to promote rapid drying of the canopy. It is best to locate susceptible varieties in high areas where air drainage and ventilation are good so that leaves dry more rapidly. Irrigation, fertilization, hedging, topping, and skirting should be carefully monitored so that excessive vegetative growth is minimized. Copper fungicides, Abound, Ferbam and Trilogy are the materials registered for the control of this disease. The first spray should be applied when the spring flush leaves are ¼-1/2 expanded. In severe cases, another spray should be applied when the leaves are near full expansion to reduce the infection on the fruit. Another spray should be scheduled shortly after petal fall. Abound or Ferbam may be the best choice for one or two applications especially if the grove has problems with both scab and Alternaria. From April though June, spray applications may be needed as often as every 10 days or as infrequently as once a month depending on the frequency and amount of rainfall and the rate of infection in the grove. Copper fungicides may produce fruit blemishes if applied during hot weather. Therefore, Abound and Trilogy or Ferbam may be substituted for copper in June or July applications. DO NOT APPLY ABOUND IN NURSERIES. READ THE LABEL.

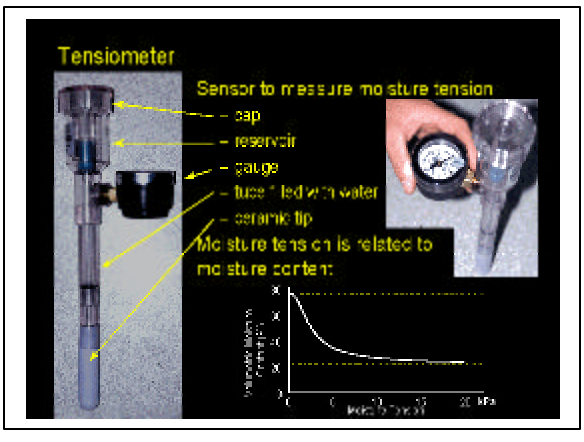
Update on Citrus Scab

This fungal disease affects grapefruit, Temple orange, Murcott, tangelos, and some other tangerine hybrids. If leaves from the previous season are heavily infected by citrus scab, 3 applications should be scheduled to control this disease. The first spray should be applied at about ¼ expansion of the spring flush leaves, the second at petal fall and the third about 3 weeks later. Fruit becomes resistant to scab about 2 months after petal fall. Benlate, Ferbam, and Abound are good choices for the first application because they are able to kill the fungus in old lesions and thus reduce the inoculum and protect the foliage. Whichever of these products was not used in the first spray may then be used in the petal fall spray. Copper fungicides are a good choice for the third spray. If used more than once a year, resistance of the scab fungus to Benlate and Abound may occur. On tangelos and Murcott, Alternaria brown spot and scab occur together. Under this circumstance, Abound or Ferbam can be selected for the first spray. Benlate is ineffective against Alternaria. However, copper fungicides can be good for all 3 sprays. DO NOT APPLY BENLATE OR ABOUND IN NURSERIES.

IRRIGATION

Despite our large yearly rainfall of 50-60 inches, which exceeds the citrus water requirement, Florida citrus growers and production managers are aware that they can't grow citrus successfully without supplemental irrigation. They know that irrigation is necessary because of the non-uniform distribution of the rainfall and the very limited water holding capacity of sandy soils.

Irrigation is of particular importance during the dry period (February-May) which coincides with the critical stages of leaf expansion, bloom, fruit set, and fruit enlargement. For the past 3 years, the spring has been very dry and irrigation has been very important for tree growth and fruit production.



Proper irrigation scheduling is defined as the application of water when needed and in the amounts needed. Production managers should accurately determine when and for how long to irrigate. With proper irrigation scheduling, tree growth and fruit yield will not be limited by water stress or water excess. Over-watering will waste water and pumping energy, will leach nutrients and other chemicals below the rootzone, and will contribute to contamination of the groundwater. Because of the high water table in southwest Florida, citrus trees have over 90% of their feeder roots within the top foot of soil. For this case, irrigating for long duration can lead to loss of water below the rootzone. Therefore, it is recommended to increase the frequency and reduce the length or duration of irrigation. Irrigating every other day is better than irrigating once or twice a week. Research work in Florida has shown the importance of the area wetted by irrigation systems. When managed properly, greater area coverage by irrigation emitters provides higher yield than very limited coverage.

Because of the relatively high annual rainfall in Florida, roots of mature trees are spread throughout the grove and are not restricted to the wetted area by the irrigation system emitters. Roots are commonly found in the middles between tree rows and outside the wetted zone by microirrigation systems. Therefore, it is important to have the irrigation system cover most of the area under the tree canopy and even slightly outside the canopy dripline.

Drip systems may not provide enough water to mature citrus trees in Florida because of the limited horizontal distribution of water on poor fine sands. Irrigating with drip systems for too long will neither provide more coverage nor reduce water stress and wilting, but will drive most of the water below the shallow

rootzone. Increasing irrigation frequency rather than duration with microirrigation systems is one of the most important factors improving water use efficiency. Raising the water table in the ditches or water furrows will dramatically help the trees recover from water stress. When the water requirement is relatively high and water stress is severe, it is recommended to irrigate daily or even twice a day with microirrigation systems.

Good water management practices should include precise irrigation scheduling and well-designed, uniform irrigation systems to minimize waste. Non-uniform irrigation will cause excess water to be applied in some areas while other areas will not get enough. Production managers should not only be aware of the losses resulting from irrigation systems that apply water and chemicals non-uniformly, but should adopt the recommended ways to minimize these losses.

LOWER WEST COAST MOBILE IRRIGATION LAB

The Mobile Irrigation Lab (MIL) offers irrigation system evaluations to growers to help them improve system efficiency and increase water conservation. The MIL is a joint effort of the USDA Natural Resources Conservation Service, the Collier Soil & Water Conservation District, and the South Florida Water Management District. This free service is available, on request, in Lee, Collier, Hendry, Glades, and part of Charlotte counties. The MIL evaluation begins with on-site measurements and observations of the system in operation. The MIL will also test water quality for irrigation purposes. Problems and recommendations for system improvement based on the collected information are presented to the grower in a confidential report. The report also includes a recommended irrigation schedule for the existing system to assist in improving operating efficiency. For more information or if you wish to make an appointment for an MIL evaluation, call **Bob Beck** at (941) 455 4100.

GIBBERELLIC ACID (GA) is recommended to be used on citrus hybrids that are weakly parthenocarpic and without sufficient cross-pollination to improve fruit set. Applied from full bloom to two-third petal fall, GA can effectively set and produce an excellent crop of seedless Robinson, Nova, Orlando, Minneola, or other self incompatible mandarin hybrids. Use Pro-Gibb (GA_3, 4.0% liquid concentrate) at the rate of 10-20 oz/acre. Because material concentration is important in plant growth regulators, water volumes below 125 gallons/acre are not recommended. Do not use in water above pH 7.5 because uptake will be reduced. Care should also be exercised in not exceeding the recommended GA dosage or concentration because it can cause severe leaf drop.

Save Our Citrus

Protect Your Right to Grow and Distribute Dooryard Citrus

What is citrus canker? Citrus canker is a bacterial disease of citrus that causes premature leaf and fruit drop.

How is citrus canker spread? Citrus canker is highly contagious and can be spread rapidly by:

- windborne rain
- lawnmowers and other landscaping equipment
- animals and birds
- people carrying the infection on their hands or clothing
- moving infected or exposed plants or plant parts

What does citrus canker look like? Symptoms on leaves and fruit are brown, raised lesions surrounded by an oily, water-soaked margin and a yellow ring or halo. Old lesions in leaves may fall out, creating a shot-hole effect.

Is the disease harmful to me? No, citrus canker does not harm humans, animals or plant life other than citrus.

Does canker affect only orange trees? Citrus canker affects all types of citrus, including oranges, sour oranges, grapefruit, tangerines, lemons and limes. Canker causes the citrus tree to continually decline in health and fruit production. Ultimately, the tree will stop producing fruit and die.

Why does my tree have to be cut down? Citrus canker is one of the most destructive bacterial diseases impacting citrus. There is no known chemical compound that will destroy the bacteria within the plant tissue. In order to eradicate the disease, infected and exposed trees must be cut down and disposed of properly.

Why do citrus trees within 1,900 feet of a citrus canker infested tree have to be destroyed? The 1,900 feet distance was determined from a specific research study conducted by experienced plant pathologists under the weather conditions in south Florida. More than 15,000 trees were identified and monitored for evidence of citrus canker disease. From this research, they determined that approximately 95 percent of the exposed trees that became diseased were up to 1,900 feet away from a single disease-positive tree.

Why is the eradication program crucial? The state's $9.1 billion citrus industry is critical to the well being of Florida's strong economy from which all citizens benefit. The program is also necessary to save the many dooryard trees not yet affected by citrus canker and allow Florida residents to grow citrus freely. Citrus eradication benefits dooryard tree owners, as well as commercial citrus growers, by allowing everyone to grow healthy citrus. In addition, current legal obstacles facing the 1,900-ft. rule are costing taxpayers $1 million each week the program is delayed. Therefore, the longer the legal delays continue, the more trees, both residential and commercial, will succumb to the citrus canker bacteria and the more money taxpayers will spend.

Citrus canker eradication is important to all Florida residents. Through your support of Senate Bill 1926 and House Bill 1539

all Florida citizens will be free to grow and enjoy healthy citrus.

For more information, call the "Save Our Citrus" program at (863) 682-1111.

Save Our Citrus

What To Do:

Contact your local newspaper by writing a letter-to-the-editor in support of the proposed citrus canker eradication legislation, SB 1926/HB 1539.

How Do I Do That:

1.) Simply use the attached talking points and the summary below to help you write your letter.

2.) Use the attached letter-to-the-editor information page for more details.

3.) Contact your newspaper and ask for the editor's fax number or e-mail address.

4.) Send in your letter, and let the *Save Our Citrus Program* at (863) 682-1111 know if your letter gets printed.

Canker Eradication Legislation Summary

The continued injunction preventing the Florida Department of Agriculture (FDACS) from cutting exposed trees has lead to an additional 120,000 known infected trees in south Florida with surely more to come. FDACS estimates an additional $1 million per week for every week that the program has been shutdown and continues to be shutdown. Florida Citrus Mutual has crafted legislation with FDACS that will codify the 1,900-ft. rule into statutes, thus removing it from the administrative hearing venue that has ground it to a halt. It also contains some due process language that gives comfort to some of the south Florida legislators, while at the same time allowing FDACS to continue the eradication process. The House bill, HB 1539, passed the House Agriculture Committee on Jan. 23. The Senate bill number is SB 1926 and will be voted upon in the Senate soon.

Save Our Citrus

Letter Writing

Writing effective letters-to-the editor is not hard. The following are a few suggestions that will make writing even easier.

- Write on your organization's letterhead or use personal stationery.

- Be sure that your return address is on your letter, not just on the envelope. Envelopes normally get detached, discarded, or misplaced before the letter is answered. Your address is also used to verify you as a local reader.

- Be accurate. Spell names correctly and verify information. Tell why you are writing and get right to the point. If you know the name or the number of the bill that is of interest to you, include it. If you do not, give as much information as you can about the bill.

- State your reason for writing up front. Your own personal experience is the best supporting evidence for your opinion. Explain how the legislation would affect your business, your fellow employees, and the community in which you live.

- Concentrate on the media in your area.

- Don't hesitate to communicate your displeasure. That will also be remembered. Be polite if the editor opposes your position.