UF UNIVERSITY of FLORIDA | IFAS EXTENSION

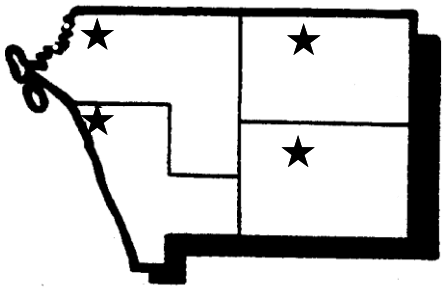
West Central Citrus Letter

DeSoto Extension Service
2150 NE Roan Street
Arcadia FL 34266
863/993-4846

Manatee Extension Service
1303 17th Street West
Palmetto FL 34221
941/722-4524

Hardee Extension Service
507 Civic Center Drive
Wauchula FL 33873
863/773-2164

Sarasota Extension Service
6700 Clark Road
Sarasota FL 34241
941/861-9900



May 2, 2017

International HLB Grower Day Presentations

Presentations from the HLB grower day that was conducted on April 21 at the Citrus Research & Education Center are now available on the Florida Citrus Mutual website at www.flcitrusmutual.com. The presentations are divided into 3 main categories: entomology, pathology, and horticulture. The goal of the presentations were to review information presented at the International HLB conference that have the greatest relevance to Florida citrus growers.

Florida Citrus Growers' Institute Presentations

Presentations from the 2017 Florida Citrus Growers' Institute will be available in early May at http://citrusagents.ifas.ufl.edu/events/GrowersInstitute2017/. Once at the site, you will be able to view a copy of the presentation as presented at the meeting.

Irrigation Water Concerns

With our extended dry conditions and frequent use of groundwater for irrigation, it would be wise to check your irrigation water for salinity. In the past, water quality has been known to deteriorate as the dry season progresses.

With frequent irrigation, high concentrations of salts may be accumulating near the soil surface in the absence of sufficient irrigation or rainfall to maintain the downward movement of applied elements out of the root zone with water flow. The increased salinity results from plant transpiration and surface evaporation which removes the water leaving salts behind in the soil which can cause salt stress in the plant. As the dry conditions progress, it is likely that the salinity levels in the soil increase with the constant application of more poor quality irrigation water and the constant drying out of the soil.

Once salts accumulate in the soil, you will need to leach the salts below the plant's root zone with higher rates of irrigation. Summer rains can also leach salts below the root zone.

To measure the salts in irrigation water, you can use handheld conductivity meters. These meters commonly report in units of dissolved solids (TDS) or electrical conductivity (EC). EC of a solution is a measurement of the ability of the solution to conduct electricity. When ions (salts) are present, the EC of the solution increases.

The unit of measurement that devices report will vary and may be reported in TDS, EC, or in scientific units of deci-Siemens per meter (dS/m).

The conversion for the different reported levels are as follows:

1mg/L = 1 ppm
dS/m x 700 = ppm
EC (in dS/m) x 700 = TDS

Soil salinity can be measured in the soil by using a 2:1 solution:soil ratio with which to determine soil EC.

As the salts increase in the soil solution, less water is available for plant use. Therefore, the roots are not able to extract as much water from the soil and osmotic stress increases.

Plant symptoms of salt injury include reduced root growth, smaller leaf size, and impaired shoot growth. As the chloride (Cl) toxicity increases you can notice burned necrotic or dry appearing edges of leaves. As sodium (Na) toxicity increase you may notice a bronzing appearance along with the reduction in growth.

As total salinity levels increase, trees will begin to shed leaves and a thinning of the canopy will become evident. Thinning canopy symptoms are usually more evident in the upper canopy of the tree as compared to the lower canopy.

Once salts accumulate in the soil, the only way to remove them is to leach them below the root zone with excess irrigation or rainfall. If relying on irrigation to reduce the salinity, enough water should be applied so that there is a downward flow with sufficient amount to move the water below the root zone. In areas with a shallow water table, salts that are flushed through the root zone may move back up into the root zone as the soil surface dries out.

Over the years a somewhat arbitrary level of 1,200 ppm of TDS has been used to determine when salinity may become an issue in citrus production. From a publication written by Brian Boman and Ed Stover in 2002 and revised in 2015, they showed that as TDS increased, total soluble solids and yield decreased. When comparing a TDS of 500 to 1,500, 2,500 and 3,500 they showed a reduction in yield of approximately 5%, 21% and 38%, respectively with increasing salinity. While these studies were conducted back in the late 1990's, one could assume that with HLB impacting root health, the damage that salinity may cause could be more severe today than in the past with our now compromised citrus roots systems. Therefore, managing irrigation salinity is a critically important to the health and productivity of your citrus trees.

Dates to Remember

June 4-6	Florida State Horticultural Society, Tampa
June 14-16	Florida Citrus Mutual Annual Industry Conference, Bonita Springs (registration required)
June 22	Citrus Youth Day, CREC, Lake Alfred

Sincerely,

Stephen H. Futch
Extension Agent, Multi-County

Office : 863-956-8644
Email: shf@ufl.edu