



Top-Notch Tool

In January 2008, the University of Florida/Institute of Food and Agricultural Sciences released the second edition of *Nutrition of Florida Citrus Trees*.

Edited by Drs. Tom Obreza and Kelly Morgan, the publication provides a comprehensive discussion of all aspects of citrus nutrition and fertilization. It maintains the same objective as the first edition, which was “to develop a sound citrus nutrition program that optimizes financial returns while sustaining yields and maintaining soil and water quality.” The second edition updates the first edition by incorporating “the findings of numerous citrus nutrition research projects conducted since the mid-1990s.”

Starting with an excellent summary of the history of important Florida citrus fertilizer research, the new 96-page bulletin summarizes the development of best management practices (BMPs) and the role of nitrate nitrogen, Florida porous soils, and impacts of fertilizer practices on groundwater quality. Along with up-to-date information, the publication also has excellent color illustrations and photographs. Maps of soil-type locations and pictures of common ridge and flatwoods soils are particularly useful.

The Scoop On Soil

Examples of the wide variety of chapters include one on soil fertility that discusses macro and micronutrients. Relative leachability of the different elements is covered along with the effect of soil pH on nutrient availability. One interesting table shows the amount of various nutrients contained in orange fruit and illustrates nutrients lost with harvesting. For example, 100 boxes (900 pounds) of oranges contain 10.6 to 13.6 pounds of nitrogen (N)

and 13.3 to 17.6 pounds of potassium (K). Effects of different nutrient elements on fruit quality are summarized. A table shows how different elements affect fruit size, color, soluble solids, acid, juice content, peel blemishes, and decay during storage.

Fertilizer Facts

The chapter on recommended fertilizer rates and timing is particularly important. Graphs show the recommended rates of N fertilization for trees of different ages and tree planting density. Another diagram shows the recommended fertilizer rate based on projected fruit yield in boxes or pounds solids per acre. Using these graphs, a grower can determine the recommended rate of N to apply.

A chapter on fertilizer sources and formulations discusses solid and liquid sources, foliar sprays, and controlled-release fertilizers. For organic citrus production, a table shows the amount of N, phosphorus, and K in manures from different animals.

Testing Techniques


A chapter on soil and leaf-tissue testing points out how leaf element concentrations change throughout the year and the best time for leaf

sampling. Optimum, excessive, and deficient levels of various elements are shown. Proper techniques for soil and leaf sampling are covered as well.

Other Useful Info

Given the current high price of fertilizer, growers will be interested in the chapter on precision agriculture. Using remote sensing, GIS, GPS, and variable rate application, growers can potentially reduce fertilizer application rates based on tree size. Fertilizer savings can be particularly noticeable in groves that have many young resets or missing trees due to tree removal.

A chapter on special situations discusses particular aspects of scions, rootstocks, calcareous or saline soils, and irrigation with reclaimed water. Fertilizer strategies for wind- or freeze-damaged trees help deal with recovery from environmental stresses.

The appendices are particularly useful. They provide easy-to-read tables showing physical and chemical properties of typical Florida citrus soils, along with nutrient concentrations, solubility, and salt index of different fertilizer materials. Pictures of different macro and microelement deficiencies in the last chapter are very helpful in showing leaf symptoms. 

Get It For Free

This publication is a practical and handy source of information on citrus nutrition all in one thin book. Because publication costs were covered by the Florida Department of Agriculture and Consumer Services, this bulletin can be obtained at no charge. Copies of the publication or a CD can be obtained from citrus county agents. It can also be found on the Web at <http://edis.ifas.ufl.edu/pdffiles/SS/SS47800.pdf>. *Nutrition of Florida Citrus Trees, Second Edition* is an updated, relevant, and complete source of information that all citrus growers should examine.

