



By Brandon White

Getting the most out of your nutrition program

Taking a wholistic, helicopter view of nutrient management programs can be beneficial in reducing high input costs and environmental implications in the continued era of HLB.

START WITH THE SOIL

An obvious first stop on the considerations list is the soil. It's the foundation of the system. Almost any economically feasible thing growers can do to improve organic matter and enhance natural biology in Florida's sandy soil is a good thing. The use of composts, cover crops, bio-stimulants, microbial inoculants, etc., has been proven effective in improving soil fertility. All of these products have their place in the system for improving nutrient-holding capacity and supporting microbial life and biological processes. Monitoring and adjusting soil pH (6 to 6.5) when necessary is a key factor for overall soil health and improved fertilizer uptake.

TIME APPLICATIONS ACCORDINGLY

Plant Needs

Fertilization schedules should follow the development stages and nutritional needs of the plant.

There are three main growth stages in citrus fruit development: cell division (phase I), cell enlargement (phase II) and maturation (phase III).

Many factors can affect

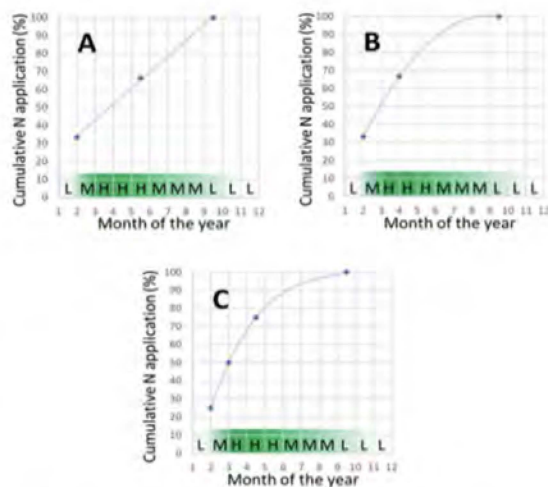


Figure 1. Nitrogen fertilizer split application examples consider peak nutrient demands of citrus trees.

Source: Nutrition Management for Citrus Trees, edis.ifas.ufl.edu/publication/cg091

the actual timing of these phases. These factors include varying bloom times from year to year (climate and drought), stresses (such as HLB) and variety (longer development in Valencias).

A lot is happening inside trees during the first two stages, which take place roughly from late winter to late spring/early summer in Florida. The peak demand for nutrients takes place around March through May, so this is a critical time for nutrient availability. After this, in late summer to fall, fruit goes into maturation with a decreased overall nutrient demand. Winter serves as a sort of rest period, when the nutrient requirements are the lowest of the year. As trees come out of the winter and approach the main bloom period, they benefit from a primer of nutrients to kick off the high-growth season.

It is important to make sure there are sufficient nutrients available from about February at pre-bloom and between March and May during fruit set and cell division. Avoid excessive fertilizer applications the rest of the calendar year to prevent overdosing trees. While some growers make regular fertilizer applications in the fall, there can be some



downfalls to this. Too high of plant nutrient levels during phase III can hinder color development and Brix levels of fruit, make trees more susceptible to cold damage and complicate psyllid management (psyllids like new flushes).

Fertilizer Form

Much research has shown that citrus benefits from split applications of fertilizer compared to a few (two to three) applications over a year. Of the methods available, fertigation offers the most flexibility and efficiency. A well dialed in and maintained fertigation system can offer better yields and reduced application costs when compared to traditional granular or foliar applications. Fertigation also increases nutrient uptake efficiency because of the numerous applications, which is especially helpful with the challenges facing the industry. Fertigation systems of course only offer these benefits if they are maintained and utilized properly.

Figure 1 (page 6) shows some options for split applications of granular fertilizer throughout the year with regard to nitrogen (N) requirements for citrus trees. For each of the three graphs, the month of the year is numbered on the bottom, and a low (L), medium (M) or high (H) growth rate is designated. Graph C shows a better approach to split applications by supplying 75% of the annual N rate within the high growth rate and nutrient demand time of late winter through spring. Note this graph does depict a lower dose of fertilizer in the fall, but this can vary.

SOIL AND TISSUE TESTING

With the above concepts in mind and the many variables to consider, the best way to guide any nutrient management program comes through testing of both soil and plant tissue. There is not a more surefire way to gauge the nutritional status of your crop than proper testing.

For more information, see Nutrition Management for Citrus Trees (edis.ifas.ufl.edu/publication/cg091). 🍊

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