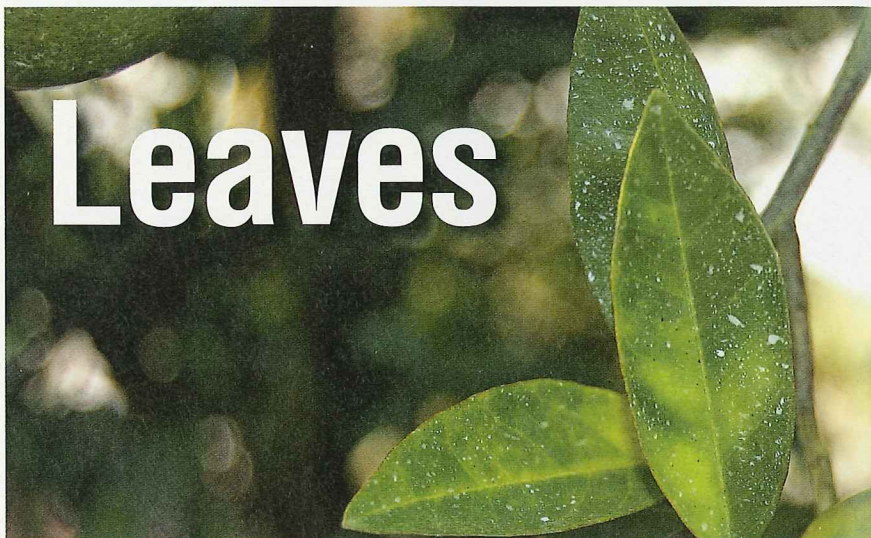


Feed The Leaves

Foliar feeding complements fertility programs and helps trees through times of stress.



Several citrus growers are using foliar nutritional sprays to slow down decline and maintain fruit productivity of greening-infected trees.

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Foliar feeding is not intended to completely replace soil-applied fertilization of the macronutrients (nitrogen, potassium, and phosphorous). However, macronutrients can be foliarly applied in sufficient quantities to influence both fruit yield and quality. Some crops, like citrus, can have a large part of the nitrogen, potassium, and phosphorous requirements met

through foliar applications.

Foliar applications of other plant nutrients (calcium, magnesium, and sulfur) and micronutrients (zinc, manganese, copper, boron, and molybdenum) have proven for many crops to be an excellent means for supplying the plants' requirements. Soil application of magnesium, manganese, zinc, boron, and molybdenum is not as economical

and not as effective as foliar application to supply those nutrients to citrus trees. Applications made to the soil can be subject to leaching, volatilization, and/or being tied up by soil particles in unavailable forms to plants.

Foliar Flexibility

Foliar feeding should be used as an integral part of the annual nutritional program. It can be used in other situations to help plants through short, but critical periods of nutrient demand, such as fruit set and bud differentiation. Foliar nutrition also may prove to be useful at times of soil or environmentally induced nutritional shortages. Leaf application of nutrients is of significant importance when the root system is unable to keep up with crop demand or when the soil has a history of problems that inhibit normal growth.

Foliar feeding is proven to be useful under prolonged spells of wet soil conditions, dry soil conditions, calcareous soil, cold weather, or any other condition that decreases the tree's ability to take up nutrients when there is a demand. It also may be utilized effectively when a nutritional deficiency is diagnosed. A foliar application is the quickest method of getting the most nutrients into plants. However, if the deficiency can be seen, the crop might have already lost some potential yield.

Several Florida citrus growers and production managers are using foliar nutritional sprays, mainly micronu-

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trients, to slow down decline and maintain adequate fruit productivity of citrus greening-infected trees. Supplemental, balanced foliar nutrition has positive effects on plant diseases by inducing naturally occurring plant resistance mechanisms. It is always important to maintain the balance between nutrients because having one nutrient significantly out of balance can be as bad as a deficiency.

Burn Notice

While foliar feeding has many advantages, it can burn plants at certain rates under certain environmental conditions. It is important to follow the established guidelines for applications. There are a number of conditions that can increase the chances of causing foliar burn. A plant under stress is more susceptible to damage. Stressful conditions include drying winds, disease infestations, and poor soil conditions. The environmental conditions at the time of application also are important factors. Applications when the weather is warm (above 80°F) should be avoided. This means that during warm seasons, applications should be made in the morning or evening.

Additionally, applications should not be at less than two-week intervals to give the plant sufficient time to metabolize the nutrients and deal with the added osmotic stress.

Another important factor when applying nutrients foliarly is to ensure that the pH of the material is in the proper range. The pH range of the spray solution should be between six and seven. Attention should be paid to the pH of the final spray solution. This is significant in areas where water quality is poor.

Post-bloom foliar applications (applied in April when the spring flush leaves are about fully expanded) of potassium nitrate or mono-potassium phosphate have been found to increase fruit yield and size (8 lb. K₂O per acre per application). 

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