unmulched crops in split applications to reduce leaching losses and to reduce soluble-salt injury. For muck soils, K can be broadcast at planting time with the P.

Most micronutrients are essentially immobile in soil and should be managed like P. Foliar applications of Mn, Fe, Cu, and Zn can be used to correct deficiencies which might occur on alkaline soils during cool periods.

Liquid vs. dry fertilizer

Research in Florida has shown that there is no difference in response of crops to similar amounts of nutrients when applied in either liquid or dry form. Certain situations (use of drip irrigation or injection wheel) require clear or true solutions. However, sidedress applications of fertilizer can be made equally well with dry or liquid forms of nutrients.

The decision to use liquid or dry fertilizer sources should depend largely on economics and on the type of application equipment available. The cost per unit of nutrient (e.g., dollars per ton of actual N) should be used in any decision-making process.

Foliar fertilization

Foliar fertilization should be thought of as a last resort for correcting a deficiency. The plant leaf is structured in such a way that it naturally resists easy infiltration by fertilizer salts. Foliar fertilization most appropriately applies to micronutrients and not to macronutrients such as N, P, and K. Research has shown that foliar applications of N, P, and/or K are not needed where proper soil-directed fertilizer programs are being followed. Leaves cannot absorb enough of these nutrients (without burning the leaves) to correct any significant deficiency. Any benefit from macronutrient foliar sprays probably results when nutrients are washed by rain or irrigation water off of the leaf surface into the soil. The nutrient then enters the plant via the plant roots. Amounts of macronutrients recommended on the label of most commercial foliar products are so minuscule compared to nutrition derived from the soil that benefit to the plant is highly unlikely. Additionally, fertilizer should only be added if additional yield results, and research with foliar-nutrient applications has not clearly documented a yield increase for vegetables.

In certain situations, temporary deficiencies of Mn, Fe, Cu, or Zn can be corrected by foliar application. Examples include vegetable production in winter months when soils are cool and roots cannot extract adequate amounts of micronutrients, and in cases where high pH (marl and Rockdale soils) fixes broadcasted micronutrients into unavailable forms. Micronutrients are so termed because small, or micro, amounts are required to satisfy the CNR. Such micro amounts may be supplied adequately through foliar applications to correct a temporary deficiency.

Boron is highly immobile in the plant. To correct boron deficiencies, small amounts of boron must be applied frequently to the young tissue or buds.

Any micronutrient should be applied **only** when a specific deficiency has been clearly diagnosed. Do not make shotgun applications of micronutrients. There is a fine line between adequate and toxic amounts of these nutrients. Shotgun application of micronutrients can actually reduce plant growth and rob yields because of toxicity. Compounding the problem is the fact that the micronutrients will end up in the soil where they can accumulate to levels which may threaten crop production on that soil. An important part of any micronutrient program involves careful calculations of all micronutrients being applied, from all sources.

Double-cropping

Successive cropping of existing mulched beds is a good practice in order to make effective use of the polyethylene mulch and fumigant. Double-cropping also can make use of residual fertilizer in the beds. If fertilizer-N applications and amounts were properly managed for the first crop, then there should be negligible amounts of fertilizer-N remaining in the beds. It is not a good practice to add extra fertilizer to the beds when planting the first crop, thinking that this fertilizer will aid growth of the second crop. The extra fertilizer could contribute to soluble-salt damage to the first crop, and might still be leached from the root zone before the second crop is established.

If double-cropping is to be practiced, then a drip-irrigation system could be used to supply adequate nutrition to each crop. In most cases, only N and K