

PETIOLE AND LEAF SAMPLING INSTRUCTIONS

Soil and climatic differences as well as cultural practices greatly affect the quantities of fertilization that have to be applied.

Soil and leaf analyses give an excellent indication of the actual requirements of a particular planting. It is therefore recommended that, when the trees reach fruit-bearing stage, full use be made of a soil and leaf analysis service. This will make it possible to obtain an accurate and complete fertilizer program for every planting. Many factors influence the actual uptake of soil nutrients by the roots. Foliar feeding of some nutrients can be very effective.

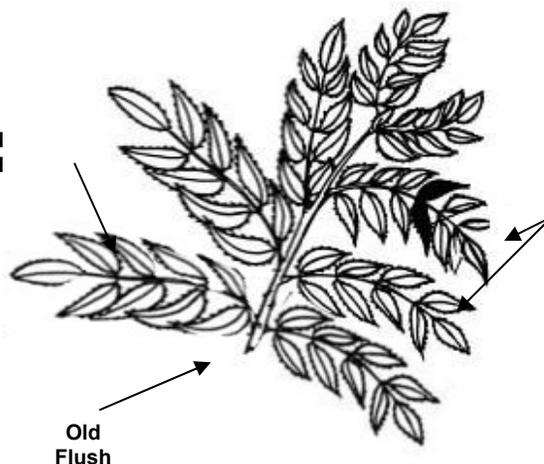
Leaf analysis

Leaf analysis determines the concentrations of specific nutrients in the plant at that stage of growth. Adequate, inadequate or excessive amounts of nutrients could be present in the plant. **Soil tests only estimate nutrients available to roots.**

- It is possible with Precision Soil and Plant Analysis (**ASK THE PLANT®**) to determine nutrient status of an orchard and to fertilize accordingly for most efficient use of inputs.
- Limiting factors that must be taken into account are weather conditions, irrigation water and soil. In the latter case, the most important requirements are usually good soil depth and drainage (tilth), Humus content and the absence of high salt concentrations in both the soil and the irrigation water, as well as complete nutrient balance.

Sampling

- Leaf samples should be taken when the first leaflets have fully expanded then at four to six week intervals, with the last at around harvest. The later samples are taken so that soil nutrition adjustments can be made for the next season.
- The correct leaves must be sampled (see figure). Take a representative composite sample of leaves for each soil management area as soils can be highly variable.
- An in-depth 2-foot soil profile sample (in 1-foot increments) should accompany the first or last leaf sample each year.
- It is advisable to have soil analyses done every year of each top 2 feet (and down to 4 feet in 1-foot increments, repeated every 4 or 5 years to determine soil mining or build up.)
- Leaves for analysis should only be taken from healthy trees and must be free of sunburn, deficiency symptoms, insect damage, disease, etc.
- A leaf and soil sample should be from a planting of not more than 5-20 acres, unless comparing good to bad.
- Diagnostic samples should be a comparison from good and poor areas of soils and leaves.
- **Sample size needed: 25 – 30 leaves.**



Pecan Leaf Sample

Method

- Select about 10 - 20 trees spread throughout the planting that are homogeneous in appearance and are representative of the leaf development stage of that planting.
- Strikingly good or poor trees should not be included in representative samples.
- The 10 - 20 pre-selected trees should be **clearly marked, numbered or have GPS coordinates**. Leaf and soil samples are then taken regularly from the same marked trees each time. This reduces sampling variation for better comparison.

- The fertilization program can then be adapted according to the analysis results. Adjustments to the previous program, according to leaf and soil analyses, can be done more effectively if the previous history is recorded each time.
- A rational fertilization program for a specific planting can only be obtained if the soil and leaf samples are analyzed regularly for several years. The situation can't always be rectified in a single season, since tree growth is a gradual process.

See **ASK THE PLANT**[®] **LEAF / PETIOLE SAMPLING** Instructions
for the handling and shipping of samples and other information.