

Walnut Leaf Sampling

Sampling Notes

Nutrient concentration in leaves generally decreases during the growing season. Nitrogen uptake from soil starts after bud break and is greatest during the onset of shoot growth and the later stages of nut fill. Leaf analysis is used to monitor nutrient depletion during the season.

Micronutrient sufficiency is best determined using tissue analysis rather than soil testing. Tissue micronutrient status is a balance between soil availability and foliar applications.

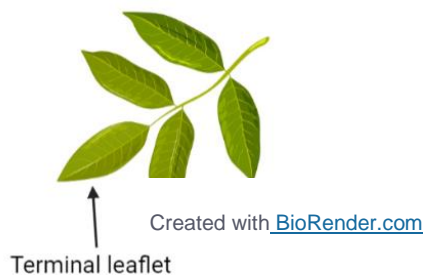
Tissue salt concentrations tend to increase as the season progresses and may become problematic, establishing a need for salinity management and soil amendments.

General Sampling Instructions

Sampling time: Collect leaf samples between full leaf out (mid-late May) through September. Nutrient concentration in leaves generally decreases during the growing season.

Plant part: Collect 30-50 terminal leaflets from fully expanded non-fruiting spurs throughout the block or management area. Collect leaflets that are 6-8 feet above the ground from different quadrants of the tree. Avoid sampling diseased, immature, or nonrepresentative leaves.

Walnut Leaf



Sampling frequency: Samples can be taken between one and five times per season. Analyzing multiple samples per season is recommended to monitor nutrient uptake, to increase the chance of detecting nutrient deficiencies, and to evaluate the fertility program more accurately.

Quantity per sample: 30-50 terminal leaflets collected from trees at least 40 feet apart.

Sampling area: If orchard health and/or vigor are different within a field, divide the field into different blocks or management areas. Walk across the sampling block and collect terminal leaflets from fully expanded non-fruiting spurs, combining them in a paper bag. Samples should be collected on approximately a 40-acre basis. Take a different composite sample for every field that differs in productivity, variety, or soil type. Assuming you have a uniform orchard/sampling unit, it's not required to go back to the exact same trees every sampling event. However, starting at the same location every sampling event improves repeatability and helps correlate spring values with summer and more easily track changes. Avoid sick/nutritionally deficient trees, or sample them separately and compare them to areas of better growth to determine what nutrients are lacking.

Recommended tests:

L2: Nitrogen (N), phosphorous (P), potassium (K), zinc (Zn), manganese (Mn), sodium (Na), boron (B), calcium (Ca), manganese (Mg), iron (Fe) and copper (Cu)

or, where **chloride** is a problem,

L3: Nitrogen (N), phosphorous (P), potassium (K), zinc (Zn), manganese (Mn), sodium (Na), boron (B), calcium (Ca), manganese (Mg), iron (Fe), copper (Cu) and chloride (Cl)

Preparing Sample for Lab: Combine collected leaves in a paper bag. Take any notes about the sampling block. Once collected, try to keep the samples cool and ship or deliver them to the laboratory as soon as possible with a **work order form**.

References:

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