



**You Can't Manage...
What You Haven't
Measured**

Advantages of Tissue Testing

- Plant tissue testing offers a “snapshot in time” of the nutrient levels in plant tissue at the time of testing. Nutrient levels fluctuate during the growing season.
- Plant tissue analysis complements soil testing by measuring the nutrients actually taken up by the plant.
- Secondary nutrients and micronutrients that may not be routinely measured in soils... may be reliably measured in plants.
- Sampling plant tissue allows for diagnosis of nutrient problems, whether deficient, sufficient, excess, or toxic. The information may be used to adjust aspects of the current nutrient management plan, or to alter future plans.
- The nutrient concentration in a plant varies with the plant's age and the part of the plant sampled.
- If plant tissue analysis is to be meaningful, a minimum sample size of the correct plant part must be collected for the specific plant growth stage.
- Plant tissue analysis may also be used to fine-tune the current season's nutrient management program by applying foliar nutrient applications.

**Improve Yield Potential
by Determining Nutrient
Uptake in Plants**

Test Package	Description
PT1	Mineral Package: Phosphorus, Potassium, Magnesium, Calcium, Sulfur, Iron, Manganese, Boron, Copper, Zinc.
PT2	Nitrogen (total) + Mineral Package (PT1)
PT3	Total Nitrogen
PT4	Individual Analysis: Per Element (from Mineral Package)
PT5	Stalk Nitrate - Nitrogen
Lab tissue analysis and electronic tissue analysis results are emailed to provided email address(es), also uploaded into I.F.A.R.M. under the grower's field.	
Contact USI or your regional salesperson for pricing	

USI offers both field tissue sample collection services and lab analysis for multiple crops



USI Sample Collection Option

- USI collects tissue samples. \$ 30 per / hour for field service tech travel / labor / vehicle costs.
- Does not include plant analysis. Separate analysis charges will apply.
- Optional: USI can take a soil sample at the tissue sample location to compare with tissue results. Sample type (standard or nitrate) & sample depth dependent on soil test type. Analysis charges will apply.
- Optional: USI can geo-reference the sample locations. Customer to advise USI of request.
- Optional: Customers can use Satshot imagery to help analyze field conditions and determine tissue sample locations. Must have a subscription with Satshot.

Reference page 2 to see recommended sample sets per crop

Collecting Plant Tissue Samples:

United Soils, Inc. suggests following the provided guide below when obtaining plant tissue samples for analysis. Results of tissue analysis may indicate whether plant development problems are due to nutritional factors, nutrient uptake, or other causes.

Accurate results are possible only when carefully selected, representative plant material is submitted for analysis. Accurate sampling requires that select plant parts are collected at specific stages of plant development. Plant nutrient levels may be different for each variety, stage of development, management practice, growing area and environmental stress. It is recommended to select plant tissue representative of a particular variety, management practice or growing area. Place samples in un-lined paper bags to allow moisture to evaporate and reduce possibility of sample decomposition. Take precautions to prevent the plant tissue from being contaminated by soil residue.



Do Not Sample:

Diseased or dead plant material; plant tissue damaged by insects and/or mechanical equipment; plant tissue which has been stressed by excesses of cold, heat or moisture; seeds should not be sampled, as they do not reflect nutritional status of the whole plant.

Crop	Stage of Growth	Plant Part to Sample	Number of Plants to Sample
Corn	Seedling Stage (less than 12")	All the above ground portion	20-30
	Prior to Tasselling	The entire fully developed leaf below the whorl	15-25
	From Tasselling & Shooting to Silking	The entire leaf opposite side and below the ear	15-25
	<i>Sampling after Brown Silk is not recommended. Place samples in un-lined paper bags.</i>		
Soybeans	Seedling Stage (less than 12")	All the above ground portion	20-30
	Prior To or During Initial Flowering	Two or three fully developed leaves at the top of the plant	20-30
	<i>Sampling after pods begin to set is not recommended. Place samples in un-lined paper bags.</i>		
Alfalfa	Prior To or 1/10 Bloom Stage	Collect mature leaves about 1/3 of the way down from the top of the plant	40-50
Wheat	Seedling Stage	All above ground portion	25-40
	Before Heading	Upper 4 leaves	25-40