Sampling Guide For Plant Tissue Analysis

INTRODUCTION

One of the more important factors affecting crop quality and yield is the nutrient status of the plant or the flow of nutrients to plant tissues during the growing season. Nutrient status is an "unseen" factor in plant growth, except when imbalances become so severe that visual symptoms appear on the plant. Determination of plant nutrient status requires precise laboratory analysis of plant tissue during the growing season.

HOW CAN A TISSUE ANALYSIS HELP?

A plant tissue analysis will detect unseen hidden hunger and confirm visual deficiency symptoms. Toxic levels may also be detected. Though usually used as a diagnostic tool for future correction of nutrient problems, a plant tissue analysis from young plants will allow a corrective fertilizer application that same season. Combined with data from a soil analysis, a tissue analysis is an important tool in determining nutrient requirements of a crop.

A complete plant tissue analysis from A & L Laboratories will identify the nutrient status of the following elements:

- Nitrogen
- Iron
- Sulphur
- Aluminum
- Phosphorus
- Manganese
- Potassium
- Boron
- Magnesium
- Copper
- Calcium
- Zinc
- Sodium
- Chlorine, molybdenum and other elements may be useful additons.

COLLECTION AND PREPARATION OF THE SAMPLE

Be sure to use a clean container. Never use a metal container as the metal may contaminate the sample.

Generally, two cups of lightly packed material provides a sufficient amount to conduct an analysis; one cup may be sufficient if gathering petioles. If plant samples have soil, dust, fertilizer, or spray residues on them, they will need a light washing, as follows: With aid of a plastic colander, immerse the sample in cool water containing a couple of drops of PHOSPHATE-FREE detergent, and gently agitate for no longer than about 10 seconds. Extended washing may damage the plant tissue and remove some of the soluble elements.

Remove the colander and quickly rinse the sample under flowing pure water. Blot-dry with a clean towel. Either air-dry samples for one day (below 176°F) or ship as soon as possible in perforated bags to allow air movement and a degree of drying in transit. Never send fresh samples in sealed plastic bags unless kept cool. Never freeze samples. Do not include roots with samples for nutrient analysis unless required. Specific sampling procedures are required for disease diagnosis. Therefore, please phone for instructions before sampling.

SAMPLING LOCATIONS: WHEN AND WHERE TO SAMPLE

Before taking tissue samples, ensure that timing and location of samples correlates with interpretive data. Instructions for petiole and leaf sampling may differ. Also, comparing samples from both a "good" and a "bad" area often helps in determining corrective action. If specific sampling guidelines are not given, collect recently mature leaves just below the growing point from at least 10 plants. A partial sampling guide follows, although many variations exist. Refer to the A&L Agronomy Handbook for further information.

FREE TISSUE SAMPLE MAILING SUPPLIES

A & L Laboratories will provide suitable plant tissue sample bags, as well as plant tissue submittal forms at no charge on request.

The information you receive on our reports is as accurate as the information submitted with your sample. Please fill out all submittal forms as accurately, completely and legibly as possible.

→ **DESIRED SAMPLE LOCATION FROM COMMON CROPS**

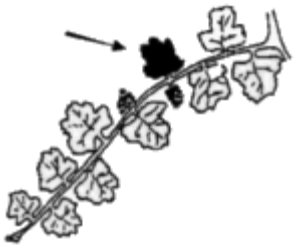
Corn - before tasseling Collect the first fully developed leaves from the top of 15 to 20 plants. (If the plant is less than 12 inches tall, collect all of the above ground portion).

Corn - from tasseling to silking Collect the leaves below and opposite from the ear of 15 to 20 plants.

Alfalfa Collect top 6 inches or upper third of the plant at tenth bloom stage or before.

Apples, Pears, Almonds, Apricots, Cherries, Prunes, Plums (lower) Collect the leaves from non-fruiting, non-expanding, spurs at mid-season.

Sorghum Collect the second leaf from the top of 20-30 plants before at at heading.

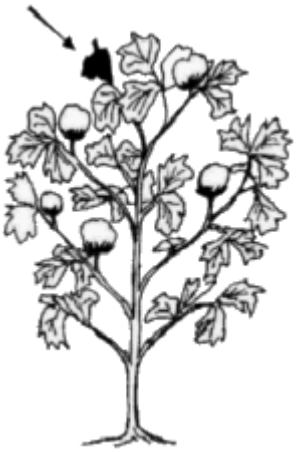


Grapes Collect the leaves opposite basal cluster at bloom.

Pecans, Figs, Olives, Peaches, Nectarines Collect the mid-shoot leaflets/leaves at mid season.

Soybeans Collect recently mature trifoliate leaves from the top of 20 to 30 plants prior to or during flowering. (In the seeding stage, collect all of the above-ground portion).

Small Grains Collect the four most uppermost leaf blades from the top of 25 to 40 plants. (In the seedling st age, collect all of the above-ground portion). Sample should



Cotton Collect recently mature leaves from the main stem on 40 to 50 plants selected at random at full bloom.

equal two cups.

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