COLLECTING SAMPLES

Logan Labs, 620 North Main Street, Lakeview, OH 43331
937-842-6100 | www.loganlabs.com

How to Collect Water Samples
The key to the success of a water sampling program is proper handling and preservation of samples.

Sample Containers

Use only clean plastic containers for holding water samples

No glass

No pesticide, surfactant, or fertilizer containers

The container and cap should be rinsed at least 3 times prior to sampling, with the water to be sampled.

Sampling

Samples from streams should be collected from running water, well downstream from tributaries.

Collect from the center of the stream, where the velocity is average and chances of solids settling is minimal.

Samples from ponds or pits should be collected when they are in use for irrigation.

Samples should be taken at various depths.

Well water should be collected after the well has been pumped for a period of 1 to 2 hours.

Handling and Storage

Fill to the top of the bottle to limit air exposure

Squeeze air out of bottle before putting on lid.

Seal sample bottle tightly

Ship to lab within 24 hours

If sample is to be held longer than 24 hours, keep refrigerated.

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SAMPLING PLANT TISSUE

Just as in soil testing, reliable plant tissue data starts with proper sampling.

Collecting the best "indicator" samples and consistency in sampling, enhances the reliability of results. The best time to collect samples is between mid-morning and mid-afternoon, avoiding rain events.

It is important to keep the samples as free from soil contamination as possible. Distilled water can be used to rinse the sample if any contamination is noticed.

BEST "INDICATOR" SAMPLES

Collecting a tissue sample depends on the crop, stage of growth, uniformity of growth, and the purpose of sampling. The most recent mature leaf is usually the best indicator of nutritional status. This is the first fully expanded leaf back from the growing point. It is not shiny green from maturity or dull from age.

When sampling turf, mower clippings can be used. It is important to avoid soil contamination using this method.

For forage grasses and small grains, collect the top 3 or 4 leaves or inches of growth.

When symptoms appear in different zones on a plant, take a separate sample of the affected area in addition to the "indicator" sample. In this case, comparative samples of the same tissue from symptom free plants are helpful in isolating differences.

THINGS TO AVOID WHEN SAMPLING:

- young, emerging leaves
- old, mature leaves
- seeds
- diseased or dead plants
- plants that have insect or mechanical damage

SAMPLE SIZE

The sample should contain enough plant tissue to represent the average condition of the crop. 10-15 leaves is adequate for most crops.

For large leaved crops, 4-5 leaves are adequate. Small leaved plants will require a 25-30 leaf sample.

When sampling turf, 2 cups of plant tissue is required.

For analysis on young seedlings, take the whole above ground portion or 30 or more plants.

SAMPLE PACKAGING

Paper containers are best for packaging and shipping plant tissue samples. Never place the samples in plastic bags. Placing the sample in plastic will accelerate deterioration of the sample.

Be sure to complete a worksheet with client information and sample identification.
Your sample and worksheet are ready to be shipped to the lab.

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SAMPLING INSTRUCTIONS FOR TISSUE SAMPLES

Stage of Growth – Plant Part to Sample – Number of Plants to Sample

CORN

- Seedling stage (less than 12") – all the above ground portion – 15 to 20, or
- Prior to tasseling and shooting to silking – entire leaf fully developed below the whorl – 10 to 15, or
- From tasseling and shooting to silking – entire leaf at the ear node or immediately above or below it – 10 to 15.

SOYBEANS OR OTHER BEANS

- Seedling stage (less than 12") – all the above ground portion – 20 to 30 or
- Prior to or during initial flowering – two or three fully developed leaves at the top of the plant – 25.

SMALL GRAIN (WHEAT, BARLEY, OR RYE)

- Seedling stage (less than 12") – all the above ground portion – 60, or
- Prior to heading – the four uppermost leaves – 60.

HAY, PASTURE, OR FORAGE GRASSES

- Prior to seed head emergence or at the optimum stage for best quality forage – four uppermost leaf blades – 50 to 75.

ALFALFA

- Prior to or at 1/10 bloom stage – mature leaf blades taken about 1/3 of the way down the plant – 40to 50.

TOBACCO

- Before bloom –uppermost fully developed leaf, fourth leaf from top of plant – 8 to 12.

PEANUTS

- Prior to or at bloom stage – mature leaves from both the main stem and either cotyledon lateral branch – 40 to 50.

COTTON

- Prior to or at first bloom or when first squares appear – youngest fully mature leaves on main stem – 30 to 40.

TOMATO (FIELD)

- Prior to or during early bloom stage – third or fourth leaf from growing up – 20 to 30.

TOMATO (GREENHOUSE)

- Prior to or during fruit set:
  - Young plants; leaves adjacent to 2nd or 3rd cluster – 20-25.
  - Older plants; leaves from 4th to 6th cluster – 20 -25.

TURF

- During normal growing season – leaf blades, clip by hand to avoid contamination with soil/material – ½ pint.

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POTATO

- Prior to or during early bloom – third to sixth leaf from growing tip – 20 to 30.

PEPPERS

- Prior to bloom – most recently mature leaf – 25.

ROOT CROPS (CARROTS, ONIONS, BEETS, ETC.)

- Prior to root or bulb enlargement – center mature leaves – 20 to 30.

MELONS (WATER, CUCUMBER, MUSKMELON)

- Early stages of growth to fruit set – mature leaves near the base portion of plant on main stem – 20 to 30.

LEAF CROPS (LETTUCE, SPINACH, ETC.)

- Mid growth – youngest mature leaf – 35 to 55 .

CELERY

- Mid growth (12 – 15" tall) – petiole of youngest mature leaf – 15 to 30.

APPLE, APRICOT, ALMOND, PRUNE, PEACH, PEAR, CHERRY

- Mid season – leaves near base of current year's growth or from spurs – 50 to 100.

STRAWBERRY

- Mid season – youngest fully expanded mature leaves – 50 to 75.

GRAPES

- From end of bloom period through August – petioles and leaves from leaves adjacent to fruit clusters – 60 to 100.

ORNAMENTAL SHRUBS

- Current year's growth – fully developed leaves – 30 to 100.

AZALEA

- Prior to flowering – most recently matured leaves – 50 to 75.

ROSES

- During flower production – 5 leaflet leaves below bud – 20 to 30.

COMPARING HEALTHY TO NON-HEALTHY PLANTS IS RECOMMENDED