



Sample collection methods are critical for accurate analysis of plant tissue samples. Samples must be taken at the appropriate time and from the correct part of the plant. Below are general guidelines for accurate plant tissue analysis.

Where to Sample from

- If the field is uniform, samples should be taken from across the field and composited into one sample.
- If a problem area exists, sample the problem area separately from areas of normal growth.
- Pick plants that best represent actual field conditions.

What NOT to Sample

Do not take samples from plants that:

- are dead;
- insect damaged;
- have been mechanically or chemically injured.
- Avoid plants that have been heat, cold, moisture or drought stressed.

When to Take Samples and How Much to Collect:

- Plant tissue samples can be taken at any time throughout the growing season, but the preferred stage(s) of growth and plant part(s) to sample are listed in the tables below (Kelling, K.A., Combs, S.M., Peters, J.B., University of Wisconsin, Sampling for Plant Analysis).
- The amount of plant tissue recommended depends on the type of plant and the stage of growth. An amount that fills a paper lunch bag is acceptable. The tables below provide more detailed guidelines.
- Samples should be collected in a large paper bag or plastic bucket (not metal).

Sample Preparation

After collecting your samples, the following steps should be followed for accurate results.

- Brush off any dirt using a soft, clean cloth or soft bristle brush. If necessary, leaves may be rinsed using distilled water and then air dried.
- Remove roots and other foreign materials.
- Place sample in paper bag or paper envelope for shipping, do not use plastic or polyethylene.
- Complete the sample submission form and attach it to the sample.
- Overnight shipping is the preferred method of shipping.



FIELD CROPS

Crop	Stage of Growth	Plant Part	No. of Plants to Sample
Alfalfa	bud to first flower	top 6 inches	35
Alfalfa, hay	harvest	whole plant	25
Barley	prior to heading	newest fully developed leaf	50
Bean, dry	prior to or at initial flower	newest fully developed leaf	25
Bean, lima	prior to or at initial flower	newest fully developed leaf	25
Bean, snap	prior to or at initial flower	newest fully developed leaf	25
Bluegrass	prior to heading	newest fully developed leaf	50
Bromegrass	prior to heading	newest fully developed leaf	50
Buckwheat	boot stage	whole plant	20
Canary Grass	prior to heading	newest fully developed leaf	50
Canola	flowering	mature upper leaves	25
Corn, field	12 inches tall	whole plant	20
Corn	pre-tassel	leaf below whorl	15
Corn	tassel to silk	ear leaf	15
Corn, silage	ensiled or chopped	whole plant	2qt
Corn, sweet	tassel to silk	ear leaf	15
corn, pop	tassel to silk	ear leaf	15
Fescue, fine	new summer growth	clippings	50
Lupine	early flower	whole plant	25
Millet	4 weeks after clipping	whole plant	25
Mint	flowering	whole plant	25
Oat	prior to heading	whole plant	50
Orchard Grass	prior to heading	newest fully developed leaf	50
Pea, canning	prior to or at initial flower	newest fully developed leaf	25
Pea, chick, field	prior to or at initial flower	newest fully developed leaf	25
Potato	prior to or at initial flower	4th petiole & leaflet (whole leaves)	40
Potato	tuber bulking	4th petiole & leaflet (whole leaves)	40
Potato	prior to or at initial flower	4th petiole & leaflet (whole leaves)	50
Potato	tuber bulking	4th petiole & leaflet (whole leaves)	50
Red Clover	bud to first flower	top 6 inches	35
Red Clover, hay	harvest	whole plant	25
Rice, wild	prior to heading	newest fully developed leaf	50
Rye	prior to heading	newest fully developed leaf	50
Sorghum, grain	prior to heading	2nd fully developed leaf	20
Sorghum-Sudan	prior to heading	newest fully developed leaf	50
Soybean	prior to or at initial flower	newest fully developed leaf	25
Sugar Beet	prior to or at initial flower	newest fully developed leaf	25
Sunflower	florets about to emerge	newest fully developed leaf	20
Tobacco	45 tp 60 days after planting	newest fully developed leaf	15
Tobacco	early flower	newest fully developed leaf	15
Tobacco	mature	leaves	15
Trefoil, birdsfoot	bud to first flower	top 6 inches	35
Triticale	prior to heading	newest fully developed leaf	50
Vetch, crown	bud to first flower	top 6 inches	35
Wheat	tillering	newest fully developed leaf	50
Wheat	prior to heading	newest fully developed leaf	50



VEGETABLE CROPS

Crop	Stage of Growth	Plant Part	No. of Plants to Sample
Asparagus	mature fern	fern 17 to 35 inches up	20
Beet, red	mid-season	youngest mature leaves	20
Broccoli	heading	youngest mature leaves	20
Brussels Sprouts	heading	youngest mature leaves	20
Cabbage	mid-season		20
Carrots	mid-season	youngest mature leaves	20
Cauliflower	mid-season	youngest mature leaves	20
Celery	mid-season	youngest mature leaves	20
Cucumber	prior to or at early fruit development	youngest mature leaves	20
Ginseng	mid-season	youngest mature leaves	35
Lettuce	mid-season	wrapper leaves	20
Melon	prior to or at early fruit development	newest fully developed leaf	25
Muskmelon	prior to or at early fruit development	newest fully developed leaf	25
Onion	mid-season	tops, no white portion	20
Pepper	prior to or at early fruit development	petiole and leaflet	40
Pumpkin	prior to or at early fruit development	newest fully developed leaf	25
Spinach	mid-season	newest fully developed leaf	25
Squash	prior to or at early fruit development	newest fully developed leaf	25
Tomato	mid-season	newest fully developed leaf	40
Watermelon	prior to or at early fruit development	newest fully developed leaf	25

FRUIT CROPS

Crop	Stage of Growth	Plant Part	No. of Plants to Sample
Apple	current season's shoots	fully developed leaves at mid-point of new shoots	4 leaves
Blueberry	new summer growth	fully developed leaves	35
Cherry, sour	current season's shoots	fully developed leaves at mid-point of new shoots	4 leaves
Cranberry	15 Aug to 15 Sept	current season growth above berries	200 uprights
Grape	full bloom	newest fully developed petiole	5 from each of 10 vines
Raspberry	10 Aug to 4 Sept	6th and 12th leaf blade and petiole from tip	2 to 3 leaves from 10 canes
Strawberry	at renovation before mowing	fully developed leaflets and petioles	40

References

Kelling, K.A., Combs, S.M., Peters, J.B., Sampling for Plant Analysis

Resources

Tech Notes – Plant Tissue Analysis

For more information on any of our Plant Tissue Analysis Packages, please contact us at 1-800-CVASLAB or via e-mail at mail@foragelab.com.