MISSISSIPPI STATE UNIVERSITY EXTENSION

Plant Analysis Sampling Instructions

This publication tells you how to collect a plant tissue sample for analysis. Remember: Plant analyses and evaluations are worthless unless you submit the proper plant part. Following are instructions as to the plant part, stage of growth to sample, and the number of plants to sample.

1. Do not sample:
    a. Dead or diseased plants.
    b. Insect- or mechanically-injured plants.
    c. Stressed plants (those that have suffered from extreme temperatures or moisture).
    d. Plants with soil-covered leaves.
    e. Plants in the advanced fruiting stages.
    f. Plants that have had no rainfall since a foliar application of insecticides, fungicides, or nutrient elements.
    g. Plants that have shown deficiency symptoms for a prolonged period of time.
    h. Early in the morning or on extremely cloudy days. Nitrates accumulate under these conditions.
2. Place plant tissue samples inside a large paper bag. Do not wrap or enclose tissue samples in polyethylene bags (freezer bags) or other impermeable containers. Let succulent or wet tissue samples air-dry for at least one day before mailing to the lab.
3. You may want to compare a normal plant with a suspected nutrient-deficient plant. If so, take two samples—one from the normal plant and the other from the abnormal plant. Place each sample in a separate paper bag. Use individual mailing containers, and make reference to each sample.
4. When sampling instructions are not given for the crop you want to sample, a good rule of thumb is to sample the most recently matured leaves. If you are in doubt, contact your county Extension agent.
5. Complete the questionnaire as accurately as possible. Feel free to write additional comments about the crop in question on a note and attach to the questionnaire. Place this information inside the small envelope attached to the mailing kit.
6. When possible, collect a soil sample from the same location and time as the plant sample was taken. Send soil samples separately from plant samples, but make reference to each sample provided.

For more information, contact your county MSU Extension office.

Table 1. Field Crops

Stage of Growth	Plant Part to Sample	No. of Plants to Sample
Corn[1]		
Seedling stage (less than 12")	All the aboveground portion.	15–20
Before tasseling	The entire leaf fully developed below the whorl.	10–15
From tasseling and shooting to silking	The entire leaf at the ear node (or immediately above or below it).	10–15
Soybeans or Other Beans[2]		
Seedling stage (less than 12")	All the aboveground portion.	20–30
Before or during initial flowering	Two or three fully developed leaves at the top of the plant.	20–30
Small Grain (Wheat, Oats, Rye)[3]		
Seedling stage (less than 12")	All the aboveground portion.	20–30
Before heading	The four uppermost leaves.	40–50
Hay, Pasture, or Forage Grasses		
Before seed head emergence or at the optimum stage for best quality forage	The four uppermost leaf blades.	40–50
Alfalfa		
Before or at 1/10 bloom stage	Mature leaf blades taken about 1/3 of the way down the plant.	40–50
Clover and Other Legumes		
Before bloom	Mature leaf blades taken about 1/3 of the way down from the top of the plant.	40–50
Sorghum-Milo		
Before or at heading	Second leaf from top of plant.	40–50
Peanuts		
Before or at bloom stage	Mature leaves from either the main stem or cotyledon lateral branch.	20–30
Cotton		
Before or at first bloom or when first squares appear	Youngest fully mature leaves on main stem.	20–30

[1]Sampling after silking is not recommended.
[2]Sampling after pods begin to set is not recommended.
[3]Sampling after heading is not recommended.

Table 2. Vegetable Crops

Stage of Growth	Plant Part to Sample	No. of Plants to Sample
Potatoes		
Before or during early bloom	Third to sixth leaf from growing tip.	20–30
Head Crops (such as Cabbage)		
Before heading	First mature leaves from center of whorl.	20–30
Tomatoes (Field)		
Before or during early bloom stage	Third or fourth leaf from growing tip.	20–30
Tomatoes (Greenhouse)		
Before or during fruit	Young plants: leaves adjacent to second and third clusters. Older plants: leaves from fourth to sixth clusters.	20–30
Peppers		
Before bloom	Most recently matured leaf.	20–30
Beans		
Seedling stage (less than 12")	All the aboveground portion.	20–30
Before or during initial flowering	Two or three fully developed leaves at the top of the plant (trifoliates).	20–30
Root Crops (such as Carrots, Onions, Beets)		
Before root or bulb enlargement	Center mature leaves.	20–30
Celery		
Midgrowth (12–15" tall)	Petiole of youngest mature leaf.	20–30
Leaf Crops (such as Lettuce, Spinach, Turnips, Mustard)		
Midgrowth	Youngest mature leaf.	20–30
Peas		
Before or during initial flowering	Leaves from the third node down from the top of the plant.	20–30
Sweet Corn		
Before tasseling	The entire fully mature leaf below the whorl.	20–30
At tasseling	The entire leaf at the ear node.	20–30
Melons (such as Watermelons, Cucumbers, Muskmelons)		
Early stages of growth before fruit set	Mature leaves near the base portion of plant on main stem.	20–30

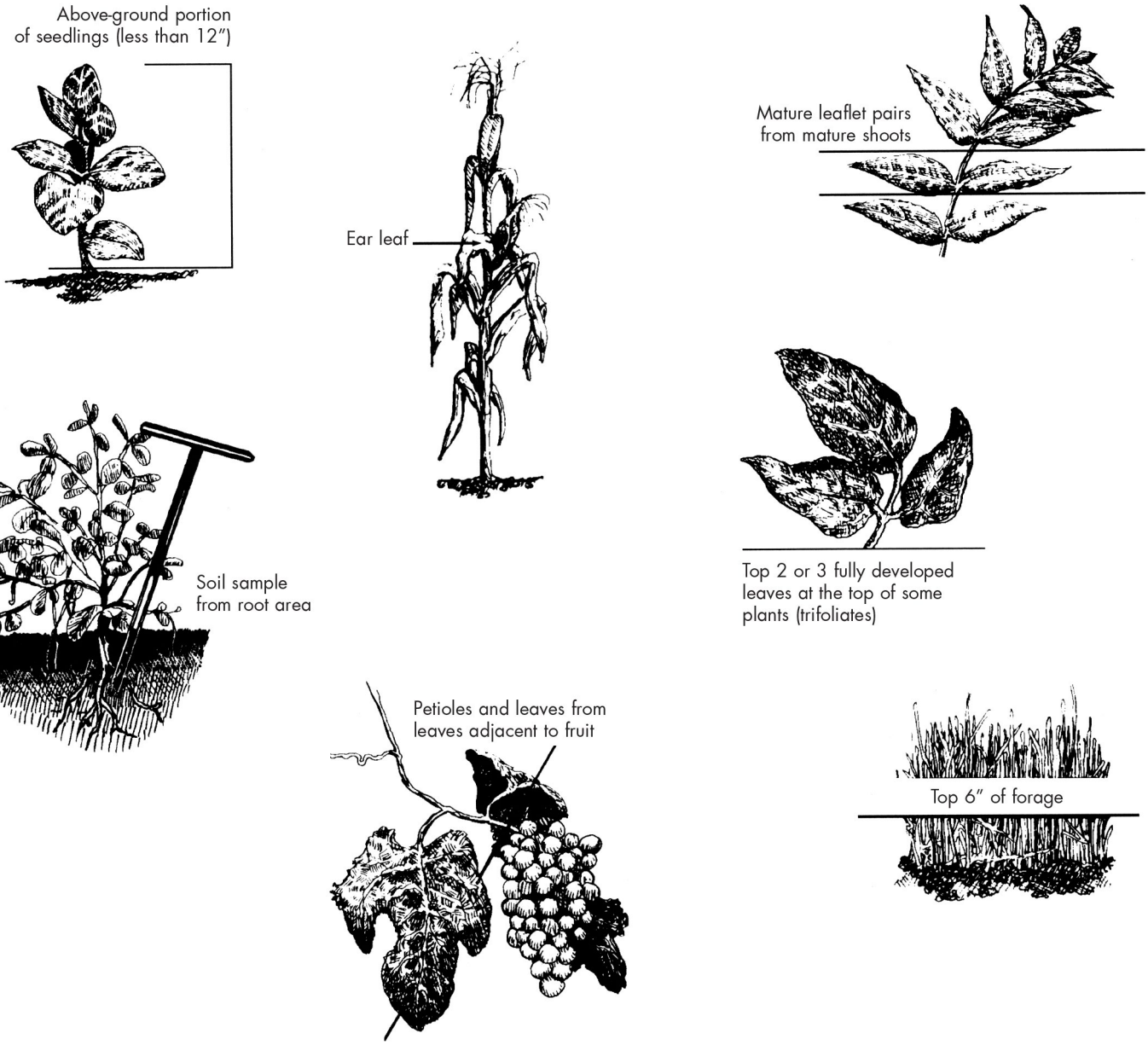
Table 3. Fruits and Nuts

Stage of Growth	Plant Part to Sample	No. of Plants to Sample
Apples, Apricots, Plums, Prunes, Peaches, Pears, Cherries		
Midseason	Leaves near base of current year's growth or from spurs.	20–30
Strawberries		
Midseason	Youngest full expanded mature leaves.	20–30
Pecans		
6 to 8 weeks after bloom	Leaves from terminal shoots, taking the pairs from the middle of the leaf.	20–30
Walnuts		
6 to 8 weeks after bloom	Mature leaflet pairs from mature shoots.	20–30
Grapes		
From end of bloom period through August	Petioles and leaves from leaves adjacent to fruit clusters.	20–30
Berries		
Midseason	Youngest mature leaves on laterals or "primo" canes.	20–30

Table 4. Ornamentals and Flowers

Stage of Growth	Plant Part to Sample	No. of Plants to Sample
Ornamental Trees		
Current year's growth	Fully developed leaves.	20–30
Ornamental Shrubs		
Current year's growth	Fully developed leaves.	20–30
Turf		
During normal growing season	Leaf blades. Clip by hand to avoid contamination with soil or other material.	½ pint of material
Roses		
During flower production	5-leaflet leaves below bud.	20–30
Chrysanthemums		
Before or at flowering	Most recently matured leaf from top of plant.	20–30
Carnations		
Unpinched plants	Fourth or fifth leaf pairs from base of plant.	20–30
Pinched plants	Fifth and sixth leaf pairs from top of primary laterals.	20–30
Poinsettias		
Before flowering	Most recently matured, fully expanded leaves.	20–30
Begonias (*Rieger elatior*)		
Before heavy flower formation	First leaf from top that is 2 or more inches wide.	20–30
Azaleas, Camellias		
Before flowering	Most recently matured leaves.	20–30

Be sure to take the proper plant sample:



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