

# TAKING A SOIL SAMPLE

## For Horticulture Crops



**W**hen you take soil test samples, keep in mind that a few ounces of soil are being tested to determine lime and fertilizer needs for what may be several thousand pounds of soil in the lawn or garden area. It is absolutely necessary to take care to assure that the soil sample you send to the laboratory accurately represents the area sampled.

Soil samples can be collected through much of the year, although fall (September to December) or spring (February to April) are the best times. Fall sampling will often result in a faster return of results and recommendations.

### TOOLS YOU'LL NEED

A soil probe, auger, garden trowel, or a spade and knife are all the tools you need to take the individual cores that will make up the "field" sample. You will also need a clean, dry bucket (preferably plastic) to collect and mix the sample cores. Soil sample boxes or bags and information forms for submitting samples are available at your local County Extension office.



The most representative sample can be obtained from a large area by sampling in smaller units on the basis of soil type, cropping history, erosion, or past management practices. More accurate results are obtained when problem areas are sampled separately, especially when "trouble-shooting" during the growing season. In such instances, take a sample both from the poor growing area and adjacent areas of good growth. Designate each sample area with a letter or numbers on an area map for record-keeping purposes.

Collect at least 5 to 10 soil cores for each lawn or garden area. Take the soil cores randomly throughout the area to be sampled and place in the bucket. From that mixture, you will **BRING IN 2 CUPS (1 PINT) OF SOIL FROM EACH SAMPLE AREA.**

### RECOMMENDATIONS AND SAMPLE DEPTHS FOR VARIOUS HORTICULTURAL CROP AREAS

**All soil core samples should start at the soil surface and go down to the recommended depth given for each specific crop listed below:**

#### A. LAWNS AND TURFGRASSES

- For established lawns, sample the top 2 inches of soil only. Do not include grass, roots or thatch in the sample.
- For areas to be tilled up for a new lawn, sample the top 4 inches of soil.
- Sample problem areas and areas with shrubs or flower beds separate from other turf or lawn areas.
- Sample front and back yards separately.
- For lawn samples, do not sample under the drip line of trees.
- Do not take samples close to driveways or streets, unless this is treated as a "problem area", which would require a separate sample.
- Fertilize lawns only at the proper time of year (primarily in the Fall).

→ See AGR-53, "**Lawn Fertilization in KY**"

#### B. HOME FLOWER GARDENS

- **Annual Flowers**—Sample the top 6 to 8 inches of soil.
- **Perennial Flowers**—Sample the top 6 to 12 inches of soil.
- Don't take samples too close to foundations, sidewalks, driveways or limestone graveled areas, unless these are treated as separate "problem areas".
- Granular dry fertilizer can be added to the flower garden when it is tilled in the spring.



### C. COMMERCIAL PRODUCTION OF FIELD-GROWN FLOWERS

- Sample the top 8 to 12 inches of soil.
- Take separate samples for each block or different flower variety.
- For large fields, up to 30 soil core samples may be needed per sample.

### D. HOME LANDSCAPE TREES & SHRUBS, AND FIELD-GROWN NURSERY STOCK

- Sample the top 6 to 12 inches of soil.
- Take samples from under the drip line of established trees (under tips of the longest branches all the way around the tree), or just outside the root ball or planting area for newly-planted trees.
- Fertilize in late fall, early winter or early spring.

→ See ID-72, "**Principles of Home Landscape Fertilization**"

### E. HOME VEGETABLE GARDENS

- Sample the top 6 to 12 inches of soil, preferably in October or November.
- Do not include compost or manure in the sample.
- Fertilize in early spring before planting, and side-dress with more fertilizer later in the season as needed.

→ See HO-63, "**Home Vegetable Gardening in KY**"

### F. COMMERCIAL VEGETABLE FIELDS

- Sample the top 8 to 12 inches of soil.

→ See ID-36, "**Commercial Vegetable Crop Recommendations**" for specific fertilizer and nutrient needs for each crop.

### G. TREE FRUITS

- Sample the top 12 to 18 inches of soil.
- Take samples from drip line area under branch tips (or closer to trunk for newly planted trees).
- Fertilize in February, according to soil test results.

→ See HO-64, "**Growing Fruit at Home in Kentucky**", or ID-92, "**Commercial Tree Fruit Spray Guide**" for nitrogen recommendations.

### H. BUSH AND VINE FRUITS

- Sample the top 8 to 12 inches of soil.
- Fertilize in February.

→ See HO-64, "**Growing Fruit at Home in KY**", or ID-94, "**Kentucky Commercial Small Fruit & Grape Spray Guide**".

## SAMPLE PREPARATION

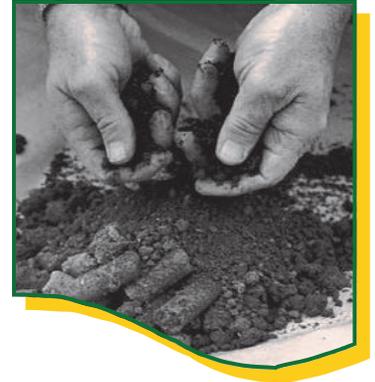
After all cores from one crop area are collected and placed in the bucket, crush the materials and mix the sample thoroughly. ALLOW THE SAMPLE TO AIR DRY in

an open space free from contamination. Spread the soil out to dry on newspapers. Do NOT dry the sample in an oven or at an abnormally high temperature.

### WHEN DRY, CRUMBLE THE SOIL AND FILL A 2 CUP

SAMPLE container with soil. Separate information is needed for:

- Agricultural Soils
- Home Gardens
- Lawns and Turfgrasses
- Commercial Horticulture Crops



## GENERAL SUGGESTIONS RELATING TO SOIL SAMPLING, FERTILIZER AND LIME NEEDS:

- 1) Never apply lime to horticultural crops unless a soil test indicates the need. Many soils are ruined by annual applications of lime. Most horticultural crops prefer acid soils, around pH 6.3 to 6.4, with some needing pH 4.5 to 5.5. It is easier to raise soil pH above 7.0 (with lime) than it is to bring it back down (with sulfur).
- 2) When you get back your soil test results, realize that the University of Kentucky did NOT do a test to determine the level of nitrogen in your soil. Nitrogen is leached out and used up regularly by all crops, so a basic, generic nitrogen recommendation is given (the same for everyone...for that specific crop), based simply on the known nitrogen requirements of the crop indicated. Therefore, if you have just applied nitrogen fertilizer before you sent in your soil sample, do not apply more just because the soil test says you need nitrogen. Remember, they did not actually test the level of nitrogen in your soil.
- 3) All Kentucky soils benefit from added organic matter such as peat moss, compost or well-aged manure. These improve the drainage and water and nutrient-holding capacity of soils.



### **Information compiled by**

**Mike Klahr**, Boone County Extension Agent  
for Horticulture and based on  
**AGR-16, "Taking Soil Test Samples".**

Soil testing depths for horticultural crops are based on recommendations from the University of Kentucky specialists:

**A.J. Powell ♦ Sharon Bale ♦ Bob Anderson ♦ Bill Fountain**  
**Mary Witt ♦ John Strang ♦ Jerry Brown**