

WHEN TO COLLECT SOIL SAMPLES

Collect soil samples at least once every 3 years. Sample at any point throughout the year, but consider the following:

- With each new round of sampling, collect samples during the same month of the year to reduce seasonal effects and variability
- Fall sampling after harvest (but before any nutrient applications) is recommended, allowing ample time to develop your nutrient management plan before the next growing season
- Wait at least 6 weeks after any fertilizer or manure applications and 6-9 months following lime application before sampling
- If it is too wet for tillage, it is too wet for soil sampling

WHERE TO SAMPLE

Start by defining management units. A management unit is an area that can and will be managed separately from other areas. Field areas with distinct differences in cropping history, fertility history (fertilizer/manure applications), production potential and/or soil type should be sampled and managed separately. If it is impossible to manage areas separately, they should be treated as a single management unit. Submit one soil sample from each management unit on the farm operation for analysis.

HOW TO SAMPLE

A stainless steel soil probe is the best tool for collecting soil samples. Do not use brass or galvanized tools or containers as they may contaminate the sample.

Soil probes may be available to borrow from your county Extension office. Tractor, truck, or ATV-mounted hydraulic probes can dramatically increase soil sampling efficiency.

Agricultural fields have inherent spatial variability, therefore it is important to pull enough individual soil cores to achieve a sample representative of each entire management unit:

- 20 acres or less: 15-20 soil cores
- 20-40 acres: ~1 soil core per acre
- 40 acres or more: less than 1 soil core per acre is acceptable

Pull individual soil cores randomly throughout the entire management unit (Figure 1).

Scrape away surface residue and insert the probe perpendicular to the soil to the appropriate depth (Figure 2), twist the probe 180 degrees, then lift the probe out of the soil to remove the core. Collect all cores from a management unit into a clean bucket and mix thoroughly.

Avoid sampling in wet areas, animal congregation areas, past manure or lime piles, fertilizer bands, turn rows, and severely eroded areas.

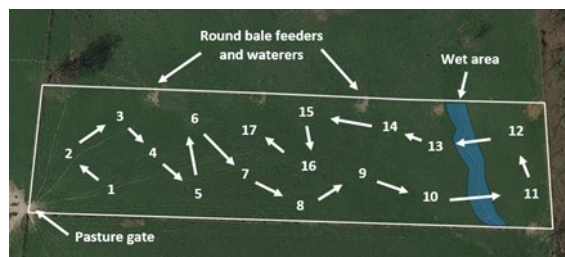


Fig. 1: An example of using a field map to randomly select soil sampling locations.

SAMPLE PREPARATION

Once you've thoroughly mixed individual soil cores, put approximately one pint (or other amount specified by laboratory) into a labeled soil sample bag. If you are unable to ship the sample immediately, air dry or refrigerate the sample. Fill out the laboratory's information sheet as completely as possible. For a list of regional soil testing labs suitable for nutrient management planning in Maryland, visit go.umd.edu/testing-lab-comparisons

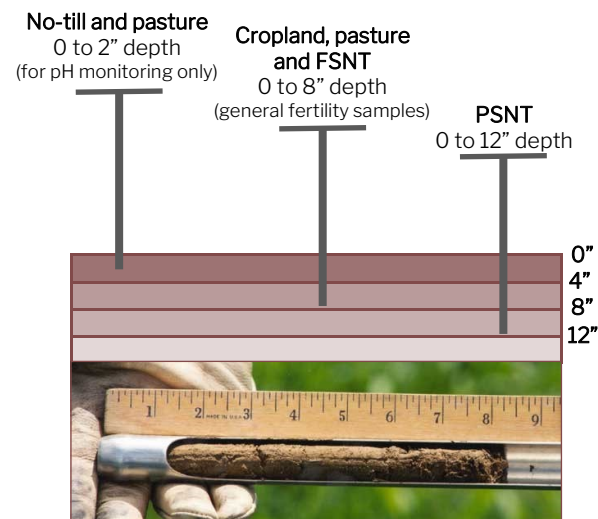


Fig. 2: Soil sampling depth guidelines. For more information, see additional resources. Photo Credit: Patricia Hoopes, UME

UNIVERSITY OF MARYLAND EXTENSION COUNTY/CITY OFFICES

Contact your local county/city extension office for additional assistance, questions, or to inquire about nutrient management planning services.

Allegany County 301-724-3320	Howard County 410-313-2707
Anne Arundel County 410-222-3900	Kent County 410-778-1661
Baltimore City 410-856-1850	Montgomery County 301-590-9638
Baltimore County 410-887-8090	Prince George's County 301-868-9366
Calvert County 410-535-3662 301-855-1150	Queen Anne's County 410-758-0166
Caroline County 410-479-4030	St. Mary's County 301-475-4482
Carroll County 410-386-2760	Somerset County 410-651-1350
Cecil County 410-996-5280	Talbot County 410-822-1244
Charles County 301-934-5403	Washington County 301-791-1304
Dorchester County 410-228-8800	Wicomico County 410-749-6141
Frederick County 301-600-1594	Worcester County 410-632-1972
Garrett County 301-334-6960	
Harford County 410-638-3255	

UNIVERSITY OF MARYLAND EXTENSION AGRICULTURAL NUTRIENT MANAGEMENT PROGRAM

ABOUT US

The University of Maryland Extension's Agricultural Nutrient Management Program, which is a component of the University of Maryland's College of Agriculture and Natural Resources, focuses on balancing nutrient applications with crop requirements to optimize crop production while reducing pollution to the Chesapeake Bay.

CONTACT US

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ADDITIONAL RESOURCES

- UME Fact Sheet FS-1184 "Soil Sampling for Optimizing Agricultural Production in Maryland" go.umd.edu/ag-soil-sampling
- UME Extension Brief EBR-15 "Fall Soil Nitrate Test (FSNT)" go.umd.edu/fsnt
- UME Publication SFM-2 "Making Decisions for Nitrogen Fertilization of Corn Using the Pre-Sidedress Nitrate Test (PSNT)" go.umd.edu/PSNT

SOIL SAMPLING FOR AGRICULTURAL PRODUCTION

A Guide for Growers
and Consultants



"A crop nutrient recommendation is only as good as the soil sample upon which it is based"

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go.umd.edu/ag-soil-sampling