

# HOW YOU SHOULD SOIL TEST

Most growers have someone else take soil samples on their land, but you can do it yourself. For directions, see the University of Wisconsin-Extension publication, *Sampling Soils for Testing (A2100)* from your county's Extension office or online at <http://learningstore.uwex.edu/Sampling-Soils-for-Testing-P183C43.aspx> (the download is free). Routine laboratory analysis of soil samples costs \$7.00 per sample at the University's labs. Whether you or someone else collect and send soil samples to a lab, there are important things to know so you can get the most out of the results.

Fill out the soil information sheet completely. The information you provide to the lab is important in obtaining accurate and reliable fertilizer and lime recommendations. Step-by-step instructions are on the back of the information sheet. The example in this publication provides further explanation and some additional information.

Accurately sample your fields. Soil samples that are not representative of the field will result in inaccurate nutrient and lime recommendations. Generally, one soil sample should be collected per five acres. A less intensive sampling frequency can be used for fields that had very high or excessively high P and K levels when last tested—provided that soil test is no more than four years old (see table below). Each soil sample should be a mixture of at least ten soil cores from within the sampling area. Use a soil probe or auger to sample to the plow depth or at least 6 inches. Be certain to label each sample with your name, field ID, and sample ID notation. Every field should have at least two soil samples. Crop strips should be sampled individually even when they are less than five acres in size—unless each strip has the same crop and management history.

Field Characteristics	Field Size (acres)	Suggested Number of Samples <sup>1</sup>
Responsive fields, or fields tested more than 4 years ago	All fields	1 per 5 acres
Non-responsive <sup>2</sup> fields tested within the past 4 years	5-10	2
	11-25	3
	26-40	4
	41-60	5
	61-80	6
	81-100	7

<sup>1</sup> Each sample should contain at least 10 soil cores.

<sup>2</sup> P and K levels tested very high or excessively high.

Avoid fertilizer bands and places in the field that seem very different from the majority of the field when soil sampling.

Use a WDATCP certified soil testing lab. Labs certified by the Wisconsin Dept. of Agriculture, Trade & Consumer Protection use approved analytical techniques and provide University of Wisconsin recommendations that are based on field trial research conducted in Wisconsin. Use of WDATCP certified labs is required if the soil testing is being done for a nutrient management plan that needs to comply with the USDA-NRCS 590 Nutrient Management Standard. A current list of certified soil testing labs is available online at <http://uwlabs.soils.wisc.edu/madison/>.

Make sure you receive the full results. Complete soil test reports include field-by-field information on the analysis results as well as crop specific fertilizer and lime recommendations for a four-year rotation. Some labs may only supply a fertilizer application plan. To get the full value from your soil tests and to use them to evaluate future cropping plans, you should get both the analysis results and the interpretation.

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## Soil Information Sheet For Field, Vegetable and Fruit Crops

Date Rec'd \_\_\_\_\_

Lab No. (Lab Use Only)	County <b>Washington</b>	FSA No.	Method of Payment									
	Name <b>The Progressive Farm</b>		The "FERTILIZER CREDIT INFORMATION" section is very important for obtaining accurate recommendations. A previous legume crop such as alfalfa or soybean will reduce the amount of N needed for the next crop. If you apply manure, it will reduce the final N, P <sub>2</sub> O <sub>5</sub> , and K <sub>2</sub> O fertilizer recommendations.									
	Address											
	City	Zip										
	Email address											
County Code	TOTAL NUMBER OF SAMPLES } <b>7</b>		PLOW DEPTH } <b>8"</b>									
		Credit Card No.	Exp. Date ____/____/____ VISA MC									
		FERTILIZER CREDIT INFORMATION										
		Previous Legume Crop	Manure Applied to Field Since Last Crop									
FIELD ID	SAMPLE NO (S)	SOIL NAME (if known)	Acres in Field	Slope %	4-YEAR CROP ROTATION	Legume Crop (crop code)	Legume Forage % stand (circle)	Check if more than 8" regrowth in fall	Manure Code (see below)	Application Rate T/a or gal/a	Application Method (circle one)	Consecutive Years of Application (circle)
1	1-3	Sisson	15	1	Sequence to be Grown (crop code)	Yield Goal					Surface	1
					17	160						
					29	3						
					1	6						
					1	6						
2	4-7	Sisson	20	5	Sequence to be Grown (crop code)	Yield Goal					Surface	1
					17	160						
					29	3						
					1	6						
					1	6						

Soil name is important to know because fertilizer recommendations vary with soil type. One way to find soil type is to look at your farm's conservation plan — it will have the name of the soil or an abbreviation on each field. If you don't know what the abbreviation stands for, call your Land Conservation Department or the Natural Resources Conservation Service. Percent slope should also be indicated on the conservation plan.

A list of crop codes with yield goal units can be found on the back of the soil information sheet. In this example, 17 indicates corn for grain in bushels/acre, 29 indicates small grain silage, underseeded with alfalfa in tons/acre, and 1 indicates established alfalfa in tons/acre.

Use realistic yield goals. This is important for getting the right P and K recommendations.

In this section you can request analysis for soil nutrients beyond those included with a routine soil test. You must indicate the specific soil sample(s) and the type of analysis for each.

Special Soil Tests (additional fee)		Manure Code List	
(List field or sample identification)		Solid	Liquid
Calcium-Magnesium	Zinc	1 Dairy	11 Dairy
Boron	Sulfate <b>1-3</b>	2 Beef	12 Veal Calf
Manganese	Other	3 Swine	13 Beef
		4 Duck	14 Swine, indoor pit
		5 Chicken	15 Swine, outdoor pit
		6 Turkey	16 Swine, farrow-nursery indoor pit
		7 Sheep	17 Duck
		8 Horse	18 Poultry

Soil tests recommended if :  
growing corn (field or sweet) Zn and SO<sub>4</sub>-S  
growing legume forage B and SO<sub>4</sub>-S  
growing small grain or soybean (with pH>7.0) Mn  
growing potato or apple (with pH<5.5) Ca/Mg  
growing specialty or vegetable crop B, Zn, and Mn  
acid of sandy soil with high amounts of applied K Ca/Mg

# Soil Test Results

Using University of Wisconsin Recommendations

Your soil test result report will be a grouping of tables, numbers, and footnotes. At first this may look confusing, but the information can be divided into three main sections: nutrient recommendations, test interpretation, and laboratory analysis. Each section will be explained below. On the following page, actual results are illustrated and discussed. But first, a couple of things about what a soil test actually determines.

A soil test does indicate the plant availability of two important soil nutrients: phosphorus (P) and potassium (K). The result of these analyses is called the soil test level of the nutrients. A routine soil test does not directly indicate the amount of nitrogen (N) in the soil; however, the test does measure soil organic matter. Soil organic matter along with soil type information (texture, yield potential, irrigation), crop to be grown, tillage, and previous crop determine your N fertilizer recommendation.

### NUTRIENT RECOMMENDATIONS

The most important information you will use is in this section! The actual amounts of nutrients and lime to apply for your specific crop rotation and yield goals are listed in the last box. The "Nutrients to Apply" recommendation is your "Crop Nutrient Need" (based on the interpretation of the actual soil test levels) minus the "Fertilizer Credits" (based on information you submitted with your soil test).

### TEST INTERPRETATION

This section is a graphic interpretation of your soil test levels. Basically, it tells you where your soil test levels fall on a relative low to high scale for your soil and crops. Your fertilizer recommendations are based on this interpretation.

The last line in this section is the rotation pH. The optimum is the target pH for the most acid-sensitive crop in the rotation. The lime recommendation (located under the "Nutrient Recommendations" section) is based on this interpretation.

### LABORATORY ANALYSIS

The actual results of the individual soil samples and the adjusted averages are listed in this section. It is interesting to look at the numbers and see the variation (or lack thereof) among the samples.

