

*Moserlee*™ **SoilMaster**™  
brings your plants to life

# Soil Testing Kit



**Great for Lawns,  
Gardens and  
Potted Plants**

## 40 Tests

10 Tests Each:

**pH**

**Nitrogen**

**Phosphorus**

**Potassium**

**ACCURATE  
& EASY!**

**Make this season your best  
growing season ever!**

# Collecting a Soil Sample



1. Spread soil sample on a piece of paper.
2. Remove and discard leaves, sticks and stones.
3. Using the back of a plastic spoon, crush any lumps larger than a pea.
4. Let soil dry, preferably overnight.



One of the most important steps in testing your soil is collecting a representative soil sample. First divide the test area into sections based on the types of plants to be grown. After dividing areas by intended uses, further subdivide the test area based on observed differences. Locations with a lot of trees and shrubs are likely to need different nutrients than open fields with less root competition. Taking notes, and drawing a diagram and/or a map is recommended to help organize your results. Generally, one soil sample, dug to a depth of 6 in.– 8 in., is suggested for an area measuring 3 ft x 3 ft. In larger plots, multiple soil samples should be collected. These soil samples should be mixed together in a plastic bag and labeled for easy identification. Soil samples can be collected farther apart in larger areas (greater than 10 ft x 10 ft). More sampling sites will result in greater accuracy.

# Soil pH

In soils, the pH level is important to both the activity of soil microorganisms and the availability of nutrients to the plant. Generally, pH values between 5.5 and 7.0 provide an ideal balance between microbial activity and nutrient availability. Many plants grow well in slightly acidic soils with pH values between 6.0 – 7.0. Some plants, like hollies and azaleas, grow best in more acidic conditions. Other plants prefer more alkaline conditions.

pH levels can be adjusted to desired ranges. The pH of sandy soils can be changed readily, while silt and clay soils are more resistant to changes in pH. Lime is used to raise the pH, making soils more alkaline. Aluminum sulfate, on the other hand, can be used to lower pH, making soils more acidic. The following information can be used as a guide to changing the pH of your soil.



## Lime Requirements

### **Increasing pH of Acid Soils with Lime**

Sandy soil      add 0.5 lb per 100 square ft

Silt or Clay soil   add 1.5 lb per 100 square ft

### **Decreasing pH of Alkaline Soils with Aluminum Sulfate**

Sandy soil      add 1.5 lb per 100 square ft

Silt or Clay soil   add 4.0 lb per 100 square ft

Generally, pH amendments are spread on tilled soil and mixed thoroughly to a depth of 6 – 12 inches. Since it takes time to adjust soil pH, fall is often a good time to apply these soil amendments. Before applying any product, read the label carefully and consult your nursery professional and/or local cooperative extension service for more details.



# How & When to Fertilize

The macronutrients Nitrogen, Phosphorus, and Potassium are essential nutrients needed for healthy plants. Macronutrient levels can be readily increased in many ways, using organic matter, composts and fertilizers. All fertilizers have 3 numbers listed on the label to indicate the amounts of Nitrogen, Phosphorus and Potassium (N, P, K) they contain. Liquid fertilizers generally provide a quick boost of nutrients, much like a vitamin. Granular fertilizers, on the other hand, generally supply nutrients over a longer period. They are added early in the season, since they provide nutrients through the growing season. Both types of fertilizers are useful to the successful gardener. As always, consult the product label, a nursery professional and/or your local cooperative extension service for more specific information for your area of the country. In general, optimum times to apply fertilizers are as follows:

Annuals	early spring to mid summer
Perennials	winter to mid summer
Shrubs	winter to spring
Lawns	cool season grasses - fall
	warm season grasses - spring to early summer
Trees	winter to early spring
Vegetables	spring or as needed

## Interpreting Your Results

Providing an adequate supply of nutrients is important for healthy plant growth and development. Excessive amounts of nutrients, however, can be harmful to the environment and detrimental to plant growth. The Mosser Lee Soil Master kit can be used to determine the macronutrients present in your soils to assist you in maintaining the optimum levels for healthy plants. Traditionally, nutrient values have been expressed in terms of pounds per acre. While this may be a convenient unit of measure for farms and large plots, the home gardener may want to use a smaller unit of measure. Since an acre measures 208 ft x 208 ft or 43,560 square feet we also have also listed values for an area 10 ft x 10 ft, or 100 square feet. Nutrient values expressed in the Mosser Lee Soil

4 Master kit are as follows:



<i>Nutrient</i>	<i>Level</i>	<i>lb per 100 sq ft</i>	<i>lb per acre</i>
Nitrogen (N)	Low	0.09 lb	40 lb
	Medium	0.37 lb	160 lb
	High	0.73 lb	320 lb
Phosphorus (P)	Low	0.02 lb	8 lb
	Medium	0.06 lb	20 lb
	High	0.15 lb	64 lb
Potassium (K)	Low	0.09 lb	40 lb
	Medium	0.18 lb	80 lb
	High	0.37 lb	160 lb

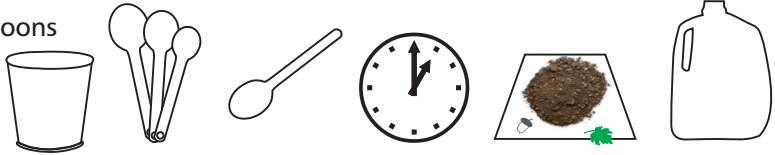
Once you have tested your soil you will be able to determine if nutrients are needed. Consulting the chart above, you can determine the nutrients required to increase fertility. For example, if your soil has a low nitrogen value and you want to increase the nitrogen to high levels, you will need 0.64 lb of nitrogen added per 100 ft. ( $0.73 \text{ lb} - 0.09 \text{ lb} = 0.64 \text{ lb}$ ). Once you have determined the nutrients your soil needs, the ratio of N, P and K needed will determine the best type of fertilizer to use. If you need twice as much phosphorus as potassium and nitrogen then a fertilizer like 5-10-5 is appropriate. If your soil needs only potassium, consider adding potash (0:0:15). Always consult with your nursery professional, cooperative extension service and the product label to find the best match for your needs.



For a listing of pH and Nutrient preferences by major plant species, refer to "How to Test Soil" in the "How To" index on Mosser Lee's website [www.mosserlee.com](http://www.mosserlee.com) or check your local library, nursery professional, or Cooperative Extension Service for more information.

## Materials Needed:

- Paper cup
- Measuring spoons
- Plastic spoon
- Clock/Timer
- Soil Sample
- Water (distilled water will give the most accurate results)




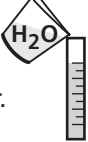




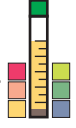
Safety: \*Potential Health Hazard. Read product label before use. See lamotte.com for SDS. Emergency information for all LaMotte reagents is available from Chem Tel (US, 1-800-255-924) (International, call collect, 813-248-0585). All reacted test samples can be poured down the drain with lots of running water. Dispose of treated soil samples in the trash. Use with adult supervision. Tablets contain chemicals. Keep out of reach of children.

## 1 Your Soil

1. Spread out soil on a piece of paper.
2. Pick out leaves, stones or sticks.
3. Use the back of a spoon to crush any lumps that are bigger than a pea.
4. Let soil dry overnight, if possible.








## 2 pH Test

<b>1</b> Remove green cap from tube. 	<b>2</b> Fill to the 10 mL line with water. 	<b>3</b> Add one SOIL pH TestTab (5503A). 	<b>4</b> Use green test tube cap to add one capful of soil. 
<b>5</b>  Cap tube with green cap. Mix by inverting 10 times.	<b>6</b> Let soil settle for one minute or until a clear, colored solution is visible above soil layer. 	<b>7</b> Match color to pH Color Chart. 	







## 3 Nutrient Tests

The clear liquid from this procedure is used for the Nitrogen, Phosphorus, and Potassium tests.



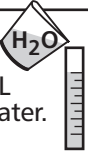

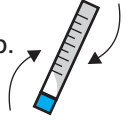

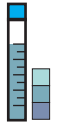
<b>1</b>  Measure 2 tablespoons of water into a paper cup.	<b>2</b>  Add two *FLOC-EX TestTabs (5504A). Stir with a spoon until tablets break apart and disintegrate.	<b>3</b>  Add one teaspoon of soil to the cup. Stir for one minute.
<b>4</b>  Allow cup to sit for one minute or until the soil settles to the bottom of the cup.	<b>5</b>  Pinch the top of the cup together to form a spout. Do not disturb the soil.	

## 4 Nitrogen Test

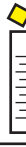




NOTE: Nitrate WR TesTabs are sensitive to UV light. When testing outdoors, cover the tube with aluminum foil after capping the tube in Step 4. Remove the foil after Step 5.

<b>1</b> Remove red cap from tube.		<b>2</b> Fill to 5 mL line with the clear solution above the soil in the paper cup.		<b>3</b> Add one *NITRATE CTA (3703A) TesTab.	
<b>4</b> Cap tube with red cap. Shake vigorously for 2 minutes.		<b>5</b> Wait 5 minutes for color to develop.		<b>6</b> Match pink color to the Nitrogen Color Chart.	

## 5 Phosphorus Test

<b>1</b> Remove blue cap from tube.		<b>2</b> Add 1/4 teaspoon of the clear solution above the soil in the paper cup to the tube.		<b>3</b> Fill to 10 mL line with water.	
<b>4</b> Add one PHOSPHORUS TesTab (5422A).		<b>5</b> Cap with blue cap. Mix until tablet disintegrates.		<b>6</b> Wait 5 minutes for color to develop.	
<b>7</b> Match blue color to the Phosphorus Color Chart.					

## 6 Potassium Test

<b>1</b> Remove yellow cap from tube.		<b>2</b> Fill to 10 mL line with the clear solution above the soil in the paper cup.		<b>3</b> Add one *POTASSIUM TesTab 5424A).	
<b>4</b> Cap with yellow cap. Mix until tablet disintegrates.		<b>5</b> Hold the tube over the black squares on the Potassium color chart. Match the cloudiness of the solution in the tube to a gray square on the Potassium color chart.			





# Soil *Mosser Lee*™ Master™

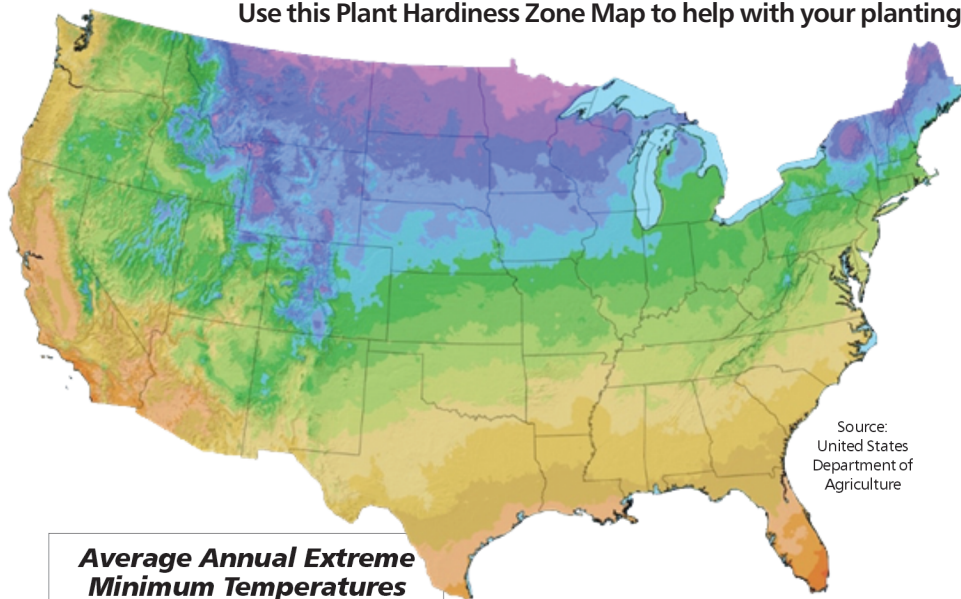
*brings your plants to life*



## 40 TESTS: 10 Tests Each for pH, Nitrogen, Phosphorus, and Potassium

Identify the nutrient content of your soil. Determine the nutrients needed to grow healthy plants. Providing the proper level of nutrients will result in better plant development, growth, and health. Excessive use of nutrients in addition to being wasteful, can be harmful to plants and the environment.

Use this Plant Hardiness Zone Map to help with your planting



Source:  
United States  
Department of  
Agriculture

### Average Annual Extreme Minimum Temperatures 1991-2020

-40 to -35	3a	0 to 5	7a
-35 to -30	3b	5 to 10	7b
-30 to -25	4a	10 to 15	8a
-25 to -20	4b	15 to 20	8b
-20 to -15	5a	20 to 25	9a
-15 to -10	5b	25 to 30	9b
-10 to -5	6a	30 to 35	10a
-5 to 0	6b	35 to 40	10b

WARNING! This kit contains chemicals that may be harmful if misused. Read cautions noted in instructions. Not to be used by children except under adult supervision.

Reagents manufactured by LaMotte Company  
SDS available at [lamotte.com](http://lamotte.com)

Mosser Lee Company  
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Help Desk: 715-284-2296