



# rapitest

## Soil Test Kit

Products for Successful Gardening™

### USING THE RAPITEST SOIL TEST KIT

This Rapitest Soil Test Kit is designed for simplicity of use and accurate results. At the heart of the system are 4 patented, specially designed testing devices called "color comparators" - one each for pH, Nitrogen, Phosphorus and Potash. Each comparator has a removable film color chart and color coded top. Capsules for each test are also color-coded.

### PREPARING YOUR SOIL SAMPLES

For lawns, annuals or house plants, take the soil sample from about 2-3" below the surface. For perennials especially shrubs, vegetables and fruit, the sample should be from 4" deep. Avoid touching the soil with your hands. Test different areas of your soil, as it may differ according to past cultivation, underlying soil differences or a localized condition. It is preferable to make individual tests on several samples from different areas, than to mix the samples together. Place your soil sample into a clean container. Break the sample up with the trowel or spoon and allow it to dry out naturally. This is not essential, however it makes working with the sample easier. Remove any small stones, organic material such as grass, weeds or roots and hard particles of lime. Then crumble the sample finely and mix it thoroughly.

#### pH TEST:

1. Remove the cap from the green comparator. Make sure the color chart (film) is in place.
2. Fill test chamber to soil fill line with soil sample.
3. Holding the capsule horizontally over the test chamber, carefully separate the two halves of the green capsule and pour powder into the test chamber.
4. Using the dropper provided, add water (preferably distilled) to water fill line.
5. Fit the cap onto comparator, making sure it is seated properly and caps tightly. Shake thoroughly.
6. Allow soil to settle and color to develop for about a minute.
7. Compare color of solution against pH chart. For best results allow daylight (not direct sunlight) to illuminate the solution. Refer to the information that follows for adjusting soil pH, if required, as well as the pH Preference List enclosed.

#### NITROGEN, PHOSPHORUS & POTASH TESTS:

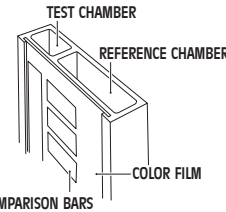
1. Fill a clean container with 1 cup of soil and 5 cups of water. (Larger or smaller quantities may be tested as long as the 1 part soil to 5 parts water proportions are maintained.) For best results use bottled or distilled water.
2. Thoroughly shake or stir the soil and water together for at least one minute; then allow the mixture to stand undisturbed until it settles (30 minutes to 24 hours, dependent on soil). A fine clay soil will take much longer to settle out than a coarse sandy soil. The clarity of the solution will also vary, the clearer the better, however cloudiness will not affect the accuracy of the test.
3. Select the appropriate comparator for the test you wish to make. Remove the cap and take out the capsules which should be the same color as the cap. Make sure the color chart (film) is in place. Do not interchange color charts between comparators.

### ADJUSTING SOIL pH - HOW MUCH TO APPLY

Material	pH Change	Sandy	Loamy	Clay
Dolomitic or calcic limestone	+0.5 unit (0.5 pH)	2.5	5.0	5.5
	+1.0 unit (1.0 pH)	5.0	8.5	11.0
Hydrated Lime	+0.5 unit (0.5 pH)	1.5 - 2.0	3 - 4	4.0 - 4.5
	+1.0 unit (1.0 pH)	3.5 - 4.0	6.0 - 6.5	8.0 - 8.5
Iron Sulfate	-0.5 unit (0.5 pH)	0.75	1.5	2.0
	-1.0 unit (1.0 pH)	1.5	3.0	4.0
Aluminum Sulfate	-0.5 unit (0.5 pH)	0.5 - 0.75	1 - 1.25	1.5
	-1.0 unit (1.0 pH)	1 - 1.25	2.25	3.0

Amounts listed are pounds per 100 square feet. Do not add more than 5lbs. of lime or sulfur in one application.

Green = pH  
Purple = Nitrogen  
Blue = Phosphorus  
Orange = Potash



A dropper is provided to facilitate transferring the test solution into the color comparator.

4. Using the dropper provided, fill the test and reference chambers to the fill mark on the chart with solution from your soil sample. Solution is added to the reference chamber to compensate for any discoloration in the tested sample caused by the soil. Avoid disturbing the sediment. Transfer only liquid.
5. Remove one of the appropriate colored capsules from its poly bag. Holding the capsule horizontally over the test chamber, carefully separate the two halves and pour the powder into the test chamber.
6. Fit the cap on the comparator, making sure it is seated properly and caps tightly. Shake thoroughly.
7. Allow color to develop for 10 minutes. Do not allow the color to develop for more than 10 minutes.
8. If flakes of blue color appear to have settled to the bottom of the phosphorus color comparator during the 10 minute development period, shake the comparator to suspend them in the solution.
9. Compare the color of the solution in the test chamber to the color chart. For best results, allow daylight (not direct sunlight) to illuminate the solution in both the test and reference chambers. Judge colors, if necessary, and note your results for future reference. Follow the same easy steps for each of the N, P & K tests. When you have the test results you need, refer to the information below.

### TO RAISE OR LOWER pH OF YOUR SOIL

Raising and lowering pH is not an exact science & most plants have a reasonably wide tolerance, certainly to within 1 pH point. Consult the enclosed pH Preference List and you will see that the majority can manage well on a pH around 6.5 but some need an alkaline soil and some a particularly acid soil. Altering pH takes time so do not expect rapid changes; rather, work steadily towards giving a plant its ideal conditions.

### ADJUSTING pH

pH can be adjusted to provide more suitable growing conditions for the different plants you wish to grow. Or, you can leave the pH of the soil as it is and select plants that like the level revealed by your test. Once you have your pH reading, check the enclosed pH Preference List for the pH levels of over 450 popular plants, trees, shrubs, vegetables and fruits. If your pH reading differs significantly from the list's recommended levels, follow instructions below for adjusting soil pH. You can correct pH at any time of the year but it is best to start in the Fall and check progress in the Spring. After working to adjust your soil, retest for pH level in 40-60 days. If results are still significantly off, retreat your soil, not exceeding recommended application levels. Allow one month to pass between adding lime and adding fertilizers.

### SOIL TYPES:

**Sandy Soils:** A light, coarse soil comprised of crumbling and alluvial debris. **Loam Soils:** A medium friable soil, consisting of a blend of coarse (sand) alluvium and fine (clay) particles mixed within fairly broad limits with a little lime and humus. **Clay Soils:** A heavy, clinging, impermeable soil, comprised of very fine particles with little lime and humus and tending to be waterlogged in winter and very dry in summer.

## FERTILIZER RECOMMENDATIONS

### FEEDING PRIOR TO PLANTING

Adequate reserves of plant food should be available in the soil before planting vegetables, preparing a seed or flower bed, sodding or seeding a lawn, or planting shrubs and trees. To make up any deficiencies, apply fertilizers from the following chart according to your soil test result.

TEST RESULTS	(0) Depleted	(1) Deficient	(2) Adequate	(3&4) Surplus / Sufficient
<b>Nitrogen Fertilizers (%N)</b>				
Dried Blood (11%)	36	19	6	N/A
Nitrate of Soda (16%)	27	14	3	N/A
<b>Phosphate Fertilizers (%P)</b>				
Bone Meal (19%)	27	14	6	N/A
Triple Superphosphate (46%)	10.25	5.25-5.5	2.25	N/A
<b>Potash Fertilizers (%K)</b>				
Muriate of Potash (60%)	8.75 - 9	4.75-5	2.25-2.5	N/A

Amounts listed are ounces per 100 square feet. (Ounces referred to are by weight)

### FEEDING ESTABLISHED PLANTS AND BEDS

Based on your test results, apply the appropriate fertilizer(s) in the amounts recommended in the following chart.

#### RECOMMENDATIONS FOR N, P AND K RESULTS

	(0) Depleted			(1) Deficient			(2) Adequate			(3&4) Surplus / Sufficient
	N	P	K	N	P	K	N	P	K	
Lawn	22.0-22.5	0.75-1.0	4.75-5.0	14.0-14.5	1.0-1.5	2.25-2.5	3.75-4.0	0	0	N/A
Fruit	14.0-14.5	6.5	13.5-14.0	7.75-8.0	4.0-4.25	8.75-9.0	3.75-4.0	2.25	4.75-5.0	N/A
Flower	14.0-14.25	6.5	13.5-14.0	7.75-8.0	4.0-4.25	8.75-9.0	3.75-4.0	2.25	4.75-5.0	N/A
Shrubs (flowering)	14.0-14.25	8.25-8.5	13.5-14.0	7.75-8.0	4.0-4.25	8.75-9.0	3.75-4.0	1.0-1.25	4.75-5.0	N/A
Shrubs (follage)	22.0-22.5	10.5-10.75	8.75-9.0	14.0-14.5	5.25-5.5	4.75-5.0	3.75-4.0	2.25	2.25-2.5	N/A
Veggies (root)	14.0-14.25	12.0-12.25	8.75-9.0	14.0-14.5	5.25-5.5	4.75-5.0	3.75-4.0	3.0	2.25-2.5	N/A
Veggies (leafy)	28.25-29.0	10.25	8.75-9.0	14.0-14.5	5.25-5.5	4.75-5.0	7.75-8.0	2.25	2.25-2.5	N/A
Tree	14.0-14.5	10.25	8.75-9.0	7.75-8.0	5.25-5.5	4.75-5.0	3.75-4.0	2.25	2.25-2.5	N/A
General Feed	22.0-22.5	8.25-8.5	8.75-9.0	10.5-11.0	4.0-4.25	4.75-5.0	3.75-4.0	1.0-1.25	2.25-2.5	N/A

The recommendations are based on the following fertilizers sources: Nitrate of Soda (16% N), Triple Superphosphate (46% P<sub>2</sub>O<sub>5</sub>) and Muriate of Potash (60% K<sub>2</sub>O). The amounts listed are in oz. /100 sq. ft. (Ounces referred to are by weight, not volume.) If you wish to use other fertilizer, simply check the package for the percentage of nutrients for N, P, & K and adjust the application level accordingly.

### SPECIAL RECOMMENDATIONS FOR LAWNS

For a new lawn, pay special attention to soil preparation before planting. Proper soil preparation for any size lawn will have a significant impact on the amount of water and care it demands in the future. Till the soil to a depth of at least 12" and incorporate plenty of organic material (9" or more). Test your soil for pH and adjust to the levels recommended on the pH Preference List for your type of grass. Refer to the previous chart for recommended lime or sulfate applications.

For established lawns, Nitrogen is the most essential nutrient to promote lush growth and deep, green color. Phosphorus and Potash, in lesser quantities, are also important for strong root formation and growth. Compound fertilizers will supply all 3 nutrients, or you can select an individual fertilizer, such as Nitrate of Soda. The following chart gives recommended application levels specifically for lawns, based on your Nitrogen soil test results.

Fertilizer Type	(0) Depleted	(1) Deficient	(2) Adequate	(3&4) Surplus / Sufficient
24 - 4 - 4	4.0 lbs.	2.0 lbs.	1.0 lb.	N/A
24 - 3 - 4	3.1 lbs	1.55 lbs	.77 lbs	N/A
30 - 4 - 4	3.0 lbs	1.5 lbs	.75 lbs	N/A

Amounts listed are pounds per 1000 square feet

### SAFETY & HYGIENE

Dispose of test solutions by rinsing down the sink. Empty gelatin capsules should be disposed of immediately with household waste. Remove the color charts. Wash the comparators and caps in warm, soapy water immediately after each use. Make sure any sediment or color staining is removed. Rinse well and dry.

Replace the color charts on the appropriate comparators. Each bag of capsules should be stored inside its comparator. Fit the caps on each comparator. Place all components back into the package. The blister pack has been specially designed to be reused as a storage container.

Store your kit in clean, dry conditions, indoors. The powders are safe in normal domestic terms but like all chemicals & pharmaceuticals, they should be put away and kept out of reach of children.

Try to avoid touching the powders. Always wash your hands thoroughly after making your tests. Do not eat, drink or smoke while using the soil test kit. Keep powders away from food, drink and animal feed. If taken internally, drink copious amounts of water and seek medical advice.

### CAUTIONS

Where a lot of fertilizer is needed to correct one plant food, divide the applications over several weeks. Do not add lime and fertilizer together; lime first. Allow at least one month to pass before applying fertilizer. Retest 30 days after applying fertilizer.

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