

The rapitest® Digital Soil pH Meter is a valuable tool for the hobby gardener. The meter is ready for use.

USE THE METER ONLY IN SOIL. DO NOT PLACE THE PROBE INTO WATER.

BASIC OPERATING INSTRUCTIONS

- Press the Power Button to turn the unit on and off
- The meter's default pH setting is neutral (7)
- The meter automatically re-calibrates each time it is turned on.
- To preserve the batteries, the meter will turn itself off after about 10 minutes of inactivity.
- If the meter has turned itself off, press the Power Button to re-start.

HOW TO USE YOUR DIGITAL SOIL pH METER

1. Remove the top 2" of the surface soil. Break up and crumble the soil underneath to a depth of 5". Remove any stones or organic debris such as leaves and twigs because they can affect the final result. Thoroughly wet the soil with water (ideally rainwater) to a mud consistency.
2. In order to obtain an even more accurate result with your Soil pH Meter, take the sample of soil to be tested from the ground and remove stones and organic debris. Prepare the sample by crumbling the soil into small particles. Measure 2 cups of soil from the prepared sample. Fill a clean glass or plastic container with 2 cups of distilled or deionized water and add the measured soil sample. Ensure the soil and water are thoroughly mixed and compact the sample firmly. Drain off excess water.
3. Using the supplied pad, lightly shine 4"-5" (10-12cm) of the probe, carefully avoiding the bullet shaped tip, to remove any oxides that may have formed on the surface of the metal. Wipe the probe clean, using a cotton ball or paper tissue; always wipe away from the tip, towards the probe handle.
4. Push the probe vertically into the moistened soil to a depth of 4"-5". If it does not slip into the ground fairly easily select a new position. Never force the probe.
5. Twist the probe clockwise and counter-clockwise between your fingers several times to ensure that damp soil is well distributed over the surface of the probe.
6. Wait for 60 seconds to acclimatize the probe and note the reading.
7. If the reading is pH7 or higher: Remove the probe from the soil and wipe any soil particles from the surface of the probe. Re-shine the probe and insert back into the soil at a different point avoiding the first hole made by the probe. Twist the probe two or three times between the fingers, as before, and wait 30 seconds before taking the final reading.
8. If the reading is below pH7: Remove the probe from the soil and wipe any soil particles from the surface of the probe. Do not re-shine the probe. Insert the probe back into the soil at a different point avoiding the first hole made by the probe. Twist the probe two or three times between the fingers, as before, and wait 60 seconds before taking the final reading.

TIPS ON TESTING

- Don't leave the probe in the soil longer than necessary because the metal electrodes may pit, with the possibility of damage to the meter mechanism.
- Insure that the probe is wiped clean and well dried before storing in order to minimize the oxidation of the metal electrodes.
- Be sure to keep the probe away from metal objects.

TROUBLESHOOTING

- Erratic readings:
- Stones, organic matter touching the electrode.
 - Sample area not sufficiently compacted (light soils and potting soils).
 - Metal particles adhering to electrode after cleaning.
 - Soil not adhered to the probe sufficiently.
 - Probe too close to side and/or bottom of the pot.
 - Soil or potting soil being tested too soon after re-potting.
 - A houseplant fertilizer stick or tablet near the probe.

- Sluggish or no response:
- Probe requires cleaning.
 - Sample area too dry.
 - Damaged or pitted probe.

- Extreme pH conditions (potted plants only):
- Nutrient build-up caused by overfeeding.
 - A houseplant fertilizer stick or tablet near the probe.

SOIL ADVICE

Raising and lowering pH is not an exact science and most plants have a reasonably wide pH tolerance, certainly to within 1 pH point. The long list of pH preferences below indicates that while a majority of plants can survive on a pH around 6.5, some need a particularly acid or alkaline soil.

Altering pH takes time. Do not expect rapid changes. Work steadily towards giving a plant its ideal conditions.

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.

ADDING LIME TO INCREASE pH

Lime can be added at any time of year but it does need time to take effect - which is why the autumn, winter and early spring are the preferred times. Hydrated lime may take effect in two or three months but ground chalk or limestone may take up to six months. Avoid adding lime at the same time as sulfate of ammonia, superphosphate, basic slag or animal manures. Lime may be used in combination with sulfate of potash or muriate of potash. This table gives approximate amounts to alter soil pH by up to 1 point up or down the pH scale.

ADDING CHEMICALS AND ORGANICS TO REDUCE pH

The best way to reduce pH to use compost to regularly introduce decaying humus. This not only reduces pH gradually, it helps hold the plant's food and moisture. Ammonia sulfate and flowers of sulfur are chemical treatments. Ammonia also adds nitrogen to the soil.

SPECIAL CLEANING PAD

The cleaning pad supplied with this meter has been specially selected for its compatibility with the meter probe metals. Other type of cleaners may cut or otherwise damage probe surfaces and/or adversely affect meter readings. Additional pads are available at a cost of \$2.00 for 3 pads, plus \$1.00 for postage and handling. Please send a check or money order, payable to Luster Leaf Products, Inc. to:

Luster Leaf Products, Inc.
2220 Techcourt, Woodstock, IL 60098.

No COD or phone orders, please.

This table gives approximate amounts to alter soil pH by up to 1 point up or down the pH scale, depending on soil type.

Material	pH Change		Sandy	Loamy	Clay
Dolomitic or Calcic Limestone	+1/2 unit (0.5 pH) +1 unit (1.0 pH)	Amounts listed are pounds per 100 square feet. *Do not add more than 5 lbs. of lime or 1/2 lb. of sulfur in one application.	2.5 5	5 8.5	5.5 11
Hydrated Lime	+1/2 unit (0.5 pH) +1 unit (1.0 pH)		1.5 - 2 3.5 - 4	3 - 4 6 - 6.5	4 - 4.5 8 - 8.5
Iron Sulfate	-1/2 unit (0.5 pH) -1 unit (1.0 pH)		.75 1.5	1.5 3	2 4
Ammonium Sulfate	-1/2 unit (0.5 pH) -1 unit (1.0 pH)		.5 - .75 1 - 1.25	1 - 1.25 2.25	1.5 3

Replacement batteries:
Three (3) #357 silver oxide, 1.55 volt

