Plant Sap pH Meter

Bruce Tanio's discovery that plant sap pH is a reliable guideline to plant health is a genuine breakthrough in Nutrition Farming®. To understand that a healthy plant, whether a pumpkin or a pear tree, should have a sap pH of 6.4, is to regain control of your growing enterprise.

The Plant Sap pH Meter, manufactured by the high-tech Japanese company Horiba, is a fully waterproof, high precision instrument designed specifically to measure the pH of very small quantities of liquid or soil solution. The handheld meter features a small sink-like receptacle, which can accurately measure pH from just a few drops of fluid. This is the only meter on the market which allows easy, practical pH measurement of plant sap (an invaluable plant monitoring technique).

Benefits

- Automatic temperature correction.
- Waterproof configuration.
- Capable of immersion measurement.
- Measures reliably within a temperature range of 5 – 40°C.
- Automatic power off.
- A replacement sensor is available.
- Measures from pH 2 – pH 12.

Soil Testing Procedure

The following is based on the method described in the Non-Toxic Farming Handbook p53 (By P.A. Wheeler & R.B. Ward). The same method and sample can be used for both pH and conductivity measurements

1. Take equal VOLUMES of soil and deionised water* (tap water/bore/dam water will have an innate level of dissolved salts that will affect your readings). Stir the mixture gently for 30 seconds and allow the solids to for 30 seconds also.
2. Measurement can be achieved by either, opening the protective cap and dipping the Plant Sap pH meter into the solution OR opening the cap and pouring a small amount of the solution into the receptacle.

* Deionised water can be sourced from the local supermarket and is the same water that is used to fill radiators and steam irons.

NOTES:

- Soil high in organic matter may require using a 1 part soil: 5 part water mixture as the organic portion will absorb the water leaving insufficient for further measurements.
- Whenever collecting a sample always wear gloves to prevent contamination from perspiration.
- Optimum soil pH range is 6.2 – 6.7

Unique meter, only requires one drop of sap.

PACKAGING

Weight: 350 g
Product Code: METPHHOR

Plant Sap pH Meter

Extra Packaging Info

The unit comes in 2 sections (the sensor and digital control panel are separate) and includes battery, spare o-ring, 10 mL calibration solution (pH 7), plastic transfer pipette and protective carry case with foam moulding. Due to the value of this tool, it will be sent via registered post. Enquire for postage charges.

Calibration

- Raise the plastic cover from the testing receptacle and rinse the electrode surface with distilled water (use deionised water if distilled is not available).
- Dab the bowl dry very carefully with a clean tissue and cover the electrode surface on the bottom of the bowl with pH 7 standard solution (supplied with the kit).
- Press the CAL button once and the display will show 6.86. When calibration is successful, a smiley face :) will appear on the LCD display. When a unit is calibrated using only one reference solution, it is termed a single point calibration. A single point calibration using pH 7 standard is sufficient for the unit if it is to be used in solution with a pH between 5 and 9.

Mode of Action

This unit works differently to the Sharp Pocket pH meter. This meter features a vessel filled with solution and capped by a porous plug which is positioned below the receptacle. This solution is used up over time as small amounts are exuded for each measurement. A new replacement sensor is needed once the solution has been fully utilised. American researcher, Bruce Tanio, has discovered that plant sap pH is a simple and accurate guideline for the following:

- Enzymatic breakdown of carbohydrates (sugars) for plant growth and vitality.
- Risk for potential insect damage.
- Rick potential for foliar disease attack (fungi, bacteria and viruses).
- Nutritional balance in the growing crop.
- Quality of fruit and vegetables.
- Shelf-life of fruit and vegetables.

NTS research confirms the validity of this exciting new approach. The technique has huge potential for both yield building and pest protection. The ideal sap pH for all plants is 6.4. Levels below this ideal spell a cation shortage – usually calcium, magnesium, potassium or ammonium nitrogen. Levels above 6.4 are related to an anion deficit – usually phosphate, nitrate nitrogen or sulfate sulfur. Low sap pH triggers a predisposition toward fungal disease. High sap pH suggests the likelihood of insect attack. Foliar fertilising is the best technique to adjust the sap pH. It is possible to have both fungal and insect pressure together. Usually this involves an initial insect attack, where the sap-sucker may inoculate a virus into the tissue around the bite site. This generates acidity in the leaf in the vicinity of the damage zone which attracts fungal disease.

Miscellaneous

- Readings can be affected by evaporation, particularly if the lid is left open. Signs of dehydration include a build up of "salt-like" crystals towards the front of the measuring well. If a crystal build up is visible then it should be carefully removed by washing the well with water and gently dabbing the surface clean with a tissue.
- Evaporation will also deplete the internal reservoir of solution, resulting in the premature replacement of the sensor.
- Ensure the plastic slide cover on the receptacle is kept closed when not in use to prevent contamination, dust or excessive evaporation.
- Ensure only the correct batteries are used (CR2032). Replacements can be readily sourced from any battery-selling outlets. When replacing batteries always inspect the o-ring seal to see if it should be replaced. There is a strict technique for inserting the batteries which is described in the owner's manual and this should be followed to avoid any problems.
- WARNING: The bottom of the receptacle is made of a very thin layer of glass that is easily broken, rendering the sensor useless if excessive downward pressure is applied.

Accessories include:

Twin pH Electrode Replacement – Product Code: METERPH – Product Weight: 32 g

pH 7 Standard Buffer Solution at 25◦C – Product Code: METPH7BS – Product size: 120mL

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