

Measurement Of pH In Plant Tissue

LAQUAtwin is a series of pocket ION meters. Using Ion Selective Electrode (ISE) technology, they are available for measuring Conductivity, Calcium, Nitrate, Potassium, Sodium, Salt concentration and pH measurement. Using just a tiny amount of sample, the LAQUAtwin proprietary flat sensors can quickly and accurately measure the values of the chemical parameters in the field.



Introduction

It is often necessary to measure the pH of plant tissue to determine plant health. At pH values above 6.4 plants can be prone to insect attacks and at pH values below 6.4 plants can be prone to specific diseases. Thus an optimal pH of 6.4 is desired. Whilst laboratory soil and tissue tests are beneficial tools, they often do not yield results for days or weeks. We can thus use an alternate method of diagnosing plant health using the LAQUAtwin pH meter.

The LAQUAtwin pH meter is used to determine the pH of plant tissue. This is an easy and quick method used to ensure that plant tissue is at the optimum pH.

Method

To measure, take a few leaves, roll them into a tight ball and squeeze out a few drops of sap using a garlic press. Be sure to use a good quality stainless steel garlic press.

Generally, the mature leaves of the plant give the most accurate picture of the plant's health.

The plant tissue can be measured using the LAQUAtwin pH meter. The plant tissue has sufficient moisture and can thus be placed on the sensor of the pH meter and measured. If the pH value is more than 0.5 away from the optimal 6.4 value, we can adjust as follows:

If the pH is >0.5 higher than 6.4: add small amount of phosphate fertilizer

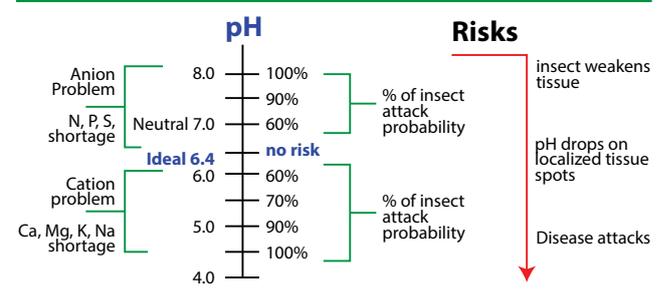
If the pH is >0.5 lower than 6.4: add small amount of calcium/potassium fertilizer

After a week, repeat the test; ensure the pH of the plant tissue is close to pH 6.4 for optimal plant health.

Results and Benefits

The use of the Horiba LAQUAtwin pH meter to ensure an optimal pH of 6.4 in plant tissue will encourage healthy plant growth and prevent insects and diseases attacking the plant.

The LAQUAtwin pH meter is small and compact; convenient to carry around in your pocket for easy on-site testing. Its easy-to-use interface is simple for anyone to use the LAQUAtwin pH meter.



Pocket ION Meter

LAQUAtwin

Unique Features



LAQUAtwin: the only meters with flat sensor technology.

HORIBA's highly-sensitive, flat sensor technology opens up new possibilities for sampling and sample types. Only a small amount of sample is required, so you can easily sample in situ without the need for beakers or other labware. Sensors are easily replaced as required.

Calibrate and measure at the touch of a button—the smiley face will tell you when the result can be read.

Hassle-free automatic calibration with a few drops of standard solution reassures you of your measurement accuracy. Two-point calibration is also possible.*1

*1 Except for B-711



LAQUAtwin is fully waterproof and dustproof.

The meter and sensor are fully waterproof*3 and dustproof, so you can take it anywhere.

*3 IP67 rated. Will withstand immersion for 30 minutes at 1 m. Not suitable for underwater use.

Carry case comes as standard for handy portability.

The compact carry case contains everything you need for your measurements, including the standard solution and sampling sheets.



1 X 6

One meter, six methods.

Only LAQUAtwin allows you to be this flexible! Choose the best method according to your sample, your situation, and your needs.



01 Immersion

When you're in the lab, you can test the sample in a beaker. Ensure the sensor guard sliding cap is open.



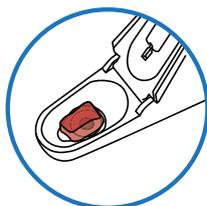
02 Scoop

Use as a scoop to test water eg from a river. A vertical scoop for an aquarium is also available with a unique sensor guard.



03 Drops

Place a drop of the sample onto the sensor with a pipette. LAQUAtwin meters can measure sample volume as low as 0.1mL



04 Solid Samples

Foods containing some moisture can be tested by placing a small piece directly onto the sensor.



05 Powders

LAQUAtwin meters can also test dry powders. Simply place the powder sample onto the sensor and drop on your defined volume of pure water.



06 Paper and textiles

To test sheets of paper and textiles, cut up the sample into small pieces and place directly onto the sensor. Drop on your defined volume of pure water.

Lineup

pH



Accurate pH measurements in a few seconds, from a single drop.

Water pH varies in different environments, and a slight change can often have a major effect.

Whether you need to keep the pH of an aquarium within tight limits, are checking for the acidity of rain water or for the quality of meat and fish products, LAQUAtwin compact pH meters are ideal for you. No matter where and when you need to test.

COND



Determine water conductivity with as little as 0.12 mL of sample.

The conductivity of rain water is a trusted guide to determining atmospheric purity. In agriculture, measuring the conductivity of soil allows farmers and agronomists to determine optimum fertilizer usage and check the 'health' of soil after salt water damage. The LAQUAtwin meter makes conductivity testing simple, anywhere.

Na+



Only compact meter for a quick and reliable measurement of sodium ion at the scene using ion selective membrane.

K+



Only compact meter for a quick and reliable measurement of potassium ion at the scene using ion selective membrane.

NO3-



Only compact meter for a quick and reliable measurement of nitrate ion at the scene. Special application packages for crop (B-741) and soil (B-742) are also available.

Ca2+



Only compact meter for a quick and reliable measurement of ionized calcium at the scene using ion selective membrane.



<http://www.horiba.com/laquatwin>

IMS

HORIBA Group is operating Integrated Management System (IMS) ISO9001 JOA-0298 / ISO14001 JOA-E-90039 / ISO13485 JOA-MD0010 / OHSAS18001 JOA-OH0068

