

Get to know your soil pH

Soil pH test results are a basis for lime and fertilizer recommendations. Knowing and correcting pH prevents over or under application and ultimately helps increase crop yields.

If you want to understand the highest yield potential of your soil, pH must be respected as one of the key indicators of soil fertility.

A soil pH of 6 to 7.5 provides optimum conditions for most agricultural plants.

Microbial activity in the soil is affected by soil pH with most action occurring in soils of pH 6 to 7.5.

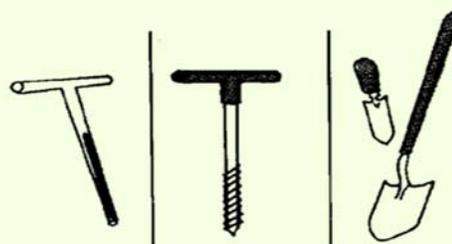
Soil pH can be measured in the field!



pH can also be measured in a water solution.



- Take pH readings where you are going to plant, and avoid unusual areas. Taking several readings of different locations can help understand what may impact your soil pH and crop growth responses.
- Take along a clean soil probe and a bucket (no residue) for sampling, your pH tester, a water bottle (for cleaning), the calibration solutions, extra batteries, and a note book.
- Take pH readings during the course of the year to understand soil pH trends based on the seasons, impact of moisture, fertilizer additions, crop growth. Do this to understand how your farm management changes soil over time.
- By comparing past and present pH, it is possible to see if soil acidity is increasing and, if it is so, to alter management methods to prevent this trend from continuing.



How pH Effects Your Bottom Line

Rate of Fertilizer Effectiveness at Various pH Measurements

FERTILISER	pH 4.5	pH 5.0	pH 5.5	pH 6.0	pH 7.0
NITROGEN	30%	43%	77%	89%	100%
PHOSPHATE	23%	31%	48%	52%	100%
POTASH	33%	52%	77%	100%	100%

Maximize

your fertilizer dollars by maintaining ideal pH levels in your fields.
(ref. (DHG 09-2001) CELAC, Lime Amendments)

Relative Yields at Various pH Levels

CROP	pH 4.7	pH 5.0	pH 5.7	pH 6.8	pH 7.5
CORN	34%	73%	83%	100%	85%
SOYBEANS	65%	79%	80%	100%	93%
WHEAT	68%	76%	89%	100%	85%
OATS	77%	93%	99%	98%	100%
BARLEY	0%	23%	80%	95%	100%
SWEET CLOVER	0%	2%	49%	89%	100%

Boost your yields by keeping soil pH level at an optimum for your crop.
(Ref. <http://igs.indiana.edu/MineralResources/Aglime.cfm>)

When to test for pH?

- Be Consistent—take pH at the same time of year.
- Before fertilizer, lime, compost or manure application.
- Best is fall after harvest of crop to receive recommendations for the following season.
- In spring before planting crop.

How often to test for pH?

- At least once every year.
- When you think there is a problem.
- Before planting new ground.
- Before land purchase.

Where to get pH Testers and Meters

Tester Name	Supplier	Website	Approx. Cost (2013)	Accuracy
We use and recommend the Extech ExStik pH Meter also called the Field Scout Soil Stik by other manufacturers.				
Extech ExStik pH Meter (Extech ExStik pH Pen)	Gemplers	www.gemplers.com http://www.gemplers.com/search/ph+meters	\$92.50	±0.01 pH
pH Tape with Dispenser	Pike Agri-Lab Supplies	www.pikeagri.com	\$6.00	least accurate*
Cardy Twin pH Meter	Spectrum Technologies	www.specmeters.com	\$225.00	±0.1 pH
HI 99121	Hanna	www.hannainst.com	\$400.00	±0.02 pH
Mobile Sensor Platform	Veris Technologies	www.veristech.com	call for price	Soil pH mapping
Also needed:				
Soil Sampler Probe	Gemplers	www.gemplers.com	\$60.00	
Calibration Solution	Agriculture Solutions	www.agriculturesolutions.com	\$5.99 each	
Calibration Prep Solution	Spectrum Technologies	www.specmeters.com	\$27.00	

pH tapes or strips are a convenient, portable way to read pH, but they are the least accurate method of testing.
For greater accuracy, use a pH meter.

You must calibrate your pH meter before use. Most pH meters require a calibration preparation solution and a buffer solution. Check with your manufacturer or supplier.