

Agriculture Newsletter Fall 2013



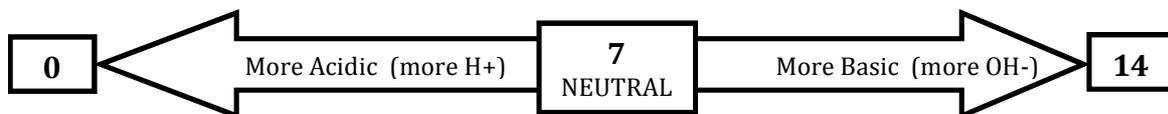
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Low Soil pH & Lime

The soil pH gauges how acidic or basic a soil is on a scale of 0 - 14 based on the amount of hydrogen ions (H^+) and hydroxide ions (OH^-) in the soil. Acidic soils have higher amounts of H^+ , while basic soils have higher amounts of OH^- . For every one unit change on the scale, there is a 10 fold change in the level of acidity.



A soil can become increasingly acidic through organic matter decomposition, the application of manure and nitrogen fertilizers (via ammonium, NH_4^+), acid rain, secretions from plant roots, and the loss of basic cations (positively charged ions) such as calcium, magnesium, and potassium through crop nutrient uptake, leaching, and erosion. An acidic



soil can negatively impact crop production; limiting the availability of nutrients needed by crops, decreasing root growth, increasing the availability of metals that can be toxic to crops, and limiting the effectiveness of certain herbicides.

To correct soil acidity, follow the lime recommendations given on a soil test. Most lime recommendations are shown as the amount of Calcium Carbonate Equivalent (CCE) in lbs/acre. The recommendations will need to be adjusted accordingly if the aglime material used is not 100% CCE using the following formula:

$$(\text{soil test limestone recommendation} / \text{CCE of aglime to be used}) \times 100$$

For example, if 4,000lbs/Acre of CCE is recommended, and the aglime material to be used is only 90% CCE, 4444lbs/A of the aglime material would be needed to meet the recommendation.

Other factors to consider when choosing a liming material include the fineness of the material (the finer the material, the faster it reacts with the soil), the moisture content (the higher the moisture content, the less actual material there is), and the presence of calcium and magnesium in the material (choose an aglime with a higher magnesium content if levels are shown to be low in a soil test).

It can take several months for lime to react with the soil and raise the pH, therefore, it is recommended that lime be applied in the fall for next summer's crop.

Resources

Soil Acidity and Aglime (extension.psu.edu)

Autumn is the Time to Lime (extension.psu.edu)



Manure Stacking

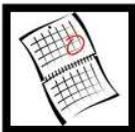
Manure stacking areas are a necessity on many farms as situations arise making it impossible to spread or export; whether it is a broken spreader, extreme weather conditions, or there is just no time left at the end of the week. To help prevent manure stacks from becoming a pollution source on the farmstead, be sure to use an improved stacking pad¹ or covered area. When manure stacks are located in areas other than the farmstead, follow the guidelines listed below².

- Keep stacks at least 100' away from water sources (streams, lakes, ponds, drinking wells and springs), and don't place stacks within an area of concentrated water flow (i.e. ditch).

- Don't put stacks in the same location each year if stacking on an unimproved area.
- Place stacks at the top of a hill if possible.
- Place stacks on areas with <8% slope.
- Be sure manure is dry enough to allow for stacking to at least 4' high.
- Cover stacks with a water repellent cover (i.e. tarp) if it will remain there for more than 120 days. If the stack is on an improved stacking pad however, it doesn't need to be covered.

¹ *improved stacking pad*: a permanent, improved, stabilized and compacted surface area with runoff controls to prevent a polluttional discharge used for the storage of solid manure which is capable of being stacked at least 4 feet high.

² The guidelines listed are for farms with a *manure management plan*. For farms with a *nutrient management plan* (Act 38 plan), and farms that import manure from other farms with an Act 38 plan, additional stipulations apply. Contact the district for more details.



Upcoming Events

Grazing Conference

Save the date for the 17th Annual Northwest PA Grazing Conference to be held at the Zion Church in Clarion, PA on Thursday, March 13, 2014

Manure Management Workshop

A workshop is being planned for the Winter of 2014



PA Onestop Assistance

PA Onestop (www.paonestop.org) is a free online program available to help you develop maps for your farm. If you want to learn how to use it, or just want some maps made, contact me (Megan Whitlatch) at the district.