JOURNEYMAN FARMER
CERTIFICATE PROGRAM

Interpreting Soil Tests
(Answers for facilitators are in italics)

1. The very small farm-Locally Yours- does not soil test but adds certain amendments every year. What are the risks with this?

   Could be adding unnecessary amendments and wasting money. Could also be creating nutrient imbalances. Phosphorus is a good example since it builds up if organic fertilizers are used.

2. If Locally Yours Farm adds lime every year without soil testing, what could happen to soil pH? What does that do to the availability of phosphorus? Micronutrients like zinc?

   Adding lime raises the pH, or makes the soil less acidic. As pH raises above 6, the availability of phosphorus decreases. Zn, B, Mg also decrease in availability as pH raises.

3. What are the consequences of phosphorus build up and its effect on water quality?

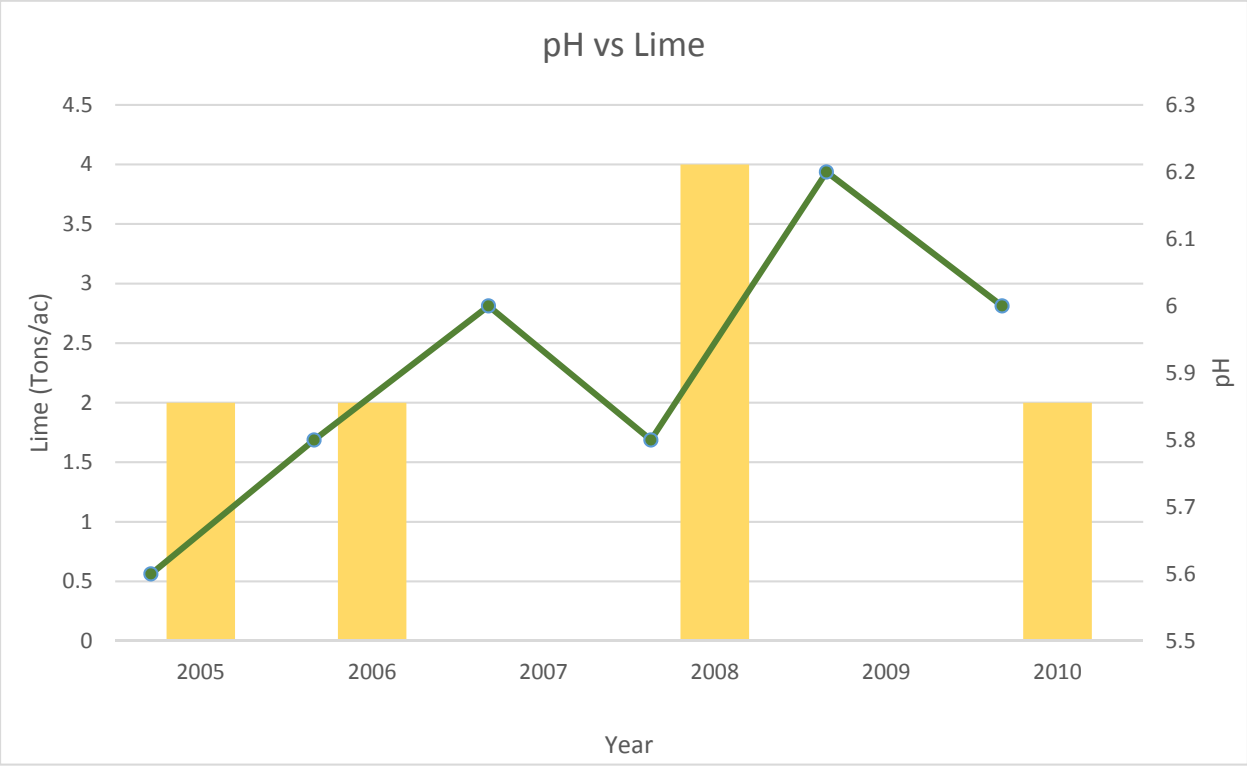
   Phosphorus can have detrimental effects on water quality at low concentrations. Excess Phosphorus in water can lead to eutrophication and fish deaths.

4. What can happen to profitability if you are using inputs you don't need for good crop growth?

   This is expensive and causes you to waste resources.

UGA extension

5. Look at the graph on pH from Wanna B Farms. Discuss the graph. How is the soil responding to lime addition and when is lime needed?
   Try to get them to tell you: how the soil is responding to lime addition and when lime is needed.



*Explain soil pH is on the right axis and the amount of lime applied on the left axis. Note the line shows pH response and bars show amount of lime added. The initial soil pH was 5.6. Although the soil test recommendation called for 4 tons/acre of lime, the farm didn't have much money so they just applied 2 tons/acre in the early winter of 2005. The soil pH rose to 5.8, which is better but not at the target of 6.0 to 6.5. The farm added another 2 tons/ac in the early winter of 2006 to bring the pH up to the target range. In 2007, the soil pH was in the target range because it reached 6.0 and the farmers decided not to add lime. The winter of 2007 was a wet year and grew heavy feeding crops in the field, by the fall of 2008, the soil pH had fallen to 5.8 again. The farmers decided to apply 4 tons/acre of lime. This brought the soil pH well up into the target range, so again no lime was applied in 2009. In 2010, the farmers applied 2 tons/acre to keep the pH in the target range. **Note—this is an example and soils at your farm may not respond like this***

6. Refer to the soil test from Gittin' There Farms on the next page.
   a. Is the pH in the target range?
      Yes.

   b. Why is no limestone recommended?
      Because pH levels are adequate

   c. Does the Soil Test Index for phosphorus represent total or plant available phosphorus? Why might you add 20 lbs P/ac as fertilizer with plant available fertilizer in the very high range?
      According to results, very high levels of soil test phosphorus in soil. This is an index of available Phosphorus. A small amount of P2O5 is often used to get seeds or transplants off to a good start.
      Note: For organic fertilizers, Phosphorus may be present in soil, but may not be in plant available forms.

   d. Does the soil need potassium?
      Yes. Many crops need almost as much potassium as nitrogen.

   e. Look at nitrogen fertilizer recommendations. Why might you want to split when fertilizer is applied?
      Point out there aren't nitrogen results. There aren't nitrogen results because Nitrogen is quickly lost from the soil and measurements of plant available Nitrogen are not accurate for a growing season. Nitrogen fertilizer recommendations are based on years of fertilizer trial results. Sometimes farmers apply nitrogen in split applications for certain crops (such as corn). By splitting the nitrogen application, you can supply nitrogen when the crop needs it most, maximize uptake and reduce loss of nitrogen.

   f. If soil organic matter is 2%, is this good for a sandy soil in Georgia?
      Yes.