NW Panhandle Crop Notes

Dennis Coker, Ph.D.
Extension Agent – Agronomy
Dallam, Hartley, Moore and Sherman Counties

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Hello readers and happy spring season to each of you. While not so convenient for curing hay and steady planting, recent rainfall in our area is good news and a blessing. Temperature wise, conditions over the past month have trended toward being cool. The cooler temperatures are not as noticeable for corn seedling emergence but tend to slow emergence of cotton to a greater extent. Hopefully, cotton planted the latter part of May will be off to a sound start with warming soil temperatures, plentiful soil profile moisture and lots of sunshine that support rapid vegetative growth, see https://www.cotton.org/tech/physiology/upload/BMP_Doc.pdf . It would be nice if these conditions persist when folks are ready to plant grain sorghum.

The rest of this article includes a few thoughts on soil testing, soil sampling and how soil test results can be utilized as a management tool to profitably steer nutrient applications season long to produce cotton. Of course, most of the same principles apply for managing soil nutrients in other crops grown in the Texas Panhandle. Where effort is being made to collect soil samples during the early growing season, soil test results can prove valuable for tweaking sidedress or applications of nitrogen through a center-pivot or drip irrigation system.

Plate 1. Cleaning and reloading planter units on May 24th, 2021 for a dryland, Replicated Agronomic Cotton Evaluation (RACE) trial in Moore county. Study site is in a strip till system and had good profile moisture at planting.

Plate 2. Planting underway on May 25th, 2021 for an irrigated, Replicated Agronomic Cotton Evaluation (RACE) trial in Moore county. This study site involves a strip till system, included a terminated wheat cover crop and appeared to have adequate soil profile moisture at planting.

Soil sampling to support improved cotton yield and higher fiber quality:

1. Randomly collected, representative soil samples are the first and most important step toward reliable soil test results and recommendations.

2. Acquiring a representative set of soil samples for each field will require planning ahead. Field areas where known textural changes occur with soil profile depth, possibly due to changes in soil type, should be sampled separately. Where changes in cropping systems occur such as a different crop rotation the previous year, those areas should be separately sampled. Other reasons for separate samples would include different fertilization or where historical crop yields are widely different.

3. Ten to 15 randomly collected soil cores from a uniform area of a field (10 to 40 acres) can be combined to represent one soil sample which is about one pint.

4. Be sure equipment and containers used in the sampling process are clean and free of any contaminant that would interfere with test results, especially for macro and micronutrients for which an analysis will be requested.

5. Soil cores should be collected to consistent depth for which a particular analysis is requested across a field. Accurate coordination of samples with labels on bags is critical, especially where multiple soil sampling depths are involved.

6. Soil testing for nitrate-N should be to a depth of 24 inches (2 feet), especially where clayey, fine-textured subsoils are present and hold nitrate against the downward movement of water.

7. Soil test for residual nitrate to two feet should be done every year for cotton grown in the Texas Panhandle. Soil testing for phosphorus, potassium, and other essential plant nutrients should happen at least every second year.

8. It is okay to air dry soil samples in a shaded area before submission to the laboratory. Avoid using oven heat to dry samples.

9. If fertilizer has been banded in fields, be careful to not collect soil samples from the fertilized band.

<u>The soil testing process and utilizing soil test results:</u>

1. Expedite handling and shipment of soil samples to the laboratory. This is particularly important in the case of nitrogen which is relatively unstable and can mineralize or change forms after the sample has been collected. Samples should be kept in a cool, dry environment until shipped or delivered to the laboratory.

2. Whether utilizing the Texas A&M AgriLife Extension Service Soil, Water and Forage Testing Laboratory (http://soiltesting.tamu.edu) or a private laboratory, be sure to specify the crop and yield goal for each sample submitted to get a complete set of soil test results and recommendations.

3. Soil test results and recommendations should be used to determine needed amounts of commercial fertilizer, manure, or effluent wastewater to be applied.

4. Soil test recommendations generated by Texas A&M AgriLife Extension for major crops like cotton are supported by research conducted in Texas soils and environments. It is from these studies that key nutrient response or calibration curves are developed. Other states and laboratories may or may not have access to this information.

5. If comparing soil test results from different laboratories, be sure they use the same extractant procedures such as nitrate-N by cadmium reduction and Mehlich-III by ICP for phosphorus and potassium.

6. You can easily access an online calculator made available through the Texas A&M AgriLife Soil, Water and Forage Testing Laboratory at http://soiltesting.tamu.edu/recscalc/recscalc.htm. This online calculator assists with nutrient recommendations and makes it possible to compare Texas A&M recommendations to those from other laboratories.

For additional, reference information, see AgriLife Extension articles posted on our county websites under 'Agronomy' and 'Publications'. If there's information related to cotton or other crop species that you are looking for and not seeing it, let me know and I can help to find it.

This concludes today's blog on soil testing for cotton. Looking forward to discussing other facets related to the management of cotton as this season progresses. Enjoy what is left of this spring cropping season. Hopefully, your operations are off to a good start.