Soil Temperatures and Nitrogen
Considering the price of nitrogen fertilizer, maximizing nitrogen applications is very important this fall. This is true for both anhydrous ammonia and liquid swine manure. Because anhydrous ammonia rapidly converts to ammonium in the presence of soil moisture and liquid manure is about 80% in the ammonium form of N, we want to keep N in that form in our soil. Ammonium is positively charged and is attracted to the negatively charged soil exchange. This form is not subject to leaching or denitrification. Warmer soil temperatures allow microbial conversion of ammonium to nitrate, which is negatively charged, not held in soil and subject to leaching. This article provides good insight to value of manure, application timing and the soil processes that take place. Get the most bang for your buck: time your manure and anhydrous applications well. Applications of these N sources should be delayed until soil temperature is 50 degrees F and falling. You can track soil temperature trends for the previous three days at this Iowa Mesonet link.

Soil Fertility and Rising Fertilizer Prices
Many of the phone calls I have received in the past 10 days are about concerns with rising fertilizer prices and
what, if any, fertilizer should be applied this fall or next spring. Antonio Mallarino's article, *Soil-test interpretations for fall fertilization and liming decisions with high fertilizer prices and after highly variable rainfall and crop yields*, provides insight for making fertility decisions.

Hold off on fertilizing soils that are in the "High" or "Very High" testing categories due to lack of expected yield response on these soils. The average percentage of P and K applications expected to produce a yield response is only 5% for "High" testing soils and <1% for "Very High" testing soils.

If possible, continue to fertilize soils in the "low" or "very low" testing categories even with high fertilizer prices as they have a high probability of paying back yield that exceeds the cost of fertilizer. The average percentage of P and K applications expected to produce a yield response is 80% in "Very Low" testing soils and 65% for "Low" testing soils.

Soils that are currently in the "Optimum" category benefit less from fertilization than the "Low/Very Low" testing soils, but still generally produce above break-even results.

Start with good soil tests.  
Know which analytical methods and sample handling procedures were used.  
Use PM 1688, *A General Guide for Crop Nutrient and Limestone Recommendations in Iowa* to make future fertilizer application decisions. This is available as a free download.

If you are looking to invest dollars in your fertility program and don't need additional P and K, review your soil pH results and consider liming fields as needed. This step is
often neglected as part of the fertility planning process. Need help? Reach out to any of the ISU Extension and Outreach Field Agronomists.

Herbicide Planning for Next Year with Anticipated Supply Chain Shortages
Some things to consider among the rumors about pesticides being in short supply and if you choose to take early possession of pesticides: 1) store pesticides in a locked place; 2) keep all pesticides in their original containers; 3) account for temperature of storage to prevent pesticide from freezing; 4) check containers frequently for leaks; 5) clean up spilled chemicals quickly and appropriately; 6) FOLLOW ALL LABEL INSTRUCTIONS FOR STORAGE REQUIREMENTS. This Penn State Extension article provides a list of best practices, Safe Storage of Pesticides.

Tight agriculture chemical supply, high prices could impact 2022 growing season

Herbicide shortage: How to Plan for the 2022 Growing Season

Herbicide shortage: How to Plan Termination of Multi-Species Cover Crop Mixtures

Additional Reading

SCN-resistant soybean varieties for Iowa in 2022

Events

Tuesdays, November 2 through December 7. Annie's Project will be held at the Wright County Extension office in Clarion. Annie's Project is the agricultural business education program that empowers farm and ranch women who want to be more knowledgeable about their
agricultural enterprises. Additional information and a registration link can be found here. Registration is required, the deadline is October 26.

November 10. Noon to 2 p.m. The Iowa Learning Farms, The Nature Conservancy and the Boone River Watershed are hosting an oxbow field day at 1905 110th St. LuVerne, Iowa. A complimentary meal will be served, however registrations are limited to 49 people. RSVP by November 5 to ilf@iastate.edu. More details.

November 16. 11:30 to 1:30. Interseeding Cover Crop Field Day at the ISU Northern Research Farm. This event is free and open to all, lunch is provided. Please RSVP by November 12 to ilf@iastate.edu More details.

November 17-18. The 51st Annual North Central Extension-Industry Soil Fertility Conference will be held at the Airport Holiday Inn in Des Moines. Registration information.

November 18. 5-8 p.m. The Southfork Watershed Alliance will host their annual Water Quality Forum with a focus on strip-till/no-till. This event will be held at the Ellsworth Community College Renewable Fuels Center, located at 707 Ellsworth Ave, Iowa Falls. Speakers include Iowa Secretary of Agriculture, Mike Naig, and Dr. Jerry Hatfield (retired). A local panel of farmers will discuss their strip-till/no-till practices. A complimentary meal will be served. Please RSVP to http://www.southforkwatershed.org/event-details/water-quality-forum-no-till-strip-till

Hold the Date!

I will post my private pesticide applicator dates in November. They start in December and continue through mid-March.