

David G. Hallauer
District Extension Agent
Crops & Soils/Horticulture

Corn Nitrogen Recommendations

With fertilizer dollars at a premium in 2022 corn budgets, now is a great time to take a second look at where those dollars are going – and why. Since nitrogen is synonymous with corn yield, it's a great nutrient to start with.

There are a number of different ways to determine the optimum N rate. K-State Soil Testing Lab recommendations are based on yield response curves gleaned from in field nitrogen evaluations. They are regularly reviewed and updated as necessary based on changes in nitrogen use efficiency and other research findings.

The foundation is a yield goal times a factor of 1.6. For example, that means a 150 bushel per acre yield goal would require a base nitrogen rate of 240 pounds per acre – much higher than the nine tenths to one and a quarter pounds per bushel we usually estimate? The reason is likely found in the other 'adjustments' that factor in to most recommendations.

We account for organic matter based on the expectation of mineralization during the growing season accounting for 20 pound of available N per acre for each one percent soil organic matter in the surface six inches. The average soil organic matter in Kansas is two percent. In the absence of an organic matter test, we therefore credit for 40 pounds of N.

That leaves the N recommendation at 200 pounds per acre – and more adjustments to come. A profile nitrogen test is a great idea, but in the absence of the two-foot deep samples recommended to get an accurate number, we estimate (conservatively) a minimum of 30 pounds per acre of N available in the profile. That drops the number to 170 pounds of N per acre.

If manure is applied, we'll give credit for values provided, as well as other credits for irrigation water, etc... Another credit comes from the previous crop. In corn/soybean rotations, the previous crop soybean crop gets credit for 40 pounds of N from rapid residue decomposition. The final recommendation: 130 pounds of N required to attain a 150 bushel per acre yield goal – or just under nine tenths of a pound of nitrogen per bushel of yield.

How/when N is applied can effect nitrogen use efficiency, too, with practices like delayed/split applications potentially increasing efficiency even more than 'average'. That means no one nitrogen recommendation fits every operation – and why a periodic review is a good idea for optimum use of your fertilizer dollars. Contact me if you want to take a closer look.

Conservation Trees from the Kansas Forest Service

Tis the season for low-cost tree/shrub seedlings from the Kansas Forest Service. Available to purchase for conservation purposes, plants are one to two years old varying in size from eight to 18 inches. Bareroot and container grown (higher survival/quicker establishment) seedlings are available with orders accepted through May 1 and shipped in mid-March.

Approved uses include windbreaks, wood lots, wildlife habitat, timber plantations and educational or riparian (streambank) plantings (no ornamental landscape planting allowed). Each single species unit consists of 25 plants. Three special bundles (quail, pheasant, or eastern pollinator bundle) are also available, along with tree planting accessories like tree tubes and weed barrier fabric. For details or an order form, visit: <http://kfs.mybigcommerce.com/> or request a copy from any District Office.

Nancy Nelson
District Agent
Family Life

Capping Extension Career

I was glad to hear the introduction earlier this month of Richard Linton to be the 15th president of Kansas State University. I certainly appreciate his Land-grant background and it will serve him well as he comes to our state in mid-February.

Linton currently is the dean of the College of Agriculture and Life Sciences at North Carolina State University. He is strongly connected to land-grant institutions, earning degrees from Virginia Tech and serving as dean at North Carolina State since 2012. Prior to that he was department chair of food science and technology at the Ohio State University and also has been a faculty member of the Department of Food Science at Purdue University. I feel he will help K-State move forward and build on positive momentum in Manhattan.

James McCain was university president 25 years and was in office when I began as a student at K-State. Duane Acker arrived in 1975 and I remember meeting he and his wife Shirley at Clovia 4-H House when they were Wednesday night dinner guests.

I have a copy of Acker's book *Two at a Time: Reflections and Revelations of a Kansas State University Presidency and the Years that Followed*. When I began my Extension career in 1978 in Ellsworth County he was president and served until 1986. I've read the book twice but have added it to the top of my stack to read in the new year. It will bring back a lot of memories of my early years in Extension.

The Jon Wefald era brought an emphasis on student recruitment. I recall accompanying high school students on a campus visit, several who were 4-H'ers. I transferred to Jackson County Extension in 1988 followed by the launch in 2006 of the Meadowlark Extension District (Jackson, Jefferson and Nemaha counties).

I enjoyed the years that Kirk Schulz was at K-State, 2009-2016. That coincided with my daughter being a student. I am proud that she is among the 4th generation of my family to graduate from Kansas State University.

Kirk and Noel Schulz were engaging and brought a lot of enthusiasm. It was a time of new building construction including an addition to Justin Hall, a new residence hall, Wefald Hall, and the College of Business building.

I appreciate the steady leadership of current president Richard B. Myers during a time of university budget cuts and the pandemic.

You see, I've been doing a bit of reflecting as I prepare to retire at the end of December. I value the lifelong learning that K-State Research & Extension provides citizens of Kansas, and the many life lessons I've had along the way. I've met many wonderful people and appreciate working alongside many volunteers who support Extension programming.

Cindy Williams
District Agent
Food, Nutrition, Health, and Safety

Cranberries—And Good-For-You!

Many of us only think about cranberries when it comes time to eat our Thanksgiving turkey. But apart from the holidays, we tend to forget these shiny, scarlet gems and the many ways they can be used. Why not add some color and sparkle to other meals throughout the year with these festive, good-for-you berries?

Adding cranberries to your repertoire will brighten up your dishes, open you up to new taste experiences (try some cranberry sauce on a hamburger, for example) and improve your health as well. Studies show that eating a variety of colorful fruits and vegetables every day is a key to a longer life. Cranberries are rich in antioxidants such as Vitamin C, flavonoids, and phenols—and also fiber and other substances that help protect against health problems like urinary tract infections, and chronic ailments like cancer and diseases of the heart, mind (Alzheimer disease), and even mouth (gingivitis and gum disease).

Fresh cranberries are typically sold in 12-ounce bags, which makes about 3 cups when chopped. Dry-harvested cranberries, i.e. those not harvested in water, can be kept in a cool room of the house, preferably a basement, for as long as four months or more, and---discounting those that will have rotted during that time---still taste like the day they were picked from the vines. Or, they can be frozen, unopened, for up to nine months.

Cranberries can be added to countless dishes, from quick breads, yeast breads, salads, relishes, salsas and chutneys, to soups, grain-based entrees and of course, desserts. Add a half-cup of chopped cranberries to your favorite banana bread or apple muffin recipe. Drop some into your leafy green/spinach salad (especially good with dried cranberries), or toss a handful into a pilaf or stuffing. Impress your dinner guests with a cranberry glaze, or slow-cook some berries with your favorite chicken or port. Before baking apples, fill the cored centers with cranberries, then sprinkle with sugar and cinnamon.

How about trying some cranberry catsup? Or, for a delicious cranberry mustard served on pork and salmon, just heat some whole-berry cranberry sauce with a touch of sherry and honey, mix with an equal amount of your favorite brown or Dijon-style mustard, and if you like, throw in a dash of ground ginger.

However, you think to use them, cranberries are sure to add color and significant nutrition to all of your tasty cranberry creations!