

Post Rock Extension District Column

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K-State Research and Extension-Post Rock District

Crop Production Agent

What are some planting guidelines to follow with your corn crop?

Producers have been busy in the field with planting spring crops, so continue to be aware and careful with the equipment on the highway.

Thought I would provide some guidelines for planting corn, as in the last few years, the later planted corn has tended to perform better in some fields in northcentral Kansas.

There are many factors that can affect the success of your corn crop including soil temperature, planting date, row spacing, planting rate and planting depth.

The optimum **soil temperature** to start planting corn is when the soil at a 2-inch depth reaches 55 degrees Fahrenheit. According to the **KSU Mesonet**, for our four locations in our Post Rock Extension District in Jewell, Mitchell, Osborne and Smith counties, **the 7-day average 2" soil depth temperatures for all locations is 68 degrees Fahrenheit, so well above the optimum soil temperature for planting.**

In medium- to low-yielding environments, below 170 bushels per acre, optimum planting time should synchronize flowering time with adequate summer rains. The distribution and amount of rainfall around flowering and during grain-filling have a large influence in defining yield potential because they affect grain number and seed size.

The **planting date** goes hand-in-hand with the soil temperature and usually provides a fairly wide window of opportunity for planting, through the end of May and even into June. Make adjustments if necessary for late planting.

Row spacing is another important factor with your corn crop. Narrow rows (20- or 15-inch rows) result in greater yields compared to 30-inch rows in certain conditions with yields greater than 180 bushels per acre. Narrow rows have several advantages, such as rapid canopy closure, enhanced weed control, improved light capture, and reduced erosion. Narrow rows can present poor and non-uniform stands (from the use of grain drills or air seeders without metering seeds). Plant-to-plant uniformity is a key factor influencing corn yields. In low-yielding environments (less than 120 bushels per acre), narrow rows can reduce yields. So the traditional 30-inch rows may fit your corn acres if you are predicting lower yields less than 120 bushels.

The **seeding rate** can be very challenging as it significantly depends on the environment, hybrid, and your production practices that you use such as no-till compared to conventional tillage. The key is to study your previous corn crops and evaluate whether the plant density was adequate. Planting date, row spacing, and crop rotations also influence the yield response to plant density or the seeding rate.

Extensive KSU corn research studies with seeding rates using over six, 5-year time periods from 1987 to 2016 showed that optimal seeding rates ranged from 30,500 to 37,900 plants per acre with yields ranging from 135 to 195 bushels per acre.

Last, but certainly not least, is the **planting depth** which is very important as well. The optimum planting depth ranges from 1.5 to 2 inches. Sandy soils, which warm more rapidly, and late planting time under dry conditions require deeper seed placement to place the seed into moisture. Planting depths of more than 3 inches can result in poor stands in any soil condition which can be made worse by soil crusting and greater disease and insect pressures.

K-State Research and Extension has an excellent publication, **"2025 Corn Management"**, that is available ONLINE or at any of our Post Rock District Offices. The publication is an excellent resource that provides detailed information on variety selection, planting, fertilization, insects, weed control and harvesting.

For further information on corn production, contact me at any Post Rock Extension District Office in Beloit, Lincoln, Mankato, Osborne or Smith Center.

Post Rock Extension District of K-State Research and Extension serves Jewell, Lincoln, Mitchell, Osborne, and Smith counties. Sandra may be contacted at swick@ksu.edu or by calling Smith Center, 282-6823, Beloit 738-3597, Lincoln 524-4432, Mankato 378-3174, or Osborne 346-2521. Join us on Facebook at "Post Rock Extension" along with our online weekly Ag News! Also remember our website is www.postrock.ksu.edu and my twitter account is @PRDcrops.