AGRONOMIC ALERT

Technology Development by MONSANTO ®

Late Corn Planting Recommendations in South Dakota

With wet soils and planting just around the corner in South Dakota, many farmers may be thinking about switching to earlier maturity corn hybrids to offset late planting. Yield potential can decrease with delayed planting because of a number of factors, including a shorter growing season, insect and disease pressure, and moisture stress during pollination. However, switching to earlier maturity corn products for late-planting situations should not be automatic.

Corn Maturity

Careful consideration should be given prior to switching to an earlier corn hybrid. Full-season corn products for a given area typically have the highest yield potential, which may help offset an increase in drying costs. As planting is delayed, corn product maturities will come closer together. Corn generally requires 1.6 growing degree units (GDUs) less each day to reach flowering and 6.8 GDUs less each day to reach physiological maturity (black layer) as planting is delayed beyond about May 1.[1] *Therefore, corn planted in late May compared to an optimum date may actually take 125 to 200 fewer GDUs to reach black layer.*

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When to Switch Corn Maturity

The yield for late-planted corn will vary greatly depending on the rest of the growing season. The decision to switch maturity with delayed corn planting is difficult because of variations in growing seasons relative to available GDUs, first frost date, and fall drying conditions.

Table 1 (below) can help with the decision of when to switch to an earlier maturity. The average GDU accumulation for various potential planting dates to the average first frost (28º F) dates for various locations in South Dakota are provided. The GDU accumulations in Table 1 represent an average climate year, however data for representative cool and warm years can be accessed at the South Dakota Climate and Weather website. Figure 1 (page 2) is a map of average first frost dates for South Dakota.

For an example, consider if planting was delayed until the week of May 22 in the Redfield area. A hybrid with a GDU to black layer rating of 2100 GDUs can still be planted because its GDU to black layer rating is below the 2121 potential. Additionally, a hybrid with a GDU to black layer rating of 2100, planted on May 29, should only require 1903 GDUs to black layer [2100-(6.8*29)].

Table 1. Average GDU accumulation from various planting dates to average first frost (28º F) dates in an average climate year in various locations in South Dakota. Reporting dates listed under each location.

Date	Loela (5/1/1899-6/30/2007)	Bowdle (1/1/1893-12/31/1976)	Redfield (1/1/1949-10/31/2009)	Pierre (1/1/1893-10/33/2009)	Brookings (1/1/1893-10/33/2009)
May 8	2313.5	1919.5	2428.5	2761.5	2318
May 15	2278	1868.5	2367	2700	2255.5
May 22	2191	1794	2303	2596	2162.5
May 29	2104	1735	2216	2518	2098.5
June 5	2007.5	1607	2121	2417	2003.5
June 12	1925	1520	2020	2301.5	1897.5

GDU Base temperature of 50° F. Data courtesy of South Dakota Climate and Weather (www.climate.sdstate.edu).

The numbers given are based on averages and should be used only as a reference. The grower must decide what is best for his operation. The main reason for switching corn product maturity is not so much for potential yield, but to reduce the risk of

to pg. 2

from previous page

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immature and wet grain in the fall. Quite often, the increased yield potential of full season products can outweigh the increased cost of drying in the fall. Therefore, the decision to switch to an earlier hybrid should not be made lightly.

Product Considerations

With insect protection and crop safety becoming more important with later planting, corn with Genuity® traits that offer insect protection and herbicide tolerance, such as Genuity® SmartStax® or Genuity® VT Triple PRO™ traits, should be considered. Additionally, even with delayed planting, it is still important to try and minimize the risk of adverse weather during critical growth stages by planting a package of hybrids that range in GDU requirements to flowering as well as maturity. Select hybrids that flower early for their maturity to help reduce of risk of damage from an early frost.

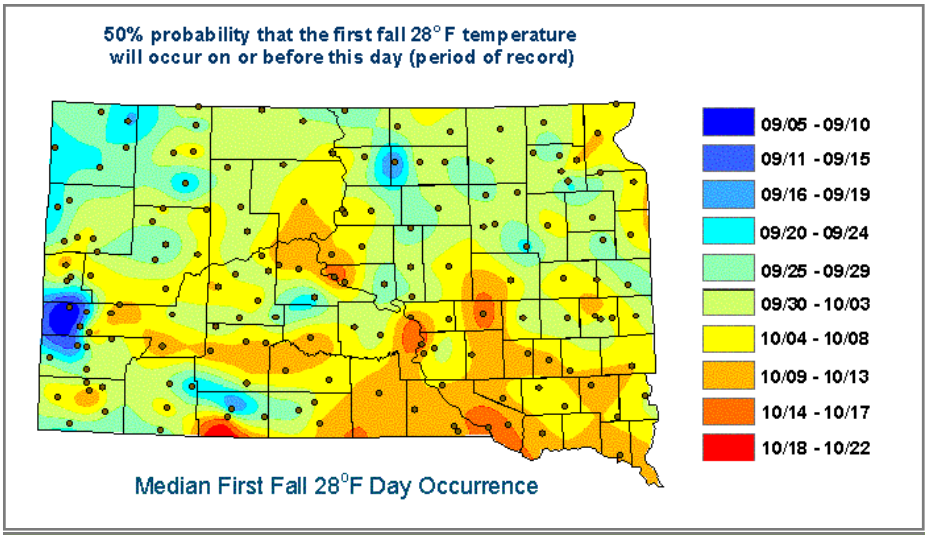

Figure 1. Average first fall freeze dates for South Dakota, according to the South Dakota Climate and Weather. http://www.climate.sdstate.edu (verified 5/2/2022).

Sources: South Dakota Climate and Weather. Data accessed May 2, 2011. http://www.climate.sdstate.edu/ (verified 5/2/11).

[1]S. Brouder et al. 2008. Corn & Soybean Field Guide. ID-179. Purdue University. West Lafayette, Indiana.