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Corn Emergence Problems Across Iowa

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Abstract

Producers recently experienced good planting conditions; these could be the best planting dates for the year. Although we recommend having corn planted by early May if possible, these recommendations are based on research data accumulated from several locations and years where planting date is the only major variable. This kind of information provides insight as to when, on average, is the best time to plant corn in Iowa. Yield variation exists though in relation to planting dates due to the growing conditions which occur during the remainder of the season.

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ICM News

Corn Emergence Problems Across Iowa

May 23, 2008

By Roger Elmore, Elwynn Taylor, and Lori Abendroth, Department of Agronomy

Producers recently experienced good planting conditions; these could be the best planting dates for the year. Although we recommend having corn planted by early May if possible, these recommendations are based on research data accumulated from several locations and years where planting date is the only major variable. This kind of information provides insight as to when, on average, is the best time to plant corn in Iowa. Yield variation exists though in relation to planting dates due to the growing conditions which occur during the remainder of the season.

Although much of Iowa's corn acres were planted after the recommended planting window, it is very possible that the most recent planting dates are the best for 2008 because of the cold and wet spring conditions. By 'best' we mean the ones that maximize yield. We may look back and find these past few days are the ones that maximized yield

this year.

Corn emergence issues will likely occupy much attention in the next two weeks. Iowa's planting season started later and is going longer than in recent history. Delayed emergence and/or poor seedbed conditions in some regions will increase variability in seedling emergence and reduce final plant populations.

As of **18 May 2008**, 78 percent of Iowa corn acres were planted compared to an average of 92 percent. Significant progress was achieved this past week relative to the 11 May report (only 46 percent planted then). In 2007, 88 percent of corn acres were planted at this time.

Soils warmed early this spring then cooled. This condition can bring a crop disaster. Many of us remember a couple of years (especially in the 80's) when crops went in, partially emerged and quit growing when the both the air and soil temperatures cooled. Crop "damping off" problems multiplied. However, **current soil temperatures** have recovered to near 60 degrees F at the 4-inch depth and will likely continue warming.

This is suitable for corn and soybean planting and growth this time of year. Mid-Iowa soil temperatures seldom fall below 50 degrees F after the first of May. This year soil temperature seems to be about 3 weeks behind normal. Both corn and soybean grow best at a soil temperature near 80 degrees F.

Iowa producers continue to plant corn and soybean and many have not taken time to assess some of their early planted fields. It is important to assess crop stands as soon as possible, especially in fields where seedbed conditions were poor to marginal at planting. Much of the corn planted before mid-May is coming up well based on reports from different parts of the state, even though many of this corn was planted into marginal conditions.

Unfortunately, crusting is preventing crop emergence in some fields across the state (Figure 1, Figure 2 and **more photos**). In those cases, producers are hoping for a gentle rain to soften the soil surface and allow for better emergence of their early-planted corn. Planting into marginal conditions this year could not be avoided in some regions.



Figure 1. A corn seedling struggling to emerge through a thick crust. Story County, Iowa, 22 May 2008.



Figure 2. A corn seedling leafing out under the soil surface in an unsuccessful attempt to emerge. Some seedlings like this are growing 1 to 2 inches horizontally in an attempt to reach the surface. Story County, Iowa, 22 May 2008.

Be aware that planting into marginal conditions brings about marginal returns. Resources useful in assessing poor stands and other emergence-related maladies are listed below:

- 1) Information on [normal corn root development](#)
- 2) [Early-season corn stress](#) and some things that go wrong
- 3) [Rootless corn syndrome](#)

- 4) **Uneven corn emergence and heights** due to variable soil conditions and planter adjustment: with a **tool to assess uneven emergence**
- 5) **Problem stands** and **replant** decision making:
- 6) **Off-color corn**

Roger Elmore is professor of agronomy with research and extension responsibilities in corn production. Elwynn Taylor is a professor with responsibilities for developing and implementing extension education and information programs in agricultural climatology. Lori Abendroth is an agronomy specialist with research and extension responsibilities in corn production.

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