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### Lessons from 2008 Corn Planting Date Studies

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Many of us would like to forget the 2008 growing season; although the year turned out better than any of us could have hoped or expected ([see Dec 9 2008 ICM](#) for details on this). Research data from 2008, in general, is more variable due to weather conditions – yet significant lessons were learned from a year that broke several paradigms. This includes our long-term, multi-location planting date research.

Planting date research identifies the window of opportunity to plant corn and get the highest yields and profitability. Extensive planting date studies have occurred across Iowa for decades. Our research team has conducted six to seven locations in each of the past three years. Earlier planting usually pays off, that is until 2008.

We know that planting should begin when soils at planting depth are near 50 degrees F or quickly rising. This typically occurs around April 20 in Iowa. Planting from April 20 through May 5 optimizes yield in most parts of Iowa. Regardless of calendar date, producers should wait for suitable seedbed conditions and the short-term forecast calls for pleasant weather.

#### 2008 Data

Our 2008 planting date data ran a rich gamut of responses: one location with no yield response; three locations had a yield loss only with plantings after late May; and the last location had the highest yield in a June planting. Only one location responded in a way typical of the long-term averages.

Yields in southern Iowa, Chariton, were similar across all planting dates May 1 through June 17 at 160 bu/acre (Figure 1, line a). Yields near Crawfordsville in southeast Iowa were highest at 213 bu/acre, with the earliest planting date of May 5 (Figure 1, line b). Yields declined after May 5 with the lowest yield, 185 bu/acre, for the June 16 planting. It should be noted that the earliest planting date in Crawfordsville was later than at the other locations.

In northwest Iowa, corn yields near Sutherland were lower only with the last planting date (May 28) 186 bu/acre. All the earlier plantings yielded about 207 bu/acre (with trends similar to Figure 1, line d). This trial included both corn following corn and corn following soybeans; the planting date responses were similar between the two systems.

Data from Kanawha, north central Iowa, were similar to that of the Sutherland location in that all four early plantings yielded about the same, 177 bu/acre (Figure 1, line d). Corn planted on June 1 yielded 157 bu/acre.

Two hybrids with different relative maturities were evaluated at Nashua, northeast Iowa. A 98 day hybrid yielded the same for all planting dates except with the last planting date, June 11, which was 20 percent lower than earlier plantings. This response is similar to what we saw at the other northern locations (Figure 1, line d) and was similar in both a corn following corn trial and corn following soybean trial. On the other hand, the 111 day hybrid had

the highest yield associated with an April 30 planting in both experiments; corn following corn 200 bu/acre, and corn following soybeans 219 bu/acre (Figure 1, line c). The lowest yield was with the last planting date. Although the 98 day hybrid was fairly consistent across all planting dates, the 111 hybrid yielded 10 to 15 bu/acre more across all planting dates. In general, the 111 day hybrid results are similar to average responses (as discussed in 2006) where the highest yields are between late April and early May; lower yields are on either side of this window.

In contrast to these data, the other southern location at Lewis, southwest IA, had the highest yield from the June 2 last planting, 211 bu/acre (Figure 1, line e). Yields were less with earlier planting dates, 174 bu/acre yields for April 16.

**Table 1. Iowa State University 2008 planting date studies at 6 ISU Research Farms. Cropping systems and hybrid maturities are shown along with the general response pattern of each combination, as referenced in Figure 1.**

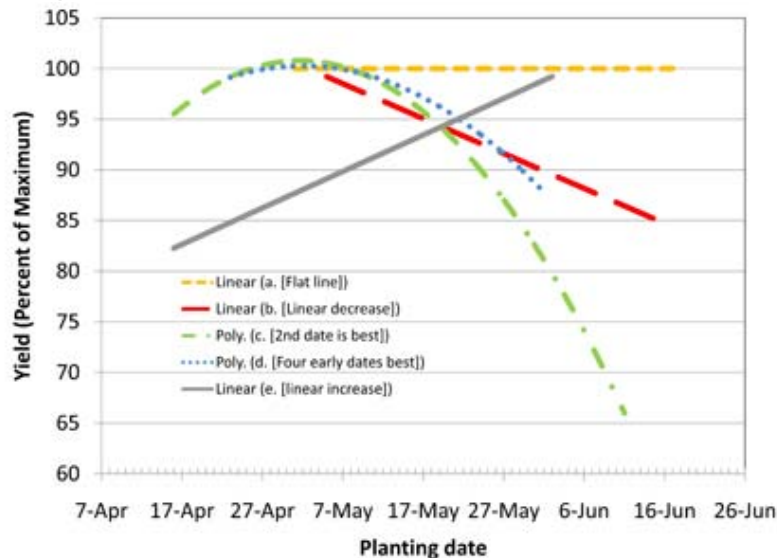
	SW	NW		N	NE			SE	S
Cropping System <sup>1</sup>	CSb	CC	CS	CSb	CC		CSb	CSb	CSb
Hybrid maturity	109d	104d		104d	98d	111d	98d	111d	112d
Response pattern <sup>2</sup>	e	d	d	d	d	c	d	c	b
2008 Planting Dates									
1	16-Apr	23-Apr	23-Apr	23-Apr	16-Apr			5-May	1-May
2	24-Apr	30-Apr	30-Apr	30-Apr	30-Apr			19-May	15-May
3	6-May	8-May	9-May	9-May	13-May			29-May	22-May
4	19-May	19-May	22-May	22-May	25-May			16-Jun	2-Jun
5	2-Jun	28-May	1-Jun	1-Jun	11-Jun			16-Jun	17-Jun

<sup>1</sup> CSb = Corn following Soybean; CC = Corn following Corn.

<sup>2</sup> See Figure 1.

Several questions remain about our 2008 data. What caused the extreme disparity in yields among planting dates and locations? Several factors likely played major roles in these seemingly random responses to planting dates. Most of these are probably related to soil conditions at planting. Data associated with planting date research will always vary from year to year based on the growing season. For this reason, recommendations are never based off of one location or one year of data. As such, consider this data as 'preliminary'; we intend to continue this work in 2009 and summarize 2006-2009 findings next winter.

**Figure 1. Generalized corn yield response patterns to different planting dates, Iowa 2008. Response curve 'c' represents typical long-term averages in Iowa.**



### **Lessons learned in 2008**

- Use long-term averages to determine when to plant corn. Averages allow us to set a stake in the ground from which we can make comparisons and draw conclusions.
- Predicting planting date responses for any specific year or location is difficult.
- Seedbed conditions at planting are critical for stand establishment and early-season growth.
- Weather conditions following planting result in largely unpredictable yield responses.

### **Recommendations for 2009 planting**

Consider planting corn in mid- to late-April if:

- Seedbed conditions are good
- Soil temperatures are close to 50°F and rising
- The forecast is for warm weather for the next five to ten days

After that, plant when soil conditions permit.

For more information on corn production in Iowa, please visit our web page:

<http://www.agronext.iastate.edu/corn/>

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