

Corn Date of Planting and Maturity in Northern Iowa

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Introduction

Inevitably, every year corn planting gets delayed or needs to be replanted because of weather somewhere in Iowa. Even if corn planting starts and progresses in a timely manner, there always is the question of what maturity should be planted. This trial was setup to determine what maturities are well suited for a given geographic location, but also how maturity selection should be adjusted as planting dates get pushed into late spring.

Materials and Methods

This project was conducted at the Northern Research Farm as well as six additional Iowa State University research farms across Iowa in 2014, 2015, and 2016. Each year the same three hybrids (P9526, P0407, and P0987) were planted at four target planting dates (April 15, May 10, June 5, and June 30). The plots were setup in a split plot arrangement with four replications. Target planting date was the whole plot and hybrid was the split plot. A target seeding rate of 35,000 seeds/acre was used. Data collection included growth staging, stand counts, grain yield, and grain moisture.

Results and Discussion

In 2014, the corn grain yields peaked at the second date of planting (DOP) for each hybrid (Table 1). Presumably, the first DOP resulted in depressed yields due to cool, wet planting conditions. In 2015 and 2016, yields decreased with delay in DOP for each hybrid. In all three years, the latest DOP (July 9, June 30, and July 1, respectively) either saw dramatic yield declines or did not reach maturity. These results suggest mid-April to early May is an ideal planting date window.

In 2014, the 104-day P0407 hybrid had the highest yield potential (although not statistically significant), however, the 109-day P0987 hybrid had the highest yield potential in 2015 and 2016 (Table 1). Switching maturity selection to an earlier adapted hybrid may potentially improve yield potential with late June DOP.

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Table 1. Corn grain yield of three hybrids at four planting dates at the ISU Northern Research Farm, Kanawha, IA, in 2014, 2015, and 2016.

| Actual date of planting | P9526 (95-day) | P0407 (104-day) | P0987 (109-day) | Average yield (bu/ac) |
|------------------------------|---------------------|--------------------|--------------------|--------------------------|
| | grain yield (bu/ac) | | | |
| 5/6/2014 | 141.1 | 125.0 | 144.1 | 136.7 |
| 5/18/2014 | 158.6 | 160.8 | 154.9 | 158.1 |
| 6/3/2014 | 140.2 | 130.6 | 134.8 | 135.2 |
| 7/9/2014 | Did not mature | | | - |
| Average yield (bu/ac) | 146.6 | 138.8 | 144.6 | P = 0.0882 |
| | P = 0.7647 | | | |
| 4/17/2015 | 184.1 | 181.7 | 207.2 | 191.0 |
| 5/13/2015 | 178.8 | 168.8 | 196.4 | 181.3 |
| 6/5/2015 | 168.8 | 139.3 | 160.5 | 156.2 |
| 6/30/2015 | 73.3 | 39.7 | 68.7 | 60.6 |
| Average yield (bu/ac) | 151.3 | 132.3 | 158.2 | P < 0.0001 |
| | P < 0.0001 | | | |
| 4/17/2016 | 161.4 | 170.0 | 182.6 | 171.4 |
| 5/18/2016 | 152.3 | 170.2 | 177.6 | 166.7 |
| 6/6/2016 | 146.2 | 137.8 | 149.8 | 144.6 |
| 7/1/2016 | 66.8 | 66.1 | 56.9 | 63.3 |
| Average yield (bu/ac) | 131.7 | 136.0 | 141.7 | P < 0.0001 |
| | P = 0.0038 | | | |

*The P-values below the columns indicate the main effect of hybrid on yield. The P-values to the right of the table refer to the main effect of planting date on yield. P-values for the interaction effect between planting date and hybrid are as follows 2014, P = 0.9132; 2015, P = 0.0511; 2016, P = 0.0005.