

Corn Date of Planting and Maturity in Northeast Iowa

RFR-A1678

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Introduction

Inevitably, every year corn planting get 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 ISU Northeast 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 yield was highest at the first date of planting (DOP) for each hybrid (Table 1). In 2015 and 2016, the first two DOP consistently yielded higher than the last two DOP for all hybrids. However, in each year the latest DOP (June 28, June 30, and June 29, respectively) either did not reach maturity or saw dramatic yield declines. These results suggest mid-April to early May is an ideal planting date window.

In 2014 and 2015, the 109-day P0987 hybrid had the highest yield potential, although the 95-day P9526 hybrid was lower yielding at the first two DOP (Table 1). Switching maturity selection to an earlier adapted hybrid may potentially improve yield potential at DOP in June due to higher fall frost potential.

The dates of emergence, silking, and maturity are presented in Table 2.

Acknowledgements

This project was supported by the ISU Research and Demonstration Farms and the Iowa Agriculture and Home Economics Experiment Station. Seed was provided by DuPont-Pioneer.

Table 1. Corn grain yield of three hybrids at four planting dates at the ISU Northeast Research Farm, Nashua, 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)				
4/19/2014	167.3	175.4	193.6	178.8
5/8/2014	157.3	174.2	188.6	173.4
6/1/2014	168.5	163.3	148.6	160.2
6/28/2014	-----Did not mature-----			-
Average yield (bu/ac)	164.4	171.0	177.0	P = 0.0042
P = 0.0723				
4/15/2015	218.2	217.2	226.1	219.8
5/9/2015	215.5	203.0	213.4	210.6
6/2/2015	189.3	140.8	184.1	171.4
6/30/2015	98.2	53.0	60.2	70.5
Average yield (bu/ac)	182.5	153.5	167.3	P < 0.0001
P = 0.0002				
4/15/2016	180.0	178.1	182.6	180.2
5/9/2016	184.5	190.3	186.3	187.0
6/3/2016	170.2	166.3	177.4	171.3
6/29/2016	110.5	75.2	66.3	84.0
Average yield (bu/ac)	161.3	152.5	153.2	P < 0.0001
P = 0.0601				

*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 = 0.0035; 2015, P = 0.0154; 2016, P = 0.0006.

Table 2. Corn dates of emergence (VE), silking (R1), and maturity (R6) for three hybrids at four planting dates at the ISU Northeast Research Farm, Nashua, IA, in 2014, 2015, and 2016.

Actual date of planting	Emergence (VE)			Silking (R1)			Maturity (R6)		
	P9526 (95-day)	P0407 (104-day)	P0987 (109-day)	P9526 (95-day)	P0407 (104-day)	P0987 (109-day)	P9526 (95-day)	P0407 (104-day)	P0987 (109-day)
	4/19/2014	5/14	5/14	5/14	7/18	7/23	7/24	9/19	9/25
5/8/2014	5/24	5/24	5/24	7/21	7/24	7/26	9/19	9/25	10/15
6/1/2014	6/8	6/8	6/8	8/1	8/7	8/11	10/8	10/25	10/25
6/28/2014	7/4	7/4	7/4	8/25	8/28	8/29	Did not mature		
4/15/2015	5/6	5/6	5/7	7/9	7/19	7/21	9/18	9/22	9/26
5/9/2015	5/21	5/21	5/22	7/18	7/25	7/26	9/23	9/28	9/30
6/2/2015	6/8	6/8	6/8	7/29	8/3	8/4	9/30	10/2	10/6
6/30/2015	7/5	7/5	7/5	8/23	8/31	8/31	10/27	Did not mature	
4/15/2016	5/6	5/6	5/6	7/13	7/20	7/18	9/11	9/17	9/20
5/9/2016	5/23	5/23	5/23	7/16	7/21	7/21	9/15	9/20	9/22
6/3/2016	6/9	6/9	6/9	7/26	8/3	8/2	10/14	10/6	10/8
6/29/2016	7/4	7/4	7/4	8/19	8/25	8/26	10/14	Did not mature	

*Some dates are an average across replications.