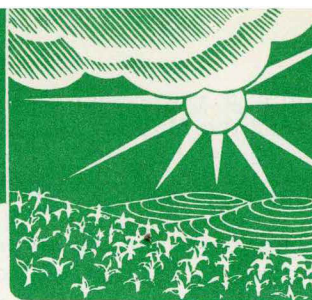


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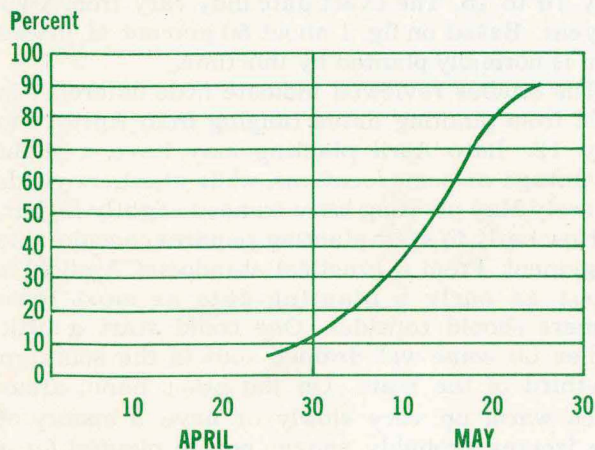
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Corn Planting Dates

During recent years there has been a trend toward planting corn earlier in Iowa. Some of the reasons for this are: 1) improved fungicide seed treatments, 2) herbicides for weed control, 3) less farmers' concern over losing a stand due to a late spring freeze, and 4) research data showing higher yields from early planted corn.

Figure 1 shows the percent planted on various dates for the 5-year period from 1968 to 1972 according to the Iowa Crop and Livestock Reporting Service. Most corn is planted over a month's span from late April to late May. The most active period is from May 10 to May 20, although this will vary from year to year. In 1972 and 1973 farmers planted over 50 percent of the Iowa corn acreage in one week.

Fig. 1 Percent of Corn Planted in Iowa, 1968-72 Average.



Planting Date Research

In 1961 an experiment was started in northwest Iowa to study the effect of planting date on yield,

Prepared by G.O. Benson and H.E. Thompson, extension agronomists. Appreciation is expressed to K.W. Ross, K. Driftmier, and W. Fruehling, outlying experimental farm managers, for their work on these studies.

time of emergence, date of silking, and grain moisture. Results of the first 5 years of this study are given in table 1. Top yields were achieved with early May planting, so the experiment was revised in 1966 so that April planting dates could also be studied. Results from the last 8 years are given in table 2.

Table 1. Effect of planting date on corn yield and maturity. Galva-Primghar Experimental Farm, Sutherland, 1961-65.

Planting Date	Emergence Date	Silking Date	Percent Grain Moisture		Yield bu/a
			Oct. 4*	Oct. 25**	
May 2	May 14	July 23	29.1	18.8	130
May 10	May 21	July 25	31.3	19.8	128
May 20	May 30	July 31	36.4	22.9	120
May 30	June 7	Aug. 5	40.7	26.9	111

*Normal freeze date.

**Harvest date.

Table 2. Effect of planting date on corn yield and maturity. Galva-Primghar Experimental Farm, Sutherland, 1966-73.

Planting Date	Emergence Date	Silking Date	Percent Grain Moisture		Yield bu/a
			Oct. 4*	Oct. 25**	
April 16	May 10	July 23	31.8	22.6	126
April 24	May 14	July 24	32.6	22.9	124
May 3	May 18	July 26	33.4	23.9	122
May 12	May 24	July 28	36.1	26.1	123

*Normal freeze date.

**Harvest date.



Results from the first 5 years showed a fairly sharp decline in yield for the May 20 and May 30 planting dates. Eight years of results indicate no yield difference for planting dates from April 16 to May 12.

With increased drying costs and energy supply problems, grain moisture content cannot be ignored—this gives an edge to the earlier planting dates. Higher moisture is associated with later emergence and delayed silking.

In this work it has been noted that late silking is of greatest concern in years of short moisture supply. The reason is that the critical silking stage will more likely coincide with a period of greater moisture stress.

A similar experiment was started in 1966 in southern Iowa. Results for 6 years are presented in table 3. The 1970 results are not included because planting could not be accomplished on all dates.

Table 3. Effect of planting date on corn yield. Shelby-Grundy Experimental Farm, Beaconsfield.

Planting Date	Yield						Average	Harvest Moisture (%)
	1966	1967	1968	1969	1971	1972		
	bushels per acre							
April 17	123	114	140	118	138	157	132	17.9
April 24	118	111	139	123	145	143	130	19.1
May 2	124	96	128	131	137	138	126	20.2
May 12	117	107	115	141	135	144	126	22.3

An important fact to observe is the large year to year variation in the results. Though not always explainable, this is typical of actual observations. The 1970 results are not included because of a missed planting date, but corn planted in late May yielded nearly 20 bushels more than the late April planting. Although more year to year variation was found with this experiment, the results are similar to those from northwest Iowa.

Results from a 3-year study in western Iowa are

Table 4. Effect of planting date on corn yield. Western Iowa Experimental Farm, Castana, 1967-69.

Planting Date	Percent Harvest Moisture	Yield bu/a
April 17	20.1	112
April 21	21.5	111
May 1	22.5	111
May 9	24.3	114

presented in table 4. No significant yield difference was found between April 17, April 21, May 1, and May 9 plantings.

A 2-year test in north-central Iowa produced 138, 137, 141, and 148 bushels per acre with April 15, 22, 29, and May 9 plantings respectively. A greater loss of stand occurred with the April planting dates, which may have contributed to the lower yields.

The effect of planting dates ranging from April 17 to June 7 on the physiology and morphology of corn was studied at Ames by Iowa State researchers. Some of the conclusions they reached were as follows:

1. Population—intolerant hybrids (those unable to withstand thick planting) were more adversely affected by delayed planting than were population-tolerant hybrids. Population-intolerant hybrids become more population tolerant when planted early.

2. With delayed planting, the length of time from tasseling to silking became longer. This delay in silking resulted in more barren plants, even with irrigation.

3. Late plantings, especially with higher populations, resulted in more small, spindly plants dispersed among the more normal ones.

4. Mid- to late-May plantings produced taller plants, greater ear height, and more lodging than earlier or later planting dates.

Planting Date Recommendations

Long-term studies indicate that on the average, yields start to decline when corn is planted after May 10 to 15. The exact date may vary from year to year. Based on fig. 1 about 50 percent of Iowa's corn is normally planted by this time.

The studies reviewed indicate little difference in yield from planting dates ranging from April 16 to May 12. Late April planting may have a slight advantage at some locations, while at others yields for early May planting have trended slightly higher.

How early to start planting requires considerable judgement. From a practical standpoint April 20 is about as early a planting date as most Iowa farmers should consider. One could start a little earlier on some well-drained soils in the southern one-third of the state. On the other hand, areas which warm up very slowly or have a history of late freezes probably should not be planted for a week or so after April 20. These would be low lying peat soils, river bottoms and parts of north-east Iowa.

Rather than an exact date, key factors to consider relative to April planting are seedbed conditions and over-all environmental conditions. Ideal conditions would be a soil temperature at planting depth of 50°F. or above and a favorable 5-day weather forecast.

However, day to day temperature variation and lack of readily available daily soil temperatures make this tool of moderate value. Most airport soil temperature readings, which are available, are taken under grass and are several degrees lower

than those under tilled soil. In most of Iowa, if soil conditions and temperatures are favorable, starting to plant the last 10 days of April should be to a farmer's advantage. In May the only consideration should be the seedbed.

When planting in late April, consider the following management tips: 1) plant no deeper than 2 inches, 2) plant a few more seeds to achieve a given stand—approximately 1,000 more seeds per acre than in May, 3) plant fuller season hybrids first, and 4) be sure of your weed control program because weeds are more competitive with corn under cool conditions.

There is some increase in risk with early planting. Replanting may occasionally be required, but the long-term benefits far outweigh this cost. With energy costs increasing, the benefit of lower grain moisture levels produced by early planted corn is likely to increase.

Summary

How early the planting needs to begin in order to finish by May 10 depends on how many acres

can be planted in a day, how many work days are available, and how many acres one has to plant. During late April and early May, a few more than half the days are suitable for working in the field on the average.

Over a period of years, April 20 to May 10 is the best time to plant corn in much of Iowa. To finish planting by May 10 is a goal which an Iowa farmer should work toward.

According to the old timers, "When the oak leaf is as big as a squirrel's ear, it's time to plant corn." Since leaf development is the result of the amount of heat units which have been received in a particular spring, such a guide wasn't too bad a few years ago. However, with improved fungicide seed treatments and better early season weed control with herbicides, modern farmers are ahead by starting earlier.

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