

Project Title: 2019 Corn Planting Date Study

Objective: To evaluate the effect of planting date and days to maturity rating on silage production and grain yield and quality

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Summary:

Two corn varieties, P8034R (80 days) and H2512 (75 days) were sown on three planting dates (April 25, May 6, and May 23). Table 1 shows detailed agronomic and management information. Silage and grain yields were recorded.

Overall, yield loss was observed with later planting dates (Table 2). Although caution should be noted when planting early. There is a chance of lowered soil temperature in the last week of April (Figure 1).

The production challenge observed was predatory birds. The negative grain yield impact due to birds is related to planting date and corn maturity (Figure 2). The later-planted and the 80-day corn is more prone to grain yield loss due to predatory birds than the earlier-planted and the 75-day corn (Table 2). Also, yield reduction due to predatory birds on 80-day corn is greater than the 75-day corn (Table 3).

The takeaways, from only one year of data, are: 1) yield reduction with delayed planting (3rd week of May, see also economic loss in Figure 3), 2) higher yield potential with 80-day corn than 75-day, but the 80-day is prone to wildlife feeding and also delayed harvest, 3) planting date had no negative impact if corn is planted only for silage, and 4) the 80-day corn performed better as silage.

Table 1. Management information

Seeding date: 4/25, 5/6, 5/23	Field Location: X1
Julian date: 114/126/143	Harvest date: Silage: 9/18 Grain: 12/9
Seeding rate: 28,000 plants/A	Julian date: 261/343
Previous crop: Peas	Soil type: Silt loam
Herbicide: Stinger: 6/5 Round-up PowerMax: 6/10	Tillage: Conventional
Insecticide: None	Soil residual nutrient (NO ₃ ⁻ , P, K lb/A): 144-10-250
Fungicide: None	Nutrient fertilizer applied (N, P ₂ O ₅ , K ₂ O lb/A): 150-50-20

Table 2. Influence of planting date to grain yield. Same letter assignment denotes no statistical difference ($P = 0.05$).

Planted	------(bu/A@15% moisture)-----	
	Estimated with the absence of predatory birds	Actual grain yield with the predatory birds
April 25	216a	195a (-10%)
May 06	180b	165a (-8%)
May 23	134c	111c (-18%)

Table 3. Influence of relative maturity to grain yield and silage. Same letter assignment denotes no statistical difference ($P = 0.05$).

Relative Maturity	------(bu/A@15% moisture)-----		Tons/A@ 60% moisture
	Absence of predatory birds	Actual grain yield with the predatory birds	Silage
80 days (P8034R)	190a	164a (-14%)	27.8 a
75 days (H2512)	163b	149a (-8%)	24.9 b

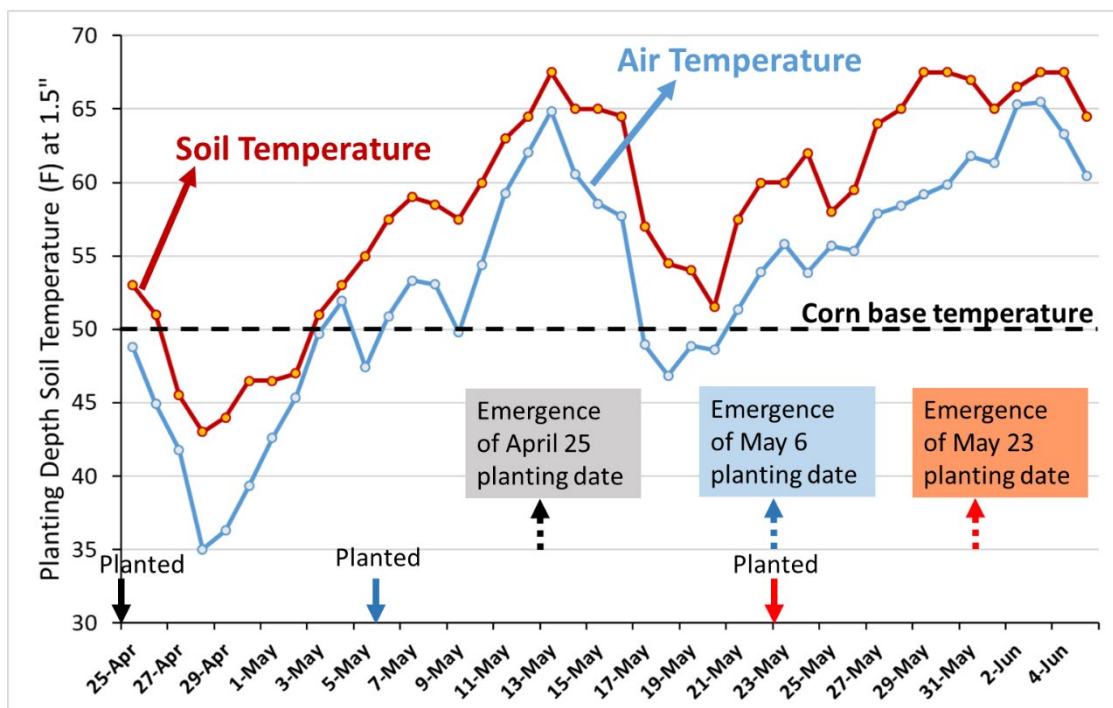


Figure 1. Trend of the soil and air temperatures with the corn planting dates and their corresponding day of emergence.

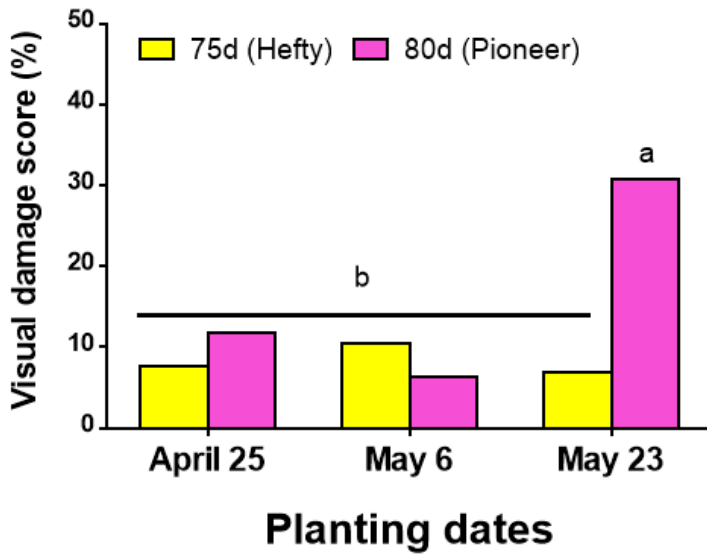


Figure 2. Percent damage to predatory birds with planting dates and relative maturity of corn. Same letter assignment denotes no statistical difference ($P = 0.05$).

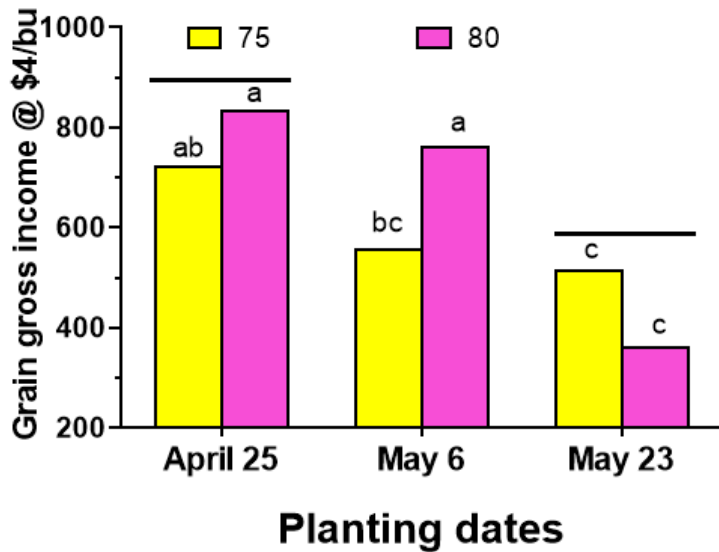


Figure 3. Grain gross adjusted income with planting dates and relative maturity of corn. Same letter assignment denotes no statistical difference ($P = 0.05$).