



Planting Date and Hybrid Influence On Corn Silage Yield and Quality

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Significant Findings:

- Delay in planting reduces silage and ear yield.
- Amount of yield reduction varies in different years depending on weather condition.
- Yield of early maturity hybrids was similar to late at varying planting dates for silage and ear yield.
- Shorter-season hybrids had a higher percent ear yield.
- A combination of early planting and use of shorter-season corn hybrids provides the opportunity for farmers to plant a cover crop early enough to maximize N recovery after corn and fall manure application.

Background:

- Using a farm system approach with early maturity corn hybrids for silage, early planting of corn, and cover crops will maximize end-of-season nitrogen accumulation for lower input costs, and environmental protection.
- Field studies were conducted over several years mostly at the UMass Research Farm in Deerfield, MA examining the impact of seeding date.

Planting Date:

- Planting dates varied from April 20 to June 23 in 5 field studies over 4 years (2005 - 2008).
- Delayed planting reduced yield (Figs. 2, 4), and the difference was more than the differences in yield between early and late maturing hybrids (Figs. 5, 6, 8, 9).
- Percent ear yield was stable across planting dates for short season hybrids but decreased for full season hybrids (Figs. 4), and relative yield and quality was lower for late hybrids especially with delayed planting (Fig. 7).
- Delayed planting delayed harvesting and thus the date for seeding cover crop (Fig. 1).
- Days from planting to harvest was much greater than relative maturity indicated by company (Fig. 3).

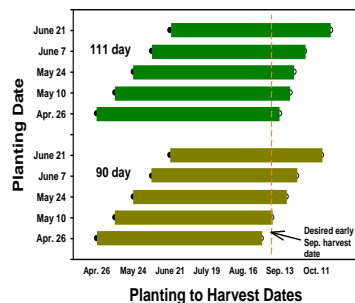


Figure 1. Planting and harvest dates for an early and a late maturing corn hybrid.

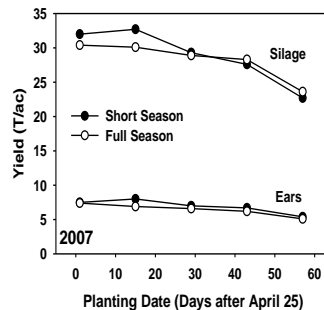


Figure 2. Mean silage and ear yields for early and late maturing corn hybrids.

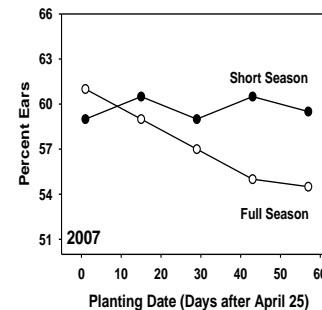


Figure 4. Mean percent ears for early and late maturing corn hybrids.

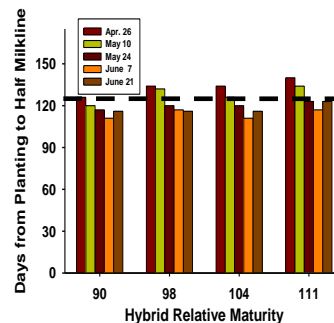


Figure 3. relative maturity of corn hybrids. Dash line added for reference for early hybrid, first planting date.

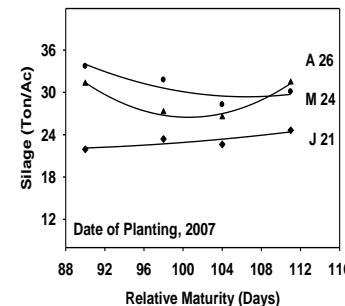


Figure 5. Silage yield of four corn hybrids on three planting dates.

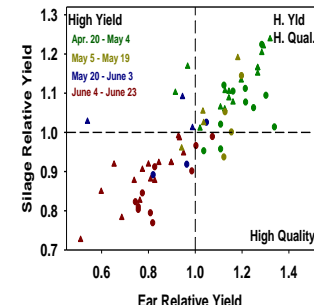


Figure 7. Relative yield of corn planted on diff. dates in 5 expt. site years. ● early, ○ late hybrids.

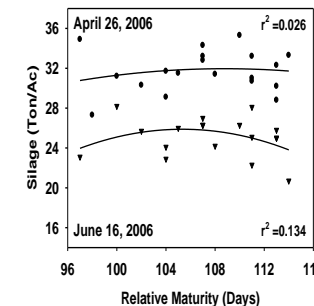


Figure 8. Silage yield of corn hybrids on two planting dates.



Corn Planting Date

Table 1. Influence of planting time on silage and ear yield and silage quality of shorter-season and full-season corn hybrids. (Numbers in parenthesis are weighted average of hybrids and number of years).

Planting period	Silage (ton/acre)		Ear (ton/acre)		
	Percent Ear				
Full	Short	Full	Short		
April 20 – May 4 (11)	31.1 (11)	32.0 (7)	7.3 (11)	7.2 (7)	58.3
May 5 – May 19 (13)	30.2 (13)	30.5 (9)	7.0 (13)	6.2 (9)	58.0
May 20 – June 3 (5)	26.1 (5)	28.6 (5)	6.0 (5)	5.7 (5)	56.4
June 4 – June 23	24.4 (14)	24.3 (10)	5.1 (14)	4.6 (10)	52.2 (14)
	45.0 (10)				
Reduction due to 20%	22%	25%	31%	37%	10%

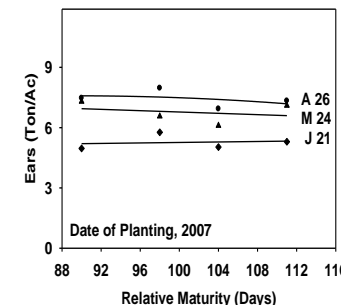


Figure 6. Ear yield of four hybrids on three planting dates.

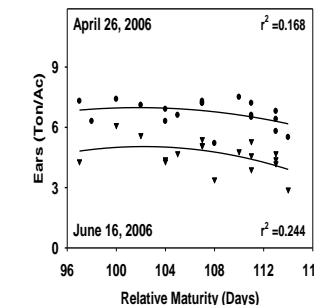


Figure 9. Ear yield of hybrids on two planting dates.