

Evaluating Corn Relative Maturity for Improving Cover Crop Establishment

Study ID: 708077201702

County: Greeley

Soil Type: Gates silt loam

Planting Date: 5/12/17

Harvest Date: 11/15/17

Population: 20,000

Row Spacing (in): 30

Reps: 4

Tillage: No-Till

Herbicides: *Pre:* 16 oz/ac 2,4-D LV4, 24 oz/ac Durango® DMA® on 4/18/17 *Post:* 3 qt/ac Lexar® EZ and 24 oz/ac Durango® DMA® on 6/15/17

Foliar Insecticides/Fungicides: None

Fertilizer: 5 gal/ac 10-34-0 and 1 qt/ac Zinc as starter; 75 lb/ac N as 46% Urea and 10 lb/ac S (AMS) at planting; 75 lb/ac N as 32% UAN at V6

Irrigation: None

Rainfall (in):



Introduction: Cover crops have the potential to provide several ecosystem services, which is why more corn producers are finding ways to integrate them into their cropping systems. One of the primary limitations to fall planted cover crops in Nebraska is the limited growing window following corn. Recent small plot research at the University of Nebraska found that shorter season comparative relative maturity (CRM) (95 CRM) corn hybrids have similar yields to longer season CRM hybrids (111 CRM). This research also showed the potential for greater cereal rye biomass accumulation following the 95 CRM hybrid compared with the 111 CRM hybrid. Based on these results our objective is to evaluate corn growth, development, and yield for different CRM hybrids using on-farm research. In this study four different CRM corn hybrids were evaluated.

95 day CRM = DKC 45-65 RIB (GENSS RIB)

105 day CRM = DKC 55-20 RIB (GENSS RIB)

111 day CRM = DKC 61-54 RIB (GENSS RIB)

115 day CRM = 215-83STXRIB (GENSS RIB)

Results:

	Corn Test Weight	Corn Moisture (%)	Corn Yield (bu/acre) [†]	Corn Marginal Net Return [‡] (\$/ac)
95 Day CRM	60 AB*	14.1 C	88 B	253.77 B
105 Day CRM	59 BC	14.4 C	100 AB	293.94 AB
111 Day CRM	61 A	15.7 B	104 AB	302.94 AB
115 Day CRM	59 C	16.3 A	109 A	331.56 A
P-Value	0.002	<0.0001	0.058	0.019

*Values with the same letter are not significantly different at a 90% confidence level.

[†]Bushels per acre corrected to 15.5% moisture.

[‡]Marginal net return based on \$3.15/bu corn and assumes hybrids have same cost.

Summary:

- There were significant differences in test weight, with the 111 day and 95 day having the highest test weight.
- There were significant moisture differences. Despite the late harvest date of November 15, the 115 day corn was still at 16.3% moisture.
- Yield trend showed an increasing yield as the relative maturity increased. The 95 day corn was significantly lower yielding than the 115 day corn but was not significantly lower yielding than the 105 or 110 day corn.
- The 95 day corn had a significantly lower marginal net return than the 115 day corn, but was not significantly lower yielding than the 105 or 110 day corn. Marginal net return does not take into account varying seed corn prices.

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