

FIELD EXPERIMENT HISTORY

Title: Sweet Corn Leaf Area Reduction

Experiment: 16Sweet

Trial ID: 6326

Year: 2020

Personnel: Joe Lauer, Thierno Diallo, Kent Kohn.

Location: Arlington, WI

County: Columbia

Supported By: HATCH, National Crop Insurance Services.

Site Information

Field: ARS 374

Previous Crop: Soybean

Soil Type: Plano Silt Loam

Soil Test Date: 11/12/18

pH: 7.0 **OM (%)**: 2.6

P (ppm): 15

K (ppm): 109

Plot Management

Tillage Operations: Field Cultivator

| | <u>Analysis:</u> | <u>Product Rate lbs/A:</u> | <u>Date:</u> |
|---------------------|------------------|----------------------------|--------------|
| Fertilizer: | | | |
| Preplant : | 46-0-0 | 250 | 5 /1 /20 |
| Starter : | N/A | N/A | N/A |
| Post plant : | N/A | N/A | N/A |
| Manure: | N/A | N/A | N/A |

| | | | |
|-------------------|--|---------------------|---------------------|
| Herbicide: | Moccasin II Plus @ 24 oz/acre 5/22/20 | Insecticide: | N/A |
| | Durango DMA @ 24 oz/acre 5/22/20 | Hybrid: | Syngenta - Overland |
| | Cavallo 4SC @ 6 oz/acre 5/22/20 | | |

Irrigation: N/A

Planting Date: 5/21/20 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 23500 plants per acre **Planting Method:** JD1700 w RTK

Harvest Date: 8/24/20 **Harvest Method:** Hand Harvest

Notes:

Experimental Design

Design: RCB 5 x 4 Factorial

Replications 4

Plot Size Seeded: 10' x 25'

Experiment Size: 0.5 A

Harvest Plot Size: 5' x 17.5'

Harvest Plant Density: 24150 plants per acre

Factors/Treatments:

Percent leaf area reduction @ stages:

- 1 - 0% Control 1
- 2 - 0% Control 2
- 3 - 0% Control 3
- 4 - 100% reduction @ V5
- 5 - 25% reduction @ V8
- 6 - 50% reduction @ V8
- 7 - 75% reduction @ V8
- 8 - 100% reduction @ V8
- 9 - 25% reduction @ V13
- 10 - 50% reduction @ V13
- 11 - 75% reduction @ V13
- 12 - 100% reduction @ V13
- 13 - 25% reduction @ Tassel
- 14 - 50% reduction @ Tassel
- 15 - 75% reduction @ Tassel
- 16 - 100% reduction @ Tassel
- 17 - 25% reduction @ Blister
- 18 - 50% reduction @ Blister
- 19 - 75% reduction @ Blister
- 20 - 100% reduction @ Blister

Results: Table 2016-01

**Table:2016-01. Influence of Sweet Corn Leaf Area Reduction on Yield.
Arlington, WI - 2020.**

| Thin time | Reduction percent | Main | Secondary | Total | 5-ear | 5-ear | Cut | Fresh | Dry | Average | | Harvest density | Tiller propensity |
|-----------------------|----------------------|-----------------------|-----------------------|-------------------|-------------------|-----------------|-------------------|----------------|----------------|-------------|-----------|--------------------|----------------------|
| | | Unhusked ear yield | Unhusked ear yield | Unhusked yield | Unhusked yield | Husked yield | grain moisture | grain yield | grain yield | Leave/plant | Ear/plant | | |
| | % | T/A | T/A | T/A | T/A | T/A | % | T/A | T/A | no. | no. | plants/A | 0 - 6 |
| Control 1 | 0 | 6.7 | 0.3 | 7.0 | 9.4 | 8.4 | 71.3 | 5.4 | 1.6 | - | 1.0 | 26500 | 0 |
| Control 2 | 0 | 5.7 | 0.8 | 6.5 | 8.5 | 7.7 | 71.1 | 4.9 | 1.4 | - | 1.0 | 25500 | 1 |
| Control 3 | 0 | 6.9 | 0.3 | 7.2 | 8.7 | 7.8 | 71.3 | 4.9 | 1.4 | - | 1.0 | 23000 | 1 |
| V5 | 100 | 6.9 | 0.4 | 7.4 | 9.2 | 7.7 | 70.8 | 5.0 | 1.5 | 7 | 1.0 | 24500 | 1 |
| V8 | 25 | 6.2 | 0.6 | 6.8 | 8.4 | 7.5 | 73.8 | 4.7 | 1.2 | 11 | 1.0 | 23500 | 1 |
| V8 | 50 | 6.1 | 0.5 | 6.6 | 9.1 | 8.0 | 71.5 | 5.1 | 1.5 | 12 | 0.9 | 24750 | 1 |
| V8 | 75 | 6.7 | 0.6 | 7.3 | 8.9 | 7.8 | 73.3 | 5.0 | 1.3 | 12 | 1.0 | 24750 | 2 |
| V8 | 100 | 5.9 | 0.6 | 6.5 | 8.3 | 7.4 | 71.3 | 4.7 | 1.4 | 11 | 1.0 | 24250 | 1 |
| V13 | 25 | 6.1 | 0.5 | 6.6 | 8.6 | 7.6 | 71.7 | 4.7 | 1.3 | 13 | 1.0 | 23500 | 1 |
| V13 | 50 | 5.7 | 0.6 | 6.3 | 8.7 | 7.7 | 71.5 | 4.9 | 1.4 | 13 | 0.9 | 24250 | 2 |
| V13 | 75 | 4.8 | 1.1 | 5.9 | 8.3 | 7.2 | 71.8 | 4.5 | 1.3 | 12 | 1.0 | 24250 | 1 |
| V13 | 100 | 0.1 | 0.9 | 0.9 | 0.3 | 0.3 | 72.0 | 0.2 | 0.2 | 13 | 0.4 | 21500 | 1 |
| Tassel | 25 | 5.6 | 0.7 | 6.3 | 8.6 | 7.6 | 69.9 | 4.9 | 1.5 | 12 | 1.0 | 23500 | 1 |
| Tassel | 50 | 4.9 | 0.7 | 5.6 | 8.4 | 7.4 | 72.6 | 4.9 | 1.3 | 12 | 0.9 | 22750 | 2 |
| Tassel | 75 | 5.2 | 0.9 | 6.0 | 8.3 | 7.3 | 70.6 | 4.7 | 1.4 | 12 | 1.0 | 23750 | 2 |
| Tassel | 100 | 0.2 | 0.3 | 0.5 | 1.4 | 1.0 | 74.1 | 0.6 | 0.4 | 12 | 0.2 | 24500 | 0 |
| Blister | 25 | 5.3 | 0.9 | 6.2 | 8.6 | 7.6 | 71.4 | 4.7 | 1.3 | 11 | 0.9 | 26250 | 0 |
| Blister | 50 | 5.9 | 0.8 | 6.7 | 7.9 | 7.1 | 70.9 | 4.5 | 1.3 | 11 | 1.0 | 23000 | 2 |
| Blister | 75 | 5.7 | 0.7 | 6.4 | 8.0 | 7.2 | 72.1 | 4.6 | 1.3 | 11 | 1.0 | 23250 | 1 |
| Blister | 100 | 2.9 | 1.3 | 4.2 | 6.3 | 5.5 | 73.4 | 3.2 | 0.9 | 11 | 0.9 | 25750 | 0 |
| Mean | | 5.2 | 0.7 | 5.8 | 7.7 | 6.8 | 71.8 | 4.3 | 1.2 | 11 | 0.9 | 24150 | 1 |
| Probability(%) | | | | | | | | | | | | | |
| Reduction time (T) | | 0.0 | 1.9 | 0.0 | 0.0 | 0.0 | 43.5 | 0.0 | 0.0 | 0.0 | 0.0 | 7.8 | 24.9 |
| Reduction percent (P) | | 0.0 | 55.1 | 0.0 | 0.0 | 0.0 | 50.9 | 0.0 | 0.0 | 56.7 | 0.0 | 89.7 | 3.1 |
| T x P | | 0.0 | 5.8 | 0.0 | 0.0 | 0.0 | 3.5 | 0.0 | 0.0 | 13.3 | 0.0 | 5.6 | 27.5 |
| LSD (0.10) | | | | | | | | | | | | | |
| Reduction time (T) | | 0.7 | 0.3 | 0.6 | 0.7 | 0.6 | NS | 0.4 | 0.1 | 0 | 0.1 | 1466 | NS |
| Reduction percent (P) | | 0.5 | NS | 0.5 | 0.5 | 0.4 | NS | 0.3 | 0.1 | NS | 0.1 | NS | 1 |
| T x P | | 1.0 | 0.4 | 0.9 | 1.0 | 0.9 | 2.2 | 0.6 | 0.2 | NS | 0.1 | 2199 | NS |