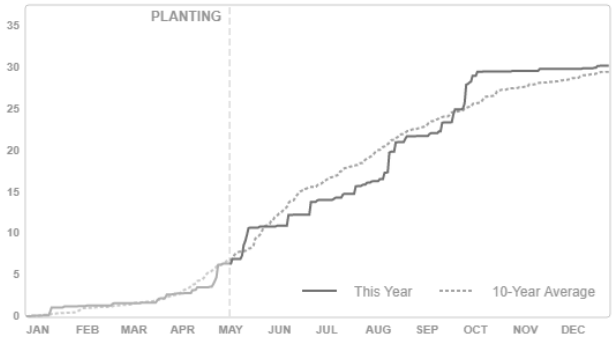
Foliar and In-Furrow Fertilizers Applied to Soybeans with Iron Chlorosis

Study ID: 722121201701
County: Merrick
Soil Type: Lex loam; Platte loam; Alda loam
Planting Date: 5/8/17
Harvest Date: 10/16/17
Population: 175,000
Row Spacing (in): 36
Variety: Syngenta S30-C1
Reps: 3
Previous Crop: Corn
Tillage: Ridge-Till and Cultivate
Herbicides: ***Post:*** 44 oz/ac glyposate and 12 oz/ac Flexstar® on 6/20/17
Seed Treatment: Dyna-Start® PBC and CruiserMaxx®

Foliar Insecticides: 5 oz/ac Bifenture® on 6/20/17
Fertilizer: 15 gal/ac 10-34-0
Irrigation: Pivot
Rainfall (in):



Introduction: Highly calcareous soils with pH levels above 7.8 can result in crops with symptoms of iron chlorosis. The soil at this site has a pH of 8.1 and iron chlorosis has been an issue on the field. This study tested several in-furrow and foliar applied fertilizer treatments.

All treatments including the check had 15 gal/ac of 10-34-0 in 2-by-2 orientation.

The products tested were:

- Toggle™ applied at a rate of 40 oz/ac at V2
- Max-IN® Iron applied at a rate of 32 oz/ac at V2
- Toggle™ at 40 oz/ac + Max-IN® Iron at 32 oz/ac at V2
- Aurora Bean Starter™ applied at a rate of 1 gal/ac at planting in-furrow
- Toggle™ at 8 oz/ac + IronForce-H at 80 oz/ac applied at planting in-furrow.

Yield, protein, oil, seed weight, and moisture were recorded.

Toggle™

0.1 - 0.4 - 1.6

GUARANTEED MINIMUM ANALYSIS

Total Nitrogen (N)	0.1%
0.1% Water Soluble Nitrogen	
Available Phosphate (P_2O_5)	0.4%
Soluble Potash (K_2O)	1.6%
Derived from 100% *Ascophyllum nodosum*	

Product info from:
http://www.kellysolutions.com/erenewals/documentsubmit/KellyData/ND%5CFertilizer%5CProduct%20Label%5CToggle_3_27_2015_3_08_21_PM.pdf

MAX-IN® Iron

The Next Generation of Foliar Nutrition
With
CornSorb® Technology
12-0-0

GUARANTEED ANALYSIS

Total Nitrogen (N)	12.0%
12.0% Urea Nitrogen	
Iron (Fe)	5.0%
5.0% Water Soluble Iron (Fe)	
Manganese (Mn)	1.0%
1.0% Water Soluble Manganese (Mn)	

Derived From: Urea, Ferrous Sulfate and Manganese sulfate

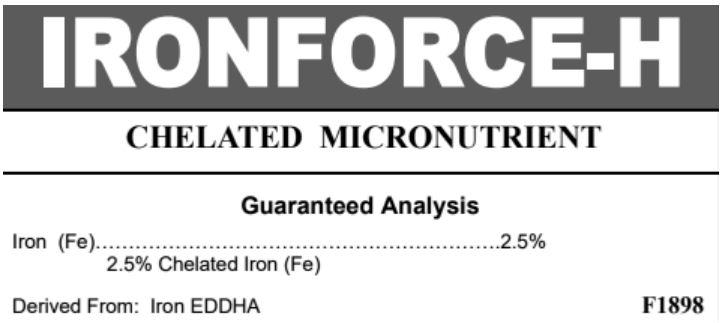
Product info from:
http://www.kellysolutions.com/erenewals/documentsubmit/KellyData/ND%5CFertilizer%5CProduct%20Label%5C20011521 6_5_16_2016_2_56_24_PM.pdf

GENERAL INFORMATION

Aurora Bean Starter is a new starter specifically designed for soybeans. **Aurora Bean Starter** does not contain any N-P-K, so, seed safety is not at risk and early season growth can be optimized.

Aurora Bean Starter stimulates increased early-season nodulation and root mass and improves uptake of applied nutrients.

Product info from:
https://auroracoop.com/img/pdf/Emerge%20TogetherWin%20Together.pdf



Product info from:
http://www.kellysolutions.com/erenewals/documentsubmit/KellyData/ND%5CFertilizer%5CProduct%20Label%5CIRONFORCE_H_10_23_2014_1_41_29_PM.pdf

Results:

	Moisture (%)	Protein (%)	Oil (%)	Weight (grams/ 100 seeds)	Yield (bu/acre)†
Check	10.8 A*	38.7 A	19.9 A	21 A	76 A
Toggle at V2	11.0 A	38.6 A	20.4 A	21 A	78 A
Max-IN Iron at V2	11.3 A	38.9 A	20.4 A	21 A	78 A
Toggle + Max-IN Iron at V2	10.8 A	38.6 A	19.9 A	21 A	79 A
Aurora Bean Starter at Planting	11.1 A	39.1 A	20.2 A	21 A	79 A
Toggle + IronForce-H at Planting	10.9 A	38.7 A	19.9 A	21 A	80 A
P-Value	0.837	0.789	0.319	0.509	0.535

*Values with the same letter are not significantly different at a 90% confidence level.
†Bushels per acre corrected to 13% moisture.

Summary:

- None of the products tested increased yield compared with the check.
- Moisture, oil, protein, and seed weight were also not affected by any of the products.
- Costs for all products were not available; therefore, net return calculations are not provided.

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Nebraska Dry Bean Commission

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