

Soa Soap Foliar Application on Corn

Study ID: 441035201601

County: Clay

Soil Type: Crete silt loam 0-1% slope; Hastings silt loam 3-7% slopes

Planting Date: 5/5/16

Harvest Date: 10/21/16

Population: 34,000

Row Spacing (in): 30

Hybrid: Dekalb 60-69 RIB

Reps: 4

Previous Crop: Corn

Tillage: Conventional Till

Herbicides: Pre: Roundup® and 2,4-D on 4/25/16

Post: Lexar®, Roundup PowerMAX®, and Class Act® on 5/15/16

Seed Treatment: Acceleron® 250

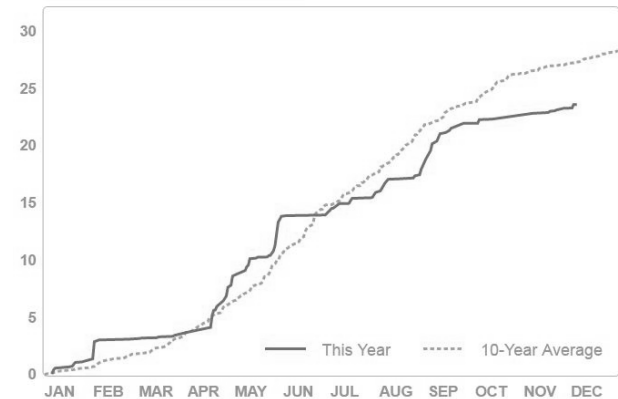
Foliar Insecticides: None

Foliar Fungicides: None

Fertilizer: 32 lb/ac 11-52-0, 5 lb/ac zinc, and 15 lb/ac sulfur in Fall 2015; 240 lb/ac 46-0-0 and 3 gal/ac 9-24-3 on 5/1/16

Irrigation: Gravity, Total: 12"

Rainfall (in):



Soil Sample:

| Soil pH 1:1 | Buffer pH | Soluble Salts 1:1 mmho/cm | Excess Lime Rating | OM LOI-% | Nitrate-N ppm N | 0-8" | | | | | Ammonium Acetate -----ppm----- | | | | | DTPA -----ppm----- | | |
|----------------|--------------|------------------------------|-----------------------|-------------|--------------------|----------------------|-------------|-----|------|-----|-----------------------------------|----|-----|------|------|-----------------------|--|--|
| | | | | | | Nitrate-N Lbs N/A | Phos ppm | K | Ca | Mg | Na | S | Zn | Fe | Mn | Cu | | |
| 6.0 | 6.9 | 0.17 | NO | 2.2 | 14 | 34 | 29 | 395 | 1832 | 222 | 27 | 12 | 2.5 | 45.9 | 13.2 | 0.6 | | |

Introduction: Soa Soap was sprayed on crop at a rate of 5 oz/ac when the crop was at V7 growth stage. The application of soa soap was compared with no application. Soa Soap product was analyzed by Midwest Laboratories, Inc.® Analysis is on the right.

| | Analysis (as received) | Analysis (dry weight) | Total content, lb/gal (as received) |
|---|---------------------------|--------------------------|--|
| Nitrogen | | | |
| Total Nitrogen | % | 7.94 | 0.340 |
| Organic Nitrogen | % | | 0.318 |
| Ammonium Nitrogen | % | | 0.023 |
| Nitrate Nitrogen | % | | --- |
| Major and Secondary Nutrients | | | |
| Phosphorus | % | --- | --- |
| Phosphorus as P ₂ O ₅ | % | --- | --- |
| Potassium | % | --- | --- |
| Potassium as K ₂ O | % | --- | --- |
| Sulfur | % | 0.17 | 0.007 |
| Calcium | % | 0.06 | 0.003 |
| Magnesium | % | 0.04 | 0.002 |
| Sodium | % | 0.705 | 0.030 |
| Micronutrients | | | |
| Zinc | ppm | 45 | --- |
| Iron | ppm | --- | --- |
| Manganese | ppm | --- | --- |
| Copper | ppm | --- | --- |
| Boron | ppm | --- | --- |
| Other Properties | | | |
| Moisture | % | | |
| Total Solids | % | | |
| C:N Ratio | | --- | |
| Total Carbon | % | 85.63 | |
| Chloride | % | --- | |
| pH | | 10.30 | |
| Density | lb/gal | 9.16 | |

Results:

| | Harvest Stand Count | Lodging (%) | Test Weight (lb/bu) | Moisture (%) | Yield (bu/acre) [†] | Marginal Net Return [‡] (\$/ac) |
|------------------|------------------------|----------------|------------------------|-----------------|---------------------------------|---|
| Check | 31,500 A* | 10 A | 62 A | 16.1 A | 224 A | \$683.20 |
| Soa Soap 5 oz/ac | 31,250 A | 4 A | 62 A | 16.1 A | 223 A | \$669.42 |
| P-Value | 0.8675 | 0.1411 | 0.9547 | 0.9421 | 0.6393 | N/A |

*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 \$3.05/bu corn, Soa Soap product cost of \$3.91 and application cost of \$6.82.

Summary: There was no difference in harvest stand count, stalk lodging, test weight, moisture, or yield between the check and the soa soap application. The check resulted in the highest net return since the additional cost of product and application was not recovered.

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