Insecticide Seed Treatment on Soybeans Following Corn Silage or Corn Grain Harvest

Study ID: 0676155201801
County: Saunders
Soil Type: Yutan silty clay loam terrace, 2-6% slopes, eroded; Tomek silt loam 0-2% slope; Filbert silt loam 0-1% slope; Fillmore silt loam terrace, occasionally ponded
Planting Date: 5/7/18 - 5/8/18
Harvest Date: 10/9/18
Population: 138,671
Row Spacing (in): 15
Hybrid: Asgrow® 29X8
Reps: 10 (40 total treatment strips)
Previous Crop: Corn
Tillage: No-Till
Herbicides: ***Pre:*** 15 gal/ac water, 12.8 oz/ac Engenia®, 18 oz/ac Outlook®, and 12 oz/ac VaporGard™ ***Post:*** 15 gal/ac water, 6 oz/ac Intensity®, 4.84 oz/ac NIS, 40 oz/ac Roundup PowerMAX®, and 2.57 lb/ac AMS
Seed Treatment: being studied, therefore described in introduction
Foliar Fungicides: 4 oz/ac Priaxor® and 6 oz/ac Masterlock®
Fertilizer: None
Irrigation: Pivot
Rainfall (in):

Introduction: The purpose of this study was to evaluate the use of an insecticide seed treatment on soybeans following corn that was harvested for grain and corn that was harvested for silage. The no insecticide treatment received Acceleron® Basic seed treatment which is a fungicide seed treatment with active ingredients of Pyraclostrobin, Metalaxyl, and Fluxapyroxad applied at a rate of 2 oz/100 lb seed. The insecticide treatment received Acceleron® Standard which contains the same fungicide seed treatment as Acceleron® Basic plus an insecticide treatment with active ingredient Imidacloprid which was applied at a rate of 4 oz/100 lb seed. All treatments also received 4 oz/ac of Priaxor® foliar fungicide at R3. Yield, moisture, and net return were evaluated.

Results: Data were analyzed using the GLIMMIX procedure in SAS 9.4 (SAS Institute Inc., Cary, NC). Mean separation was performed with Tukey's HSD.

For grain moisture, there was no interaction between insecticide treatment (with or without insecticide) and previous crop (corn grain harvest or corn silage harvest); therefore, these factors are analyzed separately. There was a difference in grain moisture for soybeans following silage versus grain. The use of an insecticide seed treatment did not impact grain moisture.

	Moisture (%)
Soybeans Following Corn Silage Harvest	11.6 B*
Soybeans Following Corn Grain Harvest	12.0 A
P-Value	*<0.0001*

For yield and net return, there was an interaction of insecticide treatment (with or without insecticide) and previous crop (corn grain harvest or corn silage harvest) therefore these factors are presented together.

Treatment applied to Soybeans	Yield† (bu/ac)	Marginal Net Return‡ ($/ac)
No Insecticide Following Silage Harvest	76.6 B	566.50 AB
Insecticide Following Silage Harvest	78.5 A	574.68 A
No Insecticide Following Corn Grain Harvest	75.3 BC	557.48 B
Insecticide Following Corn Grain Harvest	74.6 C	545.23 C
P-Value of Previous Crop x Treatment	*0.006*	*0.001*

*Values with the same letter are not significantly different at a 90% confidence level.
†Bushels per acre corrected to 13% moisture.
‡Marginal net return based on $7.40/bu soybean and $6.50/ac for additional cost of Acceleron® standard over Acceleron® basic to provide insecticide seed treatment.

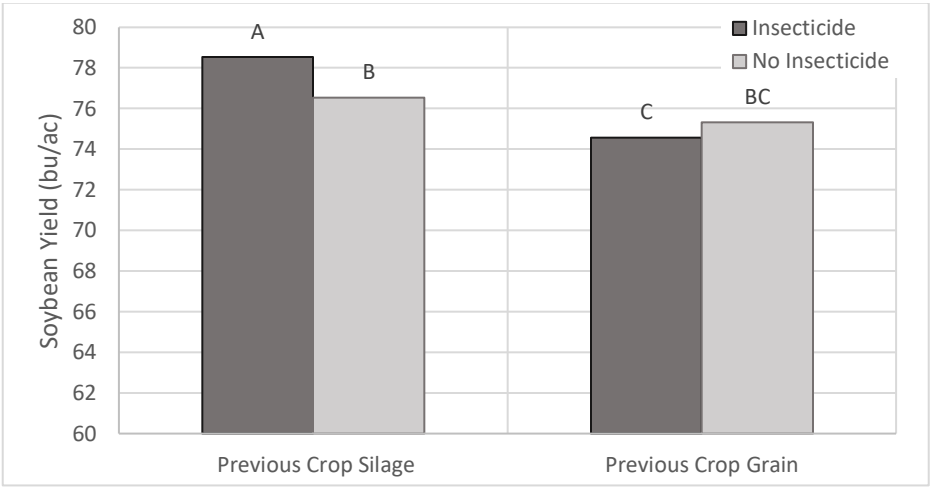

Figure 1. Impact of insecticide seed treatment on soybean yield evaluated for area that had a previous crop of corn silage and previous crop of grain.

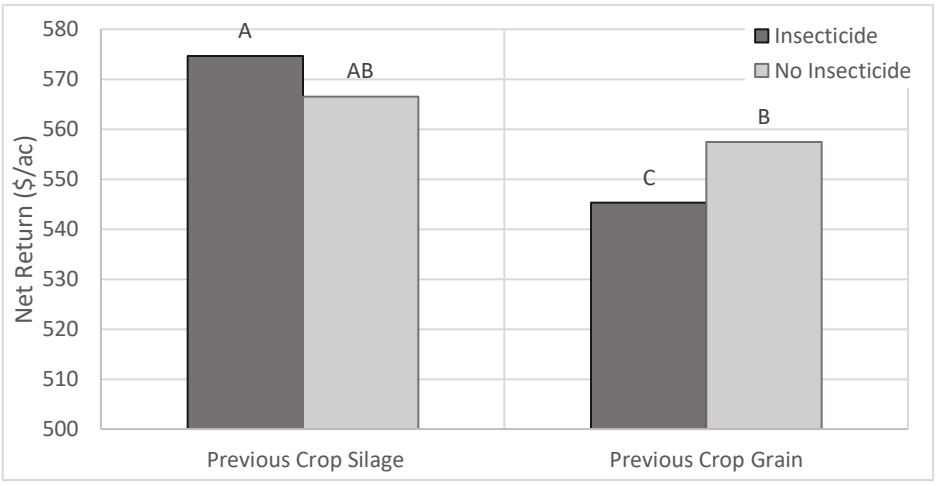

Figure 2. Impact of insecticide seed treatment on marginal net return evaluated for area that had a previous crop of corn silage and previous crop of grain.

Summary:

- The soybeans following the corn which was harvested for grain were significantly wetter at harvest than the soybeans following the corn which was harvested for silage.
- The insecticide provided an advantage over no insecticide where the previous corn crop was harvested for silage. The insecticide did not provide an advantage over the no insecticide check where the previous corn crop was harvested for grain.
- The use of the insecticide seed treatment resulted in no difference in net return where the previous crop was corn harvested for silage; the use of the insecticide seed treatment decreased net return where the previous corn crop was harvested for grain.

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