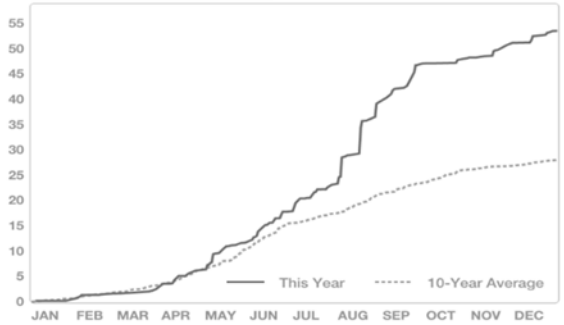
Nebraska On-Farm Research Network

SoilSet™ at Planting on Soybeans

Study ID: 218023201502
County: Butler
Soil Type: Holder silt loam; Hastings silty clay loam;
Planting Date: 5/30/15
Harvest Date: 10/19/15
Row Spacing (in.) 30
Hybrid: Asgrow AG3034 GenRR2Y
Reps: 7 (3 for yield, protein, oil, and weight)
Previous Crop: Corn
Seed Treatment: None

Irrigation: None
Rainfall (in.):



Introduction: There are a proliferation of products that claim to be beneficial for agricultural production. Some of these products mitigate stress, while other products enhance and increase plant growth and potentially increase crop yield. SoilSet™ is a product from Improcrop U.S.A. Inc., Nicholasville, KY. It contains 2% copper, 1.6% iron, 0.8% manganese, and 3.2% zinc. Product labeling notes that Soil-Set™ activates soil micro-flora favoring growth and plant root health and is a crop residue treatment designed to enhance degradation.

Local growers often graze cattle on corn stalks following corn grain harvest, thus reducing crop residue for the following planting season, which is often soybeans. Data on the efficacy of SoilSet™ for local crop production did not exist. This experiment was initiated to document and help provide replicated data for soybean growth response to SoilSet™ applied in the seed furrow at planting following grazed corn stalks from the previous year.

A field located north of David City that had produced corn in 2014, and had cattle grazing on stalks after harvest and prior to planting was selected for this experiment. SoilSet™ was applied at a rate of 10 oz./acre in-furrow through a fertilizing unit that also contained water. It was applied in-furrow at planting to six contiguous rows (½) of a twelve rows planter with 30 inch row spacings, thus resulting in seven replications of 12 row wide plots as the planter continued across the field. Plot length varied, ranging from almost 700 feet for four replicates, shortening to 254 feet for the shortest replicate.

Plant growth measurements were obtained throughout June and July. Plant populations were documented on June 16 by measuring four 20 foot sections of rows in each plot and counting the number of emerged soybeans. Plant heights (stems) and trifoliate leaf nodes on main-stems were measured on June 17 and 26, and July 9, 20 and 29. Ten plants per plot were measured on all sample dates except July 29, when only 6 plants per plot were used.

As some treatments in other experiment had resulting in increased branching at the cotyledon and unifoliate nodes, ten sets of five consecutive plants each were examined and branching recorded on July 20, however, only six sets were examined on recorded on July 29. Numbers of developing pods/plant were also documented on July 29 from six plants per plot.

Yield, % protein, % oil, and weight data were only collected for three replications.

Note: Plots were not randomized therefore conclusions should not be extrapolated beyond this field.

Results:

	Early Season Stand Count - June 16	Pods/plant - June 29
Check	113,007 A*	44 A
SoilSet 10oz/ac in Furrow	117,705 A	43 A
P-Value	0.2428	0.6608

	Height				
	June 17	June 26	July 9	July 20	July 29
Check	3.1 A	4.6 A	10.7 A	20.2 A	27.9 A
SoilSet 10oz/ac in Furrow	3.0 A	4.9 A	10.9 A	20.3 A	27.9 A
P-Value	0.6523	0.3136	0.4685	0.7749	0.9509

	Trifoliate Nodes				
	June 17	June 26	July 9	July 20	July 29
Check	1 A	3 A	6 A	10 A	12 A
SoilSet 10oz/ac in Furrow	1 A	3 A	6 A	10 A	12 A
P-Value	0.1501	0.6504	0.1528	0.8314	0.122

	Unifoliate Node Branches (%)		Cotyledon Node Branches (%)	
	July 20	July 29	July 20	July 29
Check	15.3 A	16.4 A	3.0 A	3.3 A
SoilSet 10oz/ac in Furrow	18.9 A	16.0 A	2.7 A	2.4 A
P-Value	0.2809	0.927	0.7358	0.6685

	Yield (bu/ac)†	Oil (%)	Protein (%)	Weight (grams/100 seeds)	Marginal Net Return ($/ac)‡
Check	72 A	17.7 A	41.5 A	19 A	640.80
SoilSet 10oz/ac in Furrow	72 A	18.0 A	41.0 A	19 A	632.80
P-Value	0.7601	0.726	0.5967	0.5972	N/A

†Bushels per acre corrected to 13% moisture.
*Values with the same letter are not significantly different at a 90% confidence level.
‡Net Return based on $8.90/bu soybeans and $8/acre SoilSet cost.

Summary: No significant differences were seen in any of the plant characteristics measured. Additionally, the use of soil set did not result in yield, protein, oil, or seed weight differences. Use of the SoilSet™ treatment did not provide a positive return on investment.

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