



**THE OHIO STATE
UNIVERSITY**

COLLEGE OF FOOD, AGRICULTURAL,
AND ENVIRONMENTAL SCIENCES

THE 2014 OHIO SOYBEAN SEED TREATMENT TRIAL

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INTRODUCTION

The purpose of the Ohio Soybean Seed Treatment Trial is to evaluate soybean seed treatments for stand and yield. This evaluation gives soybean producers comparative information for selecting soybean products for their unique production system.

FIELD PLOT DESIGN

The entries for each test site were planted in a randomized complete-block design. Each entry was replicated four times and planted in plots 28 ft. long and 5 ft. wide containing four rows seeded at 15-inch row width. Seeding rate was 150,000 seeds per acre. All sites had corn as the previous crop and were no-till.

METHOD OF CONDUCTING TRIALS

Entries in Trials. All 2014 entries were submitted voluntarily by companies. Entry fee charges were paid per treatment. Application protocol and product rate were provided by the company. All products were tested on Asgrow 3231 seed. Companies designated their treatments to be applied to treated or untreated seed. Treated seed was treated with Acceleron (metalaxyl, + pyraclostrobin + fluxapyroxad + imidacloprid). There were two controls of treated seed (treated check) and untreated seed (untreated check). Results of products applied to treated seed should be compared to the treated check while products applied to untreated seed should be compared to the untreated check.

Product Type. Each company was asked to specify product type(s): biological, fertilizer, inoculant, growth regulator, fungicide, and/or insecticide.

LSD. Least Significant Difference (LSD) for stand count and yield were computed for each trial location. LSD's are reported in bushels per acre at 13% moisture. Yields of two products are significantly different 90% of the time if their yields differ by more than the LSD value shown for that trial location.

MEASUREMENTS AND RECORDS

Stand count is reported as the number of plants per acre. Stand counts were conducted for each plot and location at the V2/V3 growth stage.

Yield. Soybeans were harvested when the moisture content was between 8 and 12% and yields reported in bushels per acre at 13% moisture.

DATA USE. Inclusion of entries in the Ohio Soybean Performance Trials does not constitute an endorsement of a particular entry by the Ohio State University, Ohio Agricultural Research and Development Center, or Ohio State University Extension.



TABLE 2: Directory of Companies Listed by Treatment and Product Type

Company/Treatment	Product Type
3Bar Biologics Inc.	www.3barbiologics.com
BioStart 1	Biological, Fertilizer
BioStart 2	Biological, Fertilizer
BioStart 3	Biological
BioStart 4	Biological
BioStart 5	Biological
BioStart 6	Biological
BioStart 7	Biological
BioStart 8	Biological
Verdesian Life Sciences	www.intxllc.com
Primo CL	Inoculant
Preside CL	Inoculant
Stoller USA	www.stollerusa.com
Bio-Forge ST	Fertilizer
Stimulate	Growth Regulator
Keylate Cobalt	Fertilizer
Wellman Seeds	www.wellmanseeds.com
Encase	All
MicroKing	All
Winfield	www.winfield.com
Warden CX	Fungicide, Insecticide

TABLE 1: The 2014 Ohio Soybean Seed Treatment Trial, Site Descriptions

	N1	N2	C1	C2	S1	S2
	Henry Co.	Sandusky Co.	Mercer Co.	Clark Co.	Preble Co.	Clinton Co.
Soil type	Hoytville silty clay loam	Kibbie sandy loam	Blount silt loam	Kokomo silty clay loam	Celina silt loam	Reesville silt loam
Soil pH	6.2	6.1	6.8	5.5	5.8	6.3
Soil Test P (ppm)	51	28	53	19	91	25
Soil Test K (ppm)	189	91	163	110	199	122
Organic Matter (%)	3.9	2.0	3.2	2.7	3.7	2.1
CEC (meq/100 g)	22.6	8.2	18.1	18.3	21.5	10.8
Plant Date	29-May	30-May	25-May	31-May	22-May	28-May
Harvest Date	24-Oct	27-Oct	25-Oct	30-Oct	3-Nov	30-Oct

TABLE 3. The 2014 Ohio Soybean Product Evaluation Trials, North Region

Treatment Name	Company Name	Product Type	Type of Seed	Stand Count- N1 1,000 plants/acre	Stand Count- N2 1,000 plants/acre	Yield- N1 bushels/acre	Yield- N2 bushels/acre
BioStart 1	3Bar Biologicals Inc.	BIO, FERT	Treated	143	142	61.6	58.9
Biostart 2	3Bar Biologicals Inc.	BIO, FERT	Treated	150	130	63.4	63.0 *
Biostart 3	3Bar Biologicals Inc.	BIO	Treated	134	138	60.9	61.7 *
Biostart 4	3Bar Biologicals Inc.	BIO	Treated	147	128	65.4	54.4
Biostart 5	3Bar Biologicals Inc.	BIO	Treated	140	138	62.5	59.4
Biostart 6	3Bar Biologicals Inc.	BIO	Treated	138	130	61.5	62.7 *
Biostart 7	3Bar Biologicals Inc.	BIO	Treated	137	125	62.1	63.0 *
Biostart 8	3Bar Biologicals Inc.	BIO	Treated	139	131	58.8	59.5
Primo CL	Verdesian Life Sciences	INOC	Treated	140	125	61.6	57.5
Preside CL	Verdesian Life Sciences	INOC	Treated	140	140	63.6	61.9 *
Bio-Forge ST	Stoller USA	FERT	Treated	137	137	61.2	55.9
Stim ulate	Stoller USA	GROWREG	Treated	142	133	62.6	57.2
Keylate Cobalt	Stoller USA	FERT	Treated	142	134	60.4	59.3
Encase	Wellman Seeds	All	Untreated	138	142	60.5	59.8
MicroKing	Wellman Seeds	All	Untreated	140	133	60.6	61.9 *
Warden CX	Winfield	FUNG, INSECT	Untreated	152 *	136	63.3	60.7 *
Treated Control				148	133	62.5	54.8
Untreated Control				134	135	61.1	55.3
		LSD		13	13	3.35	5.29
		CV		8.12	8.39	4.59	7.49

Table 4. The 2014 Ohio Soybean Product Evaluation Trials, Central Region

Treatment Name	Company Name	Product Type	Type of Seed	Stand Count- C1 1,000 plants/acre	Stand Count- C2 1,000 plants/acre	Yield- C1 bushels/acre	Yield- C2 bushels/acre
BioStart 1	3Bar Biologicals Inc.	BIO, FERT	Treated	138	135	54.9	64.9
Biostart 2	3Bar Biologicals Inc.	BIO, FERT	Treated	134	130	52.4	67.0
Biostart 3	3Bar Biologicals Inc.	BIO	Treated	138	134	54.0	65.1
Biostart 4	3Bar Biologicals Inc.	BIO	Treated	148	131	54.1	66.5
Biostart 5	3Bar Biologicals Inc.	BIO	Treated	141	137	51.5	63.8
Biostart 6	3Bar Biologicals Inc.	BIO	Treated	125	134	52.6	66.3
Biostart 7	3Bar Biologicals Inc.	BIO	Treated	137	131	50.6	70.8
Biostart 8	3Bar Biologicals Inc.	BIO	Treated	138	126	53.1	74.3 *
Primo CL	Verdesian Life Sciences	INOC	Treated	138	125	53.1	67.5
Preside CL	Verdesian Life Sciences	INOC	Treated	136	127	58.3	71.4
Bio-Forge ST	Stoller USA	FERT	Treated	133	137	51.8	64.0
Stim ulate	Stoller USA	GROWREG	Treated	143	127	57.5	66.7
Keylate Cobalt	Stoller USA	FERT	Treated	142	138	53.6	64.3
Encase	Wellman Seeds	All	Untreated	134	133	55.6	65.2
MicroKing	Wellman Seeds	All	Untreated	132	129	59.4	67.5
Warden CX	Winfield	FUNG, INSECT	Untreated	145	143	54.1	65.3
Treated Control				136	127	53.2	67.6
Untreated Control				133	132	53.1	65.4
		LSD		12	16	6.71	5.99
		CV		7.58	10.44	10.57	7.57

Table 5. The 2014 Ohio Soybean Product Evaluation Trials, South Region

Treatment Name	Company Name	Product Type	Type of Seed	Stand Count- C1 1,000 plants/acre	Stand Count- C2 1,000 plants/acre	Yield- C1 bushels/acre	Yield- C2 bushels/acre
BioStart 1	3Bar Biologicals Inc.	BIO, FERT	Treated	135	137 *	82.4	72.7
Biostart 2	3Bar Biologicals Inc.	BIO, FERT	Treated	134	133	79.9	77.2
Biostart 3	3Bar Biologicals Inc.	BIO	Treated	126	135	82.2	73.9
Biostart 4	3Bar Biologicals Inc.	BIO	Treated	137	129	85.3	74.6
Biostart 5	3Bar Biologicals Inc.	BIO	Treated	140	132	81.4	70.1
Biostart 6	3Bar Biologicals Inc.	BIO	Treated	139	138 *	84.1	68.4
Biostart 7	3Bar Biologicals Inc.	BIO	Treated	129	139 *	82.3	66.6
Biostart 8	3Bar Biologicals Inc.	BIO	Treated	135	135	78.9	70.9
Primo CL	Verdesian Life Sciences	INOC	Treated	140	139 *	82.8	70.0
Preside CL	Verdesian Life Sciences	INOC	Treated	135	141 *	83.2	71.8
Bio-Forge ST	Stoller USA	FERT	Treated	137	131	80.7	77.2
Stim ulate	Stoller USA	GROWREG	Treated	134	135	75.7	75.0
Keylate Cobalt	Stoller USA	FERT	Treated	132	133	80.5	73.8
Encase	Wellman Seeds	All	Untreated	122	128	82.2	74.2
MicroKing	Wellman Seeds	All	Untreated	138	136	79.4	72.3
Warden CX	Winfield	FUNG, INSECT	Untreated	125	144	85.5	72.5
Treated Control				134	126	80.3	72.4
Untreated Control				126	143	77.0	68.9
		LSD		12	10	9.63	7.7
		CV		7.82	6.47	10.14	9.05