THE OHIO STATE UNIVERSITY
COLLEGE OF FOOD, AGRICULTURAL, AND ENVIRONMENTAL SCIENCES

2016 Bayer Seed Treatment Trial

J.D. Bethel, John McCormick, Matthew Hankinson, and Laura Lindsey
Department of Horticulture and Crop Science

INTRODUCTION

The purpose of the 2016 Bayer Seed Treatment Trial was to compare stand and grain yield of soybean seed treated with Evergol Energy SB, Poncho/VOTiVO, and ILeVO to untreated seed of the same variety in high-yielding and well-drained fields with limited pest pressure.

FIELD PLOT DESIGN

The trial was planted on-farm in six counties in Ohio (see map below). 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. All sites were no-tillage.

METHOD OF CONDUCTING TRIALS

Entries in Trials. Bayer seed treatment and seed were submitted voluntarily. Entry fee charges were paid per treatment. Application protocol and product rate were provided by the company. Soybean seed treatment was tested on Bayer Credenz CZ 3560RR (3.5 relative maturity).

Statistical comparison. Contrasts were used to compare treated to untreated seed at a 90% confidence level.

MEASUREMENTS AND RECORDS

Stand count is reported as the number of plants per acre. Stand counts were conducted for each plot and location in the spring.

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

SUMMARY OF PEST PRESSURE

Percentage brown spot in the bottom third of the soybean canopy at the R6 growth stage was <5% in Henry County, Sandusky County, and Preble County, 5-10% in Mercer County, and 11-15% in Marion County and Clinton County. Percentage of frogeye leaf spot in the top third of the soybean canopy at the R3 growth stage was <1% in Henry County, Sandusky County, and Preble County and 1-4% at the Mercer County, Marion County, and Clinton County. No other diseases were present. Insect pest pressure was also low at all the locations with the exception of bean leaf beetle damaging 13-18% of the soybean pods at the Marion County location.

Soybean cyst nematode egg counts (number of eggs/100 cc soil): N1 = 880 (low), N2 = 1200 (low), C1 = 5520 (high), C2 = 1200 (low), S2 = 640 (low).

DATA USE. Inclusion of entries in the Ohio seed treatment trial does not constitute an endorsement of a particular entry by the Ohio State University, Ohio Agricultural Research and Development Center, or Ohio State Univer-

Table 1. The 2016 Ohio Soybean Seed Treatment Trial, Site Descriptions

		N1	N2	C1	C2	S1	S2
		Henry Co.	Sandusky Co.	Mercer Co.	Marion Co.	Preble Co.	Clinton Co.
Soil type		Clay	Sandy loam	Clay	Clay	Clay Loam	Silt Loam
Soil pH		6.0	5.8	7.1	6.4	6.0	6.6
Soil Test P-Mehlich (ppm)		25	62	59	35	121	53
Soil Test K (ppm)		171	72	183	140	287	144
Plant Date		May-23	May-25	May-23	May-20	May-16	May-19
Harvest Date		Oct-12	Oct-18	Oct-14	Oct-17	Oct-19	Oct-25
Precipitation (inches)	May	2.7	3.2	3.0	3.1	2.9	3.5
	June	3.3	2.6	4.5	4.0	4.3	2.1
	July	3.5	2.5	2.6	2.3	2.8	2.6
	August	3.4	2.7	7.8	4.8	5.4	4.7
	September	3.8	3.2	4.4	3.5	4.7	4.3
	Total	16.6	14.3	22.2	17.5	20.1	17.1

Table 2. 2016 Bayer Seed Treatment Trial soybean stand count and grain yield from North Region.

Treatment Name	Stand Count- N1 1,000 plants/acre	Stand Count- N2 1,000 plants/acre	Yield- N1 bu/acre	Yield- N2 bu/acre
Treated	109,000	134,000	64.8 b**	69.8
Untreated Control	97,000	133,000	66.4 a	68.5
P-value	P = 0.6797 (NS*)	P = 0.7025 (NS)	P = 0.0121	P = 0.5687 (NS)

Table 3. 2016 Bayer Seed Treatment Trial soybean stand count and grain yield from Central Region.

Treatment Name	Stand Count- C1 1,000 plants/acre	Stand Count- C2 1,000 plants/acre	Yield- C1 bu/acre	Yield- C2 bu/acre
Treated	139,000 a	138,000 b	66.2	66.6 a
Untreated Control	135,000 b	143,000 a	65.1	65.8 b
P-value	P = 0.1031	P = 0.0737	P = 0.9234 (NS)	P = 0.0960

Table 4. 2016 Bayer Seed Treatment Trial soybean stand count and grain yield from South Region.

Treatment Name	Stand Count- S1 1,000 plants/acre	Stand Count- S2 1,000 plants/acre	Yield- S1 bu/acre	Yield- S2 bu/acre
Treated	130,000	56,000	71.5	63.1 a
Untreated Control	132,000	62,000	68.5	60.2 b
P-value	P = 0.2346 (NS)	P = 0.4565 (NS)	P = 0.2296 (NS)	P = 0.1008

*NS = Non-significant difference.

** = Letters that are different represent a statistically significant difference in means at a 90% confidence level.