R2017-P04 NDB

Pennsylvania On-Farm Network Report 2017

Supported and directed by the PA Soybean Board

Prepared by: Del Voight - Senior Extension Agent - Penn State Extension

PennState Extension

PENN STATE CMEG Crop Management Extension Group

PSB Pennsylvania Soybean Board

2017 On-Farm Soybean Management Network

PI: Delbert G. Voight, Greg W. Roth

Over the past several years the Pa On Farm Network has been conducting both on station small plot design research and on farm large validation demonstration plots. The goal on farm is to establish 4 replications of treatments at full field length. Growers work closely with Extension Crop Team members to gather assessment data and arrive at meaningful results. This report details the results of the 2017 trials. Below are the participants that have been involved in the Pa On Farm Network. For this season we have variable results with trials. The 2017 Results are included within this report. As with any trials please observe if the project is conducted at SEAREC that is small plot design station work completed at the Southeast Agriculture Research and Extension Center. The On Farm projects are conducted on cooperating farms and seek to validate small plot research.

PAST PARTICIPANTS

Glen Krall	180 Schaeffer Rd. Lebanon, PA 17042
Walter Ocker	5420 Grindstone Hill Rd., Chambersburg, PA 17202
Paul Stubrick	291 Cravener Hollow Road, Kittanning, PA 16201
Matt Ahern	
Harold Miller	16032 Crossroads Ave. Stewartstown, PA 17363
SEAREC- Alyssa Collins	1446 Auction Rd. Manheim, PA 17545
Walter Ocker	5420 Grindstone Hill Rd., Chambersburg, PA 17202
Lesher Poultry (Leslie Bowman)	1153 Swamp Fox Rd. Chambersburg, PA 17202
Darren Brubaker	121 Hemlock Rd Williamsburg PA 16693
SEAREC-	1446 Auction Rd. Manheim, PA 17545
Jeff Frey	13 Radcliff Rd. Willow Street, PA 17584
Dave Houser	743 Cemetery Rd.
David Wolfskill	3857 N Church St. Wernersville, PA 14565
Doug Bowersox	351 Bowersox Rd. Middleburg, PA 17842
Dwane Miller	1202 Ag Center Dr. Pottsville, PA 17901-8732
Dwane Miller	1346 Spring Rd. Andreas, PA 18211-3214
Ed and Ken Zimmerman	791 N. Esbenshade Rd. Manheim , PA 17545
Ethan Buser	34 Buser Farm Ln. York, PA 17406
Jim Eisenhour, Jr.	721 West Spring Valley Rd. Wellsville, PA 17406
Jim Houser	721 West Spring Valley Rd. Wellsville, PA 17365
John Bicksler	7695 Lancaster Ave. Myerstown, PA 17067
Karl Kroeck	500 Doam Rd. P.O. Box 263 Knoxville, PA 16928
Kent Martin	4847 Iron Bridge Rd., Waynesboro, PA, 17268
Koch Farm	799 Golf Rd. Tamaqua, PA 18252
Mark Madden	235 Madden Ln Towanda, PA 18848-7877
Marty Greenleaf, Jr.	455 Mount Eden Rd. Kirkwood, PA 17536-9553
Milton Hershey School	1201 Homestead Ln. Hershey, PA 17033
Pontzer Farm (William Pontzer)	166 Green Rd. Kersey, PA 15846
R & B Kreider Richard & Brian Kredier	1603 Prescott Rd. Lebanon, PA 17042
Randy Zeigler	79 Wild Flower Lane, Fredericksburg, PA 17026
Richard and Randy Bruckhart	153 Rife Run Rd. Manheim, PA 17545
Rohrbach	240 Southern Dr. Catawissa, PA 17820
SEAREC- Alyssa Collins	1446 Auction Rd. Manheim, PA 17545
The Mill (Ben Hushon)	1122 Hollow Rd. Delta, PA 17314
Triple AAA Farms	201 S. Mount Pleasant Rd. Lebanon, PA 17042
Bryan Balmer	1132 Shumaker Rd. Manheim, PA 17545
Bob Shearer	806 Anderson Ferry Rd. Mount Joy, PA 17522
Dale Frankenfield	644 Elroy Rd. Souderton, PA 18964
Dave McLaughlin	Perry County

Pennsylvania On Farm Soybean Network

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FIELD TRIAL REPORT

2017 Soybean Double Crop Population Trial

Delbert G. Voight, John Bray, Alyssa Collins and Greg Roth, Penn State University

Field Information

Location: Southeast Research and Extension Center, Landisville Field

Name: YN

Acres: 0.91

2016 Crop: Corn

Tillage: No-till

Planting Date: 12 July 2017

Variety: P31T77R Seed

Treatment: Pioneer Premium?

Planter: White Planter/Drill

Planting Depth: 1 inch

Seeding rate: variable

Harvest Date: -

Plot size: 10 x 200 Feet

Replications: 6

Treatments:

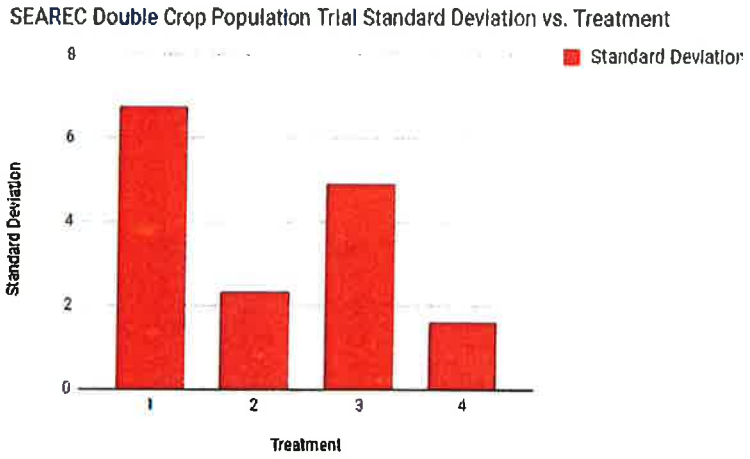
1- 160,000 Drill

2- 160,000 Planter

3- 200,000 Drill

4-200,000 Planter

Results:



Treatment	Population	Standard Deviation	Yield
1	136294	6.75	49.5b
2	115230	2.33	45.1c
3	162004	4.9	53.8a
4	147368	1.6	46.0c
Avg.	139,474	3.90	48.6
CV	8.58	24.07	5.67
LSD	14805	1.15	2.79

Comments: The data suggest even with more ideal deviation of stands with the planter the yields were significantly different for the drill over the planter.

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Pennsylvania On Farm Soybean Network

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FIELD TRIAL REPORT

2017 Soybean Fungicide Insecticide Trial

Delbert G. Voight, John Bray, Alyssa Collins and Greg Roth, Penn State University

Field Information

Location: Southeast Research and Extension Center, Landisville

Field Name: YC Acres: 1.1

2016 Crop: Corn Tillage: No-till

Planting Date:04 May 2017 Variety: P36T86

Seed Treatment: - Planter: White Planter

Planting Depth: 1 inch

Seeding rate: 140,000 ppa

Herbicide: Gramazone, Sharpen

Harvest Date: -10-6-2017 Plot size: 10 x 25 Feet

Replications: 6

TREATMENTS EVALUATED

1 Untreated
2. Topguard
3. Hero
4. Hero + Topguard
5. Acropolis
6. Rgalia
7. Rgalia + Topguard
8. Topguard + SEALION
9. SEALION
10. Toggle

Treatment	Population	Insect Severity	Application Height (inches)	Insect Severity 2 Weeks Post-Application	Height 2 Weeks Post-Application	Yield
1	51342.8	1.3	25.1917	**2.5***	39.5	75.8a
2	51265.5	1.2	25.0917	1.8	40.067	76.2a
3	59396.5	0.5	26.3083	**0.5***	41.492	76.9a
4	57150.8	1	26.0667	**0.7***	42.333	79.7a
5	64507.3	1.2	27.2042	1.8	42.775	88.8a
6	63346	1.5	27.625	1.8	42.558	86.2a
7	58622.2	1.2	26.625	1.7	41.6	81.2a
8	48554.8	1.5	24.8417	1.8	39.467	85.5a
9	45922	1.3	25.0083	1.5	40.175	83.2a
10	64275.2	1.8	27.0958	1.7	41.583	85.4a
Average	56438.31	1.25	26.10584	1.58	41.155	82.5a
CV	29.01	50.81	7.78	46.84	6.39	11
LSD	19101.75	0.74	2.36863	0.87	3.0665	8.98

*Significant

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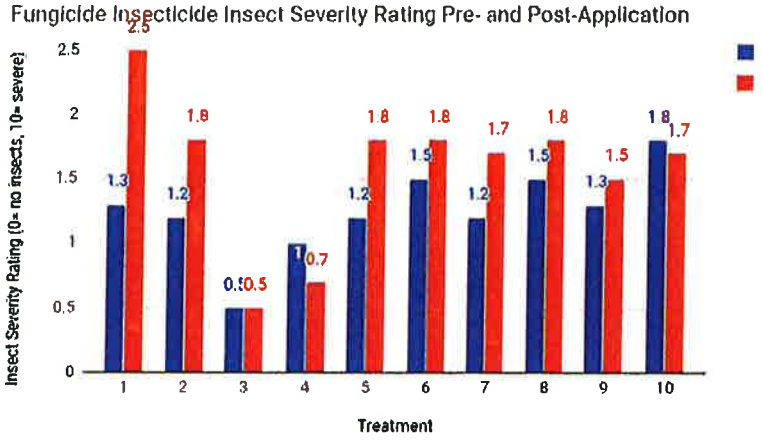
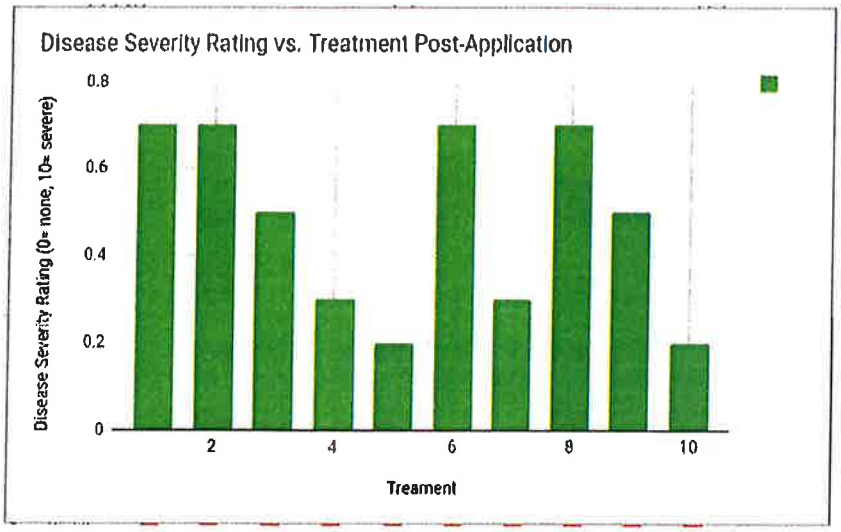
FIELD TRIAL REPORT



Pre- Application- Blue

Post- Application- Red



Comments: It appears the Hero treatments 3 and 4 reduced the insect severity the most. Few diseases were found both pre- and post- application (no significance). There were no statistical differences in yields however there were large differences in yields but not great enough statistically.

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FIELD TRIAL REPORT

2017 Soybean Gibberellic Acid Trial

Delbert G. Voight, John Bray, Alyssa Collins and Greg Roth, Penn State University

Background: Ryz Up is a Gibberellic acid product and is a growth hormone that increases cell elongation.

Field Information

Location: Southeast Research and Extension Center, Landisville
Field Name: YC
Acres: 0.66
2016 Crop: Corn
Tillage: No-till
Planting Date: May 1, 2017
Variety: P33T77
Seed Treatment: Pioneer Premium
Planter: White Planter
Planting Depth: 1 inch
Seeding rate: 140,000 ppa

Herbicide: Gramozone, Sharpen, Authority MTZ

Harvest Date: - 10-6-2017

Plot size: 10 x 50 Feet w/ 30 ft alleyways
Replications:

TREATMENTS EVALUATED

1 Untreated
2. GAA in VE
3. GAA in V1
4. GAA in V2
5. GAA in V3
6. GAA in VE followed by V3

Treatment	Height 07/05/2017(in)	Height 2 07/10/2017(in)	Height to First Node (in)	Yield
1	20.55	25.62	1.03	82.7a
2	20.64	25.66	**1.58***	86.7a
3	21.84	25.96	1.32	88.0a
4	22.78	27.02	**1.49***	81.7a
5	20.70	26.87	1.10	82.0a
6	21.99	27.30	**1.42***	85.1a
Average	21.41	26.41	1.33	84.4
CV	7.24	6.47	22.04	9.2
LSD	3.98	2.03	0.34	7.6

***Significant**

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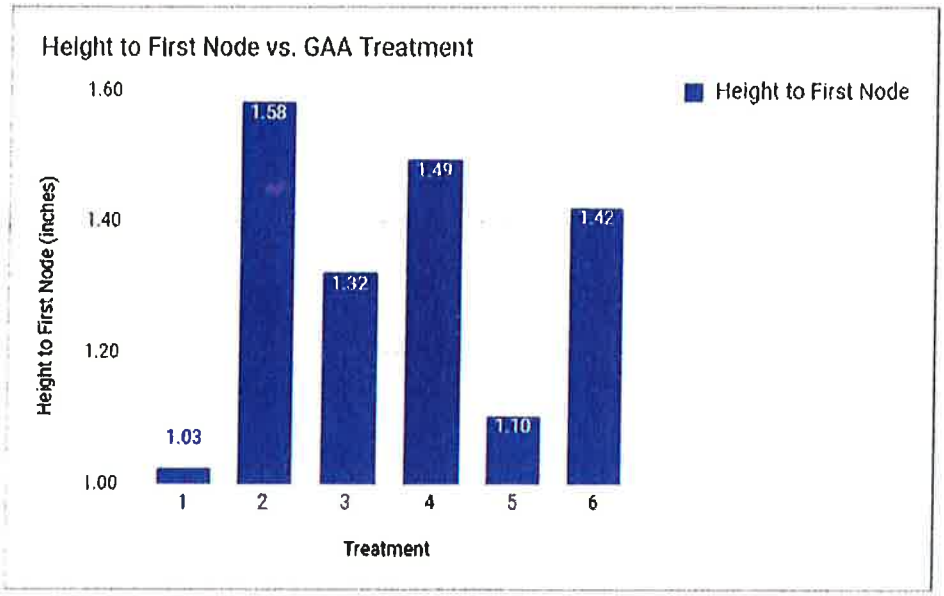
FIELD TRIAL REPORT



06/26/2017 (above)- Plots just before application

07/20/2017 (below)- Plot 201. Treatment at VE showed greatest height to first bean

Comments: The height from the ground to the first bean was the highest when GAA was applied at VE. However, yields indicated a response to this height variation but not great enough to be statistically significant. The product did move the height to first pod, but the yields were not great enough this season.

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FIELD TRIAL REPORT

2017 Soybean Population Trial

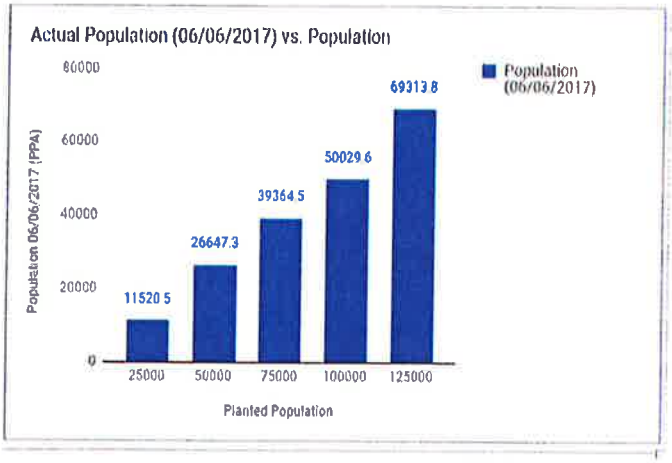
Delbert G. Voight, Alyssa Collins Penn State University

Field Information

Location: Southeast Research and Extension Center, Landisville
Field Name: YC
Acres: 0.55
2016 Crop: Corn
Tillage: No-till
Planting Date: 01 May 2017
Variety: Doeblers 3617 Xtend w/ Seed Treatment
Planter: White Planter
Planting Depth: 1 inch
Seeding rate: variable
Herbicide: Paragut, Sharpen, Authority MTZ
Harvest Date: - 10-6-2018
Plot size: 10 x 50 Feet w/30 ft alleyways
Reps: 6

Treatments-

1- 25,000
2- 50,000
3- 75,000
4- 100,000
5- 125,000



Dropped Population	Population (ppa on 06/06/2017)	Mid-Season Heights (in)	Greenseeker Data (NDVI)	Yield
25,000	**11520.5***	25.24	**0.66***	**50.8 c**
50,000	**26647.3***	26.32	0.81	65.8b
75,000	**39364.5***	26.63	0.83	82.6a
100,000	**50029.6***	27.19	0.84	81.1a
125,000	**69313.8***	28.86	0.85	84.4a
Average	39375.14	26.85	0.80	72.9
CV	10.55	8.18	0.072	14
LSD	21,000	2.64	7.48	10.1

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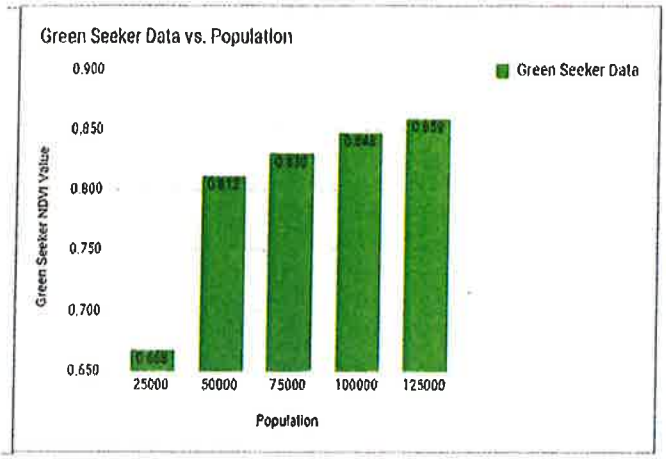
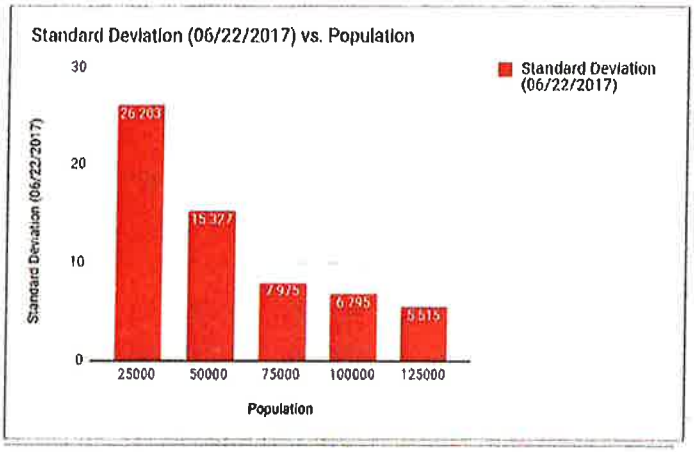
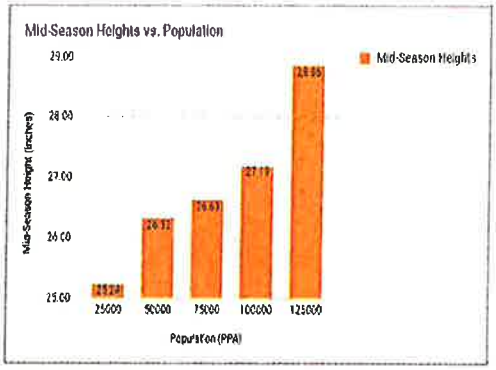
FIELD TRIAL REPORT





Low Population on 06/26/2017

Low Population on 07/20/2017



Comments: The actual population of the trial is about half the dropped population in all treatments due to heavy rain following planting. The 25,000 ppa initially had a hard time trying to canopy and showed significantly less vegetation than the other populations measured by ndvi. However, 50,000 ppa is not significantly lower in standard deviation, height, or ndvi but was significantly less than 75,000 ppa.

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FIELD TRIAL REPORT

2017 Soybean Fungicide Seed Treatment Trial

Delbert G. Voight, John Bray, Alyssa Collins and Greg Roth, Penn State University

Field Information

Location: Southeast Research and Extension Center, Landisville

Field Name: 2S Acres: 0.33 acres

2016 Crop: Corn Tillage: No-till

Planting Date: 28 April 2017 Variety: P36T86

Seed Treatment: - Planter: White Planter

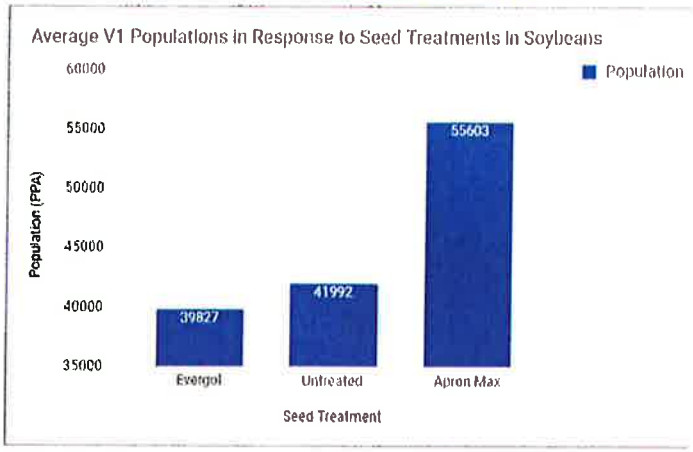
Planting Depth: 1 inch Seeding rate: 140,000

Herbicide: Paraquat, Sharpen, Authority MTZ

Harvest Date: -10-6-2018

Plot size: 10 x 50 Feet w/ 30 ft alleyways

Replications: 6



TREATMENTS EVALUATED

1 Pt36T86 evergol

2. P35T86 untreated

3. P36T86 Apron Max

Treatment	Population (ppa)	Heights (in inches on 06/09/2017)	Mid-Season Heights (in inches at R2)	Yield
Evergol	39827	14.77	23.95*	70.5b
Untreated	41992	15.08	24.68*	69.5b
Apron Max	**55603***	**15.96***	25.38*	**78.2a**
Average	45807	15.27	24.67	72.76
CV	10.95	4.40	3.34	7
LSD	6451.12	0.86	1.05	5.39

*Significant

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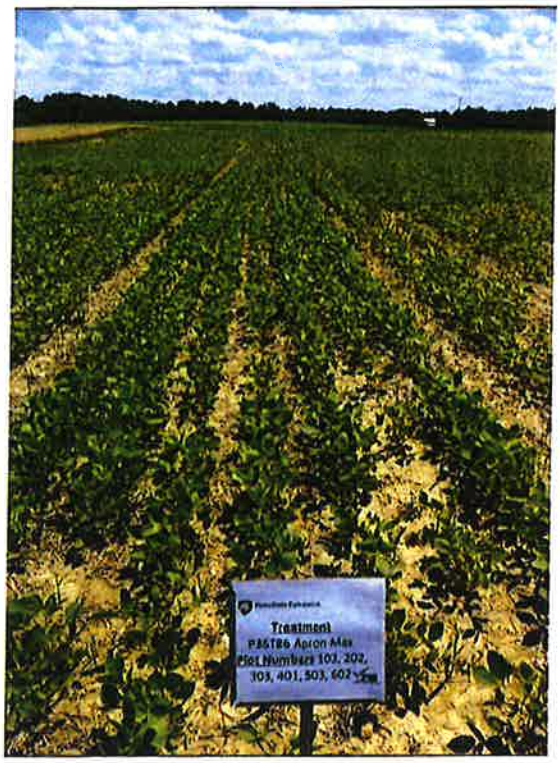
FIELD TRIAL REPORT



Comments: **06/26/2017-** Apron Max had the highest established population and height this season. This plot received a severe amount of crusting.

End of Season Comments: Apron Max had a statistically higher yield overall and stand height as well as final population. Seeds treated with Apron Max were significantly taller than the untreated and the Evergol.

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FIELD TRIAL REPORT

2017 Soybean Response to Application of Fungicide and Insecticide Applications

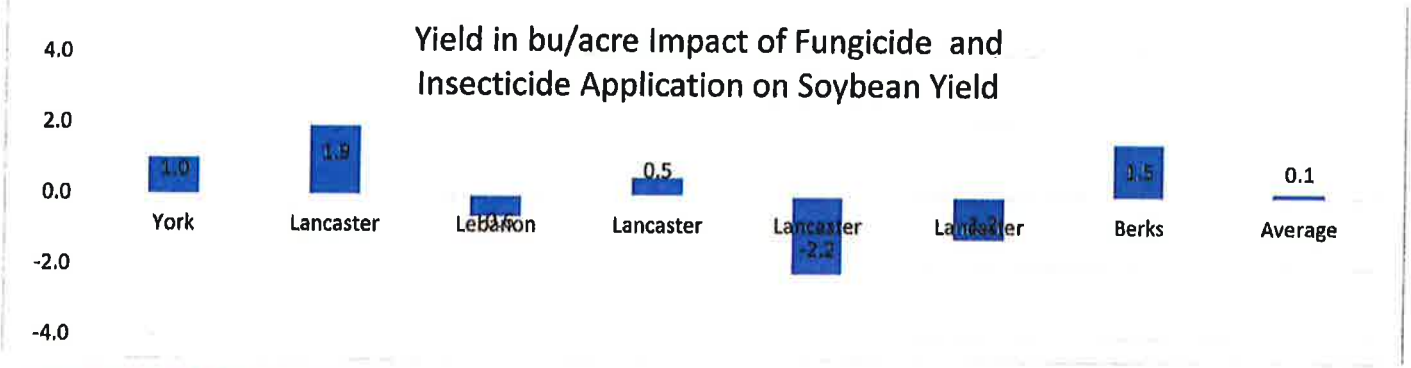
Delbert G. Voight, Alyssa Collins and Greg Roth, Penn State University

Background: Hero is a pyrethroid insecticide marketed to manage insect pests in soybeans. Topguard is a fungicide marketed to manage pathogens in soybeans.

Treatments

1. Untreated
2. 5 oz Hero combined with 5 oz Topguard

Results



Producer	Location	Reps	Untreated YLD	Untreated Moisture	Topguard+Hero YLD	Topguard+Hero Moisture	Timing	Deviation	P=.10
Glenn Krall	Lebanon	4	61.2	13.55	68.9	13.5	Post	7.7	LSD=7.6 CV 5.6%
David Wolfskill	Berks	3	52.3	11.1	56.6	11.7	Post	4.3	LSD= 2.2 CV 1.7%
Matt Ahern	Bradford	1	46.6	12	48	12	Post	1.4	NS
Richard and Randy Bruckhart	Lancaster	4	65.2	14.2	65.7	14.3	Post	0.5	NS
SEAREC	Lancaster	6	96.4	13.7	94.2	13.6	Pre	-2.2	NS
SEAREC	Lancaster	6	96.4	13.7	95.2	13.5	Post	-1.2	NS
David Wolfskill	Berks	4	64.9	11.8	66.4	11.8	Post	1.5	NS
	Average	31	76.3	13.6	76.5	13.5		0.1	NS

Comments: Over 31 replications there does not appear to be a yield response due to treatment for this growing season. However, in two locations yields were significant indicating the need for IPM.

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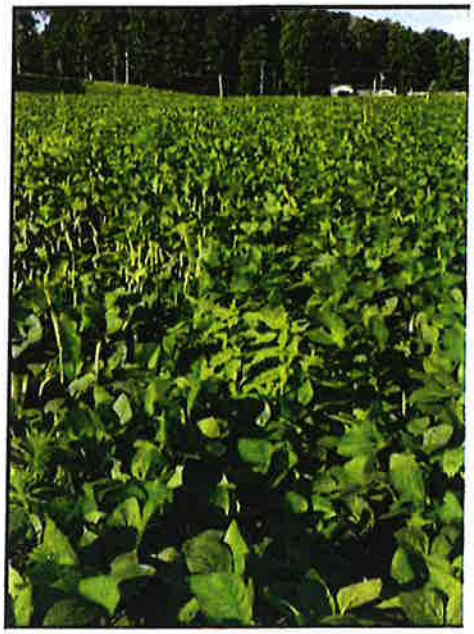
On-Farm

FIELD TRIAL REPORT

2017 Soybean Herbicide Trial

Delbert G. Voight, Penn State University

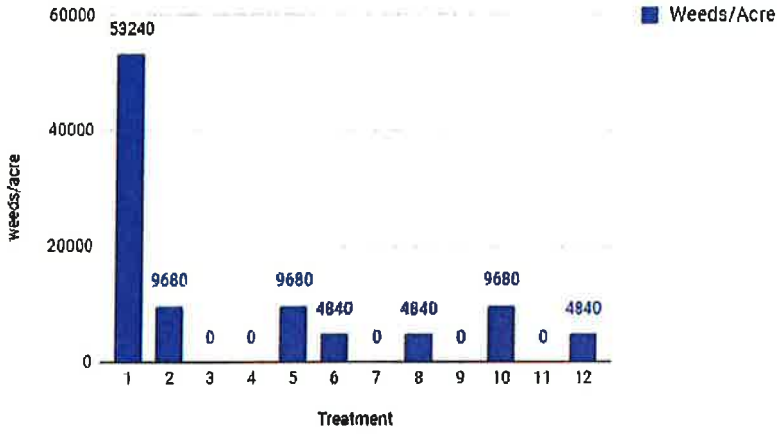


Field Information

Location: Krall's Farm (Route 419 and Willow Street)

Cooperator	County	Date of Application	Reps
Glen Krall	Lebanon	May 12, 2017	1

2017 On-Farm Krall's Herbicide Trial Final Weed Count



TREATMENTS EVALUATED

1. Untreated
2. 5 oz/a Canopy
   1.33 pt/a Dual Magnum
3. 6 fl oz/a Zidua Pro
   5 oz/a Metribuzin
4. 25 fl oz/a BroadAxe XC
   6 oz/a Metribuzin
5. 5 oz/a Sonic
   1 qt/acre Glypohsate (loaded)
6. 14 oz/a Authority MTZ
   1 qt/a Glyphosate (loaded)
   7.25 fl oz/a Marvel
7. 4 oz/a Fierce
   1 qt/acre Glyphosate (loaded)
8. 1.25 pt/a Boundary
   3.5 pt/a Flexstar GT 3.5
   0.4 pt/a NIS
9. 2 pt/a Prowl H2O
   6 oz/a Metribuzin
   1 qt/a Glyphosate (loaded)
10. 2 pt/a Prowl H2O
    4 fl oz/a Pusuit
    0.25% v/v NIS
11. 1.25 pt/a Boundary
    0.89 oz/a Python
    1 pt/a Reflex
    10 fl oz/a Select
    1% v/v COC
    2 qt/a UAN
12. 1.25 pt/a Boundary
    0.375 oz/a Synchrony XP
    10 fl oz/a Select
    1% v/v COC
    2 qt/a UAN

Greenseeker Data (NDVI) from 07/24/2017

Plot	Measurement 1	Measurement 2	Average
1	0.87	0.88	0.875
2	0.87	0.86	0.865
3	0.87	0.88	0.875
4	0.86	0.88	0.87
5	0.86	0.87	0.865
6	0.87	0.86	0.865
7	0.86	0.89	0.875
8	0.87	0.87	0.87
9	0.87	0.88	0.875
10	0.87	0.87	0.87
11	0.87	0.86	0.865
12	0.89	0.85	0.87

Comments: Treatment 9 showed the fewest amount of initial weeds in the 9 sq. ft. sampled area on June 27th.

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On-Farm

FIELD TRIAL REPORT

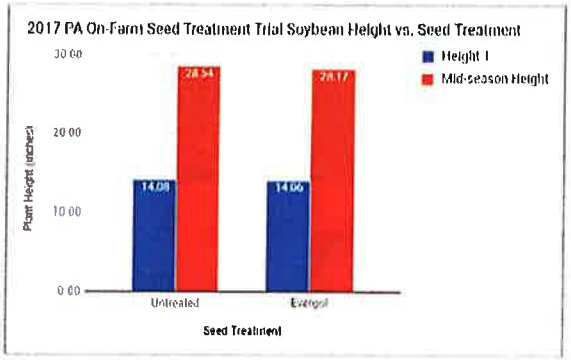
2017 Soybean Fungicide Seed Treatment On-Farm Trial

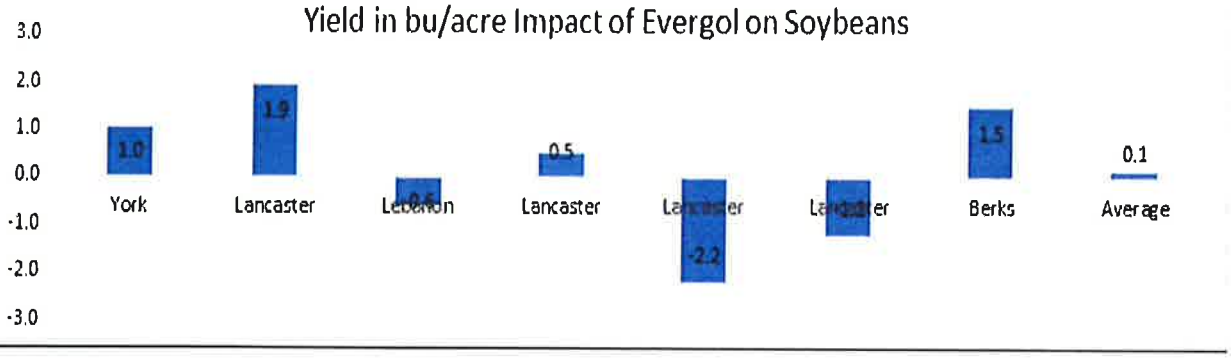
Delbert G. Voight, John Bray, Alyssa Collins and Greg Roth, Penn State University

Field Information

Location: various
Reps: 33
Seed Treatments:

1 Untreated
1 Evergol 5 oz per 100 lbs of seed





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On-Farm

FIELD TRIAL REPORT

				Untreated			Treated		
Cooperator	County	Date Planted	Reps	Population (ppa)	Height (in)	Yield	Populations (ppa)	Height (in)	Yield
Glen Krall	Lebanon		6	62,505	29.73	73.1	78,524	30.34	72.1
SEAREC	Lancaster	28 April	6	42,050	24.68	70.5	39,881	23.95	69.5
Dean Miller	York	09 May	6	189,728	34.72	60	219,000	34.63	59
Walter Ocker	Franklin	10 May	4	106,750	32.25	66.4	113,500	30.2	64.2
Paul Stubrick	Westmoreland	18 May	5	94,601	21.34	62.8	95,995	21.23	61.58
Matt Ahern	Bradford	18 May	6	114,205	23.4	38.6	115,192	23.17	36.7
		Average	33	**103442***	28.54		**110592***	28.17	
		CV		11.56	3.55		11.56	3.55	
		LSD		6220.0901	0.56371		6220.0901	0.56371	

*Significant

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On-Farm

FIELD TRIAL REPORT

Overall	Treated	UT	Significant?	LSD	CV
Root Infection Rating (0 is none, 10 is severe) (12 reps)	1.2	1.3	No	0.3346	40.36
Green-seeker (12 reps)	0.82	0.82	No	0.01834	2.47

Comments: The seeds treated with Evergol have had significantly higher populations so far. Plant heights were not affected b the seed treatment. Root infection ratings showed that treated seeds were less prone to disease.

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On-Farm

2017 Soybean Population Trial

Penn State University Extension Crop Team

Field Information

Location: various

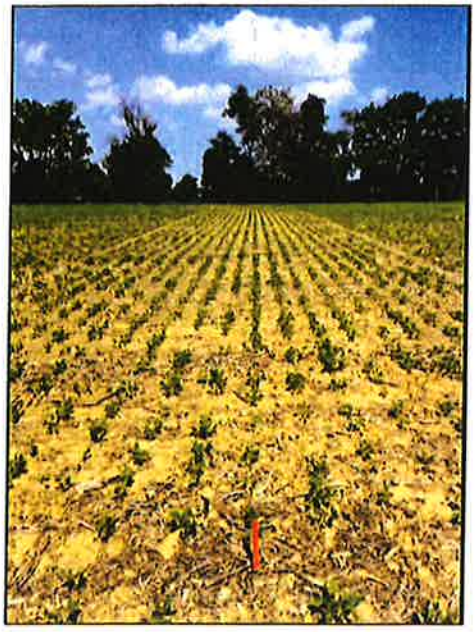
Reps: 30

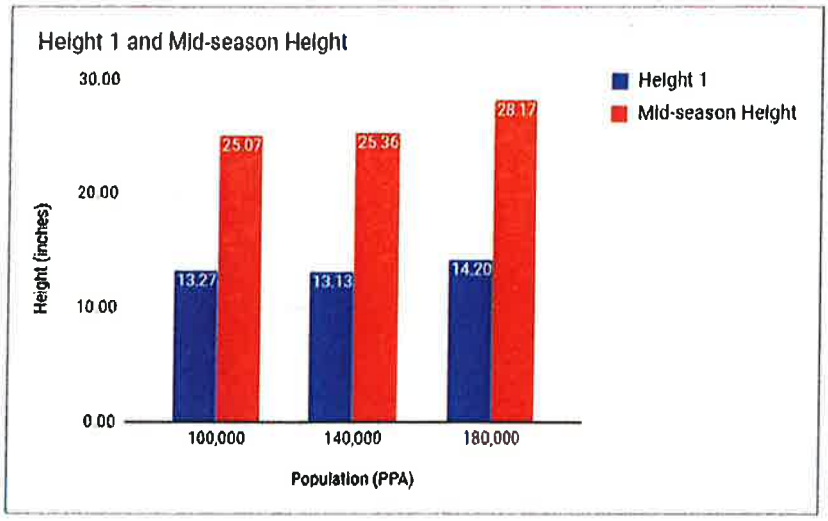
Treatments:

1 - 100,000 PPA

2 - 140,000 PPA

3 - 180,000 PPA





Comments: Midseason plant height is significantly taller in 180,000 ppa than than the two lower populations. 180k drop on farm resulted in statistically different yields in 2017.

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On-Farm

					100,000 PPA			140,000 PPA			180,000 PPA		
Cooperator	County	Planter Type	Date Planted	Reps	Pop (ppa)	Height(in)	Yield	Pop ppa	Heights (in)	Yield	Pop (ppa)	Height (in)	Yield
Glen Krall	Lebanon	Drill	5/1/17	4	51,923	27	67.6	67,721	28	69.3	90,605	31	72.6
Dave McLaughlin	Perry	Drill	3/23/17	4	109,583	27.95	50.2	145800	31.1	52.2	177399	31	52.2
Russel Larson	Centre	Planter		4	--	--	--	96485	31.2	56.4	127849	32.9	55.8
Ross Grooms	Westmoreland		5/22/17	2	93,324	21		106,867	19		144,968	23	
Lesher's Poultry	Franklin	Planter	5/10/17	4	97,279	-	65.8	130,880	-	74.3	166,302	-	77.6
Walter Ocker	Franklin	Planter	5/16/17	4	96,063	44	74.5	135,438	45	71.6	176,813	44	80.5
Dale Frankenfield	Montgomery	Drill	6/13/2017	4	92,535	40	57	109,954	42	55.5	157,921	44	55.9
Darren Brubaker	Blair	Planter	5/23/17	4	55,052	26	66.6	82,183	27	66	106,983	28	67.3
			Average	30	79,919	30.6	65.8b	105,300	31.1	67.3b	140,201	32.6*	70.8a
				CV	13.93	4.43	15	13.93	4.43	15	13.93	4.43	15
				LSD	10862	1.08	2.6	10862	1.08	2.6	10862	1.08	2.6

*Significant

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Field and Forage Crop Team Educators:

Penn State **Extension**

Liz Bosak, Dauphin & Perry County Extension Educator 717-921-8803

John Bray, Lebanon County Extension Educator 717-270-4391

Nicole Carutis, Potter County Extension Educator 814-274-8540

Andrew Frankenfield, Montgomery County Extension Educator 610-489-4315

Jeffrey Graybill, Lancaster County Extension Educator 717-394-6851

Mena Hautau, Berks County Extension Educator 610-378-1327

Chris Houser, Assistant Director 814-360-9412

Joel Hunter, Crawford County Extension Educator 814-333-7460

Zachary Larson, Blair County Extension Educator 814-414-0582

Mark Madden, Sullivan County Extension Educator 570-928-8941

Dwane Miller, Schuylkill County Extension Educator 570-622-4225

Rachel Milliron, Armstrong County Extension Educator 724-919-4314

Kelly Patches, Franklin County Extension Educator 717-263-9226

John Rowehl, York County Extension Educator 717-840-7408

Del Voight, Lebanon County Extension Educator 717-270-4391

David Wilson, Berks County Extension Educator 610-378-1327

PENN STATE CMEG Crop Management Extension Group

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