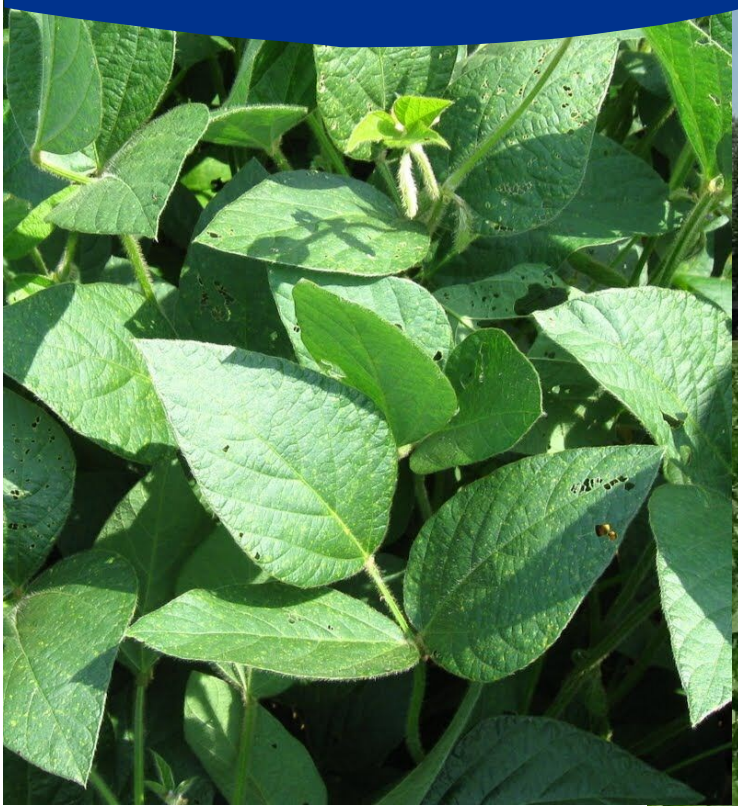
Pennsylvania On-Farm Network Report 2016



Supported and directed by the PA Soybean Board

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

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Field Trial Report

Development of an On-Farm Soybean Management Network

Delbert G. Voight, Ronald Hoover and Greg W. Roth

In 2009, we initiated a project to develop an On-Farm Soybean Management Network in Pennsylvania to help producers, their advisors and Ag industry representatives make more informed and research based decisions regarding soybean management. For the first year of the project, we established four objectives for the project:

1. Develop an on farm product testing network for soybean production in Pennsylvania.
2. Evaluate the influence of soybean at planting population on yield and final plant populations.
3. Conduct a survey of the Bean Leaf Beetle infestations and Bean Pod Mottle Virus to help establish appropriate thresholds for treatment.
4. Develop a fly over survey of representative soybean fields in conjunction with the Iowa Soybean Associations On-Farm Network.

Development of the On-Farm Network

We selected seven soybean producers as cooperators for the On-Farm Network. Each was selected because of their experience with soybean production and willingness to participate in the project.

1. Chris and Andrew Kimmel – Armstrong County: Extension Coordinator Kevin Fry
2. Glen Krall – Lebanon County: Extension Coordinator Del Voight
3. Melvin Lesher – Franklin County: Extension Coordinator Jon Rotz
4. Troy Alderfer - Berks County: Extension Coordinator Mena Hautau
5. Tom Adam, Tim Rabenold and Adam Snyder - Dauphin County: Extension Coordinator Paul Craig
6. Bill Behm - Chester County: Extension Coordinator Jeff Graybill
7. Ralph McNeal - Bradford County: Extension Coordinator Mark Madden

We feel we have develop an excellent network in our first year. Each of the cooperators was able to establish a replicated strip trial and at six of the seven sites we were able to collect good yield data. Yields averaged over 67 bushels per acre across all sites, which indicates we have an excellent group for assessing treatments under high yield production conditions.

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Pennsylvania On Farm Soybean Network

SEAREC

Field Trial Report

2016 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: 4N Acres: 2

2015 Crop: Corn Tillage: No-till

Planting Date: Jul 15, 2016 Variety: P36T86

Seed Treatment: Pioneer Premium Planter: White Planter

Planting Depth: 1 inch Seeding rate: variable

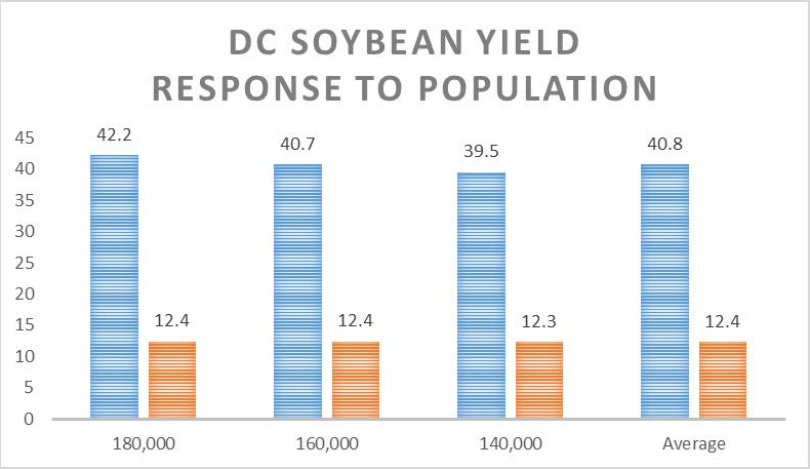
Herbicide: Gramaxzone plus Canopy f/b Credit Extra+ Pursuit

Harvest Date: 11/1/16 Plot size: 10 x 25 Feet

Replications: 6

Results:

	Yield		
Treatment	**Yield**	**Moisture**	**Test Weight**
180,000	42.2	12.4	58
160,000	40.7	12.4	57.6
140,000	39.5	12.3	57.4
Average	40.8	12.4	57.7
LSD	3.32	0.001	0.7
CV	6.34	6	2.1



Comments: It appears that the soybean yields were not affected significantly by population however it appears the trend is to the higher population. Perhaps a repeat with higher than 180k seed drop should be studied in more detail.

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Pennsylvania On Farm Soybean Network

SEAREC

Field Trial Report

2016 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: JE Acres: 2

2015 Crop: Corn Tillage: No-till

Planting Date: April 24, 2016 Variety: P36T86

Seed Treatment: Pioneer Premium Planter: White Planter

Planting Depth: 1 inch Seeding rate: 170,000

Herbicide: Gramaxzone plus Canopy f/b Credit Extra+ Pursuit

Harvest Date: 10/25/16 Plot size: 10 x 25 Feet

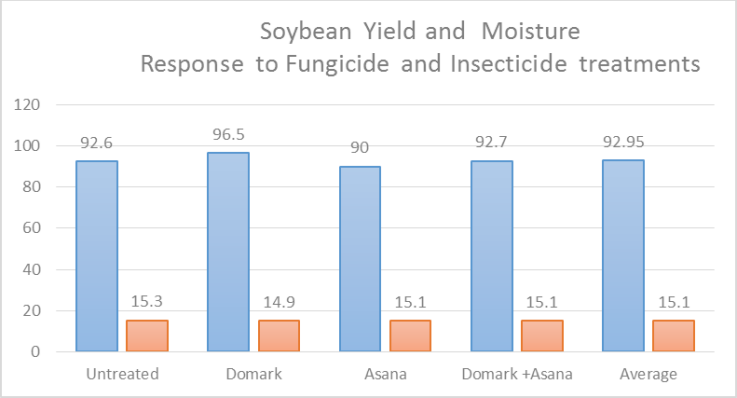
Replications: 6

Treatments

1 Control/Untreated
2 Domark 9 oz/acre
3 Asana 6 oz/acre
4 Asana plus Domark at above rates

Results

	Yield		
Treatment	**Yield**	**Moisture**	**Test Weight**
Untreated	92.6	15.3	56.5
Domark	96.5+	14.9	55.8
Asana	90	15.1	56.9
Domark +Asana	**92.7**	15.1	56.5
Average	92.9	15.1	56.4
LSD	2.11	0.002	0.92
CV	4%	1.41%	1.31%



Comments: There was a significant yield difference with the fungicide application. No other differences were noted in any other parameter of the study.

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Pennsylvania On Farm Soybean Network

SEAREC

Field Trial Report

2016 Response of Soybeans to Foliar Fertilizer

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

Field Information

Location: Southeast Research and Extension Center, Landisville

Field Name: JE Acres: 2

2015 Crop: Corn Tillage: No-till

Planting Date: April 24, 2016 Variety: P36T86

Seed Treatment: Pioneer Premium Planter: White Planter

Planting Depth: 1 inch Seeding rate: variable

Herbicide: Gramaxzone plus Canopy f/b Credit Extra+ Pursuit

Harvest Date: 10/25/16 Plot size: 10 x 25 Feet

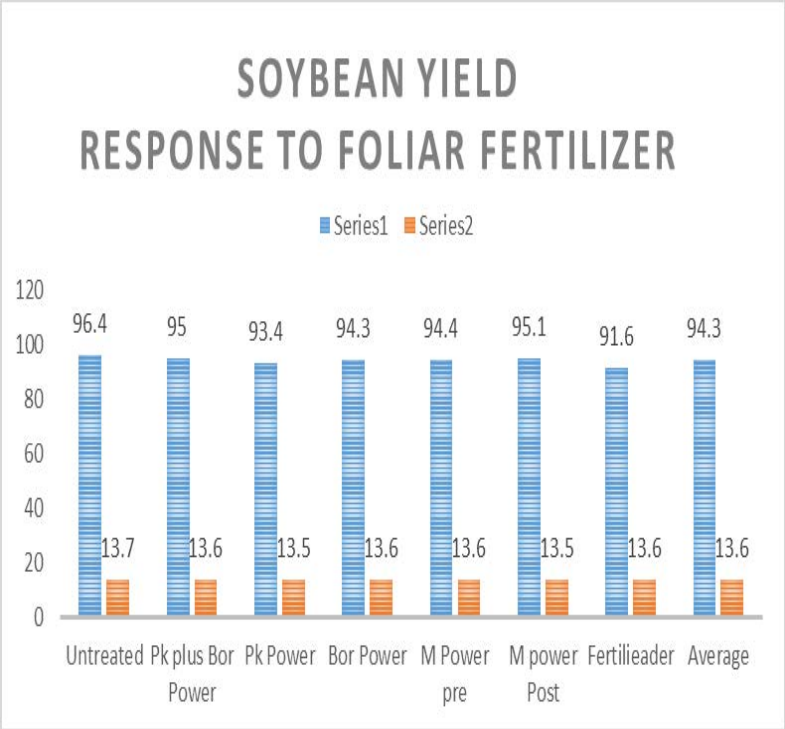
Replications: 6

Treatments

1 Untreated
2 PK Power 1.5qt/a + Bor Power 1.5 pt/a
3 PK Power 1.5 qt/a
4 Bor Power 1.5 pt/a
5 M-Power Pre 1 qt/a
6 Fertileader Axis 2.5qt/a
7 M Power Post 1pt/a

Results

	Yield		
Treatment	**Yield**	**Moisture**	**Test Weight**
Untreated	96.4	13.7	55.98
Pk plus Bor Power	95	13.6	56.6
Pk Power	93.4	13.5	56.1
Bor Power	**94.3**	13.6	56
M Power pre	94.4	13.6	56.97
M power Post	95.1	13.5	56.27
Fertilieader	91.6	13.6	56.8
Average	94.3	13.6	56.4
LSD	4.6	0.003	0.87
CV	4.2	2.18	1.29



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Pennsylvania On Farm Soybean Network

SEAREC

Field Trial Report

2016 Response to 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: 4N
Acres: 2
2015 Crop: Corn
Tillage: No-till
Planting Date: April 24, 2016
Variety: Various
Seed Treatment:
Planter: JD 1250 Drill
Planting Depth: 1 inch
Seeding rate: 170 k
Herbicide: Gramazone plus Canopy f/b Credit Extra+ Pursuit
Harvest Date:
Plot size: 10 x 50
Replications: 6

Treatments

1 Asgrow untreated seed – 3533
2 Asgrow treated seed – 3533 with Accleron
3 Doebler untreated seed – 3815
4 Doebler treated seed – 3815 with Gaucho/Boost
5 Mid-Atlantic untreated seed – 3855
6 Mid-Atlantic treated seed – 3815 with Pro Shield
7 Pioneer untreated seed – 35T58
8 Pioneer treated seed – 35T58 with Pioneer Premium
9 Seedway untreated seed – 2816
10 Seedway treated seed – 2816 with CMV/Cue/Tag Team

Results

Overall	Treated	Untreated	Significance	LSD	CV
Population	91208	87816	NS		
Growth	32.76	32.28	NS		
Pod	57	64	Yes	5	5.54
Yield	79.14	77.82	NS		

Results Continued

	Population							
	1wk		5wk		Mid-Season		Final	
	TRT	UTRT	TRT	UTRT	T	UTR	T	UTRT
Asgrow	80073	63655	107486	91611	106543	86765	97109	89210
Doebler	74884	65359	107331	94321	103436	95479	96180	85726
Mid Atlantic	69928	63191	99045	96025	96995	92751	87584	93625
Pioneer	85029	87429	105783	108958	103966	103436	97806	101756
Seedway	53975	35700	81699	71399	79995	61152	77362	68767
Average	72777	63066	100268	92462	98187	87916	91208	87816
CV	20.2		8.63		8.63		12201	
LSD	16059		9576		9371		11.68	

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Pennsylvania On Farm Soybean Network

SEAREC

Field Trial Report

	Growth			
	Mid Height		Final Height	
	T	UTRT	T	UTRT
Asgrow	12.2	10.4	32.6	30.4*
Doebler	11.2	12.7	35.4	35.6
Mid Atlantic	12.7	12.8	36	35
Pioneer	12.1	9.1	34	33
Seedway	15.2	15.3	25.8	27.4
Average	12.68	12.06	32.76	32.28
CV	5.54		4.21	
LSD	1.79		1.75	

	Yield							
	Pod Count		Bu/A		Moisture		TW	
	TRT	UTRT	TRT	UTRT	TRT	UTRT	TRT	UTRT
Asgrow	53	69	77.53	75.57	13.1	12.9	56.65	56.1
Doebler	60	57	83.27	77.93*	13.3	13.2	56.8	57.1
Mid Atlantic	62	58	79.25	78.05	12.9	13.1	55.9	56.4
Pioneer	51	77	80.43	79.85	12.8	13.0	55.9	56.2
Seedway	60	63	75.25	70.35*	12.9	12.8	55.7	55.9
Average	57.2	64.8	79.14	77.82	13	13	56.1	56.3
CV	5.54		5.1		1.93		1.65	
LSD	5		4.6		.3		1.1	

Comments:

It appears that the seed treatments had some effects on plant height, and population. Doeblers and Seedway(*) were two varieties of soybeans that responded to seed treatments that were significantly different. Overall there did not appear to be significant differences in any of the parameters of the study for 2016.

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Pennsylvania On Farm Soybean Network

SEAREC

Field Trial Report

2016 Soybean 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: JE Acres: 2

2015 Crop: Corn Tillage: No-till

Planting Date: April 24, 2016 Variety: P36T86

Seed Treatment: Pioneer Premium Planter: White Planter

Planting Depth: 1 inch Seeding rate: variable

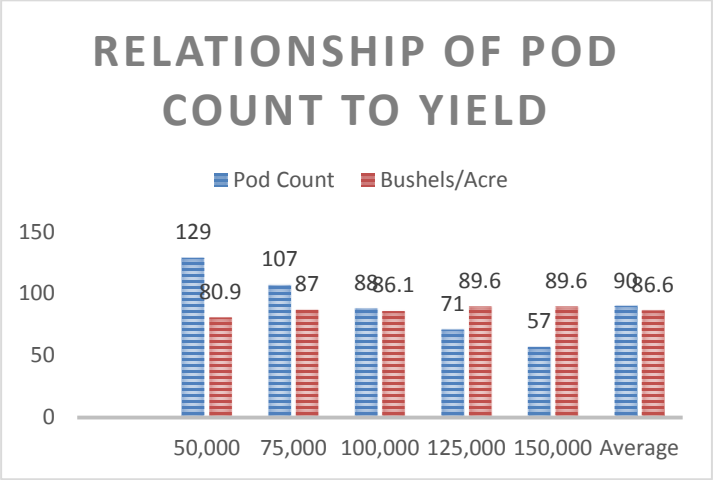
Herbicide: Gramaxzone plus Canopy f/b Credit Extra+ Pursuit

Harvest Date: 10/25/16 Plot size: 10 x 25 Feet

Replications: 6

Results:

	Yield			
Dropped Population	Pod Count	Bushels/Acre	Moisture in %	Test Weight
50,000	129*	80.9*	14.4	55.1
75,000	107*	87	14.4	55.3
100,000	88*	86.1	14.6	55.2
125,000	**71**	89.6	14.3	55.2
150,000	57	89.6	14.5	55.6
Average	90	86.6	14.4	55.2
CV	15%	5.70%	2.50%	1.20%



	Population		
Dropped Population	Pop-Up Population	Leaf Area Index Mid Season	Final Population
50,000	42205	.70	47393
75,000	53511	.73	54130
100,000	69916	.74	69463
125,000	80460	.73	85493
150,000	91534	.74	99200
Average	65545	.73	71136
CV	15%	7%	14%
LSD	13666	.06	12124

Comments: It appears that the soybean yields were not affected from 75 to 150,000 ppa.

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Pennsylvania On Farm Soybean Network

On-Farm

Field Trial Report

2016 Double Crop Soybean Response to plant Population Trial

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

Background: RyzUp is a solution of gibberellic acid known to increase cell elongation. By increasing the height to first pod using this product may aid in the harvest management of soybeans. SEAREC trials showed significant yields due to the height to first pod at VE-V2 and this On Farm trial is to validate its use at those stages.

Treatments

1. Untreated
2. Variable Populations

Results

			140K		160K		180K		200K		Differences	
Producer	Location	Reps	YLD	Moisture	YLD	Moisture	YLD	Moisture	YLD	Moisture	Significance	Average
SEAREC	Lancaster	6	39.42	12.48	40.79	12.47	42.2	12.48	-	-	NS	40.8
R and B Kreider	Lebanon	3	22.1	10.5	22.1	10.5	21.1	10.5	23.3	10.5	NS	22.2
										0.0		
		9	22.1	10.5	22.1	10.5	21.1	10.5	23.3	10.5		

Comments: Over 9 replications there does not appear to be a significant yield response due to treatment for this growing season. There is potential to reduce seeding rates however there needs to be more definitive work relative to variety and planting date.

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Pennsylvania On Farm Soybean Network

On-Farm

Field Trial Report

2016 Response to Application of RyzUp (GAA) Trial

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

Background: RyzeUp is a solution of gibberellic acid known to increase cell elongation. By increasing the height to first pod using this product may aid in the harvest management of soybeans. SEAREC trials showed significant yields due to the height to first pod at VE-V2 and this On Farm trial is to validate its use at those stages.

Treatments

1. Untreated
2. Ryze Up .5 oz/acre applied at V2

Results

			Untreated		Ryz Up .5 oz		Differences	
Producer	**Location**	**Reps**	**YLD**	**Moisture**	**YLD**	**Moisture**	**Significance**	**Deviation**
Burnin Bushels	Lebanon	4	85.6	13.0	87.3	13	NS	1.7
								0.0
		4	85.6	13.0	87.3	13.0	NS	1.7

Comments: Over 4 replications there does not appear to be a significant yield response due to treatment for this growing season. However there is a measureable difference.

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Pennsylvania On Farm Soybean Network

On-Farm

Field Trial Report

2016 Response to Application of M-Power Trial

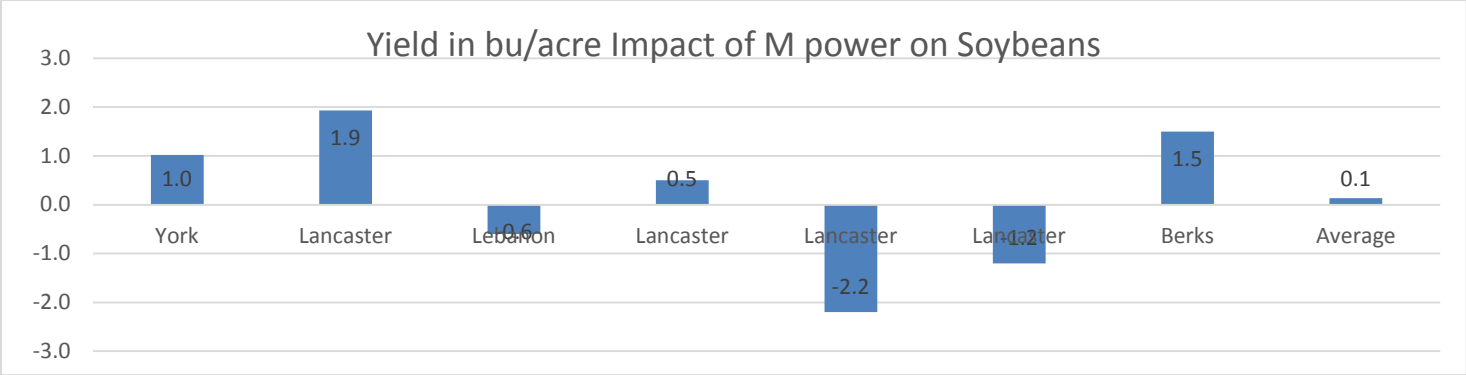
Delbert G. Voight, John Bray, Alyssa Collins and Greg Roth, Penn State University

Background: MPOWER is a dormant spore based liquid designed to rejuvenate the microbial population in the soil and improve soybean yields.
http://www.powerag.com/products/m-power.aspx

Treatments

1. Untreated
2. M-Power 1 pint/acre (pre-plant, in furrow, or post emergent V stages)

Results



			Untreated		M Power		Timing		
Producer	**Location**	**Reps**	**YLD**	**Moisture**	**YLD**	**Moisture**		**Deviation**	P=.10
Bob Buser	York	4	61.0	15.5	62.0	15.05	Post	1.0	NS
Ken Zimmerman	Lancaster	4	70.2	12.4	72.1	12.4	Post	1.9	NS
Daryl Alger	Lebanon	3	80.3	14.0	79.7	14	Post	-0.6	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.

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Pennsylvania On Farm Soybean Network

On-Farm

Field Trial Report

2016 Response to Application of PK Power Trial

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

Background: PK Power is a solution of 30% potassium derived from potassium hydroxide. http://www.powerag.com/products/m-power.aspx

Treatments

1. Untreated
2. PK Power 1 qt/acre

Results

			Untreated		PK Power		Differences	
Producer	**Location**	**Reps**	**YLD**	**Moisture**	**YLD**	**Moisture**	**Deviation**	**Significance**
Kent Martin	Franklin	4	19.3	NR	23.8	NR	4.5	YES P=.10 LSD .1.59 CV 3.29%
SEAREC	Lancaster	6	96.4	13.7	93.80	13.6	-2.4	NS
Daryl Alger	Lebanon	4	48.9	13.3	51.8	13.3	2.9	NS
	Average	10	54.8	13.3	56.4	13.2	1.6	NS

Comments: Over 14 replications there does not appear to be a yield response due to treatment for this growing season. However the Franklin location had a significant bump in yield for this growing season.

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Pennsylvania On Farm Soybean Network

On-Farm

Field Trial Report

2016 Soybean Response to Plant Population Trial

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

Background: Soybeans are capable of responding to lower plant populations. Seeding rates were assessed for the overall impact on yield

Treatments

1. Untreated
2. 50k
3. 75k
4. 100k
5. 125k
6. 150k

Results

			50k			75k			100k				125k		150k			
Producer	**Location**	**Reps**	**YLD**	**Moisture**	**Final Stand**	**YLD**	**Moisture**	**Final Stand**	**YLD**	**Moisture**	**Final Stand**	**YLD**	**Moisture**	**Final Stand**	**YLD**	**Moisture**	**Final Stand**	**P=.10**
Matt Ahern	Bradford	4	40.16	14.3	49922				39.8	14.2	71356				40.3	14.2	115367	NS
SEAREC	Lancaster	6	80.9	14.4	47393	87.3	14.4	54130.0	86.2	14.6	69463	89.6	14.3	85493	89.6	14.5	99200	50-75 yes 75-150 NS
													0.0					
		10	60.5	14.4	48657				63.0	14.4	70409				65.0	14.4	107283.5	

Comments: Soybeans appear to maintain yields across a varied plant population. There were significant differences at the Lancaster location between 50 to 75k however from 75-150k there were no statistical differences.

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Pennsylvania On Farm Soybean Network

On-Farm

Field Trial Report

2016 Soybean Response to Foliar Fungicide and Insecticide Applications

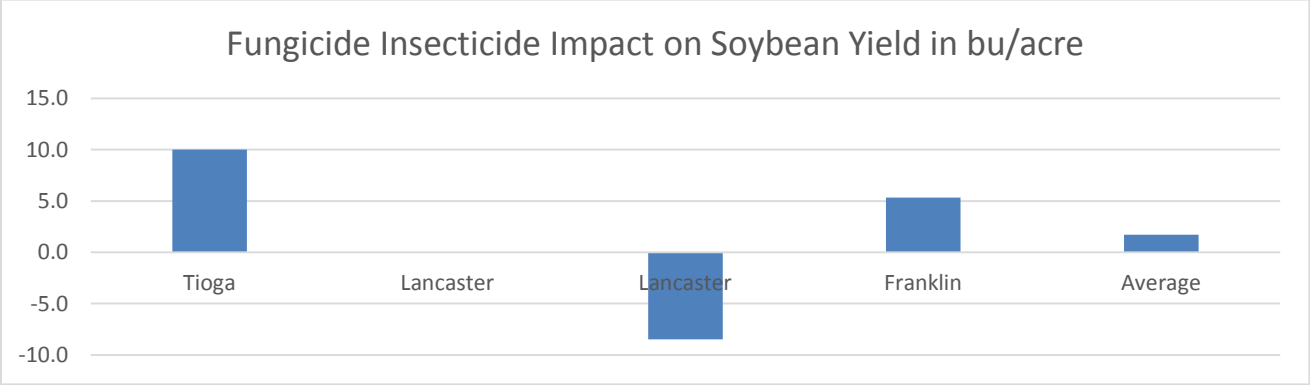
Delbert G. Voight, John Bray, Alyssa Collins and Greg Roth, Penn State University

Background: Fungicides and Insecticides are commonly used without the presence of known thresholds. The SEAREC trials indicated for 2016 that there was not a response due to insecticide treatments however there was a significant response to fungicide applications. The On Farm Network seeks to validate small plot results.

Treatments

1. Untreated
2. Domark Fungicide 9 oz/a plus pyrethroid of farmers choice

Results



			Untreated		Domark Plus Insecticide		Differences	
Producer	**Location**	**Reps**	**YLD**	**Moisture**	**YLD**	**Moisture**	**Significance**	**Deviation**
Karl Kroek	Tioga	3	44	13	54	13	p=.10 CV 3.9%	10.0
SEAREC	Lancaster	6	92.67	13.7	92.67	13.8	NS	0.0
Robert Shearer	Lancaster	4	83.8	13.0	75.3	13	NS	-8.5
Ken Moore	Franklin	3	69.1	13.0	74.4	13	NS	5.3
	Average	16.0	72.4	13.2	74.1	13.2	NS	1.7

Comments: Over 16 replications there does not appear to be a yield response due to treatment for this growing season. However at the Tioga location there appeared to be a significant response to the treatments.

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Pennsylvania On Farm Soybean Network

On-Farm

Field Trial Report

2016 Soybean Response to Seed Treatment Applications

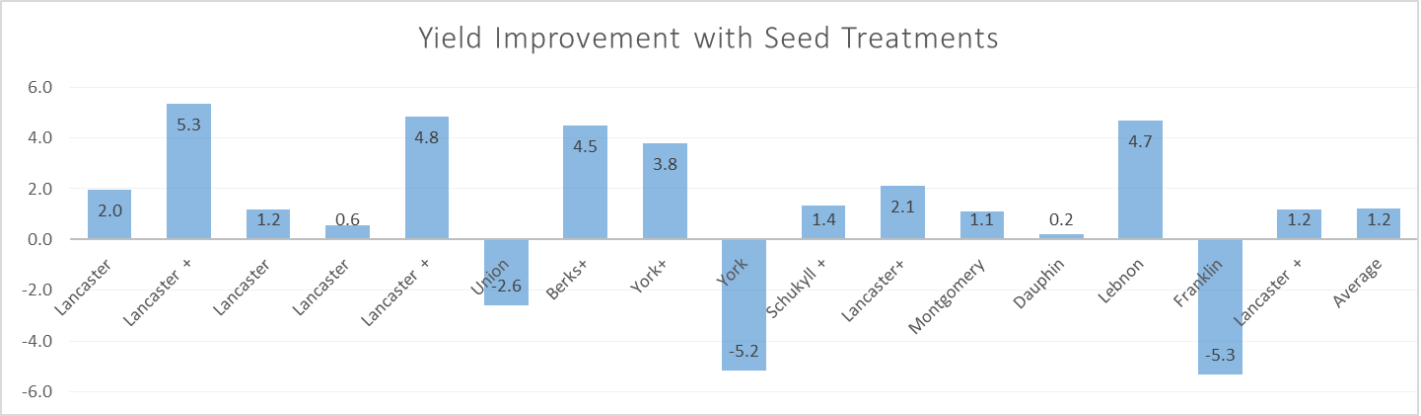
Delbert G. Voight, John Bray, Alyssa Collins and Greg Roth, Penn State University

Background: Seed treatments containing fungicide, insecticide and other growth enhancement products are being used widely. This On Farm trials seek to validate SEAREC data suggesting there were differences depending on planting date.

Treatments

1 Asgrow untreated seed – 3533
2 Asgrow treated seed – 3533 with Accleron
3 Doebler untreated seed – 3815
4 Doebler treated seed – 3815 with Gaucho/Boost
5 Mid-Atlantic untreated seed – 3855
6 Mid-Atlantic treated seed – 3815 with Pro Shield
7 Pioneer untreated seed – 35T58
8 Pioneer treated seed – 35T58 with Pioneer Premium
9 Seedway untreated seed – 2816
10 Seedway treated seed – 2816 with CMV/Cue/Tag Team

Results



Comments: Over 15 locations appears to be significant responses in the early plantings with a 2.8 bu/acre average response from May 10 and earlier. Since populations were similar it is due to one or more of the seed treatment fractions utilized.

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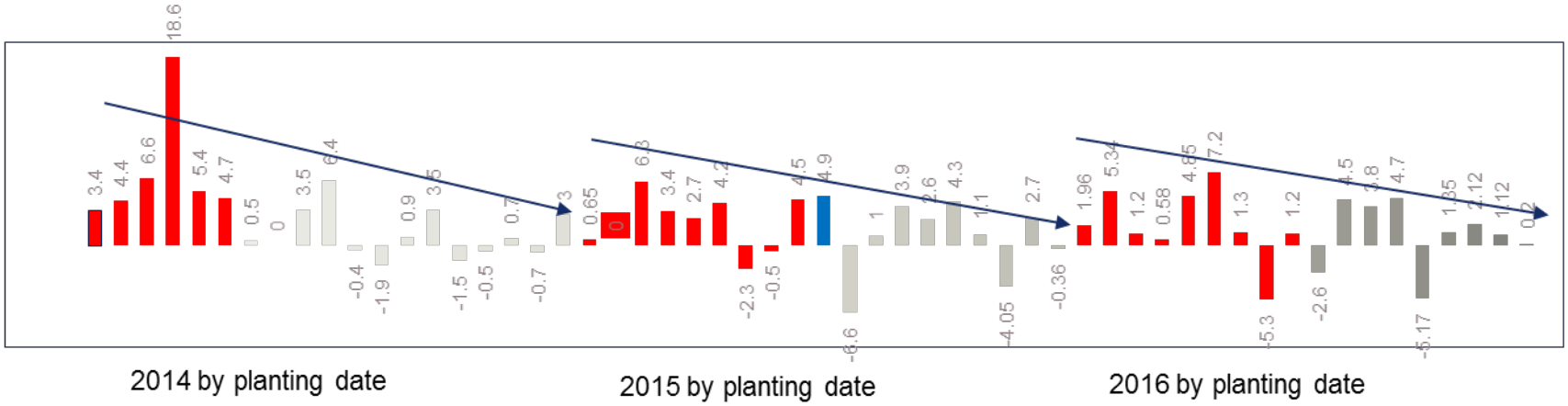
2014-2016 Soybean Seed Treatment Summary

- 2014-
  - Early Planted < 10 May
    - 23 reps +5 bu/acre Significant p=.10
    - Pop 128,000 vs 109,000
  - Mid May 10- May 25
    - 45 reps - +1 bu/a ns
    - Pop 119,000 vs 114,000 ns
  - Late > May 25
    - 23 reps – no loss no gain
    - Population 103,000 vs 101,000
  - Overall-
    - 91 reps +2.5 bu/a NS
    - Pop 116,000 vs 108,000
- 2015
  - Early < 10 May
    - 37 reps +2.4 bu/acre NS
    - Pop 127,000 vs 105,000 Significant p=.10
  - Mid 10- May 25
    - 37 reps +1bu/acre
    - Pop 129,000 vs 109,000 sign p=.10
  - Late > May 25
    - 11 reps +1 bu/acre
    - Pop 85,000 s 80,000 NS
  - Overall
    - 85 reps +2 bu/acre NS
    - Pop 124,000 vs 103,000 Significant p=.10
- 2016
  - Early Planted < 10 May
    - 30 reps +2.8 bu/acre Significant p=.10
    - Pop 87818 UT vs 91208 T
  - Mid May 10- May 25
    - 15 reps - +.1bu/a ns
  - Late > May 25
    - 27 reps – +.8bu/acre NS
    - Population 115847 UT vs 111,958 T
  - Overall-
    - 72 reps +1.2 bu/a NS
    - Pop 95825 UT vs 97136 T

Pennsylvania On Farm Soybean Network

On-Farm
Field Trial Report



April to May 10 planting Date 3.4 bu/acre overall

May 10 to May 25 planting Date .7 bu/acre overall

May 25 and later planting Date .6 bu/acre overall

Over 248 site replications and three soybean seasons there was a 1.9 bu/acre increase due to seed treatments. There is no way of determining which fraction (insecticide or fungicide or growth regulator) of the seed treatments are most beneficial.

Assuming the cost of ($9.00/bu market and treatment cost of $16.00 unit or per acre. This would require a 1.4 bu/acre increase in yield to pay for seed treatment costs. The most economic return occurs in the early planted soybeans. A 3.4 bu/acre increase would equate to a net profit of $14.60 per acre increase from the use of seed treatments. Later plantings without the presence of a pest would result in a net loss to management.

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Pennsylvania On Farm Soybean Network

On-Farm

Field Trial Report

2016 Full Data Set:

					Untreated			Treated			Differences	
Producer	**Location**	**Variety**	**DOP**	**Reps**	**YLD**	**Moisture**	**Final Pop**	**Final Pop**	**YLD**	**Moisture**	Significance	Deviation
SEAREC	Lancaster	Asgrow 3533	24-Apr	6	75.6	12.9	89210.0	97109.0	77.5	13.12	NS	2.0
SEAREC	Lancaster +	Doebler 3815	24-Apr	6	77.9	13.3	85726.0	96180.0	83.3	13.2	P=.10 LSD 4.6 CV 5.1%	5.3
SEAREC	Lancaster	MA 3855	24-Apr	6	78.1	13.1	93625.0	87584.0	79.3	12.9	NS	1.2
SEAREC	Lancaster	P 35T58	24-Apr	6	79.9	13.1	101756.0	97806.0	80.4	13	NS	0.6
SEAREC	Lancaster +	Seedway 2816	24-Apr	6	70.4	12.8	68767.0	77362.0	75.3	12.9	P=.10 LSD 4.6 CV 5.1%	4.8
Doug Bowersox	Union	P 35T58	12-May	3	27.6	10.1	105678.0	116346.0	25.0	10.1		-2.6
John Bicksler	Berks+	Asgrow 3533	15-May	4	57.5	12.9	114582.0	128489.0	62.0	12.7	P=.10 LSD 1.52 CV 1.53%	4.5
Dean Miller	York+	MA 3855	5/16/2016	4	74.5	12.7	122930.0	133375.0	78.3	12.7	P=.10 LSD 3.5 CV 2.76%	3.8
Bob Buser	York	Doebler 3815	25-May	4	53.8	12.1	124270.0	128932.0	48.6	11.9	NS	-5.2
Kochs Farm Service	Schukyll +	Seedway 2816	5/27/2016	4	62.9	12.7	124270.0	128932.0	64.3	12.7	P=.10 LSD .75 CV .71%	1.4
Jeff Frey	Lancaster+	P 35T58	28-May	4	83.1	10.8	135094.0	133816.0	85.3	11	P=.10 LSD 1.8 CV 1.31%	2.1
Dale Frankenfield	Montgomery	Seedway 2816	1-Jun	4	37.1	13.0	55413.0	65382.0	38.3	13	NS	1.1
Milton Hershey	Dauphin	P 35T58	30-Jun	4	63.3	13.0			63.5	13	NS	0.2
Randy Ziegler	Lebnon	Seedway 2816	20-May	3	78.8	13.2	65016.0	88236.0	83.5	13.5	NS	4.7
Leslie Bowman	Franklin	Asgrow 3533		4	56.8	12.1	96600.0	90100.0	51.5	11.96	NS	-5.3
Balmer	Lancaster +	P 35T58		4	79.3	12.9	118887.0	134912.0	80.5	12.9	P=.10 LSD 1.13 CV .85%	1.2
	Average			72	66.0	12.5	100121.6	106970.7	67.3	12.5	NS	1.2

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