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Virginia On-Farm Soybean Test Plots

A summary of replicated research conducted by
Virginia Cooperative Extension in cooperation with local producers and agribusiness

2015

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Introduction

These demonstration and research plot results are a collaborative effort of Virginia Cooperative Extension (VCE) Agents and Specialists, area producers, and agribusiness. The purpose of this publication is to provide research-based information to aid in the decision-making process for soybean producers in Virginia. It provides an unbiased evaluation of varieties, management practices, and new technologies through on-farm replicated research using producer equipment and time. These experiments enable producers to make better management decisions based on research and provide greater opportunities to improve yields and profits, which improves quality of life for them and their families.

The success of these on-farm plots is very dependent on the cooperative effort of the producer and the assisting agribusinesses. We are grateful for that cooperation. We hope the information will be beneficial to you and your individual agribusiness operations. This publication is made available each year at the Virginia Grain and Soybean Conference, at regional production meetings throughout Virginia, and on the VCE web site (http://pubs.ext.vt.edu). This information reaches hundreds of Virginia soybean and grain producers plus agribusinesses, impacting over 500,000 acres of soybeans valued at over $150 million.

The field work and printing of this publication is supported by Virginia Soybean Board Check-Off Funds. The cooperators graciously wish to acknowledge this support. Any producer or agribusiness professional wishing to receive a copy of this publication should contact their local Extension Agent who can request a copy from David Moore in Middlesex County at 804-758-4120 or contact **damoore3@vt.edu.**

This is the 19th year of this multi-county cooperative effort and further work is planned for 2016. The authors wish to thank the many producers who participated in this project. Appreciation is extended to seed, crop protection, and fertilizer representatives who donated products and/or assisted with the field work.

VSB
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GENERAL SUMMARY

These replicated studies provide information that can be used by Virginia soybean producers to make better management decisions. Refer to individual plots for discussion of results.

As in the past, agents have compared maturity group 4 & 5 varieties across multiple locations. This work is performed in concert with the Official Variety Tests conducted by Dr. David Holshouser and offers producers even stronger yield comparison information that they can use when making planting decisions. Maturity Group 4 and 5 varieties were compared at several locations across Virginia, including the Virginia AG-EXPO site in Orange County. In Gloucester County and in the City of Virginia Beach, and in Central Virginia, evaluations of some Liberty Link varieties yielded well.

In two locations, the use of a biological seed treatment product, *rizNate*™ was evaluated on full season maturity group 5 soybeans. According to product information, "*rizNate*™ was developed to prime the seed for speeding up the germination and emergence timeline. This technology maximizes the genetics of a seed to ensure proper seedling vigor and uniform growth". Side by side comparisons showed no visual differences and yield differences varied.

In Essex, Keith Balderson looked at soybean maturity and its effect on yield. One of the tools farmers use to help spread production risk is to plant hybrids and varieties of crops with different maturities. Soil moisture conditions were excellent throughout early August, but dry weather in mid and late August impacted yields.

In Essex and in King & Queen, a new seed treatment was evaluated. According to Bayer CropScience, "ILeVO® is the first and only seed treatment for Sudden Death Syndrome (SDS) and nematode activity. It also has seed-zone activity against soybean cyst nematode (SCN)." In these plots, the seed treatment was evaluated in a field with a long history of heavy soybean cyst nematode pressure and was also evaluated in a field with known SCN and Root-Knot (RKN) activity. Samples taken during the growing season showed the presence of nematodes, but no SDS was observed in any of the plots.

A look at commercial gypsum on soybeans in two locations showed no significant increase in yield.

In Caroline County, Mike Broaddus compared nematode resistant varieties to non-resistance in a known nematode "hot spot". Nematodes continue to be troublesome for eastern Virginia soybean producers.

Results of plot work done to test a decision-making aid for foliar fungicide treatments show promise. This work,headed by Dr. Hillary Mehl, took place in eight locations across Virginia, Maryland and Delaware.

In six (6) locations, nutrients were tracked in the plant during the growing season. Waypoint Analytical provided the information from tissue samples taken at 4-5 different stages and to track levels at various stages of growth. This is the third year of this work done to see if there were any limiting nutrients for the soybeans.

MATURITY GROUP 4 VARIETY COMPARISONS

2015 OVERALL MATURITY GROUP 4 COMPARISON

Brand	Variety	Middlesex	West-moreland	New Kent	Orange	Prince George	Mecklen-burg	Brunswick	Virginia Beach	Average
Asgrow	AG4835	35.5	57.4	45.6	34.9	48.9	51.0	58.7	80.9	51.6
Pioneer	P46T21R1	44.3	54.9	44.5	34.4	41.1	57.0	52.9	82.1	51.4
Pioneer	P49T80R1	37.4	53.6	47.6	32.4	42.4	55.0	56.6	80.7	50.7
Asgrow	AG4632	32.0	52.8	43.0	---	44.3	56.0	53.8	77.6	49.0
SeedConsultants	SCS9474RR	46.2	52.0	41.1	33.5	38.2	58.0	51.0	71.5	48.9
Channel	4508R2/SR	38.3	52.3	39.1	38.1	29.7	54.0	50.8	80.7	47.9
Dyna-Gro	S48RS53	40.1	52.9	43.8	31.3	36.0	54.0	50.2	73.3	47.7
Mycogen	5N451	36.5	49.3	43.4	27.6	34.4	56.0	53.9	80.3	47.7
Channel	4806R2/STS	40.0	51.4	41.1	31.3	38.3	50.0	49.6	78.2	47.5
Mycogen	5N479	34.6	47.5	42.0	31.7	41.4	51.0	48.5	76.5	46.7
SouthernStates	SS4917NR2	33.3	48.7	41.7	30.3	43.1	48.0	59.1	67.5	46.5
Dyna-Gro	46RY85	44.3	53.8	35.7	35.8	31.2	47.0	48.1	67.8	45.5
Credenz	CZ4959RY	34.4	48.6	34.5	29.4	32.8	45.0	58.2	71.5	44.3
Doebler's	DB4914SR2	38.4	40.6	39.5	31.8	40.6	36.0	59.1	67.0	44.1
Doebler's	DB4214SR	41.6	52.2	34.0	28.7	29.7	54.0	46.8	62.3	43.7
Credenz	CZ4590RY	33.6	51.2	32.8	33.6	28.9	51.0	39.1	67.3	42.2
Varieties listed below were not included in two or more sites; therefore, we have less confidence that they will yield similarly in future years or other environments.										
Hubner	H42-13R2	37.8	56.5	33.8	33.5	33.5	---	---	77.6	47.1
Hubner	H48-13R2/STS	33.7	51.1	---	35.6	37.3	---	50.5	74.6	46.7
SouthernStates	SS4312NR2	30.0	54.2	36.5	---	---	---	---	---	46.0
SouthernStates	SS4714NSR2	45.0	---	---	---	---	46.0	58.4	69.7	47.6
USG	74B58	36.0	53.9	---	---	35.0	---	53.5	73.1	46.9
USG	74D95RS	37.0	49.8	38.5	---	38.0	---	61.5	64.2	46.6
Site Average		**37.7**	**51.7**	**39.9**	**32.6**	**37.2**	**51.1**	**53.0**	**73.5**	**47.1**

[1]To obtain averages for varieties with missing data, the site averages was used in calculations.

2015 ORANGE (AG-EXPO) MATURITY GROUP 4 SOYBEAN COMPARISON

Cooperators: Producer: Brooke Farms
Extension: Steve Hopkins, VCE Orange; David Holshouser, VCE Soybean Specialist
Industry: Jim Riddell (S. States); Participating Seed Companies
Previous Crop: Barley
Soil Type: Nason Silt Loam
Tillage No-Till
Planting Date: June 11, 2015
Seeding Rate/Row Spacing: 145,000 seeds in 7 "rows
Fertilization: 300# 0-0-60
Crop Protection: 1.5 quarts Glyphosate + 0.5 ounce Cadet
Harvest Date: October 31, 2015
Harvest Equipment: John Deere

Brand	Variety	Moisture (%)	Yield (bu/A)
Asgrow (Check)	AG4933	harvest error	harvest error
Asgrow	AG4632	harvest error	harvest error
Southern States	SS4714NR2	harvest error	harvest error
Credenz	CZ4590RY	14.8	33.6
Channel-	4508R2/SR	14.6	38.1
CPS/Dyna-Gro	S46RY85	15.1	35.8
Hubner	H48-13R2	15.5	34.4
Mycogen	5N479	14.8	31.7
Pioneer	P46T21R1	15.1	34.4
Doebler's	DB4914SR2	15.1	28.7
Asgrow (Check)	AG4933	15.3	25.3
Doebler's	DB4214SR	15.1	28.7
Pioneer	P49T80R1	14.7	32.4
Mycogen	5N451	14.5	27.8
Hubner	H48-13R2STS	9.3	36.3
Dyna-Gro	S48RS53	14.8	31.3
Channel	4806R2/STS	14.9	31.3
Bayer-Crednez	CZ4959RY	14.2	29.4
Southern States	SS4917NR2	14.2	30.3
Seed Consultants	SCS9474RR	14.0	33.5
Asgrow	AG4835	14.6	34.9
Asgrow (Check)	AG4933	14.3	29.5
Averages		14.5	32.0

Discussion:
Use this and other Virginia Tech on-farm soybean variety information when making planting decisions for 2016.

2015 MIDDLESEX MATURITY GROUP 4 SOYBEAN COMPARISON

Cooperators: Producer: Wayne Burch
Extension: David Moore, VCE
Taylor Sabo, VCE Summer Intern
Industry: Participating Seed Companies

Previous Crop: Soybeans
Soil Type: Emporia Loam
Tillage No-Till
Planting Date: May 27, 2015
Seeding Rate/Row Spacing: 140,000/30 inch rows
Fertilization: 100# 0-0-60
Crop Protection: Gramoxone + Envive, Post: Glyphosate
Harvest Date: October 23, 2015
Harvest Equipment: AGCO-Allis Gleaner R-62

Brand	Variety	Moisture (%)	TW (lb/bu)	Yield (bu/A)
Stine (Check)	48RD00	13.7	53	40.6
Mycogen	5N479	14.2	55	34.6
Mycogen	5N451	14.7	54	36.5
Credenz	CZ4590RY	14.8	54	33.6
Credenz	CZ4959RY	14.7	55	34.4
USG	74D95RS	14.6	54	37.0
USG	74B58	14.6	56	36.0
Stine (Check)	48RD00	14.3	53	31.5
Southern States	SS4312NR2	14.4	53	30.0
Southern States	SS4917NR2	14.2	56	33.0
Asgrow	AG4632	14.2	55	32.0
Asgrow	AG4835	14.2	56	35.5
Hubner	H41-13	14.3	54	37.8
Hubner	H48-13R2	14.3	57	33.7
Stine (Check)	48RD00	14.2	55	33.7
Seed Consultants	SCS9474RR	14.1	57	46.2
Doebler's	DB4214SR	13.9	57	41.6
Doebler's	DB4914SR2	13.9	55	38.4
Pioneer	P46T21R1	14.0	56	44.3
Pioneer	P49T80R1	14.1	57	37.4
Channel	4508R2/SR	14.1	55	38.3
Stine (Check)	48RD00	13.9	56	31.2
Channel	4806R2/STS	13.8	56	40.0
Dyna-Gro	S46RY85	13.7	55	44.3
Dyna-Gro	S48RS53	13.5	56	40.1
Stine (Check)	48RD00	13.6	57	28.1
Averages		14.2	55.3	36.5

2015 NEW KENT MATURITY GROUP 4 SOYBEAN COMPARISON

Cooperators: Producer: Davis Produce
Extension: David Moore, VCE-Middlesex
Taylor Sabo, Summer Intern
Industry: Participating Seed Companies

Previous Crop: Wheat
Soil Type: Altavista-Douge Sandy Loam
Tillage No-Till into Wheat Stubble
Planting Date: July 1, 2015
Seeding Rate/Row Spacing: 200,000 seeds into 7.5 inch rows
Fertilization: None
Crop Protection: 1 qt. Roundup
Harvest Date: November 17, 2015
Harvest Equipment: AGCO Gleaner R52

Brand	Variety	Moisture%	Yield (bu/A)
Doebler's	DB4914SR2	11.7	39.5
Doebler's	DB4214SR	11.9	34.0
Pioneer	P46T21R1	11.8	44.5
Pioneer	P49T80R1	12.2	47.6
NK (Check)	S47K5	11.7	40.0
Southern States	SS4312NR2	12.6	36.5
Southern States	SS4917NR2	12.1	41.7
Dyna-Gro	S48RS53	12.0	43.8
Dyna-Gro	S46RY85	11.5	35.7
NK (Check)	S47K5	11.5	39.6
Seed Consultants	SCS9474RR	11.6	41.1
Hubner	H42-13	11.6	33.8
Mycogen	5N479	11.6	42.0
Mycogen	5N451	11.6	43.4
NK (Check)	S47K5	11.6	41.1
Credenz	CZ4959RY	11.5	34.5
Credenz	CZ4590RY	11.5	32.8
Channel	4806R2/STS	11.4	41.1
Channel	4508R2/SR	11.4	39.1
USG	74B58	harvest error	harvest error
USG	74D95RS	11.5	38.5
Asgrow	AG4835	11.5	45.6
Asgrow	AG4632	11.7	43.0
Averages:		**11.7**	**39.7**

Discussion: Use this and other Virginia Tech on-farm variety information when making planting decisions for 2016.

2015 VIRGINIA BEACH/CHESAPEAKE MATURITY GROUP 4 SOYBEAN COMPARISON

Cooperators: Producer: North Landing Farms/ Curtis Wolfarth
Extension: Roy D. Flanagan III and M. Watson Lawrence
Industry: Participating Seed Companies
Previous Crop: Soybeans
Soil Type: Acredale Silt Loam
Tillage: Conventional
Planting Date: May 26, 2015
Row Spacing: 18 inch rows
Fertilization: 250 lbs./ acre of 7-18-36
Crop Protection: Preemergence: 24 oz. of Dual II Magnum
Postemergence: June 10-32oz. Powermax, 8oz. Sinister, & 5oz. Dynamic
August 3: Quadris Top SB and 12 oz. 9oz. Besiege
Harvest Date: October 21, 2015
Harvest Equipment: JD 9500 with 922 grain platform

Brand	Variety	Moisture (%)	Yield (bu/A)
Pioneer	P46T21R1	13.0	82.1
Asgrow	AG4835	12.5	80.9
Channel	4508R2/SR	12.9	80.7
Pioneer	P49T80R1	12.1	80.7
Mycogen	5N451	12.9	80.3
Channel	4806R2/STS	12.3	78.2
Asgrow	AG4632	12.8	77.6
Hubner	H42-13	12.3	77.6
Mycogen	5N479	13.0	76.5
Hubner	H48-13R2	12.8	74.6
Dyna Gro	S48RS53	12.2	73.3
USG	74B58	13.0	73.1
Great Heart	GT482	12.8	72.2
Seed Consultants	SCS9474RR	13.6	71.5
Credenz	CZ4959RY	13.2	71.5
Southern States	SS4714NSR2	12.9	69.7
Dyna Gro	S46RY85	11.7	67.8
Southern States	SS4917NR2	12.4	67.5
Credenz	CZ4590RY	13.2	67.3
Doebler's	DB4914SR2	13.4	67.0
USG	74D95RS	12.9	64.2
Doebler's	DB4214SR	12.3	62.3
Great Heart	GT476	13.2	59.8
Averages		**12.8**	**72.0**

Discussion: Use this and other Virginia Tech soybean variety information for 2016.

2015 WESTMORELAND MATURITY GROUP 4 SOYBEAN COMPARISON

Cooperators:	Producer:	F. F. Chandler, Louis Chandler
	Extension:	Stephanie Romelczyk, ANR, Westmoreland
		Keith Balderson, ANR, Essex
		Trent Jones, ANR, Northumberland/Lancaster
	Industry:	Participating Seed Companies
Previous Crop:	Corn	
Soil Type:	Suffolk Sandy Loam	
Tillage:	No-Till in 30" Rows	
Planting Date:	May 27, 2015	
Seeding Rate:	130,000	
Fertilization:	0-0-40	
Crop Protection:	Burndown: Gramoxone (2.5 pt.) + Envive (32.5 oz.)	
	Post: Touchdown (36 oz.) + Black Label Zinc (1 gal.)	
	R1-R3: Quadris Top (8 oz.) + Sniper (6 oz.) + Re-Nforce (1 gal.)	
Harvest Date:	October 21, 2015	

Brand	Variety	Moisture (%)	Yield (bu/A)
Asgrow	AG4835	10.8	57.4
Hubner	H42-13R2	11.2	56.5
Pioneer	P46T21R1	11.3	54.9
Southern States	SS4312NR2	10.6	54.2
USG	74B58	11.4	53.9
Dyna-Gro	S46RY85	10.8	53.8
Pioneer	P49T80R1	11.1	53.6
Dyna-Gro	S48RS53	10.4	52.9
Asgrow	AG4632	10.5	52.8
Channel	4508R2/SR	11.2	52.3
Doebler's	DB4214SR	11.4	52.2
Seed Consultants	SCS9474RR	11.0	52.0
Channel	4806R2/STS	11.4	51.4
Credenz	CZ4590RY	10.8	51.2
Hubner	H48-13R2	10.9	51.1
USG	74D95	11.7	49.8
Mycogen	5N451	10.7	49.3
Southern States	SS4917NR2	10.8	48.7
Credenz	CZ4959RY	10.2	48.6
Mycogen	5N479	10.9	47.5
Doebler's	DB4914SR2	11.1	40.6
Averages		**11.0**	**51.7**

Discussion: Doebler's DB4914SR2 was completely lodged, making harvest difficult. Lower yields of that variety reflect the harvest difficulties and yield loss due to early lodging. Significant groundhog holes were present in Asgrow AG4835, Bayer Credenz CZ4959RY and Dow-Mycogen 5N479**.**

2015 PRINCE GEORGE MATURITY GROUP 4 SOYBEAN COMPARISON PLOT

Cooperators: Producer: Paul Cerny & Sean Finney
Extension: Scott Reiter, Prince George
Industry: Participating Seed Companies
Previous Crop: Wheat with straw removed
Soil Type: Slagle sandy loam and Lynchburg loam
Tillage: No-till
Planting Date: June 16, 2015
Seeding Rate/Row Spacing: 220,000 seed per acre, 7 inch rows
Fertilization: 110-40-100 applied to wheat
Crop Protection: 1 quart glyphosate + 0.375 ounces Synchrony XP
Harvest Date: November 18, 2015
Harvest Equipment: John Deere 9500

Brand	Variety	Moisture (%)	Yield (bu/A)
Asgrow (Check)	AG5533	14.8	39.3
Asgrow	AG4632	14.2	44.3
Asgrow	AG4835	14.3	48.9
Pioneer	P46T21R1	14.4	41.1
Pioneer	P49T80R1	14.8	42.4
Southern States	SS4714NSR2	14.4	45.0
Southern States	SS4917NR2	13.5	43.1
USG	74B58	14.2	35.0
USG	74D95RS	14.3	38.0
Hubner	H42-13R2	14.0	33.5
Hubner	H48-13R2/STS	14.1	37.3
Dyna-Gro	S46RY85	13.8	31.2
Dyna-Gro	S48RS53	13.6	36.0
Channel	4508R2/SR	13.7	29.7
Channel	4806R2/STS	13.6	38.3
Credenz	CZ4959 RY	13.7	32.8
Credenz	CZ4590 RY	13.6	28.9
Mycogen	5N451	13.7	34.4
Mycogen	5N479	13.7	41.4
Doeblers	DB4214SR	13.6	29.7
Doeblers	DB4914SR2	13.8	40.6
Seed Consultants	SCS9474RR	13.8	38.2
Asgrow (Check)	AG5533	13.8	39.0
Averages		**14.0**	**37.7**

Discussion: This turned out to be a surprisingly good yield despite being wet-dry-wet. This site experienced a very dry period from August 11 thru September 9 with only 1 inch of rain during those 4 weeks. However, 24.6 inches of rain was received from planting to harvest. The maturity group 4 varieties had noticeably more damage than the adjoining maturity group 5 plots.

2015 MECKLENBURG MATURITY GROUP 4 SOYBEAN VARIETY COMPARISONS

Cooperators: Producer: John Manning
Extension: Taylor Clarke, Lindy Tucker, Laura Siegle, Nikki Norton
Previous Crop: Soybeans
Soil Type: Appling Fine Sandy Loam
Tillage: No-till
Planting Date: May 14, 2015
Seeding Rate/Row Spacing: 140-150,000 in 15"rows: JD 1790 10' no-till drill
Fertilization: 0-30-60
Crop Protection: Pre: Roundup PowerMax and Envive;
Post:Roundup PowerMax
Harvest Date: October 25, 2015 with JD 4420 with 13' flex head

Brand	Variety	Moisture (%)	Yield (bu/A)	FLS (%)[1]
Progeny (check)	P 4850	14.0	53	5
Dyna-Gro	46RY85	13.9	47	8
Armor	DK 4968	14.3	46	2
Channel	4508 R2-SR	14.3	54	2
Bayer-Credenz	CZ 4590RY	13.8	51	8
Progeny (check)	P 4850	14.1	56	5
Asgrow	AG 4632	13.4	56	2
Mycogen	5N451	13.8	56	<1
Doebler's	DB 4214 SR	13.5	54	<1
Asgrow	AG 4835	13.3	56	8
Progeny (check)	P 4850	13.7	52	5
Pioneer	P 46T21R	13.8	57	2
Dyna-Gro	37RY47	13.6	43	20
Southern States	SS 4714 NSR2	13.6	46	15
Seed Consultants	SCS 9474 RR	13.8	58	2
Progeny (check)	Check -P 4850	13.4	53	5
Mycogen	5N479	13.7	51	5
Asgrow	AG 4835	13.5	51	8
Armor	50R44	13.3	50	8
Dyna-Gro	S48RS53	13.6	53	5
Progeny (check)	P 4850	13.6	53	5
Channel	4806 R2/STS	13.5	50	5
Bayer-Credenz	CZ4959RY	13.7	45	8
Doebler's	DB 4914 SR2	13.7	36	15
Southern States	SS 4917 N R2	12.9	48	6
Progeny (check)	P 4850	13.6	47	5
Pioneer	P49T80R	13.5	55	5

Armor	50R44	13.2	43	6
Dyna-Gro	37RY47	13.3	38	15
Armor	DK 4968	13.3	45	2
Progeny (check)	P 4850	13.6	50	5
Dyna-Gro	S48RS53	13.4	55	5
Armor	DK 4968	13.4	41	2
Plot Average		**13.6**	**50.0**	**6.4**
Ck. Average		**13.7**	**52**	**5.0**

[1]Frogeye Leaf Spot, % of leaf area infected.

Comments

The plots produced good yields, with a range from 36 to 58 bu/acre. The overall test average including checks was 50 bu/acre. The check variety, Progeny 4850RYS averaged 52 bu/acre across 7 replications. Three varieties yielded 10% higher compared to the plot average, the check average and the average of the two closest checks, (1) P 46T21R, (2) SCS 9474 R2, and (3) P 49T80R. Three varieties yielded 10% less compared to the plot average the check average, and the average of the two closest checks, (1) Armor DK 4968, (2) DG 37RY47, (3) Doeblers 4914 SR2. Five varieties had significant lodging, (1) P 49T80R, (2) SCS 9474 RR, (3) Armor DK 4968, (4) Doeblers 4914 SR2, and (5) AG 4632. Plots were rated for Frogeye Leaf Spot infection on 08/18/2015. Three varieties had severe leaf infections, DG 37RY47, SS 4714 NSR2, and Doeblers 4914 SR2. Seed quality was generally poor, regardless of variety. Below are photos of the seed at harvest.

Highest Yielders

Lowest Yielders

Severe FLS

Checks

2015 BRUNSWICK COUNTY MATURITY GROUP 4 SOYBEAN VARIETY COMPARISON

Cooperators: Producer: Sam and Josh Griffin
Extension: Taylor Clarke, Lindy Tucker**,** Laura Siegle, Nikki Norton
Industry: Johnny Hawthorne, Meherrin
Previous Crop: Fallow
Soil Type: Chewada Silt Loam (river bottom)
Tillage: Two passes with disc
Planting Date: May 29, 2015
Seeding Rate/Row Spacing: 140-150,000 in 15" rows JD 1780 no-till vacuum planter
Fertilization: 18-40-80
Crop Protection: Pre: Roundup PowerMax, Envive, Sharpen;
Post: Roundup PowerMax, Karate, Approach Prima
Harvest Date: October 28, 2015; Gleaner R62 with 25' flex head

Brand	Variety	Moisture (%)	Yield (bu/A)
Armor (check)	47-R13	14.5	49.3
Dyna-Gro	46RY85	15.1	45.2
Channel	4508 R2-SR	15.2	49.4
Credenz	CZ 4590RY	15.5	34.6
Asgrow	AG 4632	15.2	52.1
Mycogen	Dow 5N451R2	15.6	52.9
Doebler's	DB 4214 SR	15.0	46.8
Pioneer	P 46T21R	15.6	54.4
Dyna-Gro	37RY47	15.6	40.9
Armor (check)	47-R13	15.9	49.9
Southern States	SS 4714 NSR2	15.8	62.2
Seed Consultants	SCS 9474 RR	15.8	57.6
Mycogen	5N479	16.1	50.5
Asgrow	AG 4835	15.3	58.7
Armor	50R44	15.6	56.1
Dyna-Gro	548RS53	15.0	52.3
Progeny	P 4850	15.3	52.4
Hubner	H 48-13R	14.9	52.0
Armor (check)	47-R13	15.5	51.0
Channel	4806 R2/STS	15.5	50.4
Credenz	CZ4959RY	15.6	58.2
Doebler's	DB 4914 SR2	14.9	46.1
Southern States	SS 4917NR2	15.9	59.1
Pioneer	P49T80R	16.4	56.6
USG	74B58	15.6	53.5
Armor	DK 4968	15.3	49.1
USG	74D95 RS	15.5	62.1

Armor (check)	47-R13	16.0	53.8
Armor	DK 4968	15.8	48.5
USG	74D95 RS	15.4	60.8
Channel	4806 R2/STS	15.9	48.7
Hubner	H 48-13R	15.6	48.9
Dyna-Gro	S48RS53	15.7	48.1
Armor	50R44	15.6	53.1
Armor (check)	47-R13	15.5	49.7
Dyna-Gro	46RY85	15.5	50.9
Channel	4508 R2-SR	15.7	52.5
Credenz	CZ 4590RY	15.6	43.5
Asgrow	AG 4632	15.3	55.4
Mycogen	5N451	15.5	54.7
Doebler's	DB 4214 SR	15.3	46.7
Pioneer	P 46T21R	16.0	51.4
Dyna-Gro	37RY47	15.9	43.3
Southern States	SS 4714 NSR2	15.9	54.6
Seed Consultants	SCS 9474 RR	16.7	44.4
Mycogen	5N479	16.6	46.4
Plot average		**15.6**	**51.3**
Check average		**15.5**	**50.7**

Comments:
The plots produced good yields, with a range from 34.6 to 62.2 bu/acre. The overall test average including checks was 51.3 bu/acre. The check variety, Armor 47-R13 averaged 50.7 bu/acre across 5 replications. Six varieties yielded 10% or more higher when compared to the plot average and the average of the two closest checks, (1) USG 74D95RS, (2) SS 4917N R2, (3) SS 4714NS R2 (4) AG 4835, and (5) CZ 4959 and (6) P 49T80 R. Four varieties yielded 10% or less when compared to the plot average and the average of the two closest checks, (1) CZ 4590 RY, (2) DG 37RY47, (3) Doeblers 9414 SR2, and (4) DG 46RY85. Five varieties were completely lodged (flat), (1) CZ 4590 RY, (2) SCS 9474 RR, (3) Armor DK 4968, (4) USG 74B58, and (5) CZ 4959 RY. Overall quality of these soybeans was poor as the wet season in lowgounds gave way to high damage including rotting, purpling, sprouting, and molding across varieties. P 4850, Channel 4806, and USG 74D95 had the least quality issues.

MATURITY GROUP 5 VARIETY COMPARISONS

2015 OVERALL MATURITY GROUP 5 COMPARISON

Brand	Variety	Prince George	King & Queen	Appoma-tox	VA Beach/ Chesapeake	Brunswick	Lunenburg/ Mecklenburg	Surry	Average[1]
USG	75J90R	41.5	42.4	42.1	77.5	50.8	35.2	22.5	44.6
Channel-Bio	5307R2/STS	---	44.2	40.9	77.1	40.8	37.7	29.7	44.2
Mycogen	5N501	36.6	44.9	44.6	76.1	39.9	39.0	26.2	43.9
Pioneer	P52T50R	39.1	45.1	40.7	69.4	45.8	44.9	21.0	43.7
Mycogen	5N550	29.6	40.9	39.1	81.9	42.3	27.6	37.3	42.7
USG	7553nRS	40.6	41.7	40.7	68.7	47.4	39.4	19.1	42.5
Pioneer	P56T29R2	36.9	50.5	40.4	63.0	42.0	33.3	29.7	42.3
Asgrow	AG5533	39.0	41.2	43.5	64.4	48.2	---	24.0	42.2
Seed Consultants	SCS9544R	---	47.3	34.8	59.2	48.3	30.7	34.9	42.0
Dyna-Gro	32RY55	36.0	40.5	38.4	60.0	47.5	39.3	31.8	41.9
Doebler's	DB5710RR	41.4	41.8	38.3	58.4	50.8	34.3	23.2	41.2
Doebler's	DB5416R	35.6	41.2	38.4	59.7	52.4	44.1	14.8	40.9
Asgrow	AG5335	39.9	40.6	39.7	53.4	42.2	39.2	21.8	39.5
Varieties listed below were not included in two or more sites; therefore, we have less confidence that they will yield similarly in future years or other environments.									
Dyna-Gro	S52RY75	---	44.5	43.9	---	48.3	33.8	---	43.1
Hubner	H56-16R2	44.0	41.8	---	74.3	---	---	28.8	44.5
Hubner	H58-12R2	40.8	43.3	---	65.6	---	29.1	---	41.6
Southern States	SS5513NR2	---	---	42.9	---	46.2	28.9	---	41.9
Southern States	SS5511NR2	39.8	45.3	---	64.6	45.3	---	16.5	41.1
Southern States	SS5911NR2	---	40.5	42.3	---	56.3	30.6	---	43.0
Southern States	SS5213NR2	42.3	50.6	---	74.8	---	---	19.0	44.2
Site Average		38.9	43.6	40.7	67.5	46.7	35.4	25.0	42.6

[1]To obtain averages for varieties with missing data, the site averages was used in calculations.

2015 APPOMATTOX MATURITY GROUP 5 SOYBEAN COMPARISON

Cooperators: Producer: Dark Leaf Farm; Joanne Jones
Extension: Bruce Jones
Previous Crop: Dark Tobacco, Wheat
Soil Type: Georgeville Loam
Tillage: No-till into Wheat Stubble
Planting Date: June 23, 2015
Planting Equipment: John Deere 750
Seeding Rate/Row Spacing: 270,000 seed per acre in 7 inch rows
Fertilization: 30 lbs. P_2O_5 and 60 lbs. K_2O added to wheat fertilizer
Crop Protection: Pre-Plant: 2 pints glyphosate per acre
Post: 2 pints glyphosate per acre 1 application
Harvest Date: November 23, 2015
Harvest Equipment: Case IH 1620
Check: Pioneer P52T50R

Brand	Variety	Moisture (%)	Yield (bu/A)
Pioneer (check)	P52T50R	12.4	37.4
Pioneer	P56T29R2	12.6	40.4
Doebler's	DB5710RR	12.5	38.3
USG	7553nRS	12.3	40.7
Dyna-Gro	S52RY75	12.5	43.9
Southern States	SS5911NR2	12.6	42.3
Doebler's	DB5416R	12.6	38.4
Pioneer (check)	P52T50R	12.7	42.2
Asgrow	AG5533	12.6	43.5
Seed Consultants	SCS9544RR	12.8	34.8
Mycogen	5N501	12.9	44.6
Mycogen	5N550	12.7	39.1
Asgrow	AG5335	12.6	39.7
Southern States	SS5513NR2	12.7	42.9
Channel	5307R2/STS	12.6	40.9
Dyna-Gro	32RY55	12.1	38.4
USG	75J90R	12.1	42.1
Pioneer (check)	P52T50R	12.3	42.4
Averages		**12.5**	**40.7**

Discussion: Seed quality was exceptional in this plot regardless of variety. Full season soybeans in this area experienced much trouble with seed quality. Minimal rainfall received during the month of August. Use this and other Virginia Tech soybean variety information when making planting decisions for 2016.

2015 NORTHAMPTON MATURITY GROUP 5 SOYBEAN COMPARISON

Cooperators: Producer: Thom Shockley
Extension: Ursula Deitch
Industry: Participating Companies
Previous Crop: Sweet Corn
Soil Type: Bojac Sandy Loam
Tillage: Conventional Tillage
Planting Date: July 14, 2015
Seeding Rate/Row Spacing: 40 lbs. /ac / 16 rows/plot
Fertilization: 100# 0-0-60
Crop Protection: 1 Qt. Glyphosate Post
Harvest Date: December 4, 2015

Brand	Variety	Moisture (%)	Yield (bu/A)
Southern States	SS5511NR2	13.0	13.0
Dyna-Gro	S32RY55	13.0	5.0
Pioneer	P52T50R	13.0	8.0
Pioneer	P56T29R2	13.0	13.0
Doebler's	DB5416R	13.0	11.0
Asgrow	AG5533	13.0	5.0
Hubner	H56-16R2	13.0	13.0
Hubner	H58-12R2	13.0	8.0
Doebler's	DB5710RR	13.0	14.0
Channel	5307R2/STS	13.0	11.0
Asgrow	AG5335	13.0	13.0
Seed Consultants	SCS9544RR	13.0	6.0
USG	75J90R	13.0	13.0
Southern States	SS5213NR2	13.0	7.0
Mycogen	5N550	13.0	13.0
Mycogen	5N501	13.0	9.0
USG	7553nRS	13.0	12.0
Averages		13.0	10.2

Discussion:
Late planted soybeans just really never had much of a chance with dry weather in August and early September and then quality issues with wet conditions at harvest time.
Use this and other Virginia Tech soybean variety information when making planting decisions for 2016.

2015 SURRY MATURITY GROUP 5 SOYBEAN COMPARISON

Cooperators: Producer: Timberneck Farms, Anthony and Darren Howell,
Extension: Glenn Slade
Industry: Various Seed Companies

Previous Crop: Soybean
Soil Type: Craven Fine Sandy Loam
Tillage: No-till JD Grain Drill
Planting Date: May 29, 2015
Seeding Rate/Row Spacing: 180,000 seeds/acre 7 inch rows
Fertilization: 40-72-100
Crop Protection: 1 qt. Glyphos at planting
Harvest Date: December 20, 2015
Harvest Equipment: John Deere 7720

Company	Variety	Moisture (%)	Yield (bu/A)
Dyna-Gro	S32RY55	15.6	31.8
Hubner	H56-16R2	14.9	28.8
Channel-Bio	5307R2/STS	14.6	29.7
Asgrow	AG 5335	15.8	21.8
Asgrow	AG 5533	15.2	24.0
Mycogen	5N550	14.6	37.3
Mycogen	5N501	15.5	26.2
Doebler's	DB5416R	16.2	14.8
Doebler's	DB5710RR	15.7	23.2
Seed Consultants	SCS9544 RR	16.5	34.9
Pioneer	P52T50R	15.3	21.0
Pioneer	P56T29R2	14.8	29.7
USG	7553nRS	16.6	19.1
USG	75J90R	14.8	22.5
Southern States	SS5213NR2	15.9	19.0
Southern States	SS5511NR2	14.6	16.5
Averages		**15.4**	**25.0**

Discussion: Yields were low this year due to adverse weather conditions through the summer. Too much rain earlier, drought August to Mid-September, excessive rain late September to harvest. Asgrow 5533, and Doeblers 5416 had 6% and 9% damage respectively. Pioneer 56T29 had best quality and uniformity of samples.

2015 VIRGINIA BEACH/CHESAPEAKE MATURITY GROUP 5 SOYBEAN COMPARISON

Cooperators: Producer: North Landing Farms/ Curtis Wolfarth
Extension: Roy D. Flanagan III and M Watson Lawrence
Industry: Participating Seed Companies
Previous Crop: Soybeans
Soil Type: Acredale Silt Loam
Tillage: Conventional
Planting Date: May 26, 2015
Row Spacing: 18 inch rows
Fertilization: 250 lbs. / acre of 7-18-36
Crop Protection: Preemergence: 24 oz. of Dual II Magnum
Postemergence:
June 10 - 32oz. Powermax, 8oz. Sinister, and 5oz. Dynamic
August 3 - Quadris Top SB and 12 oz. 9oz. Besiege
Harvest Date: October 21, 2015
Harvest Equipment: JD 9500 with 922 grain platform

Brand	Variety	Moisture (%)	Yield (bu/A)
Mycogen	5N550	13.4	81.9
USG	75J90R	12.8	77.5
Channel	5307R2/STS	13.0	77.1
Mycogen	5N501	13.2	76.1
Great Heart	516	13.5	75.3
Southern States	SS5213NR2	13.1	74.8
Hubner	H56-16R2	13.0	74.3
Pioneer	P52T50R	12.9	69.4
Great Heart	500	13.0	68.7
USG	7553nRS	13.6	66.7
Hubner	H58-12R2	13.1	65.6
Southern States	SS5511NR2	12.9	64.6
Asgrow	AG5533	12.8	64.4
Pioneer	P56T29R2	13.2	63.0
Dyna Gro	32RY55	14.4	60.0
Doebler's	DB5416R	12.9	59.7
Seed Consultants	SCS9544	13.8	59.2
Doebler's	DB5710RR	12.6	58.4
Asgrow	AG5335	13.4	53.4
Averages		**13.2**	**67.9**

Discussion: Some fine yields! Use this and other Virginia Tech soybean variety information when making planting decisions for 2016

2015 KING & QUEEN MATURITY GROUP 5 SOYBEAN COMPARISON

Cooperators:	Producer:	Craig Leggett
	Extension:	David Moore, VCE-Middlesex
		Taylor Sabo-Summer Intern
	Industry**:**	Participating Companies
Previous Crop:	Corn	
Soil Type:	Emporia sandy loam	
Tillage /Row Spacing	No-till in 7.5 inch rows	
Planting Date:	May 28, 2015	
Seeding Rate:	155,000	
Fertilization:	1 Ton Lime	
Check Variety:	Southern States SS5213R2	
Crop Protection:	Burndown: Glyphosate + 2, 4-D	
	Post: Brandt Smart Trio + Glyphosate	
Harvest Date:	November 24, 2015	
Harvest Equipment:	John Deere 7720	

Brand	Variety	Moisture%	TW (lb/bu)	Yield (bu/A)	% of Check[1]
Asgrow	AG5335	13.3	51	40.6	87
Southern States	SS5213NR2 (Check)	13.2	55	46.8	
Asgrow	AG5533	13.0	55	41.2	89
Check		14.7	56	45.3	
Mycogen	5N501	14.9	53	44.9	97
Check		13.7	56.5	47.0	
Mycogen	5N550	13.3	57	40.9	85
Check		13.2	57	49.1	
USG	7553nRS Riznate	13.0	57	44.4	93
Check		13.8	57	46.7	
USG	7553nRS Untreated	13.3	57	41.0	90
Check		13.2	57	44.9	
Dyna-Gro	S52RY75	13.4	56	44.5	97
Check		13.3	56.5	46.6	
Dyna-Gro	32RY55	13.3	57	40.5	87
Check		13.1	57	46.3	
Pioneer	P52T50R1	13.3	56	45.1	92
Check		13.1	56	52.0	
Pioneer	P56T29R2	13.3	58	50.5	102
Check		14.0	56	47.3	
Channel	5307R2/STS	13.8	54	44.2	92
Check		13.7	56.5	48.3	
Doebler's	DB5416R	13.4	56	41.2	86
Check		13.5	57	48.0	
Doebler's	DB5710RR	13.3	56	41.8	84

Brand	Variety	Moisture%	TW (lb/bu)	Yield (bu/A)	% of Check
Check		13.6	56.5	51.8	
Seed Consultants	SCS9544RR	13.8	56.5	47.3	97
Check		14.2	57	45.6	
Hubner	H56-16R2	13.9	57	41.8	89
Check		14.3	57	48.2	
Hubner	H58-12R2	14.4	56	43.3	87
Check		14.3	57	51.4	
USG	7553nRS	14.3	56	41.7	82
Check		14.5	57.5	50.6	
USG	75J90R	14.6	57	42.4	82
Check		14.7	57	52.2	
Southern States	SS5511NR2	15.0	56	45.3	88
Check		14.7	56	50.3	
Southern States	SS5213NR2	14.8	56	50.6	101
Averages		13.8	56.2	45.9	90.3

[1]Percent of check calculated using the nearest check plot(s).

Discussion:

A very good plot. Doesn't appear to be a lot of variability across the plot. Quality was fair, with some varieties showing a lot of purple seed stain and mold. These yields were very good yields for 2015. Use this and other Virginia Tech soybean variety information when making planting decisions for 2016.

2015 PRINCE GEORGE MATURITY GROUP 5 SOYBEAN COMPARISON

Cooperators: Producer: Paul Cerny & Sean Finney
Extension: Scott Reiter, Prince George
Industry**:** Cooperating Seed Suppliers

Previous Crop: Wheat with straw removed
Soil Type: Slagle sandy loam and Lynchburg loam
Tillage: No-till
Planting Date: June 16, 2015
Seeding Rate/Row Spacing: 220,000 seed per acre, 7 inch rows
Fertilization: 110-40-100 applied to wheat
Crop Protection: 1 quart glyphosate + 0.375 ounces Synchrony XP
Harvest Date: November 18, 2015
Harvest Equipment: John Deere 9500

Brand	Variety	Moisture (%)	Yield (bu/A)
Asgrow (Check)	AG5533	13.8	39.0
Asgrow	AG5335	13.6	39.9
Pioneer	P56T29R2	13.2	36.9
Pioneer	P52T50R	13.6	39.1
USG	75J90R	13.6	41.5
USG	7553nRS	13.7	40.6
Hubner	H56-16R2	13.2	44.0
Hubner	H58-12R2	13.4	40.8
Dyna-Gro	32RY55	13.6	36.0
Southern States	SS5511NR2	13.8	39.8
Southern States	SS5213NR2	13.5	42.3
Channel	5307R2/STS	13.8	35.1
Mycogen	5N501R2	13.3	36.6
Mycogen	5N550R2	13.5	29.6
Doeblers	DB5710RR	13.5	41.4
Doeblers	DB5416R	13.8	35.6
Seed Consultants	SCS9544R	13.2	39.6
Asgrow (Check)	AG5533	13.7	44.1
Average		**13.5**	**39.0**

Discussion: This turned out to be a surprisingly good yield despite being wet-dry-wet. This site experienced a very dry period from August 11 thru September 9 with only 1 inch of rain during those 4 weeks. However, 24.6 inches of rain was received from planting to harvest. The group 4 varieties had noticeably more damage than the adjoining group 5 plots.

2015 BRUNSWICK MATURITY GROUP 5 SOYBEAN VARIETY COMPARISONS

Cooperators: Producer: Doug and Jonathan Harrison
Extension: Taylor Clarke, Lindy Tucker, Laura Siegle, Nikki Norton
Industry: Participating Companies

Previous Crop: Flue-cured tobacco followed by small grain cover crop
Soil Type: Appling-Mattaponi Complex
Tillage: No-till
Planting Date: May 22, 2015
Seeding Rate/Row Spacing: 140-150,000 in 15" rows; JD 1590 15' no-till drill
Fertilization: 0-30-60
Crop Protection: Pre: Roundup, Authority Elite;
Post: Roundup, Flexstar
Harvest Date: November 25, 2015 with JD 9500 with 25' 920 flex head

Brand	Variety	Moisture (%)	Yield (bu/A)
Dyna-Gro (check)	S39RY57	16.4	46.4
Stine[1]	61RF00	16.1	49.2
Southern States[1]	SS5911NR2	15.9	58.5
Southern States[1]	SS5511NR2	16.9	45.3
Credenz[1]	CZ5421RY	15.7	46.1
Dyna-Gro[1]	DG32RY55	15.8	49.1
Southern States	SS5513NR2	15.8	46.2
Dyna-Gro (check)	S39RY57	15.8	40.6
Dyna-Gro	DG52RY75	16.0	48.3
Channel	5307R2-STS	16.2	40.8
Asgrow	AG5335	16.0	42.2
Mycogen	5N501R2	15.9	39.9
Doeblers	DB5416R	16.1	52.4
Pioneer	P52T50R	15.8	45.8
Dyna-Gro (check)	S39RY57	15.5	41.2
Armor[1]	DK5363	15.3	51.2
Credenz	CZ5421RY	15.9	45.3
Southern States	SS5511NR2	16.0	45.3
Dyna-Gro[1]	32RY55	16.0	45.9
Asgrow	AG5533	15.9	48.2
Seed Consultants	SCS9554RR	15.1	48.3
Dyna-Gro (check)	S39RY57	15.0	36.5
Mycogen	5N550 R2	15.3	42.8
USG[1]	USG 7553 R	15.5	46.0
Pioneer	P 56T29R2	15.3	42.0
Doebler's	DB 5710 RR	15.2	50.8

USG	75J90R2	15.7	53.9
Southern States[1]	SS5911NR2	15.3	54.4
Dyna-Gro (check)	S39RY57	14.9	43.5
Stine[1]	61RF00	14.9	42.9
Armor[1]	DK5363	15.2	43.4
USG[1]	7553R	14.7	48.7
USG[1]	75J90R2	15.1	47.7
Plot averages		**15.6**	**46.3**
Check averages		**15.3**	**41.5**

[1]Varieties with two replications

Comments

The plots produced good yields, with a range from 36.5 to 58.5 bu/acre. The overall test average including checks was 46.3 bu/acre. The check variety, Dyna-Gro 39RY57 averaged 41.5 bu/acre compared to other varieties was not as strong as this variety has performed in the past. The top five yielding varieties compared to the plot average were (1) SS5911NR2, (2) Doeblers DB5416R, (3) Doebler's DB5710RR, (4) USG 75J90R, and (5) (tie) SCS9554RR and DG52RY75. The 5 lowest yielding varieties as compared to the plot average were Channel 5307R2/STS, Pioneer 56T29R2, Mycogen 5N501R2, DG39RY57 (check) and Asgrow AG5335. In this location, plots yielding the highest also generally produced higher quality seed (mainly purple seed stain), whereas plots with the lowest yields had more damaged seeds and purple staining, with the exceptions being (1) the check variety DG39RY57 which, while low yielding produced little damaged seed, and (2) DG52RY75 which showed substantial damage while yielding well. Purple seed stain is caused by the fungus *Cercospora kikuchii*; therefore, the amount of staining may be related to the varieties ability to resist the disease.

Checks

Highest

Lowest

2015 MECKLENBURG/LUNENBURG MATURITY GROUP 5 SOYBEAN VARIETY COMPARISON

Cooperators: Producer: Opie Farms
Extension: Taylor Clarke, Lindy Tucker, Laura Siegle
Industry: Participating Companies
Previous Crop: Soybean - 2014; small grains harvested for hay - 2014-15
Soil Type: Appling Fine Sandy Loam (Left of Path)
Cullen Clay Loam (Right of Path)
Tillage: No-till
Planting Date: May 27, 2015
Seeding Rate/Row Spacing: 140,000 in 15" rows; JD 1870 (16 row plots)
Fertilization: 0-30-60
Crop Protection: Pre: Touchdown, Prefix**;**
Post I: Roundup, Flexstar; Post II: Cobra
Harvest Date: December 8, 2015 with JD 9400 with 15' head

Brand	Variety	Moisture%	Yield (bu/A)
Progeny	P5555	16.0	30.7
Progeny (check)	P5610	15.9	35.4
Hubner (check)	H55-13R2	15.8	23.8
Southern States	SS5911NR2	15.2	29.5
Hubner	H58-12RY	15.1	33.6
Credenz	5421RY	15.3	32.0
Dyna-Gro	32RY 55	15.7	39.3
Southern States	SS5513NR2	15.8	28.9
Hubner	H53-12R2	15.7	29.7
Hubner (check)	H55-13R2	15.6	29.8
Progeny (check)	P5610	15.8	41.3
Dyna-Gro	52RY75	15.5	33.8
Channel	5307R2-STS	15.1	37.7
Asgrow	AG5335	15.0	39.2
Mycogen	5N501	15.1	39.0
Doebler's	DB5416R	15.6	44.1
Pioneer	P52T50R	15.2	44.9
Progeny (check)	P5610	15.4	36.0
Hubner (check)	H55-13R2	15.3	32.0
Progeny	P5555	15.2	31.1
P 5610 average			**37.6**
H55-13R2 average			**28.5**
Right of path average			**34.6**
Farm Path			
Progeny	P5555	15.1	30.9

Progeny (check)	P5610	15.5	36.2
Hubner (check)	H55-13R2	15.5	23.6
Armor	DK5363	14.9	31.1
Hubner	H51-13 R2	15.3	25.8
Progeny	P5333 RY	15.3	28.3
Progeny	P 5213 RY	15.1	23.8
Southern States	SS5911NR2	15.1	31.6
Hubner	H58-12RY	14.8	24.6
Hubner (check)	H55-13R2	15.3	25.1
Progeny (check)	P5610	15.1	29.4
Seed Consultants	SCS9554RR	14.7	30.7
Mycogen	5N550	15.0	27.6
Pioneer	P56T29R2	14.9	33.3
Doebler's	DB5710RR	14.8	34.3
USG	7553 R	15.1	39.4
USG	75J90 R2	15.4	35.2
Progeny (check)	P5610	15.2	37.0
Hubner (check)	H55-13R2	15.4	23.8
Hubner (check)	H55-13R2	14.8	35.3
Progeny (check)	P5610	14.9	34.4
Progeny	P5555	14.4	30.4
P5610 average			**34.3**
H55-13R2 average			**26.9**
Left of path average			**30.5**
Overall P5610 avg.			**35.7**
Overall H55-13R2			**27.6**
Overall plot average			**32.5**

Comments

Two check varieties were utilized every 6 plots, Hubner H55-13R2 and Progeny P5610. Progeny P5610 averaged 35.7 bu/ac which was 8.1 bu/ac higher than Hubner H55-13R2 over 7 replications. The entire test including checks averaged 32.5 bu/acre. The highest yielding varieties as compared to the average of the two nearest P5610 checks were (1) Doeblers DB5416R, (2) Pioneer P52T50R, (3) USG 7553R. The lowest yielding varieties as compared to the average of the two nearest P5610 checks were (1) Progeny P5213RY, (2) Southern States SS5513NR2, (3) Hubner H55-13R2. Seed quality depended on variety in this location but most plots showed only low levels of damage. The worst in terms of quality were Mycogen 5N501 and Asgrow AG5335, and the best in terms of quality included the check P5610 and Doeblers DB5710RR.

OTHER ROUNDUP READY & LIBERTY LINK SOYBEAN VARIETY PLOTS

2015 GLOUCESTER LIBERTY LINK SOYBEAN COMPARISON

Cooperators: Producer: Greg Jenkins
Extension: David Moore, VCE
Industry: Blair Hasty, Meherrin; Participating Companies
Previous Crop: Corn
Soil Type: Myatt Loam
Planting Date: May 30, 2015
Seeding Rate/Row Spacing: 150,000/15 inch rows/No-Till
Fertilization: 12-30-80
Crop Protection: Burndown: PowerMax +Authority XL
Post: 32 oz. Liberty + 10 oz. Volunteer + Lambda-Cy
Pod Fill: Stratego Yield + Belt
Harvest Date: October 22, 2015
Harvest Equipment: John Deere 9860 STS

Brand	Variety	Moisture%	TW	Yield (bu/A)
Southern States	LL473N	13.9	56	45.5
Creedenz	4953L	13.8	57	31.6
Progeny	P5160L	13.1	57	33.0
Southern Harvest	SH5215	13.1	58	43.8
Creedenz	LL5225	12.8	55	41.2
Creedenz	LL5242	13.3	57	32.5
Pioneer	P53T62L	12.9	58	34.7
Progeny	P5414L	12.3	58	36.6
Stine	54LE23	19.9	56	31.9
Creedenz	5445L	12.9	58	36.8
Progeny	P5460L	12.6	56	44.5
Southern Harvest	SH5515	12.2	57	41.3
Southern States	LL563N	12.2	57	30.4
Creedenz	5515L	12.0	57	30.0
Stine	58LC23	12.1	57	30.2
Southern Harvest	SH5912	12.2	57	40.6
USG	75G95L	12.1	57	48.0
Progeny	P5960L	12.1	56	34.2
Averages		**13.1**	**57**	**37.0**

Discussion: Weed management options have pushed producers to try things other than post treatments of glyphosate. Liberty Link is one of those options. This plot was to determine if that technology can yield as well. Tough season on this plot. It was under water for most of the first 60 days due to heavy rains. Then in July and August, it was hot and dry. Six varieties were thrown out of this plot because they never came up. All in all, and from other yield reports, I think the technology yields as well as RR. Use this and other Virginia Tech soybean plot results when making planting decisions for 2016.

2015 MECKLENBURG LIBERTY LINK SOYBEAN VARIETY COMPARISON

Cooperators: Producer: John Manning
Extension: Taylor Clarke, Lindy Tucker, Laura Siegle, Nikki Norton
Industry: Participating Companies

Previous Crop: Wheat
Soil Type: Appling Fine Sandy Loam
Tillage: No-till
Planting Date: June 25, 2015
Seeding Rate/Row Spacing: 240,000 in 15" rows with JD 1790 32 Row Planter
Fertilization: 0-30-60
Crop Protection: Early Post: Liberty; Post Liberty plus Flexstar
Harvest Date: November 27, 2015; JD 4420 with 13' flex head

Brand	Variety	Moisture%	Yield (bu/A)
Dyna-Gro	49LL34	15.8	35.6
USG	74G74LS	17.0	35.1
Credenz	CZ4748LL	16.5	39.7
Southern Harvest	SH471 LL	16.0	38.1
Southern Harvest	SH5515LL	16.6	37.6
Progeny	P5960LL	15.9	32.9
Dyna-Gro	DG52LL66	16.5	41.0
Southern States	SSLL513N	16.3	43.8
USG	75G24L	16.4	42.0
Credenz	CZ5445LL	15.7	34.6
Southern Harvest	SH5215LL	16.3	39.9
Southern Harvest	SH4913LL	15.9	39.0
Southern Harvest	SH5915LL	15.5	31.1
Dyna-Gro	DG55LS75	15.2	33.9
Progeny	P5960 LL	15.7	30.5
Southern Harvest	SH5515LL	15.9	36.5
Dyna-Gro	DG59LS45	15.3	34.3
Credenz	CZ6109LL	15.5	34.2
Southern Harvest	SH5912LL	15.8	29.5
Progeny	P5960LL	15.5	26.0
Credenz	CZ6109LL	15.5	32.5
Dyna-Gro	59LS45	15.2	29.0
Progeny	P5960LL	15.5	30.4
Southern Harvest	SH5215LL	15.5	29.4
Southern Harvest	SH5515LL	15.4	34.7
Progeny	P5960LL	15.1	30.9
Dyna-Gro	DG55LS75	14.1	31.4
Southern Harvest	SH5915LL	14.4	31.4

Southern Harvest	SH491LL	14.6	30.5
Southern Harvest	SH5215LL	14.6	32.6
Dyna-Gro	59LS45	14.5	29.3
Credenz	CZ6109 LL	14.7	32.4
Southern Harvest	SH5915LL	14.6	30.8
Dyna-Gro	DG55LS75	14.1	32.0
Progeny	P5960LL	14.5	29.0
Southern Harvest	SH5515LL	14.5	35.9
Southern Harvest	SH5215LL	14.5	38.1
Southern Harvest	SH4913LL	14.3	34.9
Southern Harvest	SH5912LL	14.4	27.2
Progeny	P5960LL	14.4	27.2
Southern Harvest	SH5515LL	14.4	34.7
Progeny	P5960LL	14.5	27.6
Progeny	P5960LL	14.3	29.9
Southern Harvest	SH5515LL	14.4	34.6
Plot Average			**33.5**

Soybean Variety Summary			
Brand	Variety	**Reps**	Average Yield
Progeny	**P5960LL**	**9**	**29.4**
Southern Harvest	**SH5515LL**	**6**	**35.7**
Southern Harvest	**SH5912LL**	**2**	**28.4**
Southern Harvest	**SH4913LL**	**3**	**34.8**
Southern Harvest	**SH5215LL**	**4**	**35.0**
Dyna-Gro	**DG55LS75**	**3**	**32.4**
Southern Harvest	**SH5915LL**	**3**	**31.1**
Credenz	**CZ6109LL**	**3**	**33.0**
Dyna-Gro	**DG59LS45**	**2**	**31.6**

Comments

The plot yields ranged from 26.0 to 43.8 bu/acre in this double-crop test. The overall test average including checks was 33.5 bu/acre. Two varieties were utilized as checks across the test, Progeny P5960LL and Southern Harvest SH5515LL. Southern Harvest SH5515LL averaged 35.7 by/acre across six replications and P5960LL averaged 29.4 bu/acre across nine replications. Of the varieties planted once in test, CZ748LL, DG52LL66, SSLL513N, and USG 75G24L yielded 5% higher than the closest SH5515LL check plot. The highest yielding varieties planted multiple times were SH5515LL, SH5215LL, and SH4913LL. The lowest yielding varieties were Progeny P5960 LL, SH5915LL, and DG59LS45. Seed quality in these plots was exceptional considering the year. Generally, seed quality is better in double-crop soybean although purple seed stain depends less on planting date. There were only minor quality issues including occasional green beans in the late Group 5s, occasional mold on few beans in the Group 4s, and some purple beans in SH4715. Overall, these beans were beautiful, round, and yellow with negligible quality differences between varieties.

2015 VIRGINIA BEACH/CHESAPEAKE LIBERTY LINK SOYBEAN COMPARISON

Cooperators: Producer**:** North Landing Farms/ Curtis Wolfarth
Extension: Roy D. Flanagan III and M Watson Lawrence
Industry: Participating Seed Companies
Previous Crop: Soybeans
Soil Type: Acredale Silt Loam
Tillage: Conventional
Planting Date: May 26, 2015
Row Spacing: 18 inch rows
Fertilization: 250 lbs. / acre of 7-18-36
Crop Protection: Pre emergence: 24 oz. of Dual II Magnum
Post: July 1 - 32oz. Liberty, 5oz. Sinister, 5oz. Dynamic
August 3 -Quadris Top SB and 12 oz. 9oz. Besiege
Harvest Date: Oct. 21, 2015
Harvest Equipment: JD 9500 with 922 grain platform

Brand	Variety	Moisture%	Yield (bu/A at 13%)
Pioneer	P53T62L	11.9	83.08
Dyna Gro	S49LL34	11.6	81.84
Pioneer	95L01	12.3	79.71
Great Heart	GT-501CLS	12.0	78.33
Dyna Gro	X52LL66	11.4	73.65
Great Heart	GX-4515	12.0	73.14
Credenz	CZ5445LL	12.1	71.27
Credenz	CZ4748LL	13.0	71.12
Average:			**76.52**

Discussion:
There should be little doubt that Liberty Link genetics are as good as Roundup Ready genetics. It is also a very good tool for controlling resistance in weeds in soybeans. Use this and other Virginia Tech Liberty Link soybean variety information when making planting decisions for 2016.

2015 ROUNDUP READY VARIETY COMPARISON

Cooperators: Producer: Danny Pittard
Extension: Taylor Clarke, Lindy Tucker
Industry: Danny Pittard, Meherrin
Previous Crop: Wheat
Soil Type: Appling Fine Sandy Loam
Tillage: No-till
Planting Date: July 9, 2015
Seeding Rate/Row Spacing: 240,000 in 7.5" rows with JD 1790 10' no-till drill
Fertilization: None
Crop Protection: Pre: Roundup PowerMax and Envive;
Post: Roundup PowerMax
Harvest Date: November 24, 2015; JD 9400 with 18' flex head (218)

Brand	Variety	Moisture%	Yield (bu/A)	Notes
Asgrow	AG5535	12.7	32.4	Tawny
NK (Check)	S56-G6	12.9	33.1	Tawny
Asgrow	AG5831	13.0	33.2	Tawny
Progeny	P5555RY	13.3	33.1	Tawny/lodged
Asgrow	AG5533	13.1	33.3	grey
Progeny	P5610RY	13.2	33.5	grey
NK	S59-A5	12.9	29.9	Tawny
NK (Check)	S56-G6	13.1	32.8	Tawny
Asgrow	AG5233	12.9	33.4	grey
Progeny	P5752RY	12.8	29.7	Tawny
NK	S52-Y2	13.3	30.9	grey
Pioneer	P56T03R	13.0	26.7	Tawny
Credenz	HBK5421	13.2	28.5	grey
Asgrow	AG5335	13.2	35.3	light tawny
NK (Check)	S56-G6	13.4	30.1	Tawny
Asgrow	AG5633	13.2	29.0	Tawny
Asgrow	AG5935	13.1	34.0	Tawny
Progeny	P6215RY	13.7	23.4	Tawny
NK	S61-Q2	13.7	30.0	Tawny
Asgrow	AG5732	14.0	31.5	Tawny/lodged
NK (Check)	S56-G6	13.8	30.8	Tawny
Asgrow	AG5535	13.3	28.8	Tawny
Plot Average		13.2	31.1	
NK (Check) Average	S56-G6	13.3	31.7	

Comments

These plots produced consistent yields, ranging from 23 to 35 bu/acre. The overall test average including checks was 31.1 bu/acre. The check variety, NK 56-G6 averaged 31.7 bu/acre across 4 replications. Three varieties yielded 5% higher relative to the plot average, the check average and the average of the two closest checks, (1) AG5233, (2) AG5335, and (3) AG5935. Two varieties yielded 10% less compared to the plot average, the check average, and the average of the two closest checks, (1) Progeny P6215RY, (2) Pioneer P56T03R. Two varieties had some lodging, (1) AG5732, (2) Progeny P5555RY, even though the plot was planted late and experienced some dry conditions.

2015 CAROLINE NEMATODE RESISTANT SOYBEAN VARIETAL COMPARISON

Cooperators: Producer: Mike Broaddus
Extension: Mike Broaddus, ANR Caroline;
Keith Balderson, ANR Essex
Stephanie Romelczyk, ANR Westmoreland
Christine O'Keefe, ANR Richmond Co.
Industry: Bryan Dillehay, Asgrow Seed

Previous Crop: Corn
Soil Type: Slagle-Kempsville Sandy Loam
Tillage Disk (2x)
Planting Equipment: John Deere 7000
Planting Date: June 10, 2015
Varieties: Asgrow AG4633**;** Asgrow AG4730 (check)
Seeding Rate/Row Spacing: 160,000 seeds/acre; 36" rows
Fertilization: 11-52-50 Broadcast-May 29, 2015
Crop Protection: Burndown: June 1: Roundup PowerMAX @ 1 qt. /A.
Post: July 14: Roundup PowerMAX @ 1 qt. /A.
Harvest Date: November 17, 2015
Harvest Equipment: Gleaner L2 with 18 foot flex head

Variety	SCN Resistance	Replication	Moisture (%)[1]	Yield (bu/A)[1]
Asgrow AG4633	Moderate - Race 3	1	13.1	31.2
Asgrow AG4730	None	1	13.5	30.7
Asgrow AG4633	Moderate - Race 3	2	13.7	32.2
Asgrow AG4730	None	2	13.7	32.5
Asgrow AG4633	Moderate - Race 3	3	13.0	29.3
Asgrow AG4730	None	3	13.4	34.1
Asgrow AG4633	Moderate - Race 3	4	13.2	33.3
Asgrow AG4730	None	4	13.3	36.6
Asgrow AG4633		Average	13.3 A	31.5 A
Asgrow AG4730		Average	13.5 A	33.5 A
[1]Means followed by the same letter are not different (P=0.10).				

Discussion:
Nematode assay performed the year prior in several hotspot areas when the field was in corn. The assay showed 420 SCN, 15 Cysts, 40 Spiral and 40 Lance nematodes per 500 ml of soil, so nematodes were a definite and obvious problem. As with most fields with nematode problems, there were obvious visual "hotspots" randomly throughout this test plot. AG4633 is moderately resistant to Race 3 soybean cyst nematodes, while AG4730 is susceptible. The yield data appears to show very little difference in yields of the two varieties and were therefore insignificant. The two varieties tested in this plot also looked very similar throughout the nematode hotspots. There is a possibility that the nematodes in this field are some other race than Race 3.

2015 CAROLINE NEMATODE RESISTANT SOYBEAN VARIETAL COMPARISON

Cooperators: Producer: Mike Broaddus
Extension: Mike Broaddus, ANR Caroline
Keith Balderson, ANR Essex
Stephanie Romelczyk, ANR Westmoreland
Christine O'Keefe, ANR Richmond
Industry: Bryan Dillehay, Asgrow Seed

Previous Crop: Corn
Soil Type: Slagle-Kempsville Sandy Loam
Tillage Disk (2x)
Planting Equipment: John Deere 7000
Planting Date: June 10, 2015
Varieties compared: Asgrow AG4835; Asgrow AG4730 (check)
Seeding Rate/Row Spacing: 160,000 seeds/acre; 36" rows
Fertilization: 11-52-50; Broadcast-May 29, 2015
Crop Protection: Burndown: June 1; Roundup PowerMAX @ 1 qt. /A.
Post: July 14; Roundup PowerMAX @ 1 qt. /A.
Harvest Date: November 17, 2015
Harvest Equipment: Gleaner L2 with 18 foot flex head

Variety	SCN Resistance	Replication	Moisture (%)[1]	Yield (bu/A)[1]
Asgrow AG4835	Moderate - Race 3	1	13.1	27.9
Asgrow AG4730	Susceptible	1	13.3	25.7
Asgrow AG4835	Moderate - Race 3	2	13.4	30.1
Asgrow AG4730	Susceptible	2	13.7	32.3
Asgrow AG4835	Moderate - Race 3	3	13.5	33.5
Asgrow AG4730	Susceptible	3	13.5	31.4
Asgrow AG4835	Moderate - Race 3	4	13.6	31.1
Asgrow AG4730	Susceptible	4	13.3	33.6
Asgrow AG4835	Moderate - Race 3	5	13.5	34.3
Asgrow AG4730	Susceptible	5	13.5	35.5
Asgrow AG4835	**Moderate - Race 3**	**Average**	**13.4 A**	**31.4 A**
Asgrow AG4730	**Susceptible**	**Average**	**13.5 A**	**31.7 A**

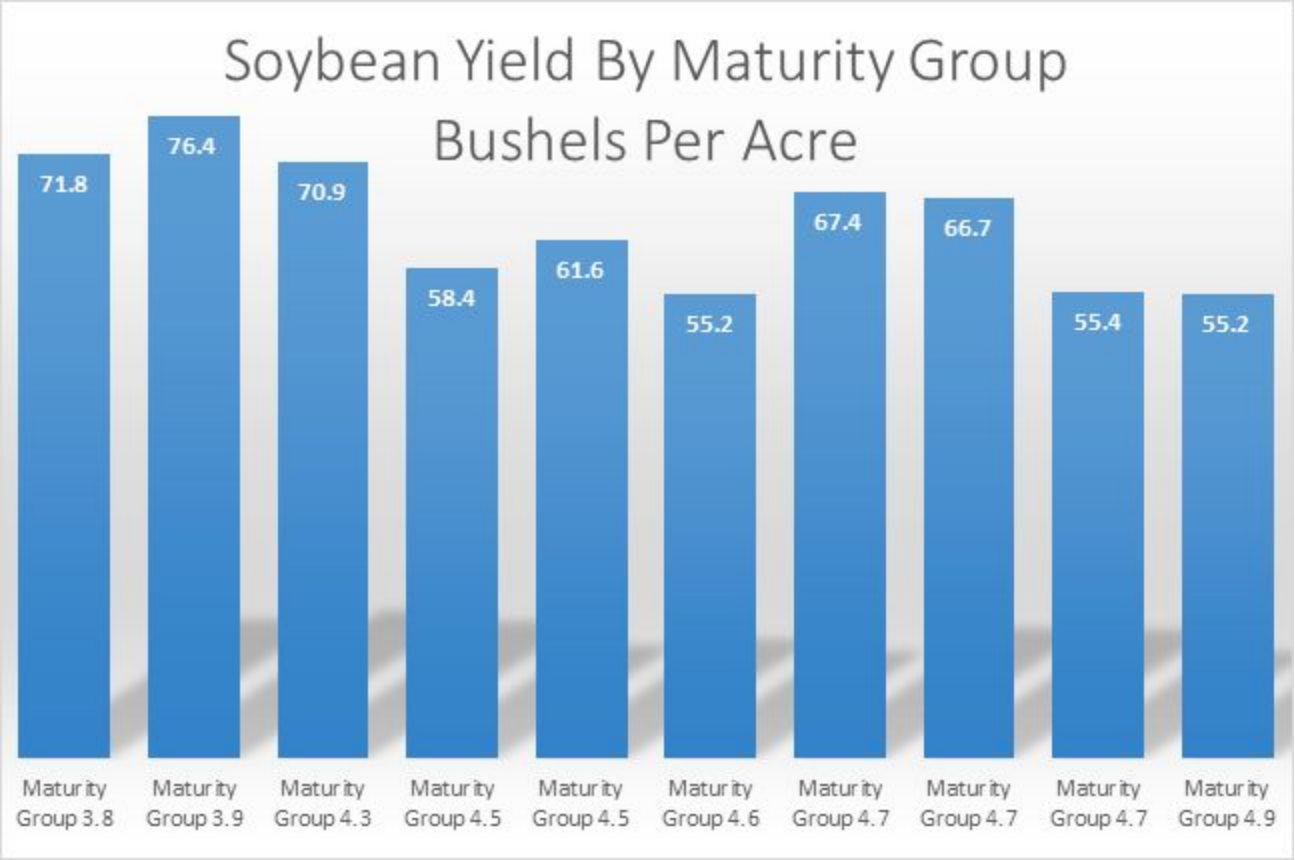
[1]Means followed by the same letter are not different (P=0.10).

Discussion:

Nematode analysis performed in prior years in several hotspots in field when the field was in corn. Assay results showed 420 SCN, 15 Cysts, 40 Spiral and 40 Lance nematodes per 500 ml of soil. As with most fields with nematode problems, there were "hotspots" randomly throughout this test plot. Although the yield data doesn't show the nematode resistant variety consistently outperforming the check, it was very obvious throughout these nematode hotspots that the AG4835 grew taller and had a much better stand than the check. (AG4835 has moderate resistance to Race 3 soybean cyst nematodes, AG4730 is a susceptible variety). There is no significant difference in yields. There is a possibility that the nematodes in this field are of some other race than Race 3.

2015 ESSEX COUNTY SOYBEAN YIELDS BY MATURITY GROUP EVALUATION

Cooperators: Extension: Keith Balderson, VCE-Essex
Producer: Tyler Franklin
Planted: May 12, 2015
Harvested: October 8, 2015



One of the tools farmers use to help spread production risk is to plant hybrids and varieties of crops with different maturities. The above chart shows yields for different soybean maturities planted full-season (early May) in upper Essex County during 2015. These soybeans were managed for high yields. Fertilization, foliar nutrition and fungicides were applied timely. Soil moisture conditions were excellent throughout early August, but dry weather in mid and late August impacted yields. In general, the earlier maturities yielded the highest, which makes sense given the late season dry conditions. These results reinforce that producers should be planting multiple maturities of crops to help spread production risk. It should be noted that late group 3 and early group 4 soybeans planted full-season in eastern Virginia are at more risk for seed quality issues because those varieties are subject to maturing during warm and humid conditions, which contribute to seed quality issues.

SOYBEAN SEED TREATMENT RESEARCH

2015 KING & QUEEN ILeVO® SOYBEAN SEED TREATMENT EVALUATION

Cooperators:	Producer:	Howard Chandler
	Extension:	David Moore, VCE-Middlesex
		Taylor Sabo, Summer Intern
	Industry:	Bayer CropScience
Previous Crop:	Soybeans	
Soil Type:	Suffolk and Emporia Sandy Loams	
Planting Date:	May 18, 2015 (No-Till)	
Variety:	Bayer-Credenz CZ4959RY	
Seeding Rate/Row Spacing:	180,000/14 inch rows	
Fertilization:	Foliar Micro 581	
Crop Protection:	Burndown: Roundup + Envive + 2,4-D	
	Post: Steed + First Rate	
Harvest Date:	October 20, 2015	
Harvest Equipment:	John Deere 9760 STS	

Seed Treatment	Rep.	M (%)[1]	TW (lb/bu)[1]	Yield (bu/A)[1]
Evergol Energy + Poncho/VOTiVO	1	13.1	57	58.4
Evergol Energy + Poncho/VOTiVO + ILeVO®	1	12.9	57	59.2
Evergol Energy + Poncho/VOTiVO	2	12.8	57	58.4
Evergol Energy + Poncho/VOTiVO + ILeVO®	2	12.6	58	55.9
Evergol Energy + Poncho/VOTiVO	3	12.5	57	60.2
Evergol Energy + Poncho/VOTiVO + ILeVO®	3	12.4	57	56.6
Evergol Energy + Poncho/VOTiVO	4	12.1	57	55.0
Evergol Energy + Poncho/VOTiVO + ILeVO®	4	12.1	57	55.6
Evergol Energy + Poncho/VOTiVO	5	12.2	57	54.7
Evergol Energy + Poncho/VOTiVO + ILeVO®	5	12.2	57	52.1
Evergol Energy + Poncho/VOTiVO	**Avg.**	**12.6 A**	**57.2 A**	**57.2 A**
Evergol Energy + Poncho/VOTiVO/ILeVO®	**Avg.**	**12.4 B**	**57.0 A**	**56.0 A**

[1]Means followed by the same letter are not significantly different (P=0.10).

Discussion: ILeVO is a new seed treatment from Bayer Crop Science that will reduce the incidence of Sudden Death Syndrome (SDS) and will help manage nematode populations. (Nematode populations have been found to play a part in the spread of SDS). This field has shown signs of SDS in previous years. In this test, side by side replicate comparisons were done with the same variety treated in different ways. CZ4959RY has moderate resistance to SDS and Race 3 Cyst Nematodes (SCN). Nematode samples in this field showed low levels of SCN and Root Knot (RKN) shortly after planting (June), but very high numbers of RKN, Spiral and Ring nematodes at harvest in October. In this test, with nematodes present, there is no significant increase in yield when using the ILeVO treated seed. There were no signs of SDS during the growing season.

2015 EVALUATION OF ILeVO® SEED TREATMENT ON IRRIGATED SOYBEAN

Cooperators: Producer: Cloverfield Enterprises
Extension: Keith Balderson, VCE-Essex
Taylor Sabo, VCE Summer Intern

Previous Crop: Barley
Soil Type: Bojac sandy loam
Tillage No-till
Planting Date: June 9, 2015
Variety: Credenz CZ4959RY
Seeding Rate/Row Spacing: 110,000 plants per acre in 15 inch rows
Fertilization: 22-104-130 per acre in fall prior to barley planting
August 19; 1 qt./A.boron and 1qt. per acre manganese
Crop Protection: June 23; 3 pts. /A Warrant and 32 oz. /A. Touchdown
July 18; 30 oz. /A. Touchdown
August 19; 9 oz. /A. Quadris Top and 3 oz. /A. Tombstone
Harvest Date: November 23, 2015
Harvest Equipment: Case IH 9240

Treatment	Rep.	Moisture (%)[1]	Yield (bu/A)[1]
EverGol Energy + Poncho/Votivo	1	14.5	34.0
EverGol Energy +Poncho/Votivo + ILeVO®	1	14.3	40.7
EverGol Energy + Poncho/Votivo	2	13.8	47.9
EverGol Energy + Poncho/Votivo + ILeVO®	2	14.2	45.0
EverGol Energy + Poncho/Votivo	3	14.0	45.9
EverGol Energy + Poncho/Votivo + ILeVO®	3	14.2	44.7
EverGol Energy + Poncho/Votivo	Avg.	14.1 A	42.6 A
EverGol Energy + Poncho/Votivo + ILeVO®	Avg.	14.2 A	43.5 A

[1]Means followed by the same letter are not significantly different (P=0.10).

Discussion: ILeVO® is a seed treatment from Bayer CropScience. According to the Bayer CropScience webiste, "ILeVO® is the first and only seed treatment for Sudden Death Syndrome (SDS) and nematode activity. It also has seed-zone activity against soybean cyst nematode (SCN) – two of the most yield-robbing pests in soybeans." In this plot the seed treatment was evaluated on a soybean variety with PI88788 soybean cyst nematode resistance in a field with a long history of heavy soybean cyst nematode pressure. Soil samples taken during the growing season showed the presence of SCN, but no SDS was observed in any of the plots. There was no statistical difference in yields of either treatment.

2015 MIDDLESEX rizNate™ SOYBEAN SEED TREATMENT TEST

Cooperators:	Producer: Jason Benton Extension: David Moore, VCE Industry: Renwood Farms, Inc.
Previous Crop:	Corn
Soil Type:	Eunola & Myatt Loams
Tillage	No-Till
Planting Date:	May 25, 2015
Seeding Rate/Row Spacing:	180,000 in 7.5 inch rows
Fertilization:	0-40-80
Crop Protection:	Burndown: Gramoxone + 2,4-D Post: Glyphosate
Harvest Date:	November 13, 2015
Harvest Equipment:	AGCO Gleaner R62

Treatment	Moisture%	Yield (bu/A)
Untreated USG 7553nRS	13.1	47.1
Check-Asgrow AG 5332	13.0	46.4
Treated USG 7553nRS	13.1	45.6

Discussion:

Soybean nutritionals and biologicals are what marketing soybean seed is all about. Keep in mind, this is one side-by-side strip comparison. Here, there is little yield difference in any of these strips. The comparison strips were 830 feet long and most likely the field expressed some decreasing of yield as we proceeded across it.

The rizNate™ label says, "rizNate™ is a biological seed treatment developed to prime the seed for speeding up the germination and emergence timeline". "This technology maximizes the genetics of a seed to ensure proper seedling vigor and uniform growth". It also acts as an incoulant.

This technology is compared additionally in the King & Queen Group 5 soybean plot. Use this and other Virginia Tech replicated soybean research when making planting decisions for 2016.

2015 KING & QUEEN rizNate™ SOYBEAN TREATMENT PLOT

Cooperators:	Producer:	Craig Leggett
	Extension:	David Moore, VCE-Middlesex
		Taylor Sabo, VCE Summer Intern
	Industry:	Renwood Farms
Previous Crop:	Corn	
Soil Type:	Emporia Sandy Loam	
Tillage	No-Till in 7.5 inch rows	
Planting Date:	May 28, 2015	
Variety:	USG 7553nRS	
Seeding Rate:	155,000 seed	
Fertilization:	1 Ton Lime	
Crop Protection:	Burndown:	Glyphosate + 2, 4-D
	Post:	Brandt Smart Trio + Glyphosate
Harvest Date:	November 24, 2015	
Harvest Equipment:	John Deere 7720	

Treatment	Moisture%	Yield (bu/A)
Untreated USG 7553NRS	13.3	41.0
Check-SS5213NR2	13.8	46.7
USG 7553nRS w/rizNate™	13.0	44.4

Discussion:

Soybean nutritionals and biologicals have become popular with some farmers. Keep in mind, this is one side-by-side strip comparison. Here, the comparison strips were 650 feet long and fairly sandy.

The rizNate™ label says, "rizNate™ is a biological seed treatment developed to prime the seed for speeding up the germination and emergence timeline". "This technology maximizes the genetics of a seed to ensure proper seedling vigor and uniform growth". it also acts as an inoculant.

In this particular test, there was no visual difference on the plots, but there was some difference in yield in favor of the treatment; however, in the combined results of the two tests that were done, there is no significant difference noted.

This technology is compared additionally in a Middlesex soybean plot. Use this and other Virginia Tech replicated soybean research when making planting decisions for 2016.

Other Research

2015 EVALUATION OF GYPSUM APPLICATION TO SOYBEANS

Cooperators:	Producer:	Keith Balderson
	Extension:	Keith Balderson, VCE-Essex
	Industry:	Philip Henley, Ameropa, North America

Previous Crop: Wheat/Soybean Double Crop
Soil Type: Suffolk sandy loam
Tillage No-till
Planting Date: May 5, 2015
Variety: Dyna-Gro 48RS53
Seeding Rate/Row Spacing: 110,000 plants per acre in 7.5 inch rows
Fertilization: 11-52-60 per acre
Crop Protection: Burndown: Roundup
Pre-emergence: Canopy EX
Post-emergence: Touchdown and Synchrony
Harvest Date: October 12, 2015
Harvest Equipment: John Deere 7720

Treatment	Replication	Moisture%	Yield (bu/A at 13%)
Check	1	12.7	62.7
Sul4R-Plus	1	12.5	61.4
Sul4R-Plus	2	12.4	60.3
Check	2	12.5	55.4
Average Check		**12.6 A**	**59.1 A**
Average Sul4R-Plus		**12.6 A**	**60.9 A**

Discussion: The need for sulfur fertilization on corn and small grains has increased dramatically over the past couple of decades as the average annual sulfate deposition from precipitation has been reduced. There has been very little work done on sulfur fertilization of soybeans. The purpose of this plot was to evaluate the application of a gypsum product, Sul4R-Plus, that is 17% sulfur and 21% calcium. The product was applied at the rate of 100 pounds per acre on May 16th just after the soybeans emerged. The sulfur is in the sulfate form, which is readily available for crop uptake. A soil sample taken just prior to applications showed a sulfur level of 14 ppm. The field has history of good sulfur fertilization to both the corn and small grain crops. There was no statistical difference in yield between the 2 treatments.

NUTRITIONAL CONTENT OF SOYBEANS DURING GROWING SEASON

Background: This is the third year of field work that was initiated to better understand the nutrient content of soybean plants during the growing season. Overall, the purpose of this study is to find effective practices that result in optimal soybean yields in Virginia; especially in double-crop situations. Soil samples were taken at planting prior to any fertilization and tissue samples were taken at various growth stages and mailed to Waypoint Analytical to determine nutritional content. Results of the tissue samples help us to better understand the nutritional need of the plant at various stages of growth. Results also help us understand if additional foliar "nutritionals" are needed. The chart below shows the nutritional deficiencies and/or excesses from soybeans collected from six (6) different locations around the lower middle peninsula. Samples 1 and 2 are full season soybeans and samples 3-6 are double-crop.

Samples were taken every two weeks during the growing season until plant maturity (leaf yellowing). The samples consisted of leaves picked from the most recently developed trifoliates of the soybean plant. The sample area was always the same 25-36 square foot section of the field. Sampling began when plants were in vegetative stages and continued every two weeks until plant was mature. The following tables will follow nutritional content of each plot, beginning with soil samples (SS) and continuing with each tissue sample (T) and sample date.

Plot 1 (pH=5.8) Full Season 1

Sample	N	P	K	Mg	Ca	Na	S	Zn	Mn	Fe	Cu	B
Soil		H	M	H	M	L	VL	L	L	VH	L	VL
T-1 7/2)	H	H	H	S	L	L	L	S	S	H	S	S
T-2 (7/15)	H	H	H	S	L	S	L	S	S	S	S	S
T-3 (7/30)	VH	H	H	S	S	H	S	S	H	S	VH	H
T-4 (8/14)	H	H	S	S	S	S	S	H	S	S	S	S
T-5 (8/31)	S	L	S	S	S	S	S	S	L	S	S	S
T-6 (9/10)	L	L	S	L	S	S	L	S	L	S	L	S

Plot 2 (pH=5.3) Full Season 2

Sample	N	P	K	Mg	Ca	Na	S	Zn	Mn	Fe	Cu	B
Soil		M	VH	M	L	L	M	L	M	VH	L	VL
T-1 (7/2)	H	H	H	S	L	L	L	H	H	S	S	S
T-2 (7/15)	H	H	S	S	VL	L	L	S	H	S	S	S
T-3 (7/30)	VH	H	H	S	S	S	S	H	H	S	VH	S
T-4 (8/14)	H	H	S	S	S	L	S	H	S	S	S	H
T-5 (8/31)	S	L	S	L	S	S	S	H	S	S	S	H
T-6 (9/10)	S	L	S	L	S	S	S	S	S	S	S	S

Plot 3 (pH=6.4) Double-Crop 1

Sample	N	P	K	Mg	Ca	Na	S	Zn	Mn	Fe	Cu	B
Soil		H	L	H	M	VL	VL	M	M	VH	L	VL
T-1 (7/15)	H	H	H	S	L	L	S	S	S	S	S	S
T-2 (7/30)	H	H	S	S	L	S	L	S	H	S	VH	S
T-3 (8/14)	VH	H	H	H	S	S	S	S	S	S	H	S
T-4 (8/31)	H	H	S	S	S	S	S	H	S	S	S	S
T-5 (9/10)	H	S	L	S	H	S	S	S	S	S	S	L

Plot 4 (pH=7.1) Double-Crop 2

Sample	N	P	K	Mg	Ca	Na	S	Zn	Mn	Fe	Cu	B
Soil		H	H	M	H	VL	L	H	M	VH	H	M
T-1 (7/15)	H	H	H	S	S	S	S	S	S	S	H	S
T-2 (7/30)	VH	H	H	S	L	S	S	S	H	S	H	S
T-3 (8/14)	VH	H	H	S	S	L	S	H	S	S	H	S
T-4 (8/31)	H	H	S	S	S	S	S	H	L	S	S	S
T-5 (9/10)	H	S	S	L	S	S	S	H	S	S	S	S

Plot 5 (pH=6.7) Double-Crop 3

Sample	N	P	K	Mg	Ca	Na	S	Zn	Mn	Fe	Cu	B
SS		VH	H	M	H	VL	L	H	L	VH	H	L
T-1 (730)	VH	H	VH	S	S	S	S	H	S	S	H	S
T-2 (8/14)	H	H	H	S	L	S	S	H	S	S	H	S
T-3 (8/31)	H	H	S	S	S	S	S	H	S	S	S	S
T-4 (9/10)	H	S	S	L	S	S	S	H	S	S	S	L

Plot 6 (pH=5.3) Double-Crop 4

Sample	N	P	K	Mg	Ca	Na	S	Zn	Mn	Fe	Cu	B
Soil		VH	VH	M	L	VL	M	L	M	VH	L	L
T-1 (7/30)	H	H	VH	S	L	S	S	S	H	S	VH	S
T-2 (8/14)	H	H	H	S	VL	L	S	S	S	S	S	S
T-3 (8/31	H	H	S	S	S	S	S	H	S	S	S	H
T-4 (9/10)	S	S	S	L	S	S	S	H	H	S	S	H

Key:
VH=Very High
H=High
S=Sufficient (Tissue Sample only)
M=Medium (Soil Sample only)
L=Low
VL=Very Low

Notes:
Fertility-wise, there is a lot of variation in the amount of nutrients present. As expected, soils in the area are usually low in Sulfur and Boron and high in Zinc and Iron, mainly due to soil types. Another thing to notice is most soils have ample Manganese in them, but due to water concerns, soil types, other nutrient levels, it can be the first nutrient to become deficient. Remember: The availability of nutrients is tied to soil pH levels and many of the cations (K, NH4, Mg, Ca, Mn, Zn, Fe, Cu, H, Al) can compete for placement on the soil particle. The purpose of the soil testing was to give the reader an idea of the nutrient levels in the soil prior to plant growth and the corresponding levels in the plant tissue during the growing season.

Most of the tissue sampling took place in July and August. The full season plots began in early July, where the double crop sampling did not begin until mid to late July. All sampling was completed by September 10th. In almost all plots, the sampling that took place at TS3 showed that there were almost no low to deficient levels of nutrients in the plants. This time of sampling generally coincided with beginning reproductive stages of plant; the time that many nutritional foliar sprays are made. This has been the case for all three years of the testing. This appears to be when the plant is running like a well-oiled machine. Root uptake of nutrients and foliar applications of nutrients should have all kicked in by this time. Towards the end of sampling and plant maturity, most plants are showing signs of yellow leaves and senescence. At this point, many nutrients, both major and minor, will become low or deficient. The plant is shutting down.

General Comments associated with three years of testing:

-There are fewer overall deficiencies in soils with pH higher than 6.5

-Nitrogen in the soybean plant usually starts high, peaks after about 1 month (root growth) and then slowly decreases.

-Potassium levels drop slightly during season, but remain sufficient

-Magnesium decreases over time and is low at maturity.

-Tissue Low levels at Week 3-Maturity; P (FS), Mg (FS), Mn (FS, DC), B (DC), Ca (DC)

-Tissue Low levels Week 1-3; Ca (FS, DC), S (FS, DC), Na (FS, DC). Sodium is in plant in such low amounts, can go from deficient to sufficient with 0.01% change

-Boron can be low in soil, but OK in plant. Zinc and Cu increase during season even if low in soil.

-Generally, Manganese is not as available in high pH soils, but almost never deficient in the plant late in season.

-Do we need micros earlier in plant's life? Plant has same deficiencies late in season no matter if micros ("nutritionals") are applied or not

2015 VALIDATION OF A FOLIAR FUNGICIDE DECISION AID IN SOYBEAN

Cooperators: Producer: Cam Gibson, Donald Meek, Glenn Dye, Marc McPherson, Ronnie Russell, Keith Dunn, Martin O'Neil, Kyle Hutchison
Extension: Hillary Mehl, David Holshouser, Tian Zhou, David Moore, Watson Lawrence, Corey Whaley,

Treatments: 1) Control; 2) Fungicide applied at R3 stage; 3) Fungicide applied based on decision aid (temperature & relative humidity)

Experimental Design: Randomized Complete Block with 3 replicates

County/City (State)	Variety	Treatment	Spray Date	Fungicide & Rate	Yield (bu/A)[a]
Orange (VA)	Pioneer P48T53	Control	NA		70.3 A
		R3	Jul 23	Priaxor – 4 oz/A	67.5 A
		Decision Aid	Aug 11	Priaxor – 4 oz/A	68.4 A
Culpeper (VA)	NK S44K7	Control	NA		68.4 B
		R3	Jul 27	Priaxor – 4 oz/A	72.2 A
		Decision Aid	Aug 11	Priaxor – 4 oz/A	68.8 B
Stafford (VA)	Pioneer P46T21	Control	NA		58.6 A
		R3	Aug 8	Quadris Top – 8 oz	62.2 A
		Decision Aid	NA	NA	
Chesapeake (VA)	Asgrow 4934	Control	NA		42.4 A
		R3	Aug 13	Priaxor – 4 oz/A	44.1 A
		Decision Aid	Aug 22	Priaxor – 4 oz/A	46.2 A
Middlesex (VA)	Pioneer P49T80	Control	NA		44.3 A
		R3	Aug 17	Aproach Prima – 6.8 oz	43.2 A
		Decision Aid	Sep 9	Aproach Prima – 6.8 oz	46.9 A
Sussex (VA)		Control	NA		37.1 A
		R3	Sep 4		32.1 A
		Decision Aid	Sep 8		30.4 A
Talbot (MD)	TA Seed TS4729; USG 75B58	Control	NA		70.9 A
		R3	Aug 5	Quadris Top – 10 oz	68.5 A
		Decision Aid	Aug 14	Quadris Top – 10 oz	69.8 A
Sussex (DE)	Pioneer 93Y84; Pioneer 39T67R: Dyna-Gro 32RY39	Control	NA		50.1 A
		R3	Aug 29	Quadris Top – 10 oz	49.8 A
		Decision Aid	Sep 9	Quadris Top – 10 oz	51.2 A

[a]Yields followed by the same letter within a location are not significantly different at 90% confidence level

DISCUSSION: Over 10 years of research in Virginia indicate that foliar fungicides only result in a significant soybean yield response one-third of the time. Foliar soybean disease development depends on optimum environmental conditions, primarily temperature (daily averages between 65 and 78°F) and relative humidity (≥95% for ≥10hrs/day). These experiments were conducted to validate a decision aid developed by Dr. Pat Phipps, former Virginia Tech Extension Plant Pathologist, to predict whether or not, and when to make a foliar fungicide application to soybean. Treatments included a control, R3 stage (early pod development) application, and application based on the decision aid. At all but one site,

the decision aid predicted that a foliar fungicide was warranted, but recommended spraying 4 to 23 days after R3. Overall, disease pressure was low and in most locations conditions were dry during pod development. Dry conditions followed by heavy rains in September resulted in a variety of stem and pod diseases which likely reduced soybean yield and/or quality, but these diseases are not well controlled with foliar fungicides. In contrast to 2014 when 4 of the 7 trials resulted in a yield response, the number of days between the R3 growth stage and the decision aid recommending a spray were greater in 2015 (4 to 23 days after R3) compared to 2014 (4 to 13 days after R3). The total number of days conducive for disease development during pod development was also low in 2015, which may explain the lack of yield response to fungicide applications at most locations.