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VIRGINIA STATE

2010

Virginia On-Farm Soybean Test Plots

A summary of replicated research conducted by

Virginia Cooperative Extension in cooperation with local producers and agribusiness

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Funded and Supported by: The Virginia Soybean Board

Introduction

The demonstration and research plot results discussed are a cooperative effort of Virginia Cooperative Extension 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 technology through on-farm replicated research using producer equipment and time. The plot work and analyzed results enable producers to make management decisions based on research and provides greater opportunity 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 their cooperation. We hope that 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 and at regional production meetings throughout Virginia. This information reaches over 400 Virginia soybean and grain producers and agribusinesses impacting over 250,000 acres of soybeans valued at over $75 million.

The field work and printing of this publication is supported by Virginia Soybean 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 fourteenth year of this multi-county cooperative effort and further work is planned for 2011. 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. Special thanks Paige Hogge, for her valuable technical assistance in compiling the book.

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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 and Liberty Link varieties across multiple locations. This information gives producers in a given area a better handle on how varieties perform "close to home". This work is done in concert with the State trials conducted by Dr. 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 7 locations in Eastern Virginia. Relative yields were calculated to provide information for varieties not included in all locations. Contact cooperating agents about results in individual test locations.

We have been evaluating Liberty Link (LL) varieties for a couple of years now. The purpose for these studies is to try and stay ahead of possible *glyphosate* resistant problems that have begun in some locations in the State. This work is done not only to look at LL variety performance, but to also evaluate the use of *glufosinate (Ignite)* herbicide. Studies show that these varieties yield well and Liberty Link technology has a place for those producers battling *glyphosate* resistance, for resistance management, and general weed control.

Soybean nematodes are an ever-present problem for producers here in Eastern Virginia especially on sandy soils. On farm surveys have been conducted for several years now and we have continued to evaluate production strategies used to control/suppress nematode problems. A new seed treatment, VOTiVO, was compared in a known soybean cyst nematode (SCN) field. SCN numbers in this test field were rated as B (nematodes present and will likely cause a problem) and C (nematodes are a serious problem, control recommended). Although this product seemed to help with non resistant varieties, there was no significant difference in yields. Note; this is just one test in one year.

Keith Balderson evaluated some new SCN resistant varieties in a known SCN problem field.

Folks in Eastern Virginia have expressed great interest in the use of starter fertilizer in full season soybeans planted in wide (30 inch) rows. This evaluation was conducted in two locations in 2010 with no significant yield differences found between strips with and without starter.

A comparison of "Soy Soap" was conducted in a field at AG-EXPO site in Westmoreland County. Soybean varieties were compared in a full-season and double crop situation. Another replication of the double crop planting with the addition of "soy soap" was included in the test. Statistically, there was no difference in the double crop yields with the use of this product.

A comparison of a wheat-double-crop soybean system versus a barley-double crop soybean system was done by Scot Reiter in Prince George County. Producers are encouraged to look at proftabilities in their own operations.

2010 MG 4 Overall Soybean Comparison

Brand	Variety	K&Q Car	K&Q Hen	West-more	Suf-folk	Sus-sex	Prince George	VSU	Avg	Avg Rel Yield3
Asgrow	AG4730*	49.2		35.9	31.0	23.5	31.6	30.4	35.6	117
Asgrow	AG4630*	47.8		36.5	33.4	15.7	31.2	28.3	35.4	116
USG	74E88*	48.0	59.5	32.9	37.8		34.1	25.4	39.6	115
NK	S48-C9*	40.4		35.8	32.8	37.0	24.8	27.7	32.3	107
USG	74A91	43.9	54.2	30.3	34.2	13.8	33.0	20.2	36.0	104
Pioneer	94Y70	40.1	54.6	34.6	31.2		26.6	25.8	35.5	103
Pioneer	94Y90	42.4	60.5	34.1	31.1		26.4		38.9	103
NK	S44-D5	49.2		38.2	30.6	9.6	26.7	16.9	32.3	102
Progeny	P4807RR	42.4	63.9	31.4	31.2	16.1	29.0	19.7	36.3	102
Mid-Atlantic	MAS4444RR2	42.7	48.0	36.8			30.2	20.1	35.6	101
Southern States	RT4996N-STS	36.9	54.1	34.1	31.0		22.2	27.9	34.4	100
T.A. Seeds	TS4299RS	44.5	60.8	29.5	27.3		24.6	20.5	34.5	97
Dyna-Gro	35X43	42.8		34.5	24.0	21.8	20.3	25.4	29.4	96
Progeny	P4606RR	42.1	59.5	31.6	24.6	29.0	27.9	17.6	33.9	95
Seed Consultants	SCS9448RR	40.9	50.7	31.9	31.1		28.0	16.5	33.2	95
Southern States	RT4777N	35.0	55.5	29.9	31.2	12.6	21.1	22.2	32.5	93
T.A. Seeds	TS3989RS	38.0	58.1	30.6	30.5	22.6	23.6	16.2	32.8	92
Dyna-Gro	33A40	37.4	50.5	31.9	30.0		21.7	19	31.7	91
Seed Consultants	SCS9479RR	33.2	55.9	30.2	29.1	16.0	19.5	21.5	31.6	90
Mid-Atlantic	MAS4399RR/STS	39.7	54.3	32.4			21.9	14.6	32.6	88
Average		41.8	56.0	33.2	30.7	19.8	26.2	21.9	34.2	100

[1]* indicates that variety's relative yield is not significantly different from highest yielding variety according to Fisher's LSD (p=0.10)

[2]Root knot nematodes (RKN) lowered yields to nearly zero in parts of the field; therefore, RKN-infested plots were not included.

[3]The Sussex location was not included in the averages due to variability.

Discussion: The Group 4 soybeans were compared in seven locations, including the 2010 AG-EXPO site (Westmoreland). If varieties were not tested in all locations, relative yield is a better method of comparing varieties. Relative yield is calculated by dividing the yield of a variety by the average yield of all varieties at that location. A variety with a relative yield of 105 was 5% above the average of all varieties at that location. Relative yield is not an actual yield, but a value that is relative to all other yield values at that location.

Thanks to all the cooperators and supporters. Use this and other Virginia Tech soybean variety information when making your planting decisions for 2011.

2010 KING AND QUEEN GROUP 4 IRRIGATED SOYBEAN VARIETY COMPARISONS

Cooperators: Producer: Todd Henley
Extension: Keith Balderson and David Moore, Middle Peninsula
Previous Crop: Corn
Soil Type: Tarboro sand
Tillage: No-till
Test/Plot Size: 300-375 ft. x 10 ft.
Planting Equipment: Kinze 8 row planter
Planting Date: May 7, 2010
Fertilization: 10-30-60 per acre broadcast pre-plant; Foliar Feed: Manni-Plex Trio
Row Spacing: 30 inches
Seeding Rate: 140,000 seeds per acre
Crop Protection: Herbicides: Burn-down: Gramoxone and 2, 4-D
Post-emergence: Roundup
Harvest Date: October 11, 2010
Harvest Equipment: John Deere 9660 with a 30 foot header

Brand	Variety	Moisture	Yield
		(%)	(bu/A)
Asgrow	AG4630	lost to root knot	nematodes
Asgrow	AG4730	lost to root knot	nematodes
Dyna-Gro	33A40	14	50.5
Dyna-Gro	35X43	lost to root knot	nematodes
NK	S44-D5	lost to root knot	nematodes
NK	S48-C9	lost to root knot	nematodes
Mid-Atlantic	MAS4444NRR	12.3	48.0
Mid-Atlantic	MAS4399RR/STS	11.7	54.3
Pioneer	94Y70	12	60.5
Pioneer	94Y90	13.1	54.6
Progeny	P4606RR	12.2	59.5
Progeny	P4807RR	12.2	63.9
Seed Consultants	SCS9448RR	14.2	50.7
Seed Consultants	SCS9479RR	13.1	55.9
Southern States	RT4777N	13.1	55.5
Southern States	RT4996N-STS	14.6	54.1
T.A. Seeds	TS3989	12.9	58.1
T.A. Seeds	TS4299	12.4	60.8
USG	74E88	15.2	59.5
USG	74A91	14.2	54.2
Average:		13.15	56.0

Discussion: After planting, we realized that part of the test plot had a root-knot nematode infestation. Yields of some varieties are not reported due to the impact of root knot nematodes on yield. Soil samples for nematode assay were taken following plot harvest, but we have not received the results as of yet. Please use this information in conjunction with replicated yield data from the Official State Variety Trials when making variety selections for 2011.

2010 KING & QUEEN GROUP 4 SOYBEAN VARIETY COMPARISONS

Cooperators: Producer: William Davis Carlton, David Carlton
Extension: David Moore, Middle Peninsula
Previous Crop: Corn followed by Barley Cover
Soil Type: Emporia Loam
Test Plot Size: 17.5' X 500'
Planting Equipment: Kinze 3500 Series
Planting Date: May 6, 2010
Row Spacing: 15 inch rows
Seeding Rate: 140,000
Crop Protection: Burndown: Glyphosate + 2,4-D; Post: Glyphosate
Harvest Date: October 13, 2010
Harvest Equipment: John Deere 9610STS

Brand	Variety	Moisture	Yield
		(%)	(bu/A)
Asgrow	AG4630	12.2	47.8
Asgrow	AG4730	12.7	49.2
USG	74E88	13.3	48.0
USG	74A91	11.5	43.9
Progeny	P4606RR	12.3	42.1
Progeny	P4807RR	12.0	42.4
NK	S44-D5	12.4	49.2
NK	S48-C9	12.4	40.4
Mid-Atlantic	MAS4399RR/STS	11.9	39.7
Mid-Atlantic	MA4444NRR	12.4	42.7
Seed Consultants	SCS9448RR	12.6	40.9
Seed Consultants	SCS9479RR	13.8	33.2
Southern States	RT4777N	13.1	35.0
Southern States	RT4996N-STS	14.0	36.9
Dyna-Gro	33A40	14.3	37.4
Dyna-Gro	35X43	14.1	42.8
T.A. Seeds	TS3989RS	14.4	38.0
T.A. Seeds	TS4299RS	13.7	44.5
Pioneer	94Y70	14.3	42.4
Pioneer	94Y90	14.2	40.1
Average:		13.1	41.8

Discussion: The average check in the field was 38.4 bushels. This was a good plot that survived the summer heat and drought pretty well. This area of the middle peninsula had a few showers that helped immensely.

2010 PRINCE GEORGE GROUP 4 SOYBEAN VARIETY COMPARISONS

Cooperators: Producer: Paul Cerny Jr. and Sean Finney
Extension: Scott Reiter, Prince George
Previous Crop: Wheat
Soil Type: Montross silt loam and Rains loam
Tillage: No-till in 14 inch rows
Test/Plot Size: 24 feet wide x 300-600 ft long
Planting Equipment: Great Plains 1205NT No-till drill
Planting Date: June 11, 2010
Seeding Rate: 200,000 seed/acre
Crop Protection: Roundup @ 1 qt/A + FirstRate @ 0.3 oz/A, Post; Karate @ 1.92 oz/A (corn earworm); Warrior T @ 3.84 oz/A (corn earworm)
Harvest Date: October 30, 2010
Harvest Equipment: John Deere 9500 with 918 Flex Platform

Brand	Variety	Moisture	Yield @ 13%
		(%)	(bu/A)
Asgrow	AG4630	13.0	31.2
Asgrow	AG4730	12.9	31.6
USG	74E88	13.4	34.1
USG	74A91	13.2	33.0
Progeny	P4606RR	12.8	27.9
Progeny	P4807RR	12.6	29.0
NK	S44-D5	13.2	26.7
NK	S48-C9	13.9	24.8
Mid-Atlantic	MAS4399RR/STS	12.8	21.9
Mid-Atlantic	MAS4444NRR2	13.9	30.2
Seed Consultants	SCS9448RR	13.9	28.0
Seed Consultants	SCS9479RR	12.3	19.5
Southern States	RT4777N	13.2	21.1
Southern States	RT4996N-STS	14.2	22.2
Dyna-Gro	33A40	13.7	21.7
Dyna-Gro	35X43	12.9	20.3
T.A. Seeds	TS3989RS	14.1	23.6
T.A. Seeds	TS4299RS	12.9	24.6
Pioneer	94Y70	14.0	26.6
Pioneer	94Y90	14.9	26.4
Average:		13.4	26.2

Discussion:
These double crop soybeans produced good yields for the season that we had. This heavier loamy soil held more water. The producer also noted that the first four plots were on “better land” and did not

show drought stress as early as other plots in this field. Seed size varied from 3,500 to 4,700 seed per pound. Test weight varied from 51 to 56 pounds per bushel. This year the Group 4's edged out the Group 5's by a little over 2 bushels. A 2 inch rainfall on August 15-17 helped these early maturing varieties. Use this and other variety information in making your 2011 soybean selections.

2010 SUFFOLK GROUP 4 SOYBEAN VARIETY COMPARISONS

Cooperators: Producer: Mike Ellis
Extension: David Holshouser, TAREC
Previous Crop: Corn
Soil Type: Rains fine sandy loam
Tillage: Disk 2X
Test/Plot Size: 24 ft x 594 ft
Planting Equipment: KMC Kelly 8-row
Planting Date: May 31, 2010
Row Spacing: 18 inches
Seeding Rate: 140,000
Crop Protection: Makaze (glyphosate) 1qt; Mangro (Mn) 5lbs
Tombstone 3 oz; Headline 6oz
Harvest Date: November 12, 2010
Harvest Equipment: Case IH 1640

Brand	Variety	Moisture	Yield
		(%)	(bu/A)
Pioneer	94Y90	14.8	31.1
Pioneer	94Y70	16.7	31.2
Asgrow	AG4730	15.6	31.0
Asgrow	AG4630	16.0	33.4
Progeny	P4807RR	15.9	31.2
Progeny	P4606RR	16.1	24.6
Dyna-Gro	35X43	15.7	24.0
NK	S44-D5	15.6	30.6
USG	74A91	15.3	34.2
USG	74E88	15.2	37.8
NK	S48-C9	15.6	32.8
T.A. Seeds	TS3989RS	16.1	30.5
Dyna-Gro	33A40	16.3	30.0
T.A. Seeds	TS4299RS	15.1	27.3
Seed Consultants	SCS9448RR	14.6	31.1
Seed Consultants	SCS9479RR	14.9	29.1
Southern States	RT4996N-STS	15.1	31.0
Southern States	RT4777N	15.6	31.2
Average:		15.6	30.7

Discussion: The summer was very dry; however, rainfall in August revived the crop. Still, a dry September resulted in aborted and small seed; therefore, yields were disappointing. Use this and other replicated variety test information when selecting varieties for 2011.

2010 SUSSEX COUNTY GROUP 4 SOYBEAN VARIETY COMPARISONS

Cooperators: Producer: Preston Lowery
Extension: Kelvin Wells, VCE-Sussex
Previous Crop: Soybeans
Soil Type: Bojac Loamy Fine Sand
Tillage: No-Till
Test/Plot Size: 1390' X 30'
Planting Equipment: Great Plains No-Till Drill
Planting Date: May 22, 2010
Row Spacing: 7 inch
Seeding Rate: 2-3 seed/row foot
Crop Protection: Burndown: Glyphosate
Post: Glyphosate
Harvest Date: October 23, 2010
Harvest Equipment: Case IH 1660

Brand	Variety	Moisture	Yield
		(%)	(bu/A)
Asgrow	AG4630	16.2	15.7
Asgrow	AG4730	16.2	23.5
USG	74A91	16.2	13.8
Progeny	P4606RR	16.2	29.0
Progeny	P4807RR	16.2	16.1
NK	S44-D5	16.2	9.6
NK	S48-C9	16.2	37.0
Seed Consultants	SCS9479RR	16.2	16.0
Southern States	RT4777N	16.2	12.6
Dyna-Gro	35X43	16.2	21.8
T.A. Seeds	TS3989RS	16.2	22.6
Average:		16.2	19.8

Discussion: We were late in securing soybean varieties for Kelvin and his plot. Several varieties were not included due to seed shortage. There was quite a wide range of yields due to 2010 growing conditions. The available results will be included in the overall variety comparisons.

2010 VIRGINIA STATE UNIVERSITY GROUP 4 SOYBEAN VARIETY COMPARISONS

Cooperators: Producer: Rudy Grammer & Mack West – VSU Randolph Farm
Glenn F. Chappell, II - VSU
Previous Crop: Soybeans
Soil Type: Norfolk & Tetotum loam
Tillage: Ripped under the row
Test/Plot Size: 8 30" rows x 320'
Planting Equipment: John Deere Max Emerge
Planting Date: May 21, 2010
Row Spacing: 30"
Seeding Rate: 160,000
Crop Protection: 1.5 qt. Gly4 May 14, 2010; **1** qt. Gly4 + 0.3 oz. First Rate June 14, 2010
1.5 qt. Gly4 + 0.3 oz. First Rate August 11, 2010
Harvest Date: October 25, 2010
Harvest Equipment: John Deere 9560 STS

Brand	**Variety**	**Moisture**	**Yield**	**% of Check***
		(%)	(bu/A)	(%)
Southern States	RT4808(check)	11.1	27.8	-----
Asgrow	AG4630	13.3	28.3	116
Asgrow	AG4730	13.6	30.4	124
USG	74E88	13.8	20.2	83
USG	74A91	13.3	25.4	104
Progeny	P4606RR	12.7	17.6	72
Progeny	P4807RR	13.6	19.7	81
NK	S44-D5	13.6	16.9	69
NK	S48-C9	13.4	27.7	113
Mid-Atlantic	MAS4399RR/STS	13.6	14.6	60
Mid-Atlantic	MA4444NRR	14.0	20.1	83
Seed Consultants	SCS9448RR	12.7	16.5	68
Seed Consultants	SCS9479RR	13.0	21.5	88
Southern States	RT4777N	12.7	22.2	91
Southern States	RT4996N-STS	14.5	27.9	114
Dyna-Gro	33A40	14.2	19.0	78
Dyna-Gro	35X43	13.3	25.4	104
T.A .Seeds	TS3989RS	14.3	16.2	66
T.A. Seeds	TS4299RS	12.6	20.5	84
Pioneer	94Y70	13.8	25.8	106
Pioneer	94Y90	13.9	29.2	120
Southern States	RT4808 (check)	10.5	21.0	----
Average:		13.5	22.5	----

Discussion:

Rainfall totals by month:	May - 6.40”, June – 3.90”, July – 1.40” Aug. – 4.45
Irrigation totals by month:	May - 0.00”, June – 0.00”, July – 2.00” Aug. – 0.00
Totals by month:	**May – 6.40”, June – 3.90”, July – 3.40” Aug. – 4.45**

Even with supplemental irrigation, yields were not as high as expected most likely as a result of the high temperatures.

* % of Check = (Variety yield/(Sum of check yields/2))*100

2010 WESTMORELAND GROUP 4 SOYBEAN VARIETY COMPARISONS

Cooperators: Producer: F. F. Chandler, Jr.
Extension: Keith Balderson, Middle Peninsula
Matt Lewis, Northern Neck; Annah Latane, VCE Summer Intern
Previous Crop: Corn
Soil Type: Kempsville fine sandy loam
Tillage: No-till
Test/Plot Size: 300 ft. x 30 ft.
Planting Equipment: Case IH 6 row air planter
Planting Date: May 21, 2010
Row Spacing: 30 inches
Seeding Rate: 140,000 seeds per acre
Crop Protection: Burndown: Gramoxone; Preemergence: Canopy; Postemergence: Glyphosate
Harvest Date: October 18, 2010
Harvest Equipment: John Deere 9400 with 918 header

Brand	Variety	Moisture	Yield
		(%)	(bu/A)
Asgrow	4630	12.8	36.5
Asgrow	4730	12.7	35.9
CPS Dyna-Gro	33A40	12.8	31.9
CPS Dyna-Gro	35X43	12.9	34.5
NK	44-D5	12.6	38.2
NK	48-C9	12.9	35.8
Mid-Atlantic	4444NRR	12.6	36.8
Mid-Atlantic	4399RR/STS	12.4	32.4
Pioneer	94Y70	12.7	34.1
Pioneer	94Y90	12.7	34.6
Progeny	4606RR	12.6	31.6
Progeny	4807RR	12.4	31.4
Seed Consultants	9448RR	12.4	31.9
Seed Consultants	9479RR	12.5	30.2
Southern States	4777N	12.2	29.9
Southern States	4996	12.5	34.1
TA Seeds	3989	12.7	30.6
TA Seeds	4299	12.2	29.5
USG	74E88	12.2	32.9
USG	74A91	12.8	30.3
Average:		12.58	33.16

Discussion: Dry weather reduced the growth and yields of the varieties. Be sure to study results from the replicated Official State Variety Trials when selecting varieties for 2011.

2010 Overall Maturity Group V Soybean Comparison

Brand	Variety	Middle-sex	Prince George	Suf-folk	Surry	Sus-sex	VA Beach	VSU	Avg	Avg Rel Yield
Progeny	P5218RR*	33.6	26.2	34.0	23.6	8.0	52.7	26.4	32.8	106
Asgrow	AG5405*	31.0	22.7	36.4	24.6	9.4		27.1	28.4	106
T.A. Seeds	TS5199RR*	31.6	26.2	31.2	22.0	9.0	56.1	27.3	32.4	104
Dyna-Gro	32A53*	31.7	28.6	27.4	25.0		56.4	24.4	32.2	104
Progeny	P5650RR*	33.4	24.6	32.8	28.8	7.0	50.2	21.4	31.9	104
USG	75M49*	31.6	23.2	31.3	23.7	16.0	54.2	26.2	31.7	102
NK	S56-G6*		26.5	31.3			47.9		35.2	101
USG	75Z98*	31.9	20.3	29.7	24.5	17.3		29	27.1	101
Southern States	RT5160N-STS*	29.4	25.8	32.1	23.2	11.5	54.1	22.9	31.2	100
Asgrow	AG5605*	34.8	18.5	33.5	23.4	10.4	56.6	23.6	31.7	100
Pioneer	95M82*	31.1	25.3	29.9	24.6	8.8	49.7	23.7	30.7	100
Dyna-Gro	35F55*	32.2	24.0	33.8			48.7	19.4	31.6	97
Pioneer	97Y70	30.2	22.8	26.9	23.2	9.2	48.4	22.1	28.9	94
Southern States	RT5471N-STS	27.0	22.5	26.2	22.7	7.8	50.7	24.6	28.9	93
NK	S56-L5	26.2	19.4	29.4	19.6	14.5	51.9	19.8	27.7	87
Average		**31.1**	**23.8**	**31.1**	**23.8**	**10.7**	**52.1**	**24.1**	**30.8**	**100**

[1]* indicates that variety's relative yield is not significantly different from highest yielding variety according to Fisher's LSD (p=0.10)

[2]The Sussex location was not included in the averages due to variability.

Discussion: The Group 5 soybeans were compared over seven locations in 2010. Considering the hot and dry year, they did remarkably well. If varieties were not tested in all locations, relative yield is a better method of comparing varieties. Relative yield is calculated by dividing the yield of a variety by the average yield of all varieties at that location. A variety with a relative yield of 105 was 5% above the average of all varieties at that location. Relative yield is not an actual yield, but a value that is relative to all other yield values at that location.

Thanks to all the cooperators and supporters. Use this and other Virginia Tech soybean variety information when making your planting decisions for 2011.

2010 MIDDLESEX GROUP 5 SOYBEAN VARIETY COMPARISONS

Cooperators: Producer: Chuck Hunt
Extension: David Moore, VCE
Stephen Davis, Summer Intern
Previous Crop: Barley
Soil Type: Kempsville sandy loam
Tillage: No Till into Barley Stubble
Test/Plot Size: 25' X 460'
Planting Equipment: Great Plains 30" Air Drill
Planting Date: June 28, 2010
Row Spacing: 7.5 inches
Seeding Rate: Approximately 200,000 seeds
Crop Protection: Glyphosate @ 4 WAP
Warrior for CEW
Harvest Date: November 19, 2010
Harvest Equipment: John Deere 9650 STS

Brand	Variety	Treat.	Seeds/Pop	Moisture	Yield
				(%)	(bu/A)
T.A. Seeds	TS5199RS	TAGE	3155/220,000	12.8	31.6
Dyna-Gro	32A53	U	3050/220,000	13.0	32.2
Dyna-Gro	35F55	U	2575/185,000	12.7	30.7
Progeny	P5218RR	CMA	2300/185,000	12.4	33.6
Progeny	P5650RR	CMA	3100/220,000	11.8	33.4
NK	S56-L5	U	3050/220,000	11.3	25.2
USG	75M49	RenPro+	2617/205,000	12.5	31.6
USG	75Z98	RenPro+	2640/210,000	11.9	31.9
Southern States	RT5160N-STS	U	2754/210,000	12.2	28.4
Southern States	RT5471N-STS	U	2929/215,000	12.1	27.0
Pioneer	95M82	GT	2800/215,000	11.7	31.1
Pioneer	95Y70	GT	3300/230,000	12.3	30.2
Asgrow	AG5405	CMA	3260/230,000	11.3	34.8
Asgrow	AG5605	CMA	3620/230,000	12.0	30.0
Average:				**12.2**	**30.8**
Asgrow	AG4730	Acceleron	3000/220,000	12.5	25.3
Asgrow	AG4730	Untreated	3000/220,000	12.9	27.0
Asgrow	AG4730	Acceleron	3000/220,000	13.4	25.4
Asgrow	AG4730	Untreated	3000/220,000	13.0	27.1

Discussion: The first part of this field had the maturity group V varieties planted after barley. Extremely hot and dry conditions prevailed for most of June, July, and August. The amount of rain that fell from planting to late September was approximately 8 inches. Considerable rain fell the last 4 days of September and by that time soybeans were almost mature. These yields were very good considering the weather. Use this and other Virginia Tech soybean variety information when making planting decisions for 2011

The second part of the field compared Asgrow's MG IV variety AG4730 with and without its Acceleron treatment technology. In this plot, there was no difference in yields with and without the treatment. We do realize that these beans were planted late in a double crop situation. The beans were not available for inclusion into an earlier planted plot. Be very careful how you use the technologies on the market. They are likely more suited for an early planting situation where seedlings may be under more stress than they would be if planted in June/July after small grains. The seed industry keeps adding this technology to seed and few really know, on your farm, in your situation, how well it will perform and if it is worth the extra money.

Below is a treatment code to explain the treatments that were used.

TAGE:	Trilex, Allegiance, Gaucho, Excalibre (inoculant)
CMA:	Cruiser, Apron Maxx
RenPro+:	Cruiser, Quadris (Azoxystrobin), Molybdenum, Apron Maxx
GT:	Gaucho, Trilex
Accel:	Apron, Imidicloprid (Gaucho), Harpin Protein, Pyraclostrobin (Headline)
U:	Untreated

2010 PRINCE GEORGE GROUP 5 SOYBEAN VARIETY COMPARISONS

Cooperators: Producer: Paul Cerny Jr. and Sean Finney
Extension: Scott Reiter, Prince George
Previous Crop: Wheat
Soil Type: Montross silt loam and Rains loam
Tillage: No-till
Test/Plot Size: 24 feet wide x 480 ft long
Planting Equipment: Great Plains 1205NT No-till drill
Planting Date: June 11, 2010
Row Spacing: 14 inches
Seeding Rate: 200,000 seed/acre
Crop Protection: Roundup @ 1 qt/A + FirstRate @ 0.3 oz/A, Post; Karate @ 1.92 oz/A (corn earworm); Warrior T @ 3.84 oz/A (corn earworm)
Harvest Date: October 30, 2010
Harvest Equipment: John Deere 9500 with 918 Flex Platform

Brand	Variety	Moisture	Yield
		(%)	(bu/A)
Asgrow	AG5405	14.2	22.7
Asgrow	AG5605	13.6	18.5
USG	75M49	14.1	23.3
USG	75Z98	14.9	20.3
Progeny	P5218RR	14.0	26.2
Progeny	P5650RR	14.1	24.6
NK	S56-L5	13.6	19.4
NK	S56-G6	13.2	26.5
Southern States	RT5160N-STS	13.2	25.8
Southern States	RT5471N-STS	13.6	22.5
Dyna-Gro	32A53	13.4	28.6
Dyna-Gro	35F55	13.9	24.0
T.A. Seeds	TS5199RS	12.7	26.2
Pioneer	95Y70	13.9	22.8
Pioneer	95M82	13.6	25.3
Averages		13.7	23.8

Discussion:
These double crop soybeans produced good yields for the season that we had. This heavier loamy soil held more water. Seed size varied from 3,050 to 5,250 seed per pound. Test weight varied from 55 to 58 pounds per bushel. This year the Group 4 soybeans beat the Group 5 soybeans by a little over 2 bushels per acre. It is all about timing of rainfall. Within the Group 5 entries, the earlier maturity varieties tended to yield a little higher. The Group 4's and early 5's benefited from a 2 inch rain about August 15-17. Use this and other variety testing information for your 2011 soybean selections.

2010 SUFFOLK GROUP 5 SOYBEAN VARIETY COMPARISONS

Cooperators: Producer: Mike Ellis
Extension: David Holshouser (TAREC)
Previous Crop: Corn
Soil Type: Rains fine sandy loam
Tillage: Disk 2X
Test/Plot Size: 24 ft x 594 ft
Planting Equipment: Kelly 8-row
Planting Date: May 31, 2010
Row Spacing: 18 inches
Seeding Rate: 140,000
Crop Protection: Makaze (glyphosate) 1qt; Mangro (Mn) 5lbs
Tombstone 3 oz; Headline 6oz
Harvest Date: November 12, 2010
Harvest Equipment: Case IH 1640

Brand	Variety	Moisture	Yield
		(%)	(bu/A)
Hubner	H571NRR	15.6	32.3
Asgrow	AG5405	15.5	36.4
Asgrow	AG5605	15.1	33.5
Dyna-Gro	35F55	15.3	27.4
Hubner	H588NRR	15.6	31.4
T.A. Seeds	TS5199RR	16.0	31.2
Dyna-Gro	32A53	15.4	33.8
Progeny	P5650RR	15.3	32.8
NK	S56-L5	14.7	29.4
Progeny	P5218RR	14.7	34.0
USG	75M49	14.7	31.3
USG	75Z98	15.1	29.7
Southern States	RT5471N-STS	15.3	26.2
Pioneer	95Y70	15.2	26.9
NK	S56-G6	14.9	31.3
Southern States	RT5160N-STS	14.7	32.1
Pioneer	95M82	14.6	29.9
Averages		15.2	31.1

Discussion: The summer was very dry; however, rainfall in August revived the crop. Still, a dry September resulted in aborted and small seed; therefore, yields were disappointing. Use this and other replicated variety test information when selecting varieties for 2011.

2010 SURRY COUNTY GROUP 5 SOYBEAN VARIETY COMPARISONS

Cooperators: Producer: Calvin Clements
Extension: Glenn Slade
Previous Crop: Wheat
Soil Type: Slagle fine sandy loam
Tillage: No-till
Test/Plot Size: 495' x 37.5'
Planting Equipment: Kinze 3500 15 row planter
Planting Date: June 4, 2010
Row Spacing: 15"
Seeding Rate: 140,000 seeds/acre
Crop Protection: Burndown: 1.8 pt. Gramoxone, 1 pt. Dual
Post: 3 pints Glyphosate at 4 WAP
Harvest Date: November 15, 2010
Harvest Equipment: John Deere 9550

Brand	Variety	Moisture	Yield
		(%)	(bu/A)
T.A. Seeds	TS5199RS	14.1	21.99
Dyna-Gro	32A53	12.9	25.04
Dyna-Gro	35F55	No seed	
Progeny	P5218RR	17.4	23.55
Progeny	P5650RR	13.5	28.79
NK	S56-L5	15.0	19.56
USG	75M49	13.4	23.71
USG	75Z98	13.1	24.49
Southern States	RT5160N-STS	13.2	23.24
Southern States	RT5471N-STS	13.6	22.69
Pioneer	95M82	13.3	24.6
Pioneer	95Y70	14.5	23.24
Asgrow	AG5405	13.3	24.57
Asgrow	AG5605	13.4	23.38
Averages		13.9	23.76

Discussion: 2010 was an unusually dry year, which resulted in low yields

2010 SUSSEX COUNTY GROUP 5 SOYBEAN VARIETY COMPARISONS

Cooperators: Producer: Preston Lowery
Extension: Kelvin Wells, VCE-Sussex
Previous Crop: Soybeans
Soil Type: Bojac loamy fine sand
Tillage: No-Till
Test/Plot Size: 1695' X 30'
Planting Equipment: Great Plains No-Till Drill
Planting Date: May 22, 2010
Row Spacing: 7 inches
Seeding Rate: 2-3 seed/row foot
Crop Protection: Burndown: Glyphosate
Post: Glyphosate
Harvest Date: October 23, 2010
Harvest Equipment: Case IH 1660

Brand	Variety	Moisture	Yield
		(%)	(bu/A)
T.A. Seeds	TS5199RS	14.0	9.0
Dyna-Gro	32A53	No seed	
Dyna-Gro	35F55	No seed	
Progeny	P5218RR	14.0	8.0
Progeny	P5650RR	14.0	7.0
NK	S56-L5	14.0	14.5
USG	75M49	14.0	16.0
USG	75Z98	14.0	17.3
Southern States	RT5160N-STS	14.0	11.5
Southern States	RT5471N-STS	14.0	7.8
Pioneer	95M82	14.0	8.8
Pioneer	95Y70	14.0	9.2
Asgrow	AG5405	14.0	9.4
Asgrow	AG5605	14.0	10.4
Averages		14.0	10.7

Discussion: Extremely hot and dry conditions affected yields in Southeast Virginia

2010 VIRGINIA BEACH GROUP 5 SOYBEAN VARIETY COMPARISONS

Cooperators: Producer: Arnold and Jason Dawley
Extension: Watson Lawrence, Chesapeake
Previous Crop: Corn
Soil Type: Augusta loam and Tetotum loam
Tillage: No-till
Test/Plot Size: 32 feet X 430 feet
Planting Equipment: John Deere 7300 planter (11 rows)
Planting Date: June 1, 2010
Row Spacing: 18 inch rows
Seeding Rate: Variable depending on seed size
Crop Protection: Herbicides: Roundup @ 1 qt./A + 2,4-D @ 1 pt./A burndown
Roundup @ 1 qt./A plus Resource @ 3 oz./A post-emergence
Insecticide: 1st spray Baythroid @ 2 oz./A and 2nd spray Steward @ 8 oz./A
Harvest Date: November 1, 2010
Harvest Equipment: Case International 2166 with 20 foot head

Brand	Variety	Moisture	TW	Yield
		(%)	(lbs.)	(bu/A)
TA Seeds	TS5199RS	12.4	58	56.08
CPS Dyna-Gro	DG32A53	11.4	61	56.41
CPD Dyna-Gro	DG35F55	12.0	59	48.74
Progeny	P5218RR	12.0	58	52.68
Progeny	P5650RR	11.9	58	50.18
NK Seeds	NK 56-L5	11.9	60	51.89
NK Seeds	56-G6	12.1	61	47.91
USG	75M49	11.7	59	54.18
Southern States	RT5160N	12.0	60	54.08
Southern States	RT5471N	12.2	56	50.71
Pioneer	95M82	12.0	57	49.68
Pioneer	95Y70	12.2	60	48.44
Asgrow	AG5605	12.2	56	56.64
Averages		12.0	59	52.1

Discussion: A very good year for this area with excellent weed control but heavy insect pressure. CEW numbers were high followed by late season infestation of soybean loopers. Use this and other variety information to select high-yielding varieties in 2011.

2010 VIRGINIA STATE UNIVERSITY GROUP 5 SOYBEAN VARIETY COMPARISONS

Cooperators: Producer: Rudy Grammer & Mack West – VSU Randolph Farm
Glenn F. Chappell, II - VSU
Previous Crop: Soybeans
Soil Type: Norfolk & Tetotum loam
Tillage: Ripped under the row
Test/Plot Size: 8 30" rows x 320'
Planting Equipment: John Deere Max Emerge
Planting Date: May 21, 2010
Row Spacing: 30"
Seeding Rate: 160,000
Crop Protection: 1.5 qt. Gly4 May 14, 2010; 1 qt. Gly4 + 0.3 oz. First Rate June 14, 2010
1.5 qt. Gly4 + 0.3 oz. First Rate August 11, 2010
Harvest Date: October 25, 2010
Harvest Equipment: John Deere 9560 STS

Brand	Variety	Moisture	Yield	% of Check*
		(%)	(bu/A)	(%)
Southern States	RT4808(check)	10.5	21.0	----
TA Seeds	TS5199RS	12.7	27.3	116
CPS Dyna-Gro	DG32A53	13.0	24.4	103
CPD Dyna-Gro	DG35F55	14.9	19.4	82
Progeny	P5218RR	13.8	26.4	112
Progeny	P5650RR	13.4	21.4	91
NK Seeds	NK 56-L5	13.3	19.8	84
USG	75M49	14.5	26.2	111
USG	75Z98	14.5	29.0	123
Southern States	RT5160N	12.2	22.9	97
Southern States	RT5471N	14.2	24.6	104
Pioneer	95M82	13.2	23.7	101
Pioneer	95Y70	13.0	22.1	94
Asgrow	AG5405	13.4	27.1	115
Asgrow	AG5605	13.8	23.6	100
Southern States	RT4808(check)	11.0	26.1	----
Averages			24.15	

Discussion:
Rainfall totals by month: May - 6.40", June – 3.90", July – 1.40" Aug. – 4.45
Irrigation totals by month May - 0.00", June – 0.00", July – 2.00" Aug. – 0.00
Totals by month: May – 6.40", June – 3.90", July – 3.40" Aug. – 4.45

Even with supplemental irrigation, yields were not as high as expected most likely as a result of the high temperatures.
* % of Check = (Variety yield (Sum of check yields/2))*100

Overall Liberty Link Soybean Variety Comparison

Brand	Variety[1]	Chesa-peak-T	Chesa-peak-L	Middle-sex	Prince George	Suffolk	Average	Avg Rel Yield
Southern States	LL450N*	56.6	33.4	24.5	33.5	32.1	36.0	111
Southern States	LL499N*	56.2	41.0	18.6	27.6	37.2	36.1	107
Southern States	LL511N*	53.4	49.3	16.6	26.6	31.8	35.5	104
Progeny	P4928LL*		37.7	19.0	25.3	32.9	28.7	100
Southern States	LL595N*	59.2	37.0		22.7	33.0	38.0	100
T.A. Seeds	TS4819L	39.1	33.1	21.8	27.7	28.7	30.1	95
T.A. Seeds	TS3919L			12.6	21.2	22.1	18.6	73
Average		**52.9**	**38.6**	**18.9**	**26.4**	**31.1**	**31.9**	**100**

[1]* indicates that variety's average yield or average relative yield is not significantly different from highest yielding variety according to Fisher's LSD (p=0.10)

Discussion:

There is increased interest in Liberty Link soybean technology. Much of this is due to the increased occurrence of glyphosate resistance. Liberty Link soybeans are another tool to help manage this resistance. In 2010, in four locations, various LL varieties were compared. It was a dry year and as far as yield is concerned, the LL beans yield competitively with RR soybeans. Look at relative yield when making comparisons in this chart. Not being included in every location affects relative yields. (Look for individual location results later in this publication).

2010 CHESAPEAKE LIBERTY LINK SOYBEAN VARIETY COMPARISON

Cooperators: Producer: Russell Temple
Extension: Watson Lawrence, Chesapeake
Previous Crop: Corn
Soil Type: Dragston-Tomotley fine sandy loam
Tillage: Disk + disk & cultipacker
Test/Plot Size: 32 feet X 384 feet
Planting Equipment: John Deere vacuum planter (8 rows)
Planting Date: June 2, 2010
Row Spacing: 24 inch rows
Crop Protection: Herbicides: 1st spray Ignite 280 @ 22 oz./A at 3-weeks post-emergence
2nd spray Ignite 280 @ 22 oz./A at 5-weeks post-emergence
Both sprays with Quest @ 1-qt./100 gal.
Insecticide: Baythroid @ 2 oz./A
Harvest Date: November 22, 2010
Harvest Equipment: John Deere CTS

Brand	Variety	Moisture	TW	Yield
		(%)	(lbs.)	(bu/A)
TA Seeds	4819 LL	15.9	54	39.1
Southern States	595 LL	15.2	56	59.2
Southern States	511 LL	14.3	56	53.4
Southern States	450 LL	15.5	54	56.6
Southern States	499 LL	15.6	55	56.2
Averages		15.3	55	52.9

Discussion: This test compared several varieties with the Liberty Link trait for post-emergence applications of Ignite 280 herbicide. The recommended double spray of 22 oz. at 3-weeks followed again at 5-weeks proved successful for weed control. Yields were good, even with a very dry September. This spray program is the only nonselective alternative to Glyphosate and should be considered when weed resistance becomes a problem.

2010 CHESAPEAKE LIBERTY LINK SOYBEAN VARIETY COMPARISON

Cooperators: Producer: Lawrence Farms
Extension: Watson Lawrence, Chesapeake
Previous Crop: Soybeans
Soil Type: Craven fine sandy loam
Tillage: No-till into 18" rows
Test/Plot Size: 24 feet X 255 feet
Planting Equipment: John Deere Flex-71 planter (8 rows)
Planting Date: May 5, 2010
Crop Protection: Herbicides: Glyphosate 1 qt./A burndown
1st spray Ignite 280 @ 22 oz./A at 3-weeks post-emergence
2nd spray Ignite 280 @ 22 oz./A at 5-weeks post-emergence
Both sprays with Quest Adjuvant @ 1-qt./100 gal.
Harvest Date: November 23, 2010
Harvest Equipment: Small plot harvester

Brand	Variety	Moisture	TW	Yield
		(%)	(lbs.)	(bu/A)
Rep. 1				
Southern States	595 LL	-	-	-
Southern States	499 LL	16.0	54	43.4
Southern States	450 LL	14.9	50	35.3
Southern States	511 LL	14.8	56	53.1
Progeny	4928 LL	14.8	54	38.1
TA Seeds	4819 LL	14.3	50	33.9
Rep. 2				
Southern States	595 LL	15.0	55	37.0
Southern States	499 LL	15.6	55	38.7
Southern States	450 LL	13.5	49	31.6
Southern States	511 LL	14.4	56	45.5
Progeny	4928 LL	14.9	56	37.3
TA Seeds	4819 LL	14.2	51	32.4
Average				
Southern States	595 LL	15.5	54.5	37.0*
Southern States	499 LL	15.8	54.5	41.0
Southern States	450 LL	14.2	49.5	33.4
Southern States	511 LL	14.6	56	49.3
Progeny	4928 LL	14.9	55	37.7
TA Seeds	4819 LL	14.3	50.5	33.1

* Indicates only one sample

Discussion: This test compared yield of several varieties with the Liberty Link trait for post-emergence applications of Ignite 280 herbicide. The recommended double spray of 22 oz. at 3-weeks followed again at 5-weeks proved successful for weed control. Yields were good, even with a very dry September. This spray program is the only nonselective alternative to Glyphosate and should be considered when weed resistance becomes a problem.

2010 MIDDLESEX LIBERTY LINK SOYBEAN COMPARISON

Cooperators:	Producer: Jason Benton Extension: David Moore, Middle Peninsula, Stephen Davis, Summer Intern Agribusiness: Participating Companies
Previous Crop:	Barley
Soil Type:	Suffolk fine sandy loam
Tillage:	No-Till
Test/Plot Size:	15' X 400'
Planting Equipment:	Great Plains 1590 NT
Planting Date:	June 4, 2010
Row Spacing:	7.5 inches
Check Variety:	TA Seeds T3919L
Seeding Rate:	200,000 seed/A
Crop Protection:	Herbicides: Ignite 280; 33 oz./A with AMS (4 WAP) Insecticides: Karate Z @ 1.6 ounces/A
Harvest Date:	October 11, 2010
Harvest Equipment:	AGCO R62

Variety	Seeds/LB.	Moisture%	Avg. Yield
	(seeds)	(%)	(@13%)
TA T3919L	3050	10.9	12.6
Check		10.8	15.2
TA T4819L	2923	10.9	21.8
Check		10.8	12.6
Southern States LL450N	2384	10.7	24.5
Check		10.7	11.9
Southern States LL499N	2780	10.7	18.6
Check		10.5	12.0
Southern States LL511N	2025	10.5	16.6
Check		10.4	14.0
Progeny P4928LL	3400	12.0	19.0
Check		10.4	12.0

Discussion: Probably not the best conditions for MG IV and early MG V soybeans following barley this dry and hot year. These beans were stressed from day one and were not given very much good weather to produce. Liberty Link is still a system that warrants another look in certain situations. Weed control was pretty good, but as has been documented before, Ignite is a little weak on some grasses.

2010 PRINCE GEORGE LIBERTY LINK SOYBEAN VARIETY COMPARISONS

Cooperators: Producer: Charles Skalsky
Extension: Scott Reiter, Prince George
Agribusiness: Participating seed suppliers
Previous Crop: Soybeans
Soil Type: Montross silt loam
Tillage: No-till into 14" rows
Test/Plot Size: 900 ft x 18 ft
Planting Equipment: Great Plains 1005 Drill
Planting Date: May 14, 2010
Seeding Rate: 140,000 seed/acre (45 lbs/acre by drill chart)
Fertilizer: 10 lbs N – 0 lbs P_2O_5 – 60 lbs K_2O – 12 S; Manganese 6% @ 1 qt
Crop Protection: **Burndown –** Roundup PowerMax @ 22 oz + 2,4-D @ 1 pt + Valor SX @ 2 oz (April 24)
Postemerge – Ignite 280 @ 22 oz + Select @ 8 oz (June 26)
Fungicide – Stratego @ 10 oz (June 26)
Insecticide – Warrior II @ 1.92 oz (August 11)
Harvest Date: September 22, 2010
Harvest Equipment: John Deere 4420 with 13 ft. head

Brand	Variety	Plant Stand at Harvest	Moisture	Yield @ 13%
		(plants/A)	(%)	(bu/A)
TA Seeds	TS3919L	98,010	8.01	21.2
TA Seeds	TS4819L	99,876	7.84	27.7
Progeny	4928LL	146,081	8.42	25.3
Southern States	LL450N	66,273	7.67	33.5
Southern States	LL499N	117,612	8.34	27.6
Southern States	LL511N	50,872	8.18	26.6
Southern States	LL595N	83,075	22.46	22.7
Southern States	LL450N (High rate)	144,681	8.34	34.3
Southern States	LL511N (High rate)	120,879	8.34	24.0
Average:		103,040	9.7	27.0

Discussion:
This plot actually produced decent yields despite the dry and hot conditions this year. This area received 1.5 inches of rain August 1-5 and another 2.0 inches August 17-20 which matched pod and seed development well for full season early maturity soybeans. Yields in this same field last year with two of these varieties was 40 bu/A. We added two additional plots with higher seeding rates due to large seed size (see next table) with under 2,500 seed/lb. As you can see, the higher seeding rates did not improve yields this year. The LL595N were not quite ready to harvest but had lost 99% of its leaves.

2010 PRINCE GEORGE LIBERTY LINK SOYBEAN VARIETY COMPARISONS (con't)

Brand	Variety	Seed Size at Planting	Seed Size at Harvest	Pre-Harvest Yield Loss	Post-Harvest Yield Loss	Potential Yield Loss
		(seed/lb)	(seed/lb)	(seed/square ft)	(seed/square ft)	(bu/A)
TA Seeds	TS3919L	3050	2546	29.1	36.0	10.2
TA Seeds	TS4819L	2923	3556	3.4	2.8	0.6
Progeny	4928LL	3400	4102	0.9	3.9	0.7
Southern States	LL450N	2384	3251	7.3	5.6	1.2
Southern States	LL499N	2781	4365	1.3	3.4	0.6
Southern States	LL511N	2025	4540	0.2	3.6	0.6
Southern States	LL595N	2974	4422	0	2.6	0.4
Average:			3826	5.1	7.5	2.0

Further Discussion:
The pre-harvest walk through revealed that the earliest maturity varieties had started to shatter. Both pre- and post harvest counts were made to quantify shatter losses. This was done by sampling two areas per plot (2 feet long x 14 inches wide) and counting soybeans on the ground. After harvest, two additional samples were taken in each plot but not in the exact location of the pre-harvest sample. Potential yield loss was calculated by using the actual seed counts for each variety. Numerous Extension publications use 4 seed per square foot = 1 bushel/acre yield loss for determining harvest losses. This is equivalent to 3,000 seed per pound or 180,000 seed per bushel seed size. In this data, the range was 3.5 to 6.25 seed per square/foot = 1 bushel yield loss.

As expected the TS3919L suffered heavy yield loss due to shattering. This variety could have been harvested 7-10 days earlier. Many pods had opened but where twisted and still holding the exposed seed on the plant. Early maturing varieties must be harvested timely even if some leaves are still attached and stems are green in September.

Does moisture stress affect seed size? I would say yes. The later maturing the soybeans the smaller the seed size. The 3.9 maturity got rain when pods were in the mid-pod fill stage. As you can see, some of the largest seed planted produced the smallest seed at harvest.

2010 SUFFOLK LIBERTY-LINK SOYBEAN VARIETY COMPARISONS

Cooperators: Producer: Mike Ellis
Extension: David Holshouser (TAREC)
Previous Crop: Corn
Soil Type: Rains fine sandy loam
Tillage: Disk 2X
Test/Plot Size: 24 ft x 594 ft
Planting Equipment: KMC Kelly 8-row
Planting Date: May 31
Row Spacing: 18 inches
Seeding Rate: 140,000
Crop Protection: Prowl 1 qt; Ignite 22 oz (2X); Mangro (Mn) 5lbs
Tombstone 3 oz; Headline 6oz
Harvest Date: November 1
Harvest Equipment: Case IH 1640

Brand	Variety	Moisture	Yield
		(%)	(bu/A)
Progeny	P4928LL	16.1	32.9
Southern States	LL450N	15.4	32.1
Southern States	LL499N	13.9	37.2
Southern States	LL511N	14.3	31.8
Southern States	LL595N	14.0	33.0
T.A. Seeds	TS3919L*	13.7	22.1
T.A. Seeds	TS4819L	13.8	28.7
Averages	`	14.5	31.1

*It was estimated that up to 40% of the seed pods had shattered for TS3919L.

Discussion: The summer was very dry; however, rainfall in August revived the crop. Still, a dry September resulted in aborted and small seed; therefore, yields were disappointing. Use this and other replicated variety test information when selecting varieties for 2011.

2010 CHESAPEAKE IGINTE 280 HERBICIDE EVALUATION ON (LL) SOYBEANS

Cooperators:	Producer: Russell Temple
	Extension: Watson Lawrence, Chesapeake
	Agribusiness: Bayer Crop Science, Franklin Dowless
Previous Crop:	Corn
Soil Type:	Dragston-Tomotley fine sandy loam
Tillage:	Disk + disk & Culti-packer
Test/Plot Size:	32 feet X 384 feet
Planting Equipment:	John Deere vacuum planter (8 rows)
Planting Date:	June 2, 2010
Row Spacing:	24 inches
Variety:	Southern States 595 LL
Crop Protection:	Herbicides: Ignite 280 + Quest Adjuvant and Pursuit
	Insecticides: Baythroid @ 2 oz./A
Harvest Date:	November 22, 2010
Harvest Equipment:	John Deere CTS

Treatment

1. Ignite 280 @ 22 oz./A + Quest @ 1 qt./100 gal. applied 3 weeks and 5 weeks postemergence

2. Ignite 280 @ 22 oz./A + Pursuit @ 4 oz./A + Quest @ 1 qt./100 gal. applied 3 weeks postemergence

3. Ignite 280 @ 36 oz./A + Quest @ 1 qt./100 gal. applied 4 weeks postemergence

Discussion: This test examined weed control for three different postemergence applications of Ignite 280 herbicide on Liberty Link soybeans. Since soybeans typically germinate within a few days after planting, postemergence here is defined from date of planting. General observations of weed control were made for each treatment. The adjuvant Quest was included as tank mix for each treatment. Quest is an ammonium sulfate replacement agent required with Ignite 280 applications, which also adjust spray pH if hard water is a problem. Ignite 280 is the only nonselective herbicide alternative to Glyphosate in soybeans. Ignite 280 can be used where weed resistance to glyphosate is a concern or already exists. Ignite 280 can also be used as a burn-down herbicide prior to planting. It has little soil residual effectiveness and is primarily a contact herbicide.

Treatment 1. This was the most effective treatment and did an effective job of controlling weeds. It is recommended Ignite 280 be applied in a timely manner as it may not give the same control as glyphosate on larger weeds. The label allows a second application to soybeans to control weeds before they exceed maximum weed size. The 3 week and 5 week applications gave good weed control until soybean canopy closure allowed suppression of weeds.

Treatment 2. Since Ignite 280 has little effectiveness in suppressing weeds germinating after 3-week application, this treatment examined if a tank mix with Pursuit herbicide would suppress weeds to avoid a second Ignite 280 application at 5-weeks. It did not rain after the 3-week application of Ignite 280 plus Pursuit which hindered Pursuit from being effective in preventing weed germination. The result was a second application of Ignite 280 was necessary to control a second flush of weeds.

Treatment 3. This treatment examined the potential of using a higher rate of Ignite 280 (36 oz./A) at a later 4 weeks post-emergence in order to achieve a one spray program. This treatment resulted in some weeds escaping due to exceeding recommended weed size and having to be manually pulled from plot later. The 4 week post-emergence application alone also did not allow good canopy competition from soybeans as using a 5 week post-emergence application. Soil moisture was lacking and soybeans did not give good canopy closure in this case.

2010 KING AND QUEEN IRRIGATED SOYBEAN STARTER FERTLIZER PLOT

Cooperators: Producer: Todd Henley
Extension: Keith Balderson and David Moore, Middle Peninsula
Annah Latane, Summer Intern
Agribusiness: Michael Rowe, Crop Production Services
Previous Crop: Corn
Soil Type: State fine sandy loam
Tillage: No-Till
Test/Plot Size: 515 feet x 40 feet
Planting Equipment: Kinze 8 row planter
Planting Date: May 7, 2010
Fertilization: Broadcast Pre-plant: 10-30-60 per acre; Foliar Feed: Manni-Plex Trio
Row Spacing: 30 inches
Variety: Dyna-Gro V47N8RR
Seeding Rate: 140,000 seeds per acre
Crop Protection: Herbicides: Burn-down: Gramoxone and 2, 4-D
Post-emergence: Roundup
Harvest Date: October 18, 2010
Harvest Equipment: John Deere 9660 with 30 foot header

Treatment	Rep 1	Rep 2	Rep 3	Avg. Yield
	(bu/A)	(bu/A)	(bu/A)	(bu/A)
Starter-15-15-0 plus micros @ 15 gallons per acre	50	52	58.8	53.6
Check	49.3	48.1	59	52.1
LSD (.10)				3.6

Discussion: In an effort to increase soybean yields, farmers are looking at early soybean production systems (April planting in some cases) and the use of starter fertilizer in 30 inch rows. In this plot, tissue samples taken in mid July at the R1 growth stage did not show any significant differences in plant tissue levels of any nutrients. All nutrients in plants from the starter plots and check plots were in the sufficient range. In this plot, there was no statistically significant difference in the yields of the starter and check plots. More work is needed on the use of starter fertilizer in soybean production

2010 WESTMORELAND SOYBEAN STARTER FERTILIZER PLOT

Cooperators:	Producer: F. F. Chandler, Jr. Extension: Keith Balderson, Middle Peninsula Annah Latane, Summer Intern Agribusiness: Curtis Packett, Crop Production Services
Previous Crop:	Corn
Soil Type:	Kempsville sandy loam
Tillage:	No-till
Test/Plot Size:	300 ft. x 30 ft.
Planting Equipment:	Case IH six row air planter
Planting Date:	May 18, 2010
Row Spacing:	30 inches
Variety:	Pioneer 94Y60
Seeding Rate:	140,000 seeds per acre
Crop Protection:	Burndown: Gramoxone Pre-emergence: Canopy Post-emergence: Glyphosate
Harvest Date:	October 18, 2010
Harvest Equipment:	John Deere 9400 with 18 foot header

Treatment	Rep 1	Rep 2	Avg. Yield
	(bu/A)	(bu/A)	(bu/A)
Starter—15-15-0 plus micros at 14 gallons per acre	29.9	28.2	29.1 a
Check	28	29.5	28.8 a

Means followed by the same letter are not significantly different according to Fisher's LSD (0.10).

Discussion: In an effort to increase soybean yields, farmers are looking at the use of starter fertilizer in 30 inch rows. In this plot, tissue samples taken in mid July at the R1 growth stage did not show any significant differences in plant tissue levels of any nutrients. All nutrients in plants from the starter plots and check plots were in the sufficient range. In this plot, there was no statistically significant difference in the yields of the starter and check plots. More work is needed on the use of starter fertilizer in soybean production.

2010 VOTiVO SOYBEAN SEED TREATMENT PLOT

Cooperators: Producer: Todd Henley
Extension: Keith Balderson and David Moore, Middle Peninsula
Annah Latane and Stephen Davis, VCE Summer Interns
Dr. David Holshouser, Soybean Specialist
Agribusiness: Berry Lewis, Bayer CropScience
Previous Crop: Corn
Soil Type: Tetotum sandy loam
Tillage: No-Till into 15 inch rows
Test/Plot Size: 940 ft. x 6.25 ft.
Planting Date: May 24, 2010 with Kinze 8 row planter
Fertilization: 10-30-60 Broadcast Pre-plant; Foliar: Manni-Plex Trio
Variety: Asgrow 5605, Asgrow 5606, and Pioneer 95M60
Seeding Rate: 140,000 seeds per acre
Crop Protection: Burndown: Gramoxone and 2, 4-D; Post-emergence: Roundup
Harvest Date: October 8, 2010
Harvest Equipment: John Deere 9660 with 630 header

Treatment	SCN Resistance	Rep 1	Rep 2	Rep 3	Avg. Yield*
		(bu/A)	(bu/A)	(bu/A)	(bu/A)
Asgrow AG5605 - Control	Race 3	32.5	34.1	31.4	32.7
Asgrow AG5605 - VOTiVO		37.3	36.5	31.5	35.1
Asgrow AG5606 Average					33.9 a
Asgrow AG5606 - Control	Race 1 & 3	37.4	37.1	35.1	36.5
Asgrow AG5606 - VOTiVO		33.8	36.8	31.6	34.1
Asgrow AG5606 Average					35.3 a
Pioneer 95M60 - Control	Multi-Race	29.6	32.5	31.3	31.1
Pioneer 95M60 - VOTiVO		31.8	32.2	29.8	31.2
Pioneer 95M60 Average					31.2 b

*Variety means followed by the same letter is not significantly different according to Fisher's protected LSD (p=0.05). VOTiVO did not significantly affect yield for 95Y60; however AG5605 with VOTiVO yielded more than without VOTiVO (p=0.15). On the other hand, using the same significance criteria, AG5606 yielded more without the VoTiVO. In addition, yield of AG5605 without VOTiVO was not significantly different than Pioneer 95M60 with or without VOTiVO.

Discussion:
Several races of Soybean Cyst Nematode (SCN) were found in this field in 2008. Asgrow 5605 was used as check variety with only SCN race 3 resistance; Asgrow 5606 has resistance to races 1 and 3; and Pioneer 95M60 has resistance to multiple SCN races. VOTiVO is a new way to protect plant roots against nematodes, including SCN. It is a seed treatment that uses a biological barrier to prevent nematode feeding, according to Bayer CropScience. In this test, it is interesting to note that the VOTiVO increased yield of the SCN race 3 variety (AG5605), but did not increase yield of the varieties with resistance to additional races. The plot suffered significant drought stress most of the season.

2010 SCN RESISTANT IRRIGATED VARIETY COMPARISON

Cooperators: Producer: Cloverfield Enterprises
Extension: Keith Balderson, Middle Peninsula
Annah Latane, VCE Summer Intern
VA Tech: Dr. Katy Martin-Rainey, Soybean Breeder, CSES Dept.
Previous Crop: Barley
Soil Type: Molena fine sandy loam
Tillage: No-Till
Test/Plot Size: 1075 ft. x 40 feet
Planting Equipment: John Deere 32 row planter
Planting Date: June 7, 2010
Fertilization: Residual from the barley crop
Row Spacing: 15 inches
Variety: Asgrow 5606 and Virginia Experimental lines V03-4660 and V03-4705
Seeding Rate: 160,000 seeds per acre
Crop Protection: Herbicides: Glyphosate burndown plus Pursuit and Dual pre-emergence
Insecticides: Silencer for corn earworms
Steward for corn earworms
Harvest Date: October 25, 2010
Harvest Equipment: Case IH with 40 foot header

Test 1

Variety	Rep 1	Rep 2	Rep 3	SCN #'s (6/24/10)	Avg. Yield
	(bu/A)	(bu/A)	(bu/A)	(Nematodes/500 cc soil)	(bu/A)
V03-4660	28.9	34.9	32.0	660 juveniles; 12 cysts	31.9
Asgrow AG5606	39.5	40.3	39.3	210 juveniles; 22 cysts	39.7
LSD (0.10)					4.4

Test 2

Asgrow AG5606	39.3	36.8		20 juveniles; 4 cysts	38.05
V03-4705	39.8	42.8		0 juveniles; 1 cyst	41.3
LSD (0.10)					NS

Discussion: This field has a long history of SCN. Original race determination tests from 2007 indicated that the field was infested with race 1, while more recently the race has been determined to be race 4. For a field to be classified as a particular race, at least 10% of the nematodes are of that race. Nematode assays taken on June 24th indicate that through the use of a race 4 resistant variety (95M60) and crop rotation, populations have declined in the field. Very few varieties have resistance to race 4 SCN, but it is likely that this field now contains a mixture of races; therefore, higher-yielding varieties with

resistance to other races should be somewhat effective. Asgrow 5606 is listed as resistant to races 1 and 3, and performed well in research conducted in 2009. Research previously conducted on this farm indicated that Virginia Experimental lines, V03-4660 and V03-4705, both non-glyphosate resistant, showed some SCN resistance. Results of the assays taken on June 24th indicate that V03-4660 was planted in a portion of the field with much greater SCN populations than the V03-4705. Weak spots from nematode feeding were evident in the V03-4660 at harvest, while such spots were not evident in the Asgrow 5606 and V03-4705. Results of this test indicate that Asgrow 5606 has some resistance to the SCN population now present in this field. Resistance of V03-4660 to the SCN races in this field does not seem to be complete: however, the lower yield with this variety may be due to the greater numbers of nematodes in the V03-4660 plots. It cannot be determined if V03-4705 has resistance to the SCN population present in this field since nematode numbers were very low.

2010 WESTMORELAND COUNTY FULL SEASON VS. DOUBLE CROP AND DOUBLE CROP SOYBEANS WITH SOY SOAP PLOT

Cooperators: Producer: F. F. Chandler, Jr.
Extension: Keith Balderson, Middle Peninsula
Agribusiness: MAXGreen
Previous Crop: Corn (full season) and Barley (double crop)
Soil Type: Suffolk sandy loam
Tillage: No-till
Test/Plot Size: 435 feet x 15 or 30 feet
Planting Equipment: Case IH six row planer
Planting Date: Full season: May 21, 2010; Double Crop: June 9, 2010
Row Spacing: 30 inches
Variety: Pioneer 94Y60
Seeding Rate: 150,000 seeds per acre
Crop Protection: Full-Season: Burndown: Gramoxone; Pre-emergence: Canopy
Full Season and Double Crop: Post-emergence: Glyphosate
Harvest Date: October 18, 2010
Harvest Equipment: John Deere 9400 with 18 foot header

Treatment	Rep 1	Rep 2	Rep 3	Rep 4	Avg. Yield
	(bu/A)	(bu/A)	(bu/A)	(bu/A)	(bu/A)
Full Season	27.1	32.6	30.8		28.5 a
Double Crop	27.7	25.5	25.9		26.4 b
DC-MAXGreen (SoySoap) - applied July 20th @ 8 oz. per acre in water	24.8	26.9	26.4		26.0 b

*Means followed by the same letter are not significantly different according the Fisher's LSD (0.10).

Discussion: This plot was conducted in an effort to compare the barley-soybean double crop system to full season soybeans. Barley harvested from the plot averaged 82 bushels per acre. Using a barley price of $4.50 per bushel and a soybean price of $11.80 per bushel, the double crop system would have produced gross revenue of $680.52 per acre, while the full season soybeans would have produced gross revenue of $336.30 per acre. Dry weather reduced yields of both the full season and double crop soybeans. MAXGreen (SoySoap), an "agricultural enhancer", was applied to 3 strips in the double crop soybeans. In this plot, yields were not increased with the use of MAXGreen (SoySoap).

2010 PRINCE GEORGE WHEAT-BARLEY AND SOYBEAN CROPPING SYSTEMS EVALUATION

Cooperators: Producer: George J. Reiter & Sons
Extension: Scott Reiter, Prince George
Previous Crop: Wheat or Barley with straw removed
Soil Type: Mattaponi sandy loam
Tillage: No-till
Test/Plot Size: 52 ft. wide x 525-465 ft. long
Planting Equipment: John Deere 750 drill
Planting Date: Barley – June 8, 2010 Wheat – June 17, 2010
Row Spacing: 7.5 inches
Variety: Southern States RT5160N
Seeding Rate: 200,000 seed/A
Crop Protection: Herbicides: Glyphosate @ 1 qt/A, Post - July
Insecticides: Baythroid @ 2.8 oz/A - August
Fungicides: none
Harvest Date: November 14, 2010
Harvest Equipment: John Deere 9510

Treatment	Rep 1	Rep 2	Rep 3	Moisture	Avg. Yield
	(bu/A)	(bu/A)	(bu/A)	(%)	(bu/A)
Barley	28.5	24.5	22.4	9.8	25.2
Wheat	31.4	26.1	22.2	10.0	26.6
LSD (0.10)					2.6

Discussion: The purpose of this on-farm plot was to evaluate the difference in barley and wheat cropping systems side by side in the same field. The barley and wheat yield data was reported in the 2010 On-farm Small Grain publication. Soybean yields were comparable with a 9 day difference in planting dates. The barley beans were already emerged when the wheat beans were planted. There was adequate moisture at planting for both systems and plant stand was excellent. Rainfall was definitely a limiting factor this year although yields at this location were still good. The main point is that we cannot definitely depend on a soybean yield increase with barley beans. I encourage growers to look at system profitability as described further in this partial budget.

		Barley	Barley	Wheat	Wheat
		(lb/A)	($/A)	(lb/A)	($/A)
Seed		120	$27.50	150	$45.00
Fertilizer	N	100	$30.00	135	$40.50
	P	40	$20.00	40	$20.00
	K	120	$60.00	120	$60.00
Herbicide			$9.00		$9.00
Fungicide		none	$0		$10.00
Insecticide		none	$0		$5.00
Sprayer Trips		1	$7.00	3	$21.00
	TOTAL		**$ 153.50**		**$ 210.50**
Yield		73.8 bu		62.6 bu	
Price		$2.39 bu	$176.80	$3.74	$234.14
SMALL GRAIN PROFIT			**$23.30**		**$23.64**
Soybeans					
Seed		66 lbs	$48.00	66 lbs	$48.00
Herbicide			$5.00		$5.00
Insecticide			$3.00		$3.00
Sprayer Trips		2	$14.00	2	$14.00
	TOTAL		**$70.00**		**$70.00**
Yield		25.2 bu		26.6 bu	
Price		$12.47	$314.24	$12.47	$331.70
SOYBEAN PROFIT			**$244.24**		**$261.70**
OVERALL PROFIT			**$267.54**		**$285.34**
Difference					**+ $17.80**

Discussion: In this example, wheat just slightly edged out barley in profits mainly due to the additional1.4 bushels of soybeans to sell. I did not adjust for any additional harvest or hauling costs. This will vary depending on your hauling distance to Hopewell. The price data is: wheat = local cash bids the day after harvest; barley = CBOT July corn futures prices x 73% the day after harvest, soybean = local cash bids the day after harvest. The barley also received a $0.07 per bushel discount for low test weight. The bright spot is that barley can compete with wheat in profitability while allowing more double crop acres to be utilized on a farm. Use this information as a guide in making your own farm budgets.