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2012

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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Introduction

These demonstration and research plot results are an 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 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 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 (<u>http://pubs.ext.vt.edu</u>). This information reaches hundreds of Virginia soybean and grain producers plus agribusinesses, impacting over 500,000 acres of soybeans valued at over \$260 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 sixteenth year of this multi-county cooperative effort and further work is planned for 2013. 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.

DISCLAIMER: Trade and brand names are used only for educational purposes, and Virginia Cooperative Extension does not guarantee or warrant the standards of the product, nor does Virginia Cooperative Extension imply approval of the product to the exclusion of others which may also be suitable.

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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 information gives producers in a given area a better handle on how varieties perform "close to home". This work is performed 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 several locations across Eastern Virginia. At two sites, soybeans yields were compared with and without a fungicide application. Please contact cooperating agents about results in individual test locations.

Soybean nematodes are an ever-present problem for producers here in Eastern Virginia especially on sandy soils. Extensive testing has been conducted for several years now and we have continued to evaluate production strategies used to control/suppress nematode problems. Newer seed treatments were compared in some known soybean nematode problem fields. The use of these seed treatments in some problem fields showed some advantage to untreated seed. This year, the New Kent location showed some great benefits to the use of seed treatments. Nematode sampling there showed large numbers of root-knot, spiral and cyst present after harvest. The use of resistant varieties is still one of the best tools when trying to control/suppress nematode damage.

David Moore evaluated some root-knot resistant varieties in a known RKN problem field.

Everyone is looking at one more bushel of \$14-15 soybeans and industry is obliged to sell something. Nutritionals and biological for just a little more yield. In this section we have taken a look at several. Few of them seem to statistically add much to yield.

An evaluation of Quilt[™] fungicide, as well additional potassium fertilizer was conducted on MG 5 double crop soybeans in Middlesex County.

	•									Avg.
			King &	Prince				West-		Rel.
Brand	Variety	Hanover	Queen	George	Suffolk	Sussex	VSU	moreland	Avg	Yield
USG	74B81R	78.7	53.1					48.8	60.2	113
USG	7495nRS			67.3	73.5	42.9	57.4		60.3	110
Pioneer	94Y70	79.0	53.2	65.3	53.2	46.2	51.4	48.1	56.6	105
Asgrow	AG4730	71.3	41.6	65.1	58.3	46.7	64.3	45.1	56.1	104
Pioneer	94Y22	74.9	59.7	65.1	50.1	45.7	48.8	42.4	55.2	103
USG	74E88	75.8	59.8	58.0	51.0		45.0	47.9	56.3	102
Southern States	SS 4700 R2	76.9	58.6	67.3	34.6	42.4	59.3	44.7	54.8	102
Progeny	P 4710 RY	59.8	39.2	58.1	68.6	48.7	55.7	50.1	54.3	101
Hubner	H48-12R2	68.7	42.3	65.1	59.4	43.0	56.6	48.4	54.8	101
HBK (Bayer CS)	RY4620	72.2	43.1	69.3	43.7	45.4	52.8	45.0	53.1	98
Hubner	H46-01R2/STS	58.1	38.6	67.3	55.3	44.1	54.4	50.6	52.6	98
Asgrow	AG4832	70.5	37.1	67.1	50.6		58.6	45.4	54.9	98
RPM (Doebler's)	DB4512RR	68.2	41.1	70.4	66.6		45.5	38.1	55.0	97
Southern States	SS 4510N R2	65.9	39.4	66.2	69.2	36.6	45.8	48.1	53.0	97
Seed Consultants	SCS 9412RR	55.9	40.3	61.1	65.3	42.4	60.3	41.7	52.4	97
HBK (Bayer CS)	RY4721	75.6	40.1	59.9	44.8	43.8	52.0	44.8	51.6	95
Progeny	P 4510 RY	52.4	40.1	65.1	53.4		57.4	46.1	52.4	95
Seed Consultants	SCS 9472RR	55.7	37.1	69.3	65.6	39.2	46.1	44.5	51.1	94
Average Each Loca	tion	68.2	45.0	65.1	56.7	43.6	53.6	45.9	54.7	101

2012 Overall MG 4 Comparison

*Only varieties that were tested at 3 or more locations are included in this table

2012 KING & QUEEN MATURITY GROUP 4 SOYBEAN COMPARISONS

Cooperators:	Producer:	David Carlton	
-		William Davis Carlton	
	Extension:	Laura Maxey, VCE-King & Queen/King William County	
		David Moore, VCE-Middlesex County	
	Industry:	Participating Seed Companies	
Plant Date:	May 18		
Previous Crop:	Double Crop	o Soybeans	
Soil Type:	Emporia sandy loam		
Population:	170,000 seed	ds	
Plant Equipment:	John Deere	30' Air Drill	
Fertilization:	0-0-120/A		
Crop Protection:	Burndown: (Gramoxone +2,4-D	
	Post: Glypho	osate + First Rate	
Harvest Date:	October 17		
Harvest Equipment:	9770 STS Jo	hn Deere	

	Moisture	Yield @ 13%	
Brand and Variety	(%)	(Bu/A)	% of check ^a
NK S41-J6	16.4	37.5	100
Check (Dyna-Gro 37RY47)	16.1	37.1	
NK S46-T3	15.8	42.0	111
Check	16.1	38.3	
Progeny P 4510 RY	16.2	40.1	109
Check	16.3	35.1	
Progeny P 4710 RY	15.7	39.2	102
Check	16.4	42.1	
Seed Consultants SCS 9412RR	16.8	40.3	101
Check	16.9	38.1	
Seed Consultants SCS 9472RR	16.7	37.1	99
Check	16.6	37.1	
Hubner H46-01R2/STS	16.7	38.6	106
Check	16.7	35.6	
Hubner H48-12R2	17.1	42.3	114
Check	16.8	38.7	
Asgrow AG4730	15.9	41.6	106

	Moisture	Yield @ 13%	
Brand and Variety	(%)	(Bu/A)	% of check ^a
Check	16.6	39.8	
Asgrow AG4832	16.6	37.1	93
Check	16.9	40.1	
RPM (Doebler's) DB4512RR	16.9	41.1	101
Check	17.1	41.4	
HBK (Bayer CS) RY4620	15.9	43.1	105
Check	16.5	40.5	
HBK (Bayer CS) RY4721	17	40.1	97
Check	16.5	42.0	
Southern States SS 4510N R2	16.2	39.4	97
Check	16.1	39.5	
Southern States SS 4700 R2	15.8	58.6	131
Check	16.1	50.3	
Pioneer 94Y22	16.3	59.7	114
Check	15.7	54.1	
Pioneer 94Y70	15.9	53.3	103
Check	16.2	49.1	
USG 74B81R	16.4	53.1	107
Check	16.0	49.8	
USG 74E88	15.9	59.8	120

^aPercent of check was calculated by dividing the yield of the variety by the average of the two varieties on either side and multiplying by 100.

Discussion: See the overall comparison and other MG 4 variety information in this publication.

2012 WESTMORELAND COUNTY GROUP 4 SOYBEAN VARIETY COMPARISONS

Cooperators:	Producer:	F.F. Chandler, Jr.
-	Extension:	Stephanie Romelczyk, VCE - Westmoreland County
		Keith Balderson, VCE – Essex County
		Daniel Bowie, VCE Summer Intern
	Agribusiness:	Participating Seed Companies
Previous Crop:	Corn	
Soil Type:	Kempsville lo	Dam
Tillage:	No-till	
Planting Equipment:	Case IH Air F	Planter
Planting Date:	May 29	
Row Spacing:	30"	
Seeding Rate:	140,000	
Crop Protection:	Burndown: G	ramoxone + Canopy + Salvo
	Post-emergen	ce: Roundup PowerMAX + Radiate
Harvest Date:	November 5	
Harvest Equipment:	John Deere 94	400 with 918 header

		Moisture	Yield
Brand	Variety	(%)	(Bu/A)
Asgrow	AG4730	13.5	45.1
Asgrow	AG4832	13.2	45.4
RPM (Doebler's)	DB4512RR	13.1	38.1
Dyna-Gro	S44RS93	13.5	44.9
Dyna-Gro	37RY47	13.7	51.6
HBK (Bayer CS)	RY4620	12.9	45.0
HBK (Bayer CS)	RY4721	13.3	44.8
Hubner	H46-01R2/STS	13.1	50.6
Hubner	H48-12R2/STS	13.2	48.4
NK	S41-J6	13.2	42.0
NK	S46-T3	13.3	48.9
Pioneer	94Y22	13.4	42.4
Pioneer	94Y70	13.0	48.1
Progeny	P 4510 RY	13.3	46.1
Progeny	P 4710 RY	13.0	50.1

		Moisture	Yield
Brand	Variety	(%)	(Bu/A)
Seed Consultants	SCS 9412RR	13.4	41.7
Seed Consultants	SCS 9472RR	13.5	44.5
Southern States	SS 4510 R2	13.5	48.1
Southern States	SS 4700 R2	13.0	44.7
USG	74B81R	13.2	48.8
USG	74E88	12.9	47.9
Average:		13.2	46.1

Discussion: Although Westmoreland County experienced extremely hot and dry conditions during most of the growing season of 2012, late season rains resulted in good soybean yields.

2012 VIRGINIA STATE UNIVERSITY GROUP 4 SOYBEAN VARIETY COMPARISONS

Cooperators:	Producer: Rudy Grammer & Mack West – VSU Randolph Farm VSU - Glenn F. Chappell, II
Previous Crop:	Barley
Soil Type:	Tetotum loam & Bourn fine sandy loam
Tillage:	No-Till in 15 " rows
Plot Size:	15'X 468'
Planting Equipment:	Great Plains 706 NT Drill
Fertility:	20-60-90 Oct. 26, 2011 prior to Barley
Planting Date:	June 21
Seeding Rate:	157,000
Crop Protection:	1.5 qt. Gly4 + 0.23 oz. First Rate - June 22 1.5 qt. Gly4 + 0.30 oz. First Rate + 1.9 oz. Warrior - August 29
Harvest Date:	November 12
Harvest Equipment:	John Deere 9560 STS

Brand	Variety	Moisture (%)	Yield (bu/A)	% of Check ^a
Hubner (check)	H52-12R2	11.5	43.9	
RPM (Doeblers)	DB4512RR	10.9	45.5	89.1
Hubner	H46-01R2/STS	11.1	54.4	106.4
Hubner	H48-12R2/STS	11.5	56.6	110.8
Seed Consultants	SCS 9412RR	11.3	60.3	118.0
Seed Consultants	SCS 9472RR	10.8	46.1	90.2
Asgrow	AG4730	10.3	64.3	125.8
Asgrow	AG4832	10.4	58.6	114.6
Progeny	P 4510 RY	10.8	57.4	112.2
Progeny	P 4710 RY	10.8	55.7	108.9
Southern States	SS 4510 RR2	10.9	45.8	89.5
Southern States	SS 4700 RR2	10.2	59.3	116.0
HBK (Bayer CS)	RY4620	10.2	52.8	103.3
HBK (Bayer CS)	RY4721	10.9	52.0	101.8
Pioneer	94Y22	10.8	48.8	95.4
Pioneer	94Y70	10.8	51.4	100.6

Brand	Variety	Moisture (%)	Yield (bu/A)	% of Check ^a
USG	7495nRS	10.8	57.4	112.2
USG	74E88	11.0	45.0	87.9
Hubner (check)	H52-12R2	10.3	58.4	
Average ^b :		10.8	53.6	

^aPercent of check = (Variety yield/(Sum of check yields/2))*100. ^bAverage does not include checks.

Discussion: Rainfall totals by month: June – 3.20", July – 8.55", Aug. – 4.15"

2012 PRINCE GEORGE GROUP 4 SOYBEAN VARIETY COMPARISONS

Cooperators:	Producer: Paul Cerny and Sean Finney
•	Extension: Scott Reiter, Prince George County
	Agribusiness: Participating Seed Companies
Previous Crop:	Wheat with straw removed
Soil Type:	Montross silt loam and Rains loam
Tillage:	No-till
Plot Size:	13 feet x 275 feet
Planting Equipment:	Great Plains 705 No-till Drill
Planting Date:	June 8
Row Spacing:	7 inches
Seeding Rate:	210,000 seed/acre (190,000 expected final stand)
Crop Protection:	Gly 4 @ 1.5 qts/A; Baythroid @ 2.8 oz/A, Aug 15; Steward @ 8 oz/A + Baythroid @ 2.0 oz/A, Aug 22
Harvest Date:	November 8
Harvest Equipment:	John Deere 9500 with 918 Flex head

Brand	Variety	Moisture (%)	Test Weight (lb/bu)	Yield (Bu/A)	Yield Ratio
Seed Consult. (check)	SCS 9412RR	12.9	56.8	64.0	98%
Asgrow	AG4832	12.9	56.6	67.1	103%
Asgrow	AG4730	12.8	56.4	65.1	100%
Pioneer	94Y70	12.6	56.6	65.3	100%
Pioneer	94Y22	12.8	56.3	65.1	100%
Southern States	SS 4510N R2	12.8	57.0	66.2	101%
Southern States	SS 4700 R2/STS	12.6	56.3	67.3	103%
USG	74E88	12.6	56.6	58.0	89%
USG	7495nRS	12.6	56.7	67.3	103%
Seed Consult. (check)	SCS 9412RR	12.6	57.0	61.1	94%
Seed Consultants	SCS 9472RR	12.7	57.2	69.3	106%
RPM (Doeblers)	DB4512RR	12.7	56.3	70.4	108%
HBK (Bayer CS)	RY4620	12.7	57.1	69.3	106%
HBK (Bayer CS)	RY4721	12.9	57.1	59.9	92%
Hubner	H46-01R2/STS	12.7	56.9	67.3	103%
Hubner	H48-12R2/STS	12.8	57.3	65.1	100%
Progeny	P 4510 RY	12.8	57.0	65.1	100%

Progeny	P 4710 RY	12.4	56.6	58.1	89%
Seed Consult. (check)	SCS 9412RR	12.6	56.3	68.4	105%
Average:		12.7	56.7	65.2	

Discussion: These were some excellent double crop soybeans. Seed quality was very good with little seed stain or other damage. Varieties are listed in order of planting across the field. This plot was treated 2 times for corn earworm due to very high CEW counts (12+ CEW per 15 sweeps) and a period of rain within 4 hours after treatment. Use this data with statewide averages and other data for your 2013 seed selections.

2012 SUSSEX GROUP 4 SOYBEAN VARIETY COMPARISONS

Producer: Extension:	Wyatt Cox Kelvin Wells – Sussex County
Agribusiness:	Participating Seed Companies
Cotton	
Emporia sandy	y loam
JD Grain Drill	l
June 8	
7 inch	
42 lb/A	
November 20	
JD 9400	
	Producer: Extension: Agribusiness: Cotton Emporia sandy JD Grain Drill June 8 7 inch 42 lb/A November 20 JD 9400

		Moisture	
Brand	Variety	(%)	Yield (Bu/A)
Asgrow	AG4730	14.3	46.7
HBK (Bayer CS)	RY4620	14.3	45.4
HBK (Bayer CS)	RY4721	14.4	43.8
Hubner	H46-01R2/STS	14.2	44.1
Hubner	H48-12R2/STS	14.2	43.0
Pioneer	94Y22	14.2	45.7
Pioneer	94Y70	14.4	46.2
Progeny	P 4710 RY	14.2	48.7
Seed Consultants	SCS 9412RR	14.2	42.4
Seed Consultants	SCS 9472RR	14.4	39.2
Southern States	SS 4510 RR2	13.9	36.6
Southern States	SS 4700 RR2	14.2	42.4
RTS	4002	14.2	40.2
USG	7495nRS	14.2	42.9
Average		14.3	43.4

Discussion: Use this and other Virginia Tech variety information to make planting decisions for 2013.

2012 HANOVER COUNTY GROUP 4 SOYBEAN VARIETY COMPARISONS AND RESPONSE TO FOLIAR FUNGICIDE APPLICATION

Cooperators:	Producer: Chuck McGhee Extension: Jim Schroering – Hanover Co., Keith Balderson – Essex Co., David Holshouser – Tidewater AREC Agribusiness: Participating Seed Companies
Previous Crop:	Soybean
Soil Type:	Pamunkey loamy sand
Irrigation:	Yes
Tillage:	Great Plains Turbo Chopper (immediately before planting)
Planting Equipmen	t: Kinze 3600
Planting Date:	May 18
Row Spacing:	30 inches
Seeding Rate:	140,000 seed/A
Crop Protection:	Herbicides: Roundup PowerMAX 1 qt/A + 2,4-D ³ / ₄ pt/A + Leadoff 1.5 oz/A (burndown 45-60 days before planting); Roundup PowerMAX 1 qt (postemergence)
	Insecticides: Belt 3oz /A+ Baythroid 2 oz/A
	Fungicide: Headline 6 oz/A applied to half of plots
Harvest Date:	October 12

Harvest Equipment: Wintersteiger plot combine

				Sood	Purple	Sood	
Brand	Variety	RKN Resist ^a	Fungicide	Quality ^b (1-5)	Stain ^c (%)	Size (seed/lb)	Yield (bu/A)
Asgrow	AG4730	N	N	1.0	0	3355	67.9
Asgrow	AG4730	N	Y	1.0	1	3175	74.7
Asgrow	AG4832	N	N	1.7	2	3040	67.0
Asgrow	AG4832	N	Y	2.3	1	2826	74.0
Croplan	RC4757	N	N	1.0	0	3027	85.1
Croplan	RC4757	N	Y	1.0	0	3013	101.8
Croplan	RZC48015	N	N	1.3	1	2929	75.5
Croplan	RZC48015	N	Y	1.3	1	2867	94.0
Dyna-Gro	37RY47	N	N	1.0	0	3314	62.8
Dyna-Gro	37RY47	N	Y	1.0	0	3346	77.9
Dyna-Gro	44RS93	Ν	Ν	2.0	0	3160	58.8

					Purple		
				Seed	Seed	Seed	
		RKN		Quality ^D	Stain ^c	Size	Yield
Brand	Variety	Resist ^a	Fungicide	(1-5)	(%)	(seed/lb)	(bu/A)
Dyna-Gro	44RS93	Ν	Y	2.0	0	3197	77.2
HBK (Hornbeck)	RY4620	Ν	Ν	1.0	0	3138	65.7
HBK (Hornbeck)	RY4620	Ν	Y	1.0	1	3088	78.8
HBK (Hornbeck)	RY4721	Ν	Ν	1.3	1	3095	68.9
HBK (Hornbeck)	RY4721	Ν	Y	1.0	0	2967	82.3
Hubner	H46-01R2/STS	Ν	Ν	13	1	3167	62 1
Hubner	H46-01R2/STS	N	Y	2.0	0	3000	54.0
Hubner	H48-12R2/STS	N	N	2.0	1	3371	70.1
Hubner	H48-12R2/STS	N	Y	2.7	1	3363	67.2
NK	S16 A1	N	N	17	0	2020	82.0
NK	S46-A1	N N	IN V	1.7	0	2838	82.0 87.1
			I N	1.7	0	2015	04.0
NK NW	S49-F8	N N	N V	1.0	0	3397	84.0
INK	549-60	IN	ľ	1.0	0	5459	98.3
Pioneer	94Y22	N	N	2.3	1	2993	67.8
Pioneer	94Y22	Ν	Y	2.3	2	2910	82.0
Pioneer	94Y70	Ν	Ν	2.0	0	3227	72.7
Pioneer	94Y70	Ν	Y	2.0	1	3212	85.2
Progeny	P 4510 RY	Ν	Ν	1.0	0.3	3251	48.7
Progeny	P 4510 RY	Ν	Y	1.0	0.3	3117	56.1
Progeny	P 4710 RY	Ν	Ν	1.0	0	3603	53.3
Progeny	P 4710 RY	Ν	Y	1.0	0	3519	66.2
RPM (Doeblers)	DB4512RR	Ν	Ν	2.0	2	3064	61.1
RPM (Doeblers)	DB4512RR	N	Y	1.8	2	3054	75.3
Seed Consultants	SCS 9412RR	N	N	27	1	3212	53.6
Seed Consultants	SCS 9412RR	N	Y	2.7	1	3212	58.2
Sood Consultants	SCS 0472DD	N	N	2.0	0	2120	52.6
Seed Consultants	SCS 94/2RR SCS 9472RR	IN N	IN V	2.0	0	2128 2867	55.0 57.8
	SCS 7472ICC		I	2.7	0	2007	57.0
Southern States	SS 4510 KK2	N N	N V	1.0	1	2879	64.1
Southern States	55 4310 KK2	IN	ľ	1.0	Z	2/03	0/./
Southern States	SS 4700 RR2	N	N	1.0	0	3330	71.7
Southern States	88 4700 RR2	Ν	Y	1.0	1	3182	82.2
T. A. Seeds	TS4729RS	Ν	Ν	2.0	0	3061	72.5
T. A. Seeds	TS4729RS	Ν	Y	2.0	0	2942	85.5

					Purple		
Brand	Variety	RKN Resist ^a	Fungicide	Seed Quality ^b (1-5)	Seed Stain ^c (%)	Seed Size (seed/lb)	Yield (bu/A)
T. A. Seeds	TS4939R2	N	N	1.0	0	2954	68.5
T. A. Seeds	TS4939R2	N	Y	1.0	2	2942	80.7
USG	74E88	N	N	2.0	0	3274	68.1
USG	74E88	N	Y	2.0	0	3145	83.5
USG	74B81R	N	N	1.0	0	2954	71.9
USG	74B81R	N	Y	1.0	0	2967	85.5
Average				1.6	1	3097	71.2

^aHigh numbers of root knot and other nematodes were found in this field. Soil test results are listed in the discussion.

^bSeed Quality: Ratings represent overall seed quality, but are a good representation of *Phomopsis* seed decay. The following scale was used: 1.0 - very good; 2.0 - good; 3.0 = fair; 4.0 = poor; 5.0 = very poor.

^cPurple seed stain is caused by *Cercospora* blight and leaf spot. Data represents the percentage of seed showing signs of purple seed stain from a 100-seed sample.

Discussion: These maturity group 4 varieties yielded very well, with some approaching or exceeding 100 bushels per acre when a foliar fungicide was applied.

At the R3 (beginning pod) development stage, Headline[®] fungicide was applied across all varieties in 24-foot increments (no fungicide for 24 feet, fungicide for 24 feet, no fungicide for 24 feet, etc.). These strips were replicated three times. Being an irrigated test, conditions were good for disease development. Conditions necessary for disease development include good soybean growth, moist soil conditions, and high relative humidity. Seed quality was good for all varieties and purple seed stain was not found in high amounts; neither seed quality nor purple seed stain was affected by the fungicide application.

Nematode samples were taken from areas of good and bad soybean growth. Results of these tests are listed below. Although none of these varieties are listed as being resistant to root knot nematode (RKN), varietal tolerance to RKN or other nematodes may have affected yields. For more information on nematodes, thresholds, and management, see VCE publication AREC-9, Soybean Nematode Management Guide.



	Good	Bad			
Nematode	Area	Area			
	(no./500 cc soil)				
Lesion	20	40			
Root-Knot	40	500			
Stubby Root	100	40			
Dagger	20	0			
Stunt	20	0			
Spiral	400	60			
Lance	60	40			
Recommendation	R	C			

Recommendation: A=No Problem; B=Possible Problem; C=Problem, control needed

Colors represent risk level: Green=Low; Yellow=Moderate; Red=Hi; stubby root nematode in the "good area" is a possible problem; root knot nematode is definitely a problem in the "bad area" of this field.

2012 SUFFOLK GROUP 4 SOYBEAN VARIETY COMPARISONS AND RESPONSE TO FOLIAR FUNGICIDE APPLICATION

Cooperators:	Producer: Mike Ellis Extension: David Holshouser, Tidewater AREC Agribusiness: Participating Seed Companies
Previous Crop:	Cotton
Soil Type:	Suffolk loamy sand/Eunola loamy fine sand/Lynchburg fine sand
Tillage:	Disk 2X
Planting Equipment:	John Deere 750 Grain Drill
Planting Date:	Nov. 26
Row Spacing:	7.5 inches
Seeding Rate:	140,000 seed/A
Crop Protection:	Herbicides: Touchdown 26 oz/A
	Insecticides: Baythroid 2 oz/A
	Fungicide: With or without Headline 6 oz/A at R3
Plot Size:	Planted - 30 ft x length of field; Harvest – 6 rows x 17 feet
Harvest Date:	Nov. 26
Harvest Equipment:	Wintersteiger plot combine

Brand ^a	Variety	Fungicide	Seed Quality ^b (1-5)	Purple Seed Stain ^c (%)	Seed Size (seed/lb)	Yield (Bu/A)	Adjusted Yield (Bu/A) ^d
USG (check)	74E88 (1)	Ν	2.5	1	3314	44.0	51.0
USG (check)	74E88 (1)	Y	2.0	1	3052	44.4	51.5
Progeny	P 4710	Ν	1.5	1	3022	60.6	71.2
Progeny	P 4710	Y	1.8	0	2924	56.2	66.0
Seed Consultants	SCS 9412RR	Ν	3.0	2	2628	55.1	65.6
Seed Consultants	SCS 9412RR	Y	2.5	0	2536	54.6	65.0
Seed Consultants	SCS 9472RR	Ν	2.8	3	2529	53.5	64.4
Seed Consultants	SCS 9472RR	Y	2.8	1	2498	55.3	66.7
RPM	DB4512RR	Ν	2.5	4	2628	52.8	64.4
RPM	DB4512RR	Y	2.0	4	2576	56.3	68.8
USG	7495nRS	Ν	1.5	1	2785	58.2	72.0
USG	7495nRS	Y	1.8	1	2719	60.6	75.0
Progeny	P 4510RY	Ν	1.5	2	2540	42.9	53.8
Progeny	P 4510RY	Y	1.5	1	2471	42.3	53.0
HBK	RY4620	Ν	2.0	4	2352	34.4	43.7

HBK	RY4620	Y	1.7	6	2373	34.4	43.7
Southern States	SS 4700 R2	Ν	1.3	2	3095	28.6	36.8
Southern States	SS 4700 R2	Y	1.7	3	3047	25.2	32.4
USG (check)	74E88 (2)	Ν	1.8	0	2929	38.8	50.7
USG (check)	74E88 (2)	Y	1.8	0	2982	39.6	51.8
Southern States	SS 4510N R2	Ν	2.0	2	2536	56.8	69.2
Southern States	SS 4510N R2	Y	2.0	2	2569	56.9	69.3
Hubner	H48-12R2	Ν	2.0	0	2727	51.1	58.3
Hubner	H48-12R2	Y	2.0	1	2710	53.1	60.5
Asgrow	AG4730	Ν	1.0	1	2887	55.0	58.9
Asgrow	AG4730	Y	1.0	0	2887	53.9	57.7
Hubner	H46-01R2/STS	Ν	1.3	0	2794	53.2	53.7
Hubner	H46-01R2/STS	Y	1.5	0	2764	56.2	56.8
Asgrow	AG4832	Ν	2.0	1	2686	50.2	48.0
Asgrow	AG4832	Y	2.0	3	2659	55.6	53.1
HBK	RY4721	Ν	2.3	1	2702	49.8	45.2
HBK	RY4721	Y	2.0	1	2690	48.9	44.4
Pioneer	94Y22	Ν	2.3	1	2798	56.3	48.6
Pioneer	94Y22	Y	2.8	2	2481	59.8	51.7
Pioneer	94Y70	Ν	3.0	0	2667	59.6	49.1
Pioneer	94Y70	Y	3.0	1	2636	69.4	57.2
USG (check)	74E88 (3)	Ν	2.0	1	3120	61.6	48.5
USG (check)	74E88 (3)	Y	2.3	0	3037	66.9	52.7
Average			2.0	1	2730	51.4	56.1

^aVarieties are listed in order of planting.

^bSeed Quality: Ratings represent overall seed quality, but are a good representation of *Phomopsis* seed decay. The following scale was used: 1.0 - very good; 2.0 - good; 3.0 = fair; 4.0 = poor; 5.0 = very poor.

^cPurple seed stain is caused by *Cercospora* blight and leaf spot. Data represents the percentage of seed showing signs of purple seed stain from a 100-seed sample.

^dBecause check yield varied from one side of the field to the other, yields were adjusted between checks with linear interpolation.

Discussion: Yields were good due to timely rainfall throughout the growing season. At the R3 (beginning pod) development stage, Headline[®] fungicide was applied across all varieties in 24-foot increments (no fungicide for 24 feet, fungicide for 24 feet, no fungicide for 24 feet, etc.). These strips were replicated three times.

Although variety may have affected the yield response, there was little or no yield response to the foliar fungicide with most varieties. Conditions necessary for disease development include good soybean growth, moist soil conditions, and high relative humidity. According to weather models under development by Dr. Pat Phipps, conditions at the Tidewater AREC (located within 10 miles of this experiment) during R3 were not conducive for disease development. However, conditions were very

conducive late in the season. Therefore, the fungicide may have been applied too early for most varieties to benefit from the application. Seed quality was good for all varieties and purple seed stain was not found in high amounts; neither seed quality nor purple seed stain was affected by the fungicide application.



2012 MG 5	Comparison
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											Avg
		New	Prince		South-				VA		Rel
Brand	Variety	Kent	George	VSU	ampton	Suffolk	Surry	Sussex	Beach	Avg	Yield
Asgrow	AG5332	64.8	70.0	61.4	60.8	69.4				65.3	109
Southern States	SS 5511N R2	58.4	69.2	51.6	60.0	70.2	52.0	57.0	64.0	60.3	106
Hubner	H51-10R2	63.8	70.7	51.5	60.9	69.6		44.3		60.1	103
USG	75J90R		67.5	49.8		69.9	44.6		65.8	59.5	101
Pioneer	95Y20	55.6	62.9	54.2	57.6	70.6	49.3	51.9	58.7	57.6	101
Asgrow	AG5632	59.5	65.2	47.8	59.7	67.1	47.9	52.3		57.1	101
Hubner	H58-12R2	60.5	70.0	49.0	63.0	66.7	47.2	37.3	67.7	57.7	100
HBK (Hornbeck)	R5525	57.2	66.5	48.3	61.8	69.1	45.2	46.5		56.4	99
Progeny	P 5610 RY	59.4	62.7	50.5	61.3	68.1	46.3	42.2	60.5	56.4	98
Pioneer	95M82	59.0	64.4	45.8	57.1	64.1		51.5		57.0	98
RPM (Doebler's)	DB5711RR	58.1	65.0	42.3	55.8	62.4	52.5	51.0	57.6	55.6	97
Progeny	P 5210 RY	55.6	63.4	50.2	56.1	69.8	44.5		60.1	57.1	97
Southern States	SS 5312N R2	60.4	70.8	52.3	58.6	53.6	46.3	42.2		54.9	97
USG	75U52R		58.6	51.9		63.9	44.4	46.6	57.8	53.9	95
Average Each Loca	ation	59.4	66.2	50.5	59.4	66.8	47.3	47.5	61.5	57.8	100

*Only varieties that were tested at 3 or more locations are included in this table

2012 VIRGINIA STATE UNIVERSITY GROUP 5 SOYBEAN VARIETY COMPARISONS

Cooperators:	Producer: Rudy Grammer & Mack West – VSU Randolph Farm Glenn F. Chappell, II - VSU
Previous Crop:	Barley
Soil Type:	Tetotum loam & Bourn fine sandy loam
Tillage:	No-Till
Test/Plot Size:	15'X 507'
Planting Equipment	Great Plains 706 NT Drill:
Fertility:	20-60-90 Oct. 26, 2011 prior to barley
Planting Date:	June 21
Row Spacing:	7.5"
Seeding Rate:	157,000
Crop Protection:	1.5 qt. Gly4 + 0.23 oz. First Rate - June 22, 2012
	1.5 qt. Gly4 + 0.30 oz. First Rate + 1.9 oz. Warrior - August 29, 2012
Harvest Date:	November 12

Harvest Equipment: John Deere 9560 STS

Brand	Variety	Moisture (%)	Yield (bu/A)	% of Check ^a
Hubner (check)	H52-12R2	10.8	42.4	
RPM (Doeblers)	DB5711R	10.7	42.3	95
Hubner	H51-10R2	10.5	51.5	116
Hubner	H58-12R2	10.5	49.0	110
Asgrow	AG5332	10.1	61.4	138
Asgrow	AG5632	10.2	47.8	107
Progeny	P 5210 RY	10.3	50.2	113
Progeny	P 5610 RY	10.6	50.5	113
Southern States	SS 5312 RR2	9.8	52.3	117
Southern States	SS 5511 RR2	10.4	51.6	116
HBK (Bayer CS)	R5525	9.8	48.3	108
Pioneer	95Y20	10.1	54.2	122
Pioneer	95M82	10.2	45.8	103
USG	75U52	10.5	51.9	117
USG	75J90	10.2	49.8	112
Hubner (check)	H52-12R2	10.3	46.7	
Average ^b :		10.3	50.5	

Discussion: Rainfall totals by month: June -3.20", July -8.55", Aug. -4.15" ^aPercent of check = (variety yield/(sum of check yields/2))*100 ^bThe maturity group average does not include the check variety.

2012 NEW KENT GROUP 5 SOYBEAN VARIETY COMPARISONS

Cooperators:	Producer:	Davis Produce
-	Extension:	David Moore, Middlesex County
	Agribusiness:	Participating Companies
Previous Crop:	Wheat	
Soil Type:	State fine sand	ly loam
Tillage:	No-Till in 30 i	nch rows
Planting Date:	June 19	
Seeding Rate:	140,000 seed j	per A
Crop Protection:	7/3/12 Roundu	ıp PowerMAX @ 1 qt.
	8/1/12 Roundu	ıp PowerMAX @ 1 qt.
	8/31/12 Doma	rk (4 oz) + Bayhtroid (2 oz.)
Harvest Date:	November 10	
Harvest Equipment:	AGCO R40	

Moisture Yield Brand (%) Variety (Bu/A)11.1 AG5332 64.8 Asgrow Asgrow AG5632 10.6 59.5 11.2 RPM (Doeblers) DB5711RR 58.1 HBK (Bayer CS) R5525 11.6 57.2 Hubner H51-10R2 10.8 63.8 Hubner 10.9 60.5 H58-12R2 NK 572 S54-V4 11.1 55.6 Pioneer 95Y20 11.1 12.1 Pioneer 95M82 59.0 Progeny P 5210 RY 12.2 55.8 P 5610 RY 12.5 59.4 Progeny Southern States SS 5312 RR2 10.9 60.4 Southern States SS 5511 RR2 58.4 11.0 USG 75Z38 11.8 57.8 USG 75Z98 11.3 53.7 11.3 58.6 Averages

Discussion: Great plot! Double crop after wheat. There are lots of these types of yields around this year. Weather hit just right. Use this and other on-farm replicated variety results for your 2013 planning.

2012 PRINCE GEORGE GROUP 5 SOYBEAN VARIETY COMPARISONS

Cooperators:	Producer: I	Paul Cerny and Sean Finney
-	Extension:	Scott Reiter, Prince George County
	Agribusiness: I	Participating Seed Companies
Previous Crop:	Wheat with stra	aw removed
Soil Type:	Montross silt lo	am and Rains loam
Tillage:	No-till	
Test/Plot Size:	13 feet x 350 fe	eet
Planting Equipment	Great Plains 70	5 No-till Drill
Planting Date:	June 8	
Row Spacing:	7 inches	
Seeding Rate:	210,000 seed/ad	cre (190,000 expected final stand)
Crop Protection:	Gly 4 @ 1.5 qts	s/A; Baythroid @ 2.8 oz/A, 8-15-12; Steward @ 8 oz/A +
	Baythroid @ 2.	0 oz/A, 8-22-12
Harvest Date:	November 8	
Harvest Equipment:	John Deere 950	00 with 918 flex head

			Test			Yield
		Moisture	Weight	Lodging	Yield	Ratio
Brand	Variety	(%)	(lbs/bu)	Score ^a	(Bu/A)	(%)
Asgrow (check)	AG5605	12.4	57.1	2	66.9	101
Asgrow	AG5332	12.6	56.9	2	70.0	106
Asgrow	AG5632	12.5	55.5	2	65.2	98
Pioneer	95Y20	12.3	56.3	3	62.9	95
Pioneer	95M82	12.5	56.4	3	64.4	97
Southern States	SS 5312N R2	12.6	57.6	2	70.8	107
Southern States	SS 5511N R2	12.6	57.6	3	69.2	104
USG	75J90R	12.7	57.8	3	67.5	102
USG	75U52R	12.6	58.0	4	58.6	88
RPM (Doeblers)	DB5711RR	12.8	57.2	4	65.0	98
HBK HBK (Bayer CS)	R5525	12.9	57.2	3	66.5	100
Hubner	H51-10R2	12.7	55.9	1	70.7	107
Hubner	H58-12R2	12.6	57.5	3	70.0	106
Progeny	P5210RY	12.7	56.5	3	63.4	96
Progeny	P5610RY	12.6	57.5	3	62.7	95
Asgrow (check)	AG5605	12.6	57.3	2	66.3	100
Averages		12.6	57.0	2.7	66.3	

Discussion: These were excellent double crop soybeans. Some of the lower yielding plots were lodged from tremendous vine growth. Seed quality was very good with little seed stain or other damage. Varieties are listed in order of planting across the field. This plot was treated 2 times for corn earworm due to very high CEW counts (8+ CEW per 15 sweeps) and a period of rain within 4 hours after treatment. Use this data with statewide averages and other data for your 2013 seed selections.

Lodging Ratings (taken 10-22-12)

1 = standing straight
2
3 = leaning approximately 45 degree angle
4
5 = flat on ground

2012 SOUTHAMPTON COUNTY GROUP 5 SOYBEAN VARIETY COMPARISON

Cooperators:	Producer: Chip Felts
-	Extension: Chris Drake, Southampton County
	Agribusiness: Participating seed companies
Previous Crop:	Cotton
Soil Type:	Emporia fine sandy loam
Tillage:	No-Till Ripperin 36" rows
Planting Equipment	: KMC No-Till Ripper, John Deere 71 Planters
Planting Date:	May 18
Seeding Rate:	9.5 seeds per foot or row (137,940 seeds/acre)
Fertilization:	200# per acre 4-15-38 on 5/17/2012
Crop Protection:	April 9 - 1qt. Roundup, 1 pt. 2-4 D burndown, 2 applications Roundup at 1qt/A
	postemergence,
	4 oz. Domark, 4 oz. Mustang Maxx
Harvest Date:	November 25
Harvest Equipment:	John Deere 9550 with 25 foot platform

		Moisture	
Brand	Variety	(%)	Yield (Bu/A)
Asgrow	AG5332	11.1	60.84
HBK (Bayer CS)	R5525	11.6	61.77
Pioneer	95Y20	11.3	57.62
NK	S53-A1	11.3	60.84
Southern States	SS 5312 RR2	11.7	58.62
Progeny	P 5210 RY	11.9	56.05
RPM (Doeblers)	DB5711RR	11.9	55.76
Hubner	H51-12R2	11.5	60.85
Pioneer	95M82	11.4	57.05
Southern States	SS 5511 RR2	11.7	59.75
N/K Seeds	S56-G6	11.3	59.95
Asgrow	AG5632	11.4	59.74
Progeny	P 5610 RY	11.9	61.26
Hubner	H58-12R2	11.5	63.00
Average		11.5	59.5

Discussion: Plot yields were outstanding, considering that soybean were planted on 36" rows on a sandy soil. Adequate rainfall throughout the growing season pushed the yields to very impressive levels. Use this data and other variety trials when making seed selections for 2013.

2012 SURRY COUNTY GROUP 5 SOYBEAN VARIETY COMPARISONS

Cooperators:	Producer: Cliff Slade	
	Extension: Surry Unit, Glenn Slade	
	Agribusiness: Various seed companies	
Previous Crop:	Wheat	
Soil Type:	Emporia fine sandy loam	
Tillage:	No-till	
Planting Equipment	:JD Max Emerge II Vacuum planters, 11 row	
Planting Date:	June 29	
Row Spacing:	15" rows	
Seeding Rate:	180,000 seed/acre	
Crop Protection:	1qt Glyphos 2 weeks after planting	
Harvest Date:	November 27	
Harvest Equipment:	JD 6600 Combine 215 head	

		Moisture	Yield
Brand	Variety	(%)	(Bu/A)
Asgrow	AG5632	11.1	47.9
RPM (Doeblers)	DB5711RR	11	52.5
HBK (Bayer CS)	R5525	9.8	45.2
Hubner	H58-12R2	9.3	47.2
Pioneer	95Y20	11.3	49.3
Progeny	P 5210 RY	9.8	44.5
Progeny	P 5610 RY	11.1	44.7
Southern States	SS 5312 RR2	11	46.3
Southern States	SS 7450 RR2	10.9	52.0
USG	75J90	9.7	44.6
USG	75U52R	11.5	44.4
Averages		10.6	47.13

Discussion: There were several varieties of seed missing from the plot, but yields were very good for double crop planting.

2012 SUSSEX COUNTY GROUP 5 SOYBEAN VARIETY COMPARISONS

Cooperators:	Producer: Wyatt Cox		
	Extension: Kelvin Wells, Sussex Extension		
Previous Crop:	Cotton		
Soil Type:	Emporia sandy loam		
Planting Equipment: JD Grain Drill –No-Till			
Planting Date:	June 8		
Row Spacing:	7 inch		
Seeding Rate:	42#/A		
Harvest Date:	November 20		
Harvest Equipment:	JD 9400		

		Moisture	Yield
Brand	Variety	(%)	(Bu/A)
Asgrow	AG5632	14.4	52.3
RPM (Doeblers)	DB5711RR	13.9	51.0
Dyna-Gro/CPS	32RY55	14.1	33.1
HBK (Bayer CS)	R5525	13.5	46.5
Hubner	H51-10R2	14.2	44.3
Hubner	H58-12R2	13.3	37.3
Pioneer	95Y20	14.3	51.9
Pioneer	95M82	14.1	51.5
Progeny	P 5610 RY	14.4	42.2
Southern States	SS 5312 RR2	14.0	42.2
Southern States	SS 5511 RR2	14.0	57.0
USG	75U52	14.2	46.6
Dyna-Gro	32A53	13.9	27.0
Average		14.0	44.8

Discussion: Use this and other MG 5 soybean on farm information when making decisions for 2013.

2012 VIRGINIA BEACH GROUP 5 SOYBEAN VARIETY COMPARISONS

Cooperators:	Producer: Arnold and Jason Dawley
	Extension: Roy D. Flanagan III, Virginia Beach
	Agribusiness: Participating Seed Companies
Previous Crop:	Wheat with residue left on field
Soil Type:	Fomotley loam
Tillage:	No-till
Planting Equipment:	John Deere 7300
Planting Date:	fune 14
Row Spacing:	18 inches
Seeding Rate:	180,000 seed/ acre
Crop Protection:	Roundup PowerMAX @ 1qt./A; First Rate @ .3 ounce/A; Bifenthrin @ 6 ounces
Harvest Date:	December 3
Harvest Equipment:	Case IH 2166 with 1020 flex head

		Moist	Yield @ 13%
Brand	Variety	ure	Moisture
		(%)	(bu/A)
RPM (Doeblers)	B5711RR	13.9	57.6
Great Heart	GT-543CRS		
Great Heart	GT-550CR2	13.9	53.3
Hubner	H58-12R2	13.3	67.7
Pioneer	95Y20	13.6	58.7
Pioneer	95Y40	13.4	59.7
Pioneer	95Y60	13.7	58.2
Pioneer	95Y61	13.4	55.3
Progeny	P 5210 RY	13.5	60.1
Progeny	P 5610 RY	13.4	60.5
Southern States	SS 5511RR2	13.5	64.0
Southern States	SS 5312RR2		
USG	75U52	13.5	57.8
USG	75J90	13.5	65.8

Discussion: Rainfall and standing water was an issue for two varieties with no data included; all others handled the conditions well. Use this data and other variety trials when making seed selections for 2013.

2012 SUFFOLK GROUP 5 SOYBEAN VARIETY COMPARISONS AND RESPONSE TO FOLIAR FUNGICIDE APPLICATION

Cooperators:	Producer: Mike Ellis
L	Extension: David Holshouser, Tidewater AREC
	Agribusiness: Participating Seed Companies
Previous Crop:	Cotton
Soil Type:	Suffolk loamy sand/Eunola loamy fine sand/Lynchburg fine sand
Tillage:	Disk 2X
Planting Equipment:	John Deere 750 Grain Drill
Planting Date:	Nov. 26
Row Spacing:	7.5 inches
Seeding Rate:	140,000 seed/A
Crop Protection:	Herbicides: Touchdown 26 oz/A
	Insecticides: Baythroid 2 oz/A
	Fungicide: With or without Headline 6 oz/A at R3
Harvest Date:	Nov. 26
Harvest Equipment:	Wintersteiger plot combine

Brand ^a	Variety	Fungicide	Seed Quality ^b (1-5)	Purple Seed Stain ^c (%)	Seed Size (seed/lb)	Yield (Bu/A)	Adjusted Yield (Bu/A) ^d
Hubner (check)	H58-10(1)	Ν	2.3	1	2522	61.6	66.0
Hubner (check)	H58-10 (1)	Y	1.5	0	2540	62.8	67.2
Southern States	SS 5312N R2	Ν	2.8	3	2820	48.8	51.8
Southern States	SS 5312N R2	Y	2.0	3	2773	52.1	55.3
Southern States	SS 5511N R2	Ν	2.5	0	2501	63.4	66.7
Southern States	SS 5511N R2	Y	2.0	0	2572	70.2	73.8
Progeny	P 5210 RY	Ν	2.3	1	2620	64.5	67.2
Progeny	P 5210 RY	Y	1.8	0	2547	69.5	72.4
Progeny	P 5610 RY	Ν	2.5	0	2393	66.7	68.9
Progeny	P 5610 RY	Y	2.0	0	2393	65.2	67.3
USG	75J90R	Ν	2.0	0	2374	70.8	72.5
USG	75J90R	Y	2.0	0	2380	65.8	67.4
USG	75U52R	Ν	2.8	1	2777	59.9	60.8
USG	75U52R	Y	2.3	0	2768	66.1	67.1
HBK	R5525	Ν	1.8	1	2543	71.5	71.9

				Purple			
			Seed	Seed			Adjusted
			Quality ^b	Stain ^c	Seed Size	Yield	Yield
Brand ^a	Variety	Fungicide	(1-5)	(%)	(seed/lb)	(Bu/A)	$(Bu/A)^d$
HBK	R5525	Y	1.5	1	2488	66.0	66.4
Asgrow	AG5332	Ν	2.0	0	2386	68.9	68.7
Asgrow	AG5332	Y	1.5	0	2412	70.3	70.1
Hubner (check)	H58-10 (2)	Ν	2.3	1	2838	67.7	66.9
Hubner (check)	H58-10 (2)	Y	1.3	1	2807	67.0	66.3
Asgrow	AG5632	Ν	2.0	1	2878	69.6	68.0
Asgrow	AG5632	Y	1.5	0	2846	67.9	66.3
RPM	DB5711RR	Ν	2.5	1	2602	65.7	63.4
RPM	DB5711RR	Y	2.5	1	2602	63.6	61.4
Pioneer	95Y20	Ν	2.0	1	2768	74.8	71.4
Pioneer	95Y20	Y	1.8	1	2752	73.3	69.9
Hubner	H51-10	Ν	2.0	2	2659	70.9	66.9
Hubner	H51-10	Y	1.5	1	2647	76.6	72.3
Pioneer	95M82	Ν	1.8	0	2727	69.1	64.4
Pioneer	95M82	Y	2.0	1	2694	68.4	63.7
Hubner	H58-12	Ν	1.3	1	2393	73.0	67.3
Hubner	H58-12	Y	1.5	0	2389	71.8	66.2
Hubner (check)	H58-10 (3)	Ν	1.5	0	2310	70.3	64.1
Hubner (check)	H58-10 (3)	Y	1.5	0	2328	75.8	69.1
Average			1.6	1	3097	67.3	66.7

^aVarieties are listed in order of planting.

^bSeed Quality: Ratings represent overall seed quality, but are a good representation of *Phomopsis* seed decay. The following scale was used: 1.0 - very good; 2.0 - good; 3.0 = fair; 4.0 = poor; 5.0 = very poor.

^cPurple seed stain is caused by *Cercospora* blight and leaf spot. Data represents the percentage of seed showing signs of purple seed stain from a 100-seed sample.

^dBecause check yield increased from one side of the field to the other, yields were adjusted with linear interpolation between checks.

Discussion: Yields were very good due to timely rainfall throughout the growing season. At the R3 (beginning pod) development stage, Headline[®] fungicide was applied across all varieties in 24-foot increments (no fungicide for 24 feet, fungicide for 24 feet, no fungicide for 24 feet, etc.). These strips were replicated three times.

Although variety may have influenced yield response, there was little or no yield response to the foliar fungicide with most varieties. Conditions necessary for disease development include good soybean growth, moist soil conditions, and high relative humidity. According to weather models under development by Dr. Pat Phipps, conditions at the Tidewater AREC during R3 were not conducive for disease development. Therefore, the fungicide may have been applied too early for most varieties to



benefit from the application. Seed quality was good for all varieties and purple seed stain was not found in high amounts; neither seed quality nor purple seed stain was affected by the fungicide application.

2012 KING AND QUEEN COUNTY NEMATICIDE (VOTiVO) TRIAL

Cooperators:	Producer: Todd Henley
	Extension: Laura Maxey, King & Queen & King Williams Counties
	Keith Balderson, Middle Peninsula Counties
Previous Crop:	Wheat
Soil Type:	Tarboro sand, 0 to 6 percent slopes
Tillage:	No-Till
Planting Equipment	:Kinze 3600 16 row
Planting Date:	June 6
Row Spacing:	15 inches
Variety:	Control: Asgrow 4832/ A1026419
	Treated: AG4832 treated with Poncho/Votivo
Seeding Rate:	155-158,000 seed/A
Crop Protection:	Herbicides: Touchdown 1 qt June 5, Makaze 3 pt + Firstrate 0 .15 oz July 17
	Insecticides: Tombstone 2.8 oz August 15
	Fertilizers: Smart Trio 1 qt (July 17 and August 15) and black jack manganese
	July 17
	Adjuvant: Franchise 2 oz and Quad 6 oz August 15
Harvest Date:	November 12
Harvest Equipment:	John Deere 9660

								Rep 1-5
	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Avg. Yield
Treatment	(Bu/A)	(Bu/A)	(Bu/A)	(Bu/A)	(Bu/A)	(Bu/A)	(Bu/A)	(Bu/A)
Control	41.3 ^a	49.7 ^a	41.7 ^a	54.2	46.7	55.5	42.9	46.7
Poncho/Votivo	45.3 ^a	46.4 ^a	41.8	54.0	52.8	-	-	48.1
LSD (0.10)								3.5

^aPlanted at 1.5 inch depth; other plots were planted 1 inch deep.

Discussion: Although the Poncho/Votivo yields were numerically greater than the control, the difference was no significantly different due to variability between replications.

2012 NEW KENT COUNTY SOYBEAN SEED TREATMENT

Cooperators:	Producer: Extension: Agribusiness:	Davis Produce David Moore, Middlesex County Bryan Dillehay, Monsanto; Chip Graham, Bayer CropScience
Previous Crop:	Barley	
Soil Type:	Altavista fine	sandy loam
Tillage:	No-Till in 30 i	inch rows
Planting Date:	June 13	
Variety:	Asgrow 5332	
Seeding Rate:	140,000 seed/2	A
Crop Protection:	July 3 - Round	lup Power Max @ 1.5 qt.
	July 14 - Rour	ndup Power Max at 1 qt. + Reflex @ 1.5 pints
	Aug 1 - Round	dup Power Max @ 1 qt.
	Aug 1 - Doma	rk (4 oz.) + Baythroid (2 oz)
	Aug 31 - Bayt	hroid @ 2 oz.
Harvest Date:	November 4	
Harvest Equipment:	AGCO R40	

Treatment	Rep 1 (Bu/A)	Rep 2 (Bu/A)	Rep 3 (Bu/A)	Avg. Yield (Bu/A)
Control	35.6	50.0	47.1	44.2
Poncho-VOTiVO	51.4	54.5	57.2	54.4
LSD (0.10)				9.5

Discussion: This plot shows a significant increase in yield by using the seed treatment Poncho-VOTiVO. This treatment is a combination insecticide-nematicide that could help in the presence of nematode populations. This field has a history of root-knot nematodes although the population levels have been sporadic. This seed treatment combination has been looked at for several years and has not always increased yields. It did however increase yield in this field. Past plot work has shown this product to be less effective on cyst nematodes. Cultural practices and resistance are still the best defense to high nematode populations. Look for other seed treatment plots in this publication.

Post-harvest nematode samples showed root knot, dagger, and spiral nematodes in the "high risk" range. There were also some cyst juveniles (SCN) in the field; but again, we think this product is less effective with SCN. Use this and other on-farm replicated plot work when making your future planting decisions.

2012 ESSEX COUNTY IRRIGATED SOYBEAN NEMATICIDE SEED TREATMENT PLOT

Cooperators:	Producer:	Cloverfield Enterprises
	Extension:	Keith Balderson, Middle Peninsula Counties
		Daniel Bowie, VCE Summer Intern
	Agribusiness:	Rose Bradshaw, former Monsanto representative
Previous Crop:	Corn	
Soil Type:	Molena loamy	y sand
Tillage:	No-till	
Test/Plot Size:	.5 acre	
Planting Equipment:	John Deere 17	'90
Planting Date:	May 7	
Row Spacing:	15 inches	
Variety:	Asgrow 5332	
Seeding Rate:	140,000 seeds	per acre
Crop Protection:	Herbicides: B acre Salvo 2,4 Preemergence	ourndown: 24 oz. per acre Roundup PowerMAX + 8 oz. per -D : 1 ot. per acre Prefix
	Postemergenc	e: 28 oz. Touchdown plus 2 oz. Butyrac 175, June 7 30 oz. Touchdown for escapes in plot, Aug 29
	Insecticide: 2	.5 oz. Tombstone; Fungicide: 6 oz. Quadris, July 30
Harvest Date:	October 20	
Harvest Equipment:	CIH 8120	

Treatment	Rep	Moisture (%)	Yield (Bu/A)
Poncho/Votivo	1	13.1	38.9
Check	1	12.9	41.1
Poncho/Voltivo	2	13.0	47.0
Check	2	12.8	44.6
Poncho/Votivo	3	13.1	35.2
Check	3	12.9	46.9
Average Poncho/Votivo		13.1	40.4
Average Check		12.9	44.2
LSD (0.10)			12.1

Discussion: The purpose of the experiment was to evaluate Poncho®/VOTiVO® seed treatment for managing soybean cyst nematodes in a field with a long history of SCN. Introduced from Bayer CropScience, Poncho®/VOTiVO® is a new soybean seed treatment that protects early season seedlings and roots from numerous insect and nematode pests. It controls early season soybean aphids, over-wintering bean leaf beetles, seed corn maggot and other early season insect pests. Poncho/VOTiVO also

contains a unique bacteria strain that provides nematode protection on the seed. The bacteria create a living barrier that keeps important soybean nematode species, including reniform, root knot and soybean cyst (SCN), from reaching the root.

The most current SCN race test from this field showed that race 4 is the predominant race in the field. Asgrow 5332 is rated as resistant to race 3. A composite soil sample for nematode assay was taken twice during the growing season. Results of the assays are shown in the graph below.

Variability in yields in the plot was significant and most likely caused by variability in the SCN population, but there was no difference in the yields between treatments. Crop rotation and variety selection remain very important production practices in managing SCN.



2012 SOUTHAMPTON COUNTY PONCHO/VOTiVO SEED TREATMENT TEST

Cooperators:	Producer: Edward S. Drake
-	Extension: Chris Drake
	Agribusiness: Bryan Dillehay, Monsanto; Chip Graham, Bayer CropScience
Previous Crop:	Wheat
Soil Type:	Uchee loamy sand
Tillage:	KMC Strip Till Rig tied to John Deere Max Emerge Air Planters
Planting Equipment	:John Deere Max Emerge Planters
Planting Date:	June 6
Row Spacing:	36 inches
Variety:	Asgrow 5632 and NK 53-A1
Seeding Rate:	137,940 seeds/acre (9.5 seed per ft-row)
Crop Protection:	225 # 6-18-36 preplant, 1 qt/acre Prefix pre-emergence, 2 applications Roundup
	PowerMAX at 1qt/acre post-emergence, 4 oz/acre Steed insecticide
Harvest Date:	November 17
Harvest Equipment	: John Deere 4420, 13 foot platform

Treatment	Rep 1	Rep 2	Rep 3	Avg. Yield
	(bu/A)	(bu/A)	(bu/A)	(bu/A)
NK 53-A1	42.0	43.4	43.0	42.8
AG 5632 Untreated	43.8	45.5	44.9	44.7
AG 5632 Poncho Votivo	46.9	45.8	47.4	46.7
LSD (0.10)				1.4

Discussion: I took a nematode sample on May 21 showing a population of 180 Root Knot (RKN), 40 Stunt, and 300 Ring nematodes per 500 cc's of soil. We planted the NK 53-A1 as a check variety due to its resistance to Southern RKN and soybean cyst nematode (SCN) race 3. Asgrow AG5632 is resistant to SCN race 3, but is susceptible to RKN. There was a slight visual difference in the seedling vigor and growth of the Poncho/Votivo treated beans. The test showed a 2 bushel increase in yield using the seed treatment versus the untreated AG 5632. The Asgrow untreated beans showed a 2 bushel bump over the NK variety untreated. These were good yields for double crop soybeans on marginal land with nematode pressure. Use this data and other similar tests when choosing seed treatments in 2013.

2012 PRINCE GEORGE COUNTY PONCHO/VOTiVO SEED TREATMENT COMPARISON

Cooperators:	Producer: George Reiter
-	Extension: Scott Reiter, Prince George
	Agribusiness: Bryan Dillehay, Monsanto; Chip Graham, Bayer CropScience
Previous Crop:	Corn
Soil Type:	Mattaponi sandy loam
Tillage:	Disk and CaseIH field cultivator
Planting Equipment	::Kinze 3500 Twin Line
Planting Date:	May 20
Row Spacing:	15 inches
Variety:	Asgrow 5632
Seeding Rate:	150,000 seed/A
Crop Protection:	Herbicides: Roundup PowerMAX @ 1 qt/A + Volunteer @ 8 oz/A + COC @ 1 gal/100 gal (6/27); Roundup PowerMAX @ 1 qt/A (7/18), Post
	Insecticides: Tombstone @ 2.8 oz/A + Orthene @ 8 oz/A (8/18)
	Fungicides: Tebustar @ 4 oz/A (8/18)
Harvest Date:	November 10
Harvest Equipment	: John Deere 9660 with 625F Platform

Treatment	Rep 1	Rep 2	Rep 3	Avg. Yield
	(bu/A)	(bu/A)	(bu/A)	(bu/A)
Control	51.9	50.7	50.6	51.1
Poncho-Votivo	54.1	51.2	50.3	51.9
LSD (0.10)				2.2

Discussion: Soybean yields have been excellent in 2012. This field was selected for this seed treatment comparison due to previous history of nematode problems. Votivo does not kill nematodes like traditional nematicides. The bacterium helps prevent nematodes from feeding on the plant roots. In this comparison in 2012 we did not see any yield response. A nematode assay indicated that nematode counts were high enough to cause problems at the end of the season. There are no good rotational crops or varietal resistance for lesion nematode problems. The following table describes nematode counts at the beginning and end of the growing season. A * indicates nematode is a problem.

Sampling Date		Lesion	Stunt	Stubby Root	Spiral
June 18, 2012		100	300		
October 24, 2012	Untreated	820*	400	60	20
October 24, 2012	Poncho-Votivo	960*	180	0	100

2012 CHESAPEAKE SOYBEAN SEEDTREATMENT PLOT

Cooperators:	Producer: Bennie Jennings Extension: Watson Lawrence Agribusiness: Bryan Dillehay, Monsanto; Chip Graham, Bayer CropScience; Syngenta
Previous Crop:	Soybeans
Soil Type:	Dragston-Tomotley complex, fine sandy loam
Tillage:	M&W Dyna Drive 5000
Planting Equipment	:JD MaxEmerge 2
Planting Date:	June 4
Row Spacing:	15 inches
Fertilizer:	250 lbs. /acre 7-11-36
Crop Protection:	1 ½ qts. Glyphosate per acre
Harvest Date:	November 10
Harvest Equipment:	John Deere 9600 with JD 925 (25ft.) bean head

	Nematode		Rep 1	Rep 2	Avg Yield
Variety	Resistance	Seed Treatment	(Bu/A)	(Bu/A)	(Bu/A)
Asgrow 5632	SCN race 3	Untreated	56.9	55.8	56.4
Asgrow 5632	SCN race 3	Poncho/Votivo	56.1	56.0	56.0
Pioneer 95Y40	SCN race 3	Avicta Complete	53.8	55.0	54.4
Pioneer 95Y60	SCN races 1, 3, 5	Untreated	58.3	54.0	56.1
LSD (0.10)					3.9

Discussion: Fields with these plots have been planted in soybeans for many consecutive years. In July 2010, there were areas in two fields showing plant stress. Nematode samples were taken July 2, 2010 from affected areas in both fields. Results of 500 cc's of soil showed the following results:

- Field Rep. 1: 640 soybean cyst nematode (SCN) juveniles and 15 cysts; 70 spiral nematodes
- Field Rep. 2: 180 SCN juveniles and 2 cysts; 170 spiral nematodes

Last year in 2011, the field was planted with Pioneer 95Y60, a variety with cyst nematode tolerance to multiple races. No nematode sample was taken last year.

In 2012, a soybean seed treatment test was set up looking at four options replicated twice. One option was using an untreated variety with resistance to only SCN race 3. Another option was the same variety treated with Poncho/Votivo which claims nematode protection. A third option was a nematode

susceptible variety treated with Avicta, which claims some nematode protection. A fourth option was a variety with resistance to SCN races 1, 3, and 5. Nematode samples were taken August 31 from same two fields. Results of 500 cc's of soil collected randomly showed:

- Field Rep. 1: <u>no soybean cysts</u>; 20 other cyst male; 1140 spiral; 360 stunt nematodes
- Field Rep 2: <u>no soybean cysts</u>; 20 other cyst male; 4740 spiral nematodes

Growing conditions were good in 2012 and no visual signs of nematode stress observed. Results of a random nematode sample in the untreated seed plot showed a nematode problem was still present, but the nematode population had shifted from soybean cyst nematodes to a spiral nematode problem. None of the 2012 treatments claim any activity on spiral nematodes.

Reasons that might point to a shifting nematode population could be attributed to use of a cysts nematode tolerant variety planted in 2011 that helped reduce cyst nematode population. The difference in taking a nematode sample from a "hot spot" in 2010 vs. a random area in 2012 could also account for some difference in cysts nematode population. There was no yield advantage from any of the seed treatments in 2012.

2012 NEW KENT GROUP 5 NEMATODE RESISTANT VARIETY COMPARISONS

Cooperators:	Producer:	Davis Produce
	Extension:	David Moore, Middlesex County
	Agribusiness:	Participating Companies
Previous Crop:	Barley	
Soil Type:	Altavista fine	sandy loam
Tillage:	No-Till in 30 i	nch rows
Planting Date:	June 13	
Seeding Rate:	140,000 seeds	/A
Crop Protection:	July 3 - Round	lup PowerMAX
	July 14 - Rour	ndup PowerMAX + Reflex
	Aug 1 - Round	dup PowerMAX + Domark + Baythroid
	Aug 31 - Bayt	hroid
Harvest Date:	November 4	
Harvest Equipment:	AGCO R40	

Brand	Variety	Moisture	Yield
		(%)	(bu/A)
Asgrow	AG5831	14.4	42.0
Asgrow	AG5732	14.5	51.3
Channel Bio	5305R2	14.7	51.0
Pioneer	95Y70	15.1	53.9
NK Seeds	S56-G6	14.7	50.7
Doeblers	DB5711RR	14.7	59.0
Average		14.7	51.3

Discussion: These varieties are root knot nematode (RKN) resistant varieties. They were planted into a known RKN field to see how they yielded and compared to one another. Really great yields! Planting resistant varieties is still the best defense in the presence of nematodes and some varieties have very good yield potential.

2012 MIDDLESEX NUTRITIONAL AND BIOLOGICAL TEST

Cooperators:	Producer: Carlton & Calhoun Farms Inc. Extension: David Moore, VCE-Middlesex Agribusiness: Coastal Agrobusiness
Previous Crop:	Soybeans
Soil Type:	Kempsville fine sandy loam
Tillage:	No-Till in 15 inch rows
Planting Date:	June 12
Variety:	Dyna-Gro 39D48
Seeding Rate:	155,000 seed/A
Crop Protection:	Herbicides: Glyphosate @ 1 qt/A post 2X
	Insecticides: Karate Z @ 2 oz. in August
	Fungicides: Quadris @ 6 oz. August
Harvest Date:	November 8
Harvest Equipment:	John Deere 9660

Treatment	Moisture (%)	Yield (Bu/A)
Micro 581	13.9	63.4
Amino Acid Treatment	13.7	60.8
Amino Acid + Impact F	13.5	62.8
Impact F only	13.5	63.0
Micro 581	13.7	62.4

Discussion: This was a non-replicated test to look at some of the nutritional and biological products on the market. Micro 581 is a nutritional foliar treatment of micro nutrients, usually applied at growth stage R2-R3. It has many micros in it, but does not have appreciable N-P-K. Amino Acid (0.5-0-0.5) and *Impact F* are new biological foliar treatments for soybeans to try and get additional yield. Some of these products have shrimp by products and molasses in them. Amino Acid formulation is generally loaded with all free amino acids in addition to molasses and other by-products. Impact F is a "stabilized biological complex-derived from natural plant compounds and contains trace minerals, amino acids, and natural occurring growth stimulants". There was not a comparison to no treatment at all and there was no difference in yield when adding any of these products over the producer's standard use of Micro 581.

If you have questions about some of the products coming onto the market, do your own testing to see if you get a response.

2012 MIDDLESEX FUNGICIDE TEST ON DOUBLE CROP SOYBEANS

Cooperators:	Producer: Jason Benton
-	Extension: David Moore, VCE-Middlesex
	Agribusiness: Michael Day, Southern States
Previous Crop:	Wheat
Soil Type:	Suffolk fine sandy loam
Tillage:	No-Till
Planting Equipment	Great Plains NT1590 Drill
Planting Date:	June 9
Variety:	Stine 4782
Seeding Rate:	215,000 seed/A
Crop Protection:	Herbicides: Synchrony @ 0.40 oz/A, Post)
	Insecticide: Warrior
	Fungicides: Alternating Strips-Quilt @ 15 oz./A at R3
Harvest Date:	November 9Mi
Harvest Equipment:	AGCO R62

Treatment	Rep 1	Rep 2	Rep 3	Avg. Yield	
	(bu/A)	(bu/A)	(bu/A)	(bu/A)	
Control	60.6	59.2	61.9	60.6	
Treated	63.1	61.2	60.8	61.7	
LSD (0.10)				3.3	

Discussion: Good plot! Soybeans did very well in the lower middle peninsula this year. These 60 bushel beans were after wheat! The use of a fungicide was not beneficial enough in this plot to pay for the application. The treated strips were cleaner and brighter, but it did not significantly increase yields. This has been the case in a lot of on farm trials, but with high price soybeans, folks try to do all they can for a little yield "bump".

Use this and other on-farm replicated results when making production decisions for 2013.

2012 MIDDLESEX DOUBLE CROP SOYBEAN ADDITIONAL POTASSIUM TEST

Cooperators:	Producer: Extension:	Jason Benton David Moore, VCE-Middlesex					
Previous Crop:	Wheat	,					
Soil Type:	Suffolk Fine Sandy Loam						
Tillage:	No-Till in 7.5 inch rows						
Planting Equipment: Great Plains NT Drill							
Planting Date:	June 13						
Variety:	Asgrow 5605STS						
Seeding Rate:	210,000 seed/A						
Crop Protection:	Synchrony XP @ 0.375 oz/A, Post)						
	Insecticides: Karate						
Harvest Date:	November 19						
Harvest Equipment: AGCO R62							

Treatment	Rep 1 Rep 2		Rep 3	Avg. Yield	
	(bu/A)	(bu/A)	(bu/A)	(bu/A)	
Control (no potassium)	59.9	59.9	56.4	58.7	
20# additional	59.9	58.1	56.4	58.1	
40# additional	61.7	61.7	59.9	61.1	
LSD (0.10)				1.2	

Discussion: This field tested high to very high in potassium. This test was done to see if there was any benefit to adding more potash. This idea stemmed from work done by Dr. Mark Reiter in full season soybeans in another one of Jason's field.

The addition of 40# K, gave a significant response over the control and the 20# rate. Potassium reached the \$.60/# of plant food range though; it appears that this test shows some benefit to additional potassium, if soybeans continue to sell in this price range. Trying to get the extra bushel out of \$14-15.00 soybeans is very popular with producers.

Use this and other on-farm replicated research results when making your decisions for 2013.

2012 VIRGINIA SOYBEAN INOCULANT TESTS

Cooperators:	Producers:	Eastern Shore, Eastern Virginia, Northern Piedmont, Southern Piedmont, and Tidewater ARECs Chuck McGhee, Hanover Co. Cam Gibson, Orange Co.				
	Extension:	David Holshouser				
	Agribusiness:	Becker Underwood, INTX Microbials, Novozymes, XiteBio Technologies,				
Previous Crop:	corn, cotton, or soybean					
Plot Size:	5 rows x 24 feet					
Replications:	3 or 4					
Planting Equipmen	t:Hege plot plan	nter				
Planting Date:	May (Full-Season) – June (Double-Crop)					
Row Spacing:	15 inches					
Variety:	Asgrow AG5632					
Seeding Rate:	Full-Season: 160,000; Double-Crop: 240,000					
Crop Protection:	Herbicides: various, depending on location Insecticides: various, depending on location					
Harvest Date:	Oct-Nov					

Harvest Equipment: Wintersteiger plot combine

	BLK	HAN	ORG	ORG	PTR	PTR	SUF	SUF	WAR	WAR	
Inoculant	FS	FS	FS	DC	FS	DC	FS	DC	FS	DC	Average
Control	52.8	53.4	64.7	42.9	56.3	73.1	64.8	69.4	53.0	58.6	58.9
Optimize	62.3	55.5	70.6	44.1	44.5	78.6	58.7	74.8	56.5	55.6	60.1
Tag Team LCO	67.9	56.2	57.6	47.6	52.3	70.1	59.7	74.7	53.4	60.2	60.0
SoyRhizo	67.0	57.4	64.8	44.8	52.8	71.1	60.7	70.7	53.6	60.4	60.3
Primo CL	76.2	61.1	65.5	44.2	50.3	73.8	60.4	76.9	51.4	58.8	61.9
Vault NP	62.3	54.7	69.0	42.1	58.1	64.3	59.6	69.9	52.0	56.5	58.9
Average	64.8	56.4	65.4	44.3	52.4	71.9	60.7	72.7	53.3	58.4	
LSD (P=.05)	7.7	6.5	9.5	5.4	7.5	9.9	6.3	6.5	7.0	5.0	

Discussion: Only at the Blackstone location did inoculating the seed with *Bradyrhizobia japonicum*, the bacteria that allows soybean to fix its own nitrogen, consistently result in a significant yield increase over the control. Soybean and other crops have not been grown regularly at the Blackstone location; it is "new" ground converted to cropland from forest just recently. In all other locations, soybean has been grown in the last 2 or 3 years. In those locations, one or two of the inoculants would occasionally yield more than the control. Still, these data indicate that inoculant is not needed in land that is regularly rotated to soybean; but is primarily an insurance treatment to prevent nitrogen deficiency.