

Virginia On-Farm Soybean Test Plots

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

2017



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Introduction

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

The success of these on-farm plots is very dependent on the cooperative effort of the producer and the assisting agribusinesses. We are grateful for that cooperation. We hope the information will be beneficial to you and your individual agribusiness operations. This publication is made available each year at the Virginia Grain and Soybean Conference, at regional production meetings throughout Virginia, and on the VCE website (<http://pubs.ext.vt.edu>). This information reaches hundreds of Virginia soybean and grain producers plus agribusinesses, impacting over 600,000 acres of soybeans valued at over \$200 million.

The field work and printing of this publication is supported by Virginia Soybean Board Check-Off Funds. The cooperators graciously wish to acknowledge this support. Any producer or agribusiness professional wishing to receive a copy of this publication should contact their local Extension Agent who can request a copy from Stephanie Romelczyk in Westmoreland County at 804-493-8924 or contact sromelcz@vt.edu.

This is the 21st year of this multi-county cooperative effort and further work is planned for 2018. 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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PHOTOS: Courtesy of Lindy Tucker, Laura Siegle, Emily Brown, Scott Reiter, and Stephanie Romelczyk

GENERAL SUMMARY

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

As in the past, agents have compared Maturity Group 4 & 5 varieties across multiple locations. This work is performed in concert with the Official Variety Tests conducted by Dr. David Holshouser and offers producers even stronger yield comparison information that they can use when making planting decisions. Maturity Group 4 and 5 varieties were compared at several locations across Virginia, including the Virginia AG-EXPO site in Charles City County.

The new Roundy Ready 2 Xtend soybeans made a wide scale debut in the trials this year. In MG 4, 12 of 20 varieties carried the RR2X trait. In MG 5, 6 of 16 were RR2X. The question everyone has asked – “Are the RR2X varieties yielding better than RR2 or RR varieties?” The short answer is Yes, they yield as good or better than RR and RR2 genetics. However, there are some new RR2 and RR varieties that produced high yields. When selecting varieties do not just focus on the latest herbicide traits, make sure they are performers. You will also find two trials that compared numerous Liberty Link varieties.

Here is a summary of “location wins”. All varieties with that particular Roundup Ready herbicide trait were averaged together at each location.

MG 4 = 8 locations

Roundup Ready	1 win
Roundup Ready 2	3 wins
Roundup Ready 2 Xtend	4 wins

MG 5 = 9 locations

Roundup Ready	3 wins
Roundup Ready 2	2 wins
Roundup Ready 2 Xtend	4 wins

Double crop soybeans account for 30-50% of Virginia’s total soybean acreage depending on the year. Yields in the double crop system are generally lower than full season soybeans. A consortium of researchers in the Mid-Atlantic region are investigating ways to increase double crop soybean yields. You will find three on-farm plots that looked at seeding rates, planting depth, and maturity group. The seeding rate study confirmed that we need more seed for later plantings. Soybeans will emerge from deeper planting depths especially when temperatures are warm and surface moisture is less than ideal. The maturity group plot confirmed that getting rainfall at the crucial seed filling stage is key for yields.

The widespread use of cover crops and soil health focus has prompted interest “planting green”. A plot in Lancaster County looked at the effects of different rolling, burn down, and nitrogen treatments on soybean yields.

Dr. David Holshouser cooperated with several growers across Virginia to evaluate seeding rates with MG 4 & MG 5 varieties in full season and double crop plantings. This was Year 1 of a 3-year project. Initial results show that higher seeding rates were beneficial in 2017.

Dr. Holshouser also evaluated numerous foliar and in-furrow treatments at the Ag-Expo site. Vendors were solicited to provide products to compare in the trial. No products provided a significant yield increase over the untreated plots. Growers are encouraged to test products under their own field conditions to see if they have a fit.

Trait Data for 2017 VCE On-farm Soybean Variety Plots

Company	Brand	Relative	Herbicide	Soybean Cyst	Root Knot	Frogeye	Sudden death	Brown	Cercospora
		Maturity	Traits	Nematode	Nematode	leafspot	syndrome	stem rot	blight
Asgrow	AG45X6	4.5	RR2X/SR	R3	S	G	G		
Asgrow	AG48X7	4.8	RR2X/SR	R3	S	G	G		
Pioneer	P46A16R	4.6	RR	R3, R14	S	F	G		
Pioneer	P48T53R	4.8	RR	R3, R14	S	VG	G		
Hubner	H47-16R2X	4.7	RR2X/SR	R3	MR/MS	G	G		
Hubner	H49-27R2X	4.9	RR2X/SR	MR/MS1, R3	S	G	G		
USG	74D95RS	4.9	RR2/STS	R3, MR14	R	MR	MR		
USG	7487XTS	4.8	RR2XT/STS	R3, MR14	S	MS	MR		
VCIA*	MO4901D GT	4.9	GT	MR 1,2,3,5,14	MR	R	MR		
Dyna-Gro	S46XS87	4.6	RR2XT/STS	R3, MR14	P	G	G		
Dyna-Gro	S49XS76	4.9	RR2XT/STS	R3, MR14	VG	G	VG		G
Channel	4717R2X/SR	4.7	RR2X/SR	R3		G	VG		
Channel	4916R2X/SR	4.9	RR2X/SR	R3	MR	VG	VG		
Credenz	CZ 4181 RY	4.1	RR2/STS	VG		VG	G	G	
Progeny	P4816RX	4.8	RR2X	R3	S	MR	MR		
Progeny	P4757RY	4.7	RR2	R3, MR14	MR	R	MR		
Armor	49-G1	4.9	RR/STS	R3	MS	R	MR		
Seed Consultants	SCS 9497RR	4.9	GT	R3, R14		VG	G	G	
NK	S43-V3X	4.3	RR2X	R3, MR14	S	E	VG	G	
NK	S45-K5X	4.5	RR2X	R3, MR14	MS	E	G		
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Asgrow	AG53X6	5.3	RR2X	R1, R3	R	VG	G		
Asgrow	AG55X7	5.5	RR2X	S	R	G	G		
Pioneer	P52A26R	5.2	RR	R3, R14	S	F	G		
Pioneer	P55T81R	5.5	RR	R3, R14	R	VG	G		
USG	7506XTS	5.0	RR2XT/STS	R3, R14	MR	MS	MR		
USG	75B75R	5.7	RR2	MR1	R	R	R		
Hubner	H57-18R2X	5.7	RRSX/SR	R3	R	VG	G		
Dyna-Gro	S52RS86	5.2	RR2/STS	R3, MR14	G	F	VG		F
Dyna-Gro	S54XT17	5.4	RR2XT	R3, MR14	VG	VG	VG		G
Progeny	P5417RX	5.4	RR2X	R3	R	MR	MR		
Progeny	P5752RY	5.7	RR2		R	R	MR		
Credenz	CZ 5375 RY	5.3	RR2		F	E	VG		
Armor	53-Z5	5.3	RR/STS	MR2,R3,MR14	S	MS	M		

R = Resistant
 S = Susceptible
 MR = Moderately resistant
 M = Moderate
 MS = Moderately susceptible
 RR = Roundup Ready
 RR2 = Roundup Ready 2 Yield
 GT = glyphosate tolerant
 STS or SR = Tolerant to sulfonylurea herbicides; such as Synchrony STS or Classic
 X or XT = Xtend - dicamba tolerant
 VCIA = Virginia Crop Improvement Association

No entry for a particular trait means that no information was provided or trait has not been rated by the company.

All ratings were taken from company literature available in 2017 and 2018 catalogs or current websites.



MATURITY GROUP 4 VARIETY COMPARISONS

2017 VIRGINIA COOPERATIVE EXTENSION ON-FARM VARIETY TESTS -- GROUP 4

Company	Brand	Virginia Beach -								AVERAGE	RELATIVE YIELD
		Prince George	Westmoreland	Chesapeake	Charles City	Appomattox	Mecklenburg	Brunswick	Caroline		
Progeny	P4757RY	58.5	68.4	59.4	53.2	34.2	40.4	68.2	61.1	113	
USG	74D95RS	56.2	70.3	48.6		31.4	41.8	71.1	60.8	111	
USG	7487XTS	58.1	55.1	52.7	46.4	35.8	41.8	57.2	61.3	106	
Pioneer	P46A16R	57.2	69.9	53.5	55.9	21.2	36.8	72.8	62.1	106	
Channel	4916R2X/SR	45.8	64.2	55.6	56.8	28.6	36.6	65.4	62.5	105	
Asgrow	AG48X7	57.0	54.9	52.5	56.1	31.3		60.9	60.6	105	
Channel	4717R2X/SR	54.2	53.3	52.9	54.2	32.8	40.0	59.2	56.8	104	
Dyna-Gro	S46XS87	52.0	54.0	49.2	53.3		42.3	56.1	59.6	101	
Dyna-Gro	S49XS76	47.8	60.3	48.8	58.1				60.5	101	
Hubner	H47-16R2X	48.7	60.4	48.9	52.5	23.0	42.3	61.9	55.9	100	
Seed Consultants	SCS 9497RR	49.3	66.7	52.4	55.1	19.5	37.5	63.6	59.1	100	
Hubner	H49-27R2X	55.1	51.7	53.5	57.3	26.4	27.9	56.2	62.6	98	
Armor	49-G1	48.6	58.7	52.0	48.9	25.9	32.0	62.8	55.4	97	
Pioneer	P48T53R	50.6	65.3	47.0	47.3	25.3	36.0	60.3	40.4	95	
Asgrow	AG45X6	53.1	58.3	50.9	48.2	22.9	27.8	66.1	55.5	95	
Progeny	P4816RX	48.1	68.0	48.8	40.3		27.9	50.1	59.8	92	
Credenz	CZ 4181 RY	48.3	63.8	52.8	44.9	18.6	19.7	45.5	55.7	86	
VCIA	MO4901D GT	40.6	54.2	38.3	46.9	19.9	27.9	64.9	49.8	85	
AVERAGE		51.6	61.0	51.0	51.5	26.5	34.9	61.3	57.8		
USG	7478XTS				53.3						
USG	7496XTS				58.4						
NK Seed	S43-V3X		69.1		43.0				53.1		
NK Seed	S45-K5X		60.9		37.4				65.1		
NK Seed	S48--R2X								60.8		
NK Seed	S41-A1X								59.1		
Seed Consultants	SCS 8428X				49.0				50.6		
Dyna-Gro	S48RS43						27.8				
Dyna-Gro	S43XS27						37.0		62.6		
Great Heart	GT4750XS			55.6							
Great Heart	GT476C R2			54.5							
Asgrow	AG4831								52.8		
AVERAGE		51.6	61.6	51.4	50.8	26.5	34.6	61.4	57.5		

2017 APPOMATTOX COUNTY MATURITY GROUP 4 SOYBEAN COMPARISONS

Cooperators: **Producer:** Dark Leaf Farm – Joanne Jones
Extension: Bruce Jones, VCE-Appomattox
Previous Crop: Soybeans
Soil Type: Georgeville-Brockroad Loam
Tillage: No-till
Planting Date: June 14, 2017
Seeding Rate/Row Spacing: 200,000/7.5 inch rows drilled with John Deere 750
Fertilization: 18-46-60
Crop Protection: Burndown: Gramoxone SL (3 pints/acre) + Crop Oil
 Postemerge: glyphosate (2 pints/acre)-2 applications
Harvest Date: November 18, 2017
Harvest Equipment: Case IH 1620

Brand	Variety	Moisture%	Yield (bu/A)
USG	7487XTS	14.1	35.8
USG	74D95RS	13.6	31.4
Pioneer	P48T53R	13.5	25.3
VCIA	MO4901D GT	13.0	19.9
Channel	4916R2X/SR	12.7	28.6
Hubner	H49-27R2X	13.0	26.4
Hubner	H47-16R2X	13.2	23.0
Credenz	CZ 4181 RY	13.0	18.6
Seed Consultants	SCS 9497RR	12.9	19.5
Progeny	P4757RY	12.9	34.2
Asgrow	AG48X7	13.1	31.3
Armor	49-G1	12.9	25.9
Channel	4717R2X/SR	12.7	32.8
Pioneer	P46A16R	12.7	21.2
Asgrow	AG45X6	12.8	22.9

Discussion: Growing conditions were very dry with little rainfall during August, September and October.

2017 BRUNSWICK COUNTY MATURITY GROUP 4 SOYBEAN VARIETY COMPARISONS

Cooperators: **Producer:** Sam and Josh Griffin
Extension: Taylor Clarke, Lindy Tucker, Laura Siegle
Industry: Johnny Hawthorne
Previous Crop: Soybean
Soil Type: Chewada Silt Loam (river bottom)
Tillage: No-till
Planting Date: May 19, 2017
Seeding Rate/Row Spacing: 150,000-160,000/15” rows, Kinze 15 row 15” planter with brush meters
Fertilization: 18-40-80
Crop Protection: Pre: Roundup PowerMax, Envive, Sharpen
Post: Roundup PowerMax, Karate, Approach Prima
Harvest Date: October 26, 2017
Harvest Equipment: Gleaner R62 with 25’ flex head

Brand	Variety	Moisture%	Yield (bu/A)
Mycogen (CHECK)	5N490R2	15.6	53.5
Dyna-Gro	43SX27	14.8	62.6
Progeny	P4816RX	14.8	50.1
Channel	4916R2X/SR	14.8	65.4
Seed Consultants	SCS 9497RR	14.8	63.6
Armor	49-G1	15.1	62.8
Credez	CZ 4181 RY	15.2	45.5
Mycogen (CHECK)	5N490R2	14.8	71.0
Pioneer	P48T53R	14.5	60.3
USG	7487XTS	14.6	57.2
Hubner	H49-27R2X	14.7	56.2
VCIA	MO4901D GT	14.2	64.9
Asgrow	AG45X6	14.6	66.1
Progeny	P4757RY	14.9	68.2
Mycogen (CHECK)	5N490R2	14.5	74.0
Asgrow	AG48X7	14.9	60.9
Hubner	H47-16R2X	14.8	61.9
Dyna-Gro	46XS87	14.5	56.1
Pioneer	P46A16R	14.7	72.8
USG	74D95RS	14.5	71.1
Channel	4717R2X/SR	14.5	59.2
Mycogen (CHECK)	5N490R2	14.2	52.9
		Plot average	61.7
		Check average	62.8

Discussion: The plots produced good yields, with a range from 45.5 to 74.0 bu/acre. The overall test average including checks was 62.8 bu/acre. The check variety, Mycogen 5N490R2 averaged 62.8 bu/acre across 4 replications. The non-Xtend varieties suffered leaf curling and some reduction in height from dicamba injury resulting from an inversion settling in the low-ground around R4 and R5 of development. However, the 9 RR varieties averaged 3.8 bu/ac more than the 10 Xtend varieties in the test. Three varieties yielded 5% or greater when compared to the plot average, (1) Pioneer P46A16R, (2) USG 74D95RS, and (3) Progeny P4757RY. Progeny P4757RY, however, lodged considerable more than any of the varieties in the test. The three lowest yielding varieties were, (1) Credenz CZ 4181RY, (2) Progeny P4816RX, and (3) Dyna-Gro S46XS87.

2017 CAROLINE COUNTY MATURITY GROUP 4 SOYBEAN COMPARISONS

Cooperators: **Producer:** Airy Hill Farm
Extension: M. Broaddus, S. Romelczyk
Previous Crop: Double-Crop Soybean
Soil Type: Kempsville-Emporia Complex
Tillage: No-Till
Planting Date: June 3, 2017
Seeding Rate/Row Spacing: 140,000 seeds/A/30 inch rows
Fertilization: 0-40-80
Crop Protection: Burndown: Glyphosate/2,4-D; PPE: 3 oz. Envive;
 second burndown for marestail: Liberty
Harvest Date: November 28, 2017
Harvest Equipment: Case/IH 1660 w/ 25' flex head

Brand	Variety	Moisture%	Yield (bu/A)
Asgrow*	4831	12.5	52.8
Pioneer	P46A16R	11.2	62.1
Pioneer	P48T53R	11.8	40.4
USG	74D95RS	11.7	60.8
USG	7487XTS	11.9	61.3
Hubner	H47-16R2X	11.3	55.9
Hubner	H49-27 R2X	12.4	62.6
Dyna-Gro	S46XS87	11.9	59.6
Dyna-Gro	S49XS76	12.2	60.5
Channel	4717R2X/SR	11.5	56.8
Channel	4916RSX/SR	12.3	62.5
Credenz	CZ 4181 RY	11.6	55.7
Progeny	P4816RX	12.3	59.8
Progeny	P4757RY	11.5	61.1
Armor	49-G1	11.4	55.4
Seed Consultants	SCS 9497RR	11.9	59.1
Seed Consultants	SCS 8428X	11.5	50.6
NK Seed	S45-K5X	11.4	65.1
NK Seed	S43-V3X	11.5	53.1
VCIA	MO4901D GT	13.0	49.8
Asgrow	AG48X7	12.2	60.6
Asgrow	AG45X6	11.9	55.5
NK Syngenta	S41-A1X	11.7	59.1
NK Syngenta	S48-2RX	12.3	60.8

***Farmer supplied seed**

Discussion: This was a good plot that encountered heat and water stress during July, or the R5-R6 vegetative stage. The soybeans did well considering this heat and water stress.

2017 CHARLES CITY MATURITY GROUP 4 SOYBEAN COMPARISONS

Cooperators: **Producer:** David, Johnny, & Jeff Hula
Extension: David Holshouser
Industry: Cooperating Seed Companies
Previous Crop: Corn
Soil Type: Pamunkey loam
Tillage: No-till
Planting Date: June 26, 2017
Seeding Rate/Row Spacing: 160,000 seed/acre; 15 inch rows
Fertilization: 300 lbs potash
Crop Protection: Herbicides: Brundown: Gramoxone, Warrant
 Preemergence: Roundup PowerMax
 Postemergence: Roundup PowerMax
 Insecticides: Prevathon
 Fungicides: Priaxor
Harvest Date: November 29, 2017
Harvest Equipment: Wintersteiger Delta plot combine

Brand	Variety	Moisture%	Yield (bu/A)
USG	7496XTS	15.5	58.4
USG	7478XTS	15.5	54.2
Dyna-Gro	S49XS76	14.8	58.1
Dyna-Gro	S46XS87	14.1	53.3
VCIA	MO4901D GT	14.4	46.9
Hubner	H49-27R2X	13.5	57.3
Hubner	H47-16R2X	14.1	52.5
Seed Consultants	SCS 9497RR	13.4	55.1
Seed Consultants	SCS 8428X	13.6	49.0
Channel	4916R2X/SR	13.8	56.8
Channel	4717R2X/SR	13.6	54.2
Asgrow	AG48X7	13.3	56.1
Asgrow	AG45X6	13.5	48.2
USG	7487XTS	12.7	46.4
USG	7478XTS	13.2	53.3
NK	S45-K5X	13.0	37.4
NK	S43-V3X	13.4	43.0
Armor	49-G1	12.5	48.9
Credenz	CZ 4181RY	13.1	44.9
Progeny	P4816RX	12.7	40.3
Progeny	P4757RY	15.2	53.2
Pioneer	P48T53R	12.8	47.3
Pioneer	P46A16R	14.0	55.9
	Average	13.7	50.9

Discussion: Considering the late planting date (due to wet conditions), the soybean yielded relatively well. Due to wet spots in the field that would have yielded less, we only harvested 200 feet of length (five 15-inch rows), which was free of these wet spots. Use this and other information for choosing varieties.



2017 MECKLENBURG COUNTY MATURITY GROUP 4 SOYBEAN VARIETY COMPARISONS

Cooperators:
Previous Crop:
Soil Type:
Tillage:
Planting Date:
Seeding Rate/Row Spacing:
Fertilization:
Crop Protection:
Harvest Date:
Harvest Equipment:

Producer: John Manning
Extension: Taylor Clarke, Lindy Tucker, Laura Siegle
 Soybeans
 Appling Fine Sandy Loam
 No-till
 June 9, 2017
 155,000/18" rows, Kinze 9 row planter with brush meters
 12-30-80
 Pre: Roundup PowerMax and Surveil, Post: Roundup PowerMax
 November 27, 2017
 JD 4420 with 13' flex head

Brand	Variety	Moisture%	Yield (bu/A)
Dyna-Gro (CHECK)	DG 32RY55	13.4	33.5
Credenz	CZ4181RY	13.2	19.7
USG	7487XTS	13.2	41.8
Dyna-Gro	S46XS87	13.2	42.3
Hubner	H49-27R2X	13.2	27.9
Asgrow	AG45X6	13.4	27.8
Dyna-Gro	S48RS43	13.3	27.8
VCIA	MO4901D GT	13.0	27.9
Progeny	P4816RX	13.2	27.9
Dyna-Gro (CHECK)	DG 32RY55	13.7	28.4
Dyna-Gro	43XS27	13.7	37.0
Channel	4916R2X/SR	13.9	36.6
Seed Consultants	SCS 9497RR	13.7	37.5
Pioneer	P48T53R	13.4	36.0
Progeny	P4757RY	13.8	40.4
Armor	49-G1	13.7	32.0
Channel	4717R2X/SR	13.4	40.0
Pioneer	P46A16R	13.8	36.8
Dyna-Gro (CHECK)	DG 32RY55	13.4	31.8
USG	74D95RS	13.5	41.8
Hubner	H47-16 R2X	13.6	42.3
USG	7506XTS	13.5	42.8
DynaGro	S52RS86	13.4	51.1
Dyna-Gro (CHECK)	DG 32RY55	13.5	39.3
		Plot Average	35.4
		Check Average	33.3
		RR2 Average	35.6
		Xtend Average	36.3

Discussion: The plot yields ranged from 19.7 to 51.1 bu/acre. The overall test average including checks was 35.4 bu/acre. The check variety, Dyna-Gro 32RY55 averaged 33.3 bu/acre across 4 replications. The highest yielding variety was, Dyna-Gro 52RS86 and the lowest yielding variety was Credez CZ4181RY.

2017 PRINCE GEORGE MATURITY GROUP 4 SOYBEAN COMPARISONS

Cooperators: **Producer:** Paul Cerny and Sean Finney
Extension: Scott Reiter
Industry: Participating Seed Companies
Previous Crop: Soybeans
Soil Type: Montross and Aycock silt loam
Tillage: No-till double crop behind wheat with straw removed
Planting Date: June 13, 2017
Seeding Rate/Row Spacing: 220,000 seed/acre, 7.5 inch rows, John Deere 1590 drill
Fertilization: 120 N – 60 P2O5 – 120 K2O to wheat crop
Crop Protection: Post-emerge – 1 qt glyphosate, July
Harvest Date: November 27, 2017
Harvest Equipment: John Deere 9500 w/918 flex head, Weigh wagon

Brand	Variety	Moisture (%)	Test Weight (lbs/bu)	Yield @ 13% (bu/A)
Hubner	57-18R2X (check)	12.8	56.2	48.3
Asgrow	AG45X6	14.0	55.8	56.1
Asgrow	AG48X7	13.6	56.2	57.0
Pioneer	P46A16R	14.1	56.7	57.2
Pioneer	P48T53R	13.4	56.3	50.6
Hubner	H47-16R2X	13.6	56.2	48.7
Hubner	H49-27R2X	13.2	56.8	55.1
USG	74D95RS	13.6	56.2	56.2
USG	7487XTS	13.4	57.1	58.1
VCIA	MO4901D GT	13.2	56.7	40.6
Dyna-Gro	S46XS87	13.2	57.0	52.0
Dyna-Gro	S49XS76	13.3	56.8	47.8
Channel	4717R2X/SR	13.0	57.0	54.2
Channel	4916RSX/SR	13.2	56.1	45.8
Credenz	CZ 4181 RY	13.3	56.1	48.3
Progeny	P4816RX	13.2	56.1	48.1
Progeny	P4757RY	13.2	55.8	58.5
Armor	49-G1	13.2	56.4	48.6
Seed Consultants	SCS 9497RR	12.9	56.6	49.3
Hubner	57-18R2X (check)	11.9	57.5	47.5
	Average	13.3	56.5	51.3

Discussion: An excellent yielding double-crop plot. July was dry, August very wet, and dry again September & October. At this location, the Group 4 varieties yielded 4 bu/A better than the Group 5 varieties. Growth stage and rainfall timing are key to high yields. Utilize the overall plot comparisons and other yield data when selecting varieties for 2018.

2017 VIRGINIA BEACH-CHESAPEAKE MATURITY GROUP 4 SOYBEAN COMPARISON PLOT

Cooperators: **Producer:** Brickhouse Farms/Frank Brickhouse
Extension: Roy D. Flanagan III and M. Watson Lawrence
Previous Crop: Corn
Soil Type: Acredale Silt Loam
Tillage: Conventional
Planting Date: May 19, 2017
Seeding Rate/Row Spacing: 180,000/30 inch rows
Fertilization: 500 lbs./ acre of 15-15-15
Crop Protection: Post emergence: 12 oz. Select, 16oz. Reflex, 9oz. Besiege
Harvest Date: Oct. 27, 2017
Harvest Equipment: JD 9860 with 935 grain platform

Brand	Variety	Moisture%	Yield (bu/A at 13%)
Great Heart	GT476C R2	14.4	54.5
Credenz	CZ 4181 RY	14.5	52.8
Armor	49-G1	14.7	52.0
Progeny	P4757RY	14.2	59.4
Seed Consultants	SCS 9497RR	14.1	52.4
Pioneer	P48T53R	13.6	47.0
Pioneer	P46A16R	14.6	53.5
Great Heart	4750 XS	14.0	55.6
Progeny	P4816RX	14.0	48.8
Hubner	H49-27R2X	13.9	53.5
Hubner	H47-16R2X	13.9	48.9
Channel	4717R2X/SR	14.0	52.9
USG	7487XTS	13.9	52.7
Channel	4916R2X/SR	13.6	55.6
Asgrow	AG48X7	13.7	52.5
Asgrow	AG45X6	13.6	50.9
Dyna-Gro	S46XS87	13.5	49.2
Dyna-Gro	S49XS76	13.2	48.8
VCIA	MO4901D GT	12.6	38.3
USG	74D95RS	12.7	48.6
Average yield			51.4

Discussion: Group IV's Average Yield in 2017 was 3 bu./acre higher than Group V Average Yield. Some Group IV varieties yielded much higher than Group V varieties. Late Group IV varieties are a better choice than Mid or Early Group IV in Southeast Virginia. Late Group IV varieties should be planted on more productive soils and in May. As planting season transitions into June or July, Group IV competitiveness declines compared to a Group V option. Prompt harvest of Group IV varieties is important to avoid seed quality problems.

2017 WESTMORELAND MATURITY GROUP 4 SOYBEAN COMPARISONS

Cooperators: **Producer:** F.F. Chandler, Jr. and Louis Chandler
Extension: Stephanie Romelczyk, ANR – Westmoreland
 Trent Jones, ANR – Northumberland/Lancaster
 Makenzie Hall & Ellie Daney, VCE Interns
Previous Crop: Corn
Soil Type: Suffolk sandy loam
Tillage: No-till
Planting Date: June 9, 2017
Seeding Rate/Row Spacing: 120,000/30” rows
Fertilization: 6.4-30-80
Crop Protection: Burndown: Makaze (1.5 qts/A) + Weather Gard (1 qt/100 gal) + Surveil (2.8 oz/A) + Tricor (3 oz/A)
 Post-emergence: 1: Makaze (2 qts/A) + Weather Gard (1 qt/100 gal) + FirstRate (0.4 oz/A)
 2: Quadris Top SBX (7 oz/A) + Sniper (6 oz/A) + Re-nforce K (1/2 gal/A) + Franchise (3 oz/A) + Task Force (1 qt/A)
Harvest Date: October 25, 2017
Harvest Equipment: John Deere 9400

Brand	Variety	Moisture%	Yield (bu/A)
Armor	49-G1	12.9	58.7
VCIA	MO4901D GT	13.1	54.2
USG	74D95RS	13.0	70.3
USG	7487XTS	12.7	55.1
Seed Consultants	SCS 9497RR	12.8	66.7
Seed Consultants	SCS 8428X	12.8	66.3
Hubner	H47-16R2X	13.0	60.4
Hubner	H49-27R2X	12.6	51.7
Asgrow	AG48X7	12.7	54.9
Asgrow	AG45X6	12.6	58.3
Channel	4717R2X/SR	12.9	53.3
Channel	4916RSX/SR	12.7	64.2
Credenz	CZ 4181 RY	12.7	63.8
Progeny	P4757RY	13.2	68.4
Progeny	P4816RX	12.9	68.0
NK Seed	S43-V3X	12.8	69.1
NK Seed	S45-K5X	12.9	60.9
Dyna-Gro	S46XS87	12.7	54.0
Dyna-Gro	S49XS76	12.6	60.3
Pioneer	P48T53R	12.7	65.3
Pioneer	P46A16R	12.4	69.9

Discussion: Use this and other Virginia Tech on-farm soybean variety information when making planting decisions for 2017



MATURITY GROUP 5 VARIETY COMPARISONS

2017 VIRGINIA COOPERATIVE EXTENSION ON-FARM VARIETY TESTS -- GROUP 5

Company	Brand	Virginia												AVERAGE RELATIVE YIELD
		Prince George Cerny	Prince George Clements	Beach - Chesapeake Brickhouse	Dinwiddie Bain	Charles City AgExpo-Hula	Appomattox Cole	Brunswick Harrison	Brunswick Wright	Mecklenburg Manning				
Asgrow	AG55X7	49.8	56.9	54.3	55.8	55.5	31.2	52.2	46.4	36.7	114			
USG	75B75R	52.0	52.9	52.4	39.4	51.1	29.7	49.0	47.2	38.4	106			
Dyna-Gro	S52RS86	50.4	52.9	50.3		51.4		56.7	38.6	36.5	104			
Pioneer	P52A26R	52.1	57.8	51.8	33.5	54.7	27.8	40.5	46.0	35.4	102			
Pioneer	P55T81R	46.3	53.9	49.4	41.0	51.9	29.7	40.9	45.1	30.3	100			
Asgrow	AG53X6	47.3	59.5	50.7	35.1	51.0	32.5	36.8	38.4	34.9	100			
Dyna-Gro	S54XT17	44.8	49.4	46.4		51.9		51.5	46.4	31.1	99			
USG	7506XTS	48.4	55.2	50.3	29.6	46.5	30.7		42.8	36.0	99			
Progeny	P5417RX	47.8	46.3	47.8	33.2	42.0	32.1	50.0	47.0	29.3	97			
Hubner	H57-18R2X	44.3	48.5	54.9	25.2	45.9	34.7	42.7	46.6	32.7	97			
Progeny	P5752RY	46.2	52.9	49.2	34.0	49.1	29.3	36.4	39.9	33.8	96			
Armor	53-Z5	45.1	46.8	44.7	22.8	46.3	34.1	51.5	45.9	30.8	95			
Credenz	CZ 5375 RY	48.1	45.8	46.0	26.8		26.1	44.3	43.6	28.6	91			
AVERAGE		47.9	52.2	49.9	34.2	49.8	30.7	46.0	44.1	33.4				
Progeny	6461RX				33.6									
Seed Consultants	SCS 8518X	45.3												
NK	S56-B7X					47.6								
NK	S52-Y7X					52.2								
Virginia Tech	V12-0045R2					39.6								
Virginia Tech	V11-3485					49.0								
USG	7553nRS						29.0							
Dyna-Gro	S39RY57							35.3	41.0	29.4				
Dyna-Gro	S32RY55							46.4		28.1				
Asgrow	AG59X7								35.0					
Great Heart	GT5020XS			51.1										
Great Heart	GT568CR2			47.4										
AVERAGE		47.7	52.2	49.8	34.2	49.1	30.6	45.3	43.3	32.8				

2017 APPOMATTOX COUNTY MATURITY GROUP 5 SOYBEAN COMPARISONS

Cooperators: **Producer:** Ben Cole
Extension: Bruce Jones, ANR-Appomattox
Previous Crop: Corn (2016); Rye Grain (2017)
Soil Type: Cecil Sandy Loam
Tillage: No-till
Planting Date: July 4, 2017
Seeding Rate/Row Spacing: 160,000/15" rows, John Deere 7200 planter
 Seed double inoculated with Graph-EX
Fertilization: 24-60-60 + 1 lb Zn + 1 lb B broadcast
Crop Protection: Burndown: Gramoxone 3 pts/A + 3 oz. Fierce
 Postemerge: 32 oz. Roundup PowerMax, 1 pt. Parallel PCS; 1 qt. B Moly
 Fungicide: 4 oz. Priaxor @ R3
 Insecticide: 3 oz. Mustang Maxx @ R3
 Nitrogen: 50 units treated urea @ R2
Harvest Date: November 25, 2017
Harvest Equipment: Gleaner R52

Brand	Variety	Moisture%	Yield (bu/A)
USG	7506XTS	12.2	30.7
Progeny	P5752RY	12.0	29.3
USG	75B75R	12.2	29.7
Asgrow	AG55X7	11.3	31.2
Progeny	P5417RX	14.0	32.1
Pioneer	P55T81R	12.7	29.7
Credenz	CZ 5375 RY	11.7	26.1
Asgrow	AG53X6	11.3	32.5
Pioneer	P52A26R	11.3	27.8
Hubner	H57-18R2X	11.2	34.7
Armor	53-Z5	11.0	34.1
USG	7553nRS	11.3	29.0

Discussion: This was the first year this field was planted in soybeans. Although seed was inoculated heavily, poor nodulation was observed during the season. Conditions were very dry during the growing season.

2017 BRUNSWICK COUNTY MATURITY GROUP 5 SOYBEAN VARIETY COMPARISONS

Cooperators: **Producer:** Doug and Jonathan Harrison
Extension: Taylor Clarke, Lindy Tucker, Laura Siegle
Previous Crop: Flue-cured tobacco followed by small grain cover crop
Soil Type: Appling-Mattaponi Complex
Tillage: No-till
Planting Date: June 13, 2017
Seeding Rate/Row Spacing: 140,000-150,000/15" rows, JD 1590 15' no-till drill
Fertilization: 0-30-60
Crop Protection: Burndown: Roundup and Authority Elite
 Post: Roundup and Flexstar
Harvest Date: November 21, 2016
Harvest Equipment: JD 9500 with 920 flex head

Brand	Variety	Moisture%	Yield (bu/A)
Asgrow (CHECK)	AG5535	17.4	53.2
Credenz	CZ5375RY	19.0	44.3
Dyna-Gro	S52RS86	19.2	56.7
Hubner	H57-18 R2X	18.6	42.7
Progeny	P5417RX	19.2	50.0
Dyna-Gro	S54XT17	19.2	51.5
USG	75B75R	18.9	49.0
Armor	53-Z5	18.3	51.5
Asgrow	AG55X7	18.1	52.2
Asgrow (CHECK)	AG5535	18.0	47.2
Pioneer	P55T81R	18.2	40.9
Progeny	P5752RY	18.1	36.4
Pioneer	P52A26R	18.9	40.5
Asgrow	AG53X6	18.7	36.8
Dyna-Gro	39RY57	17.9	35.3
Dyna-Gro	32RY55	18.5	46.4
Asgrow (CHECK)	AG5535	18.2	47.0
		Plot average	46.0
		Check average	49.1
		RR2 Average	44.5
		Xtend Average	46.6

Discussion: The overall test average including checks was 46.0 bu/acre. The check variety, Asgrow AG5535 averaged 49.1 bu/acre over 3 replications. The top four yielding varieties compared to the plot average were (1) Dyna-Gro 52RS86, (2) Dyna-Gro 54XT17, (3) Armor 53-Z5, and (4) Asgrow AG55X7. The 4 lowest yielding varieties as compared to the plot average were Progeny P5752RY, Pioneer P52A26R, Asgrow AG53X6, and Dyna-Gro 39RY57.

2017 BRUNSWICK COUNTY MATURITY GROUP 5 DOUBLE CROP SOYBEAN VARIETY COMPARISONS

Cooperators: **Producer:** William Wright, Howard Wright, Carlton Clarke, Kenneth Clarke
Extension: Taylor Clarke, Lindy Tucker
Industry: Austin Puryear
Previous Crop: Wheat
Soil Type: Mattaponi Complex
Tillage: No-till
Planting: June 26, 2017 with JD 1780 vacuum planter, 11 row
Seeding Rate/Row Spacing: 200,000/15 inches
Fertilization: None on beans
Crop Protection: **Pre:** Roundup PowerMax & 2,4-D, Surveil
Post: Roundup PowerMax, Flexstar
Harvest: November 22, 2017
Harvest Equipment: Gleaner R50, 15 foot head

Brand	Variety	Moisture%	Yield (bu/A)
Doebler's (CHECK)	DB5711RR	14.3	43.4
Asgrow	AG59X7	13.9	35.0
Dyna-Gro	39RY57	13.9	41.0
USG	75B75R	13.6	47.2
Progeny	P5752RY	13.6	39.9
Asgrow	AG55X7	13.4	46.4
Pioneer	P55T81R	13.6	45.1
Hubner	H57-18R2X	13.4	46.6
Doebler's (CHECK)	DB5711RR	13.8	41.0
Progeny	P5417RX	13.8	47.0
Dyna-Gro	S54XT17	13.5	46.4
Credenz	CZ 5375RY	13.2	43.6
Armor	53-Z5	13.3	45.9
Asgrow	AG53X6	13.3	38.4
Pioneer	P52A26R	13.4	46.0
Dyna-Gro	S52RS86	13.3	38.6
Doebler's (CHECK)	DB5711RR	13.3	45.1
USG	7506XTS	13.7	42.8
Hubner	H49-27R2X	13.3	42.5
Asgrow	AG48X7	13.1	37.9
Channel	4916R2X/SR	13.3	43.6
Doebler's (CHECK)	DB5711RR	13.2	42.4
		Plot average	43.0
		Check average	43.0
		RR average	43.1
		Xtend average	42.6

Discussion: The plots produced good double crop yields overall, with a range from 35.0 to 47.2 bu/acre. The overall test average including checks and the average for the check variety, Doeblers 5711R, across 4 replications were both 43.0 bu/acre. The 11 Roundup Ready varieties averaged 0.5 bu/ac more than the 10 Xtend varieties in the test. The two highest yielding varieties were (1) USG 75B75R and (2) Hubner H57-18R2X. The lowest yielding variety was Asgrow 59X7. At harvest, soybeans were small and clean with some Cercospora throughout the trial.

2017 CHARLES CITY MATURITY GROUP 5 SOYBEAN COMPARISONS

Cooperators: **Producer:** Renwood Farms
Extension: David Holshouser
Industry: Cooperating Seed Companies
Previous Crop: Corn
Soil Type: Pamunkey loam
Tillage: No-till
Planting Date: June 26, 2017
Seeding Rate/Row Spacing: 160,000 seed/acre/15 inch rows
Fertilization: 300 lbs potash
Crop Protection: Herbicides: Brundown: Gramoxone, Warrant
 Preemergence: Roundup PowerMax
 Postemergence: Roundup PowerMax
 Insecticides: Prevathon
 Fungicides: Priaxor
Harvest Date: November 29, 2017
Harvest Equipment: Wintersteiger Delta plot combine

Brand	Variety	Moisture%	Yield (bu/A)
Virginia Tech	V12-0045R2	16.0	39.6
Virginia Tech	V11-3485	14.2	49.0
Dyna-Gro	S54XT17	13.8	51.9
Dyna-Gro	S52RS86	14.1	51.4
Hubner	H57-18R2X	12.9	45.9
Asgrow	AG55X7	12.5	55.5
Asgrow	AG53X6	13.4	51.0
USG	75B75R	12.2	51.1
USG	7506XTS	13.3	46.5
NK	S56-B7X	12.9	47.6
NK	S52-Y7X	12.3	52.2
Armor	53-Z5	12.0	46.3
Progeny	P5752RY	11.9	49.1
Progeny	P5417RX	11.9	42.0
Pioneer	P55T81R	11.4	51.9
Pioneer	P52A26R	12.5	54.7
	Average	13.0	49.1

Discussion: Considering the late planting date (due to wet conditions), the soybean yielded relatively well. Due to wet spots in the field that would have yielded less, we only harvested 200 feet of length (five 15-inch rows), which was free of these wet spots. Use this and other information for choosing varieties.

2017 DINWIDDIE MATURITY GROUP 5 SOYBEAN COMPARISONS

Cooperators: Producer: Billy Bain
 Extension: Mike Parrish
Previous Crop: Corn
Soil Type: Mattaponi Sandy Loam
Tillage: No-till
Planting Date: June 9, 2017
Seeding Rate/Row Spacing: 186,000/15" rows
Fertilization: 230lbs 0-26-26
Crop Protection: Herbicide: 1qt Roundup PowerMax + 1.5pts 2,4-D at burndown
 1qt Roundup PowerMax + 3pts Prefix over the top
 Insecticide: 3.2 oz Lambda
Harvest Date: November 29, 2017
Harvest Equipment: Case IH 2388

Brand	Variety	Moisture%	Yield (bu/A)
Asgrow	AG53X6	12.1	35.1
Asgrow	AG55X7	12.0	55.8
Pioneer	P52A26R	12.1	33.5
Pioneer	P55T81R	12.5	41.0
USG	7506XTS	13.0	29.6
USG	75B75R	12.6	39.4
Hubner	H57-18R2X	12.5	25.2
Progeny	P5752RY	12.4	34.0
Credenz	CZ 5375 RY	12.2	26.8
Progeny	P5417RX	12.9	33.2
Armor	53-Z5	12.5	22.8
Progeny	6461RX	12.6	33.6

Discussion: Use this and other Virginia Tech on-farm soybean variety information when making planting decisions for 2017.

2017 MECKLENBURG COUNTY MATURITY GROUP 5 DOUBLE CROP SOYBEAN VARIETY COMPARISONS

Cooperators: **Producer:** John Manning
Extension: Taylor Clarke, Lindy Tucker, Laura Siegle
Previous Crop: Wheat
Soil Type: Appling Fine Sandy Loam
Tillage: No-till behind oats harvested for grain
Planting Date: June 12, 2017
Seeding Rate/Row Spacing: 200,000/18” rows, Kinze 9 row planter with brush meters
Fertilization: 30-40-120 on small grain
Crop Protection: Pre: Roundup PowerMax and Envive, Post: Roundup PowerMax
Harvest Date: November 27, 2017
Harvest Equipment: JD 4420 with 13’ flex head

Brand	Variety	Moisture%	Yield (bu/A)
Dyna-Gro (Check)	32RY55	11.9	31.9
Dyna-Gro	39RY57	11.9	28.1
Hubner	H57-18R2X	11.8	32.7
USG	75B75R	11.6	38.4
Progeny	P5752RY	11.5	33.8
Asgrow	AG55X7	11.3	36.7
Pioneer	P55T81R	11.2	30.3
USG	7553nRS	11.6	29.4
Progeny	P5417RX	11.2	29.3
Dyna-Gro (Check)	32RY55	11.8	27.2
Dyna-Gro	S54XT17	11.3	31.1
Credenz	CZ 5375 RY	10.9	28.6
Armor	53-Z5	10.9	30.8
Asgrow	AG53X6	11.2	34.9
Pioneer	52A26R	11.3	35.4
Dyna-Gro	S52RS86	11.5	36.5
USG	7506XTS	11.4	36.0
Hubner	H49-27R2X	11.4	36.1
Dyna-Gro (Check)	32RY55	11.4	30.0
		Plot Average	32.5
		Check Average	29.7
		RR Average	31.9
		Xtend Average	33.8

Discussion: The overall test average including checks was 32.5 bu/acre. The check variety, Dyna-Gro 32RY55 averaged 29.7 bu/acre across 3 replications. USG 75B75R was the highest yielding variety in this test yielding 6% above the plot average.

2017 PRINCE GEORGE MATURITY GROUP 5 SOYBEAN COMPARISONS

Cooperators: **Producer:** Paul Cerny and Sean Finney
Extension: Scott Reiter
Industry: Participating Seed Companies
Previous Crop: Soybeans
Soil Type: Montross and Aycock silt loam
Tillage: No-till double crop behind wheat with straw removed
Planting Date: June 14, 2017
Seeding Rate/Row Spacing: 220,000 seed/acre, 7.5 inch rows, John Deere 1590 drill
Fertilization: 120 N – 60 P2O5 – 120 K2O to wheat crop
Crop Protection: Post-emerge – 1 qt glyphosate, July
Harvest Date: November 27, 2017
Harvest Equipment: John Deere 9500 w/918 flex head, Weigh wagon

Brand	Variety	Moisture (%)	Test Weight (lbs/bu)	Yield @ 13% (bu/A)
Hubner	57-18R2X (check)	11.9	57.5	47.5
Asgrow	AG53X6	12.3	57.1	47.3
Asgrow	AG55X7	12.5	56.5	49.8
Pioneer	P52A26R	13.0	56.8	52.1
Pioneer	P55T81R	11.7	57.4	46.3
USG	7506XTS	12.7	57.1	48.4
USG	75B75R	11.9	57.3	52.0
Hubner	H57-18R2X	11.5	57.5	44.3
Dyna-Gro	S52RS86	11.9	57.1	50.4
Dyna-Gro	S54XT17	12.0	57.7	44.8
Progeny	P5417RX	11.8	58.3	47.8
Progeny	P5752RY	11.5	57.5	46.2
Credenz	CZ 5375 RY	11.4	58.2	48.1
Armor	53-Z5	12.0	57.5	45.1
Seed Consultants	SCS 8518X	12.6	56.5	45.3
Hubner	57-18R2X (check)	11.5	57.5	43.0
	Average	12.0	57.3	47.4

Discussion: An excellent yielding double-crop plot. July was dry, August very wet, and dry again September & October. Utilize the overall plot comparisons and other yield data when selecting varieties for 2018.

2017 PRINCE GEORGE MATURITY GROUP 5 SOYBEAN COMPARISONS

Cooperators: **Producer:** Calvin and David Clements
Extension: Scott Reiter
Industry: Participating Seed Companies
Previous Crop: Soybeans
Soil Type: Burrowsville sandy loam and Wickham fine sandy loam
Tillage: No-till
Planting Date: June 8, 2017
Seeding Rate/Row Spacing: 175,000 seed/acre, 7.5 inch rows, Great Plains 1510 Precision drill
Fertilization: 23 N – 80 P2O5 – 140 K2O, pre-plant
Crop Protection: Burndown & pre-emerge–1 qt glyphosate + 1 pt Me-Too-LachlorII
 Post-emerge – 1 qt glyphosate, July
 Insecticide – 3.8 oz Lamba-Cy, August
Harvest Date: November 3, 2017
Harvest Equipment: John Deere S660 w/625F flex head, Weigh wagon

Brand	Variety	Moisture (%)	Test Weight (lbs/bu)	Yield @ 13% (bu/A)
USG	74K95	14.7	56.2	68.3
Asgrow	AG53X6	14.2	55.9	59.5
Asgrow	AG55X7	13.9	55.5	56.9
Pioneer	P52A26R	14.6	56.7	57.8
Pioneer	P55T81R	13.9	57.2	53.9
Hubner	H57-18R2X	13.8	56.7	48.5
USG	75B75R	13.7	56.6	52.9
USG	7506XTS	14.0	56.2	55.2
Dyna-Gro	S54XT17	14.6	55.4	49.4
Dyna-Gro	S52RS86	13.9	56.4	54.7
Progeny	P5752RY	13.7	56.2	52.9
Progeny	P5417RX	13.9	56.4	46.3
Armor	53-Z5	14.0	56.6	46.8
Credenz	CZ 5375 RY	13.8	56.9	45.8
USG	74K95	13.9	56.7	54.5
	Average	14.0	56.6	53.6

Discussion: An excellent yielding plot. July was very dry, August very wet, and dry again September & October. Utilize the overall plot comparisons and other yield data when selecting varieties for 2018.

2017 VIRGINIA BEACH-CHEESAPEAKE MATURITY GROUP 5 SOYBEAN COMPARISON PLOT

Cooperators: **Producer:** Brickhouse Farms/Frank Brickhouse
Extension: Roy D. Flanagan III and M. Watson Lawrence
Previous Crop: Corn
Soil Type: Acredale Silt Loam
Tillage: Conventional
Planting Date: May 19, 2017
Seeding Rate/Row Spacing: 180,000/30 inch rows
Fertilization: 500 lbs./acre of 15-15-15
Crop Protection: Post emergence: 12 oz. Select, 16oz. Reflex, 9oz. Besiege
Harvest Date: October 27, 2017
Harvest Equipment: JD 9860 with 935 grain platform

Brand	Variety	Moisture%	Yield (bu/A at 13%)
Great Heart	GT5020 XS	13.3	51.1
Dyna-Gro	S54XT17	13.2	46.4
USG	7506XTS	13.0	50.3
Progeny	P5417RX	13.1	47.8
Asgrow	AG55X7	12.7	54.3
Asgrow	AG53X6	12.9	50.7
Hubner	H57-18R2X	12.9	54.9
Armor	53-Z5	12.6	44.7
Credenz	CZ 5375 RY	12.8	46.0
Pioneer	P52A26R	13.0	51.8
Pioneer	P55T81R	12.4	49.4
Great Heart	GT568 CR2	12.3	47.4
USG	75B75R	12.1	52.4
Progeny	P5752RY	12.2	49.2
Dyna-Gro	S52RS86	12.7	50.3
Average yield			49.8

Discussion: Use this and other location yields when selecting varieties for 2018.



**OTHER
SOYBEAN WEED CONTROL SYSTEM PLOTS**

2017 VIRGINIA BEACH-CHESAPEAKE LIBERTY LINK SOYBEAN COMPARISON PLOT

Cooperators: **Producer:** Brickhouse Farms/Frank Brickhouse
Extension: Roy D. Flanagan III and M. Watson Lawrence
Previous Crop: Corn
Soil Type: Acredale Silt Loam
Tillage: Conventional
Planting Date: May 19, 2017
Seeding Rate/Row Spacing: 180,000/30 inch rows
Fertilization: 500 lbs./acre of 15-15-15
Crop Protection: Post emergence: 12 oz. Select, 16oz. Reflex, 9oz. Besiege
Harvest Date: October 27, 2017
Harvest Equipment: JD 9860 with 935 grain platform

Brand	Variety	Moisture%	Yield (bu/A at 13%)
Southern Harvest	SH 5215 LL	12.6	53.0
Credenz	CZ 5150 LL	12.3	51.4
Credenz	CZ 4748 LL	12.9	50.2
Southern Harvest	SH 4817 LL	12.9	49.9
Progeny	P4930 LL	12.6	49.4
Aarmor	53-L55	12.4	48.6
Credenz	CZ 5727 LL	12.2	46.9
Credenz	CZ 4540 LL	12.9	45.8
Southern Harvest	SH 5515 LL	12.4	44.4
Great Heart	GT-501 CLS	12.9	43.4
Great Heart	GT-541 CLL	12.8	38.6
Average yield			47.4

Discussion: Liberty-Link soybean varieties continue to provide an alternative to weed control without repeated use of glyphosate.

2017 MECKLENBURG COUNTY LIBERTY-LINK FULL SEASON SOYBEAN VARIETY COMPARISONS

Cooperators: **Producer:** Walter Algood
Extension: Taylor Clarke, Lindy Tucker, Laura Siegle
Industry: Franklin Dowless, Danny Pittard, Austin Puryear
Previous Crop: Soybeans
Soil Type: Appling Fine Sandy Loam
Tillage: No-till
Planting Date: May 31, 2017
Seeding Rate/Row Spacing: 155,000/15” rows, Kinze 15 row planter with brush meters
Fertilization: P and K applied by soil test on 2 acre grid
Crop Protection: Pre: Roundup PowerMax and Surveil; Post: Liberty
Harvest Date: December 15, 2017
Harvest Equipment: JD 9560 with 20’ flex head

Brand	Variety	Moisture%	Yield (bu/A)
Credenz	CZ 5515 LL	13.9	29.4
Credenz	CZ 6316 LL	13.5	32.4
Dyna-Gro	DG 55LS75	13.2	35.8
Credenz	CZ 5147LL	13.3	28.4
Credenz	CZ 5150 LL	13.4	34.3
Dyna-Gro	DG 52 LL 66	13.6	31.9
Credenz	CZ 4818 LL	13.7	27.3
Dyna-Gro	DG 59 LS 45	13.6	33.1
Credenz	CZ 5515 LL	13.5	28.2
Dyna-Gro	DG 59 LS 45	13.1	24.0
Credenz	CZ 6109 LL	13.6	27.9
Credenz	CZ 6316 LL	13.4	28.5
Credenz	CZ 6109 LL	13.5	28.3
Credenz	CZ 5150 LL	13.6	29.7
Dyna-Gro	DG 55LS75	13.8	28.9
Credenz	CZ 5147 LL	13.6	31.6
Dyna-Gro	DG 52 LL 66	13.5	28.2
Credenz	CZ 5515 LL	13.8	23.4
Dyna-Gro	DG 59 LS 45	14.0	22.6
Credenz	CZ 4818 LL	14.0	24.2
Credenz	CZ 5515 LL	14.4	34.1
		Plot Average	29.1

Brand	Variety	# Observations	Average Yield (bu/A)
Credenz	CZ 5515 LL	4	28.8
Credenz	CZ 6316 LL	2	30.4
Dyna-Gro	DG 55LS75	2	32.4
Credenz	CZ 5147LL	2	30.0
Credenz	CZ 5150 LL	2	32.0
Dyna-Gro	DG 52 LL 66	2	30.0
Credenz	CZ 4818 LL	2	25.7
Credenz	CZ 6109 LL	2	28.1
Dyna-Gro	DG 59 LS 45	3	26.6

Discussion: Varieties in the test had good growth but water was very limiting during pod fill. Beans were very small. The overall test average including checks was 29.1 bu/acre. Plots Credenz CZ5515LL had notably more deer traffic and feeding than all the other varieties. Credenz CZ4818LL had shattered badly by the late harvest date.



Other Research

2017 FULL-SEASON & DOUBLE-CROP SOYBEAN SEEDING RATE STUDY

Cooperators:	Producers: Cam Gibson, David, Johnny, and Jeff Hula, John Shepherd, Mike Ellis, Billy Taylor
	Extension: David Holshouser
	Industry: Monsanto
Previous Crop:	Corn, Wheat, or Rapeseed
Soil Type:	Blackstone (BLK) – FS-Madison clay loam, DC-Cecil fine sandy loam; Charles City (CHC) – Pamunkey loam; Orange (ORG) – Davidson clay; Painter (PTR) – Bojac sandy loam; Suffolk (SUF) – FS-Eunola loamy sand, DC-Rains sandy loam.
Varieties:	Asgrow AG47X6, Asgrow AG54X6
Row Spacing:	15-inch
Seeding Rates:	Full-Season: 30, 60, 90, 120, 150, or 180 thousand seed/acre Double-Crop: 80, 120, 160, 200, 240, or 280 thousand seed/acre
Experiment Design:	RCB with 4 replications
Fertilization:	based on soil test
Crop Protection:	Herbicide: varies based on weeds; Insecticides applied at Blackstone, Painter, and Suffolk; fungicide applied at Suffolk and Blackstone
Harvest Equipment:	Wintersteiger plot combine

Cropping System	Cultivar	Seeding Rate (1,000s/acre)	Seeding Rate					AVG
			BLK	CHC	ORG	PTR	SUF	
Full-Season	AG47X6	30	41.9	20.4	50.6	52.5	43.1	41.7
		60	49.0	38.1	60.1	64.7	56.3	53.6
		90	51.4	59.1	57.4	71.8	64.0	60.7
		120	55.3	64.0	60.5	66.7	64.2	62.1
		150	58.2	74.4	58.2	72.0	64.3	65.4
		180	62.1	77.4	61.8	69.7	70.6	68.3
		LSD P=0.10			8.8	10.1	6.5	7.1
CV			13.4	14.7	9.1	8.7	10.1	
Grand Mean			53.0	55.6	58.1	66.2	60.4	58.7
Full-Season	AG54X6	30	40.5	13.8	50.7	45.6	32.2	36.6
		60	51.3	37.3	53.7	53.3	50.7	49.3
		90	52.3	46.0	61.8	59.4	57.6	55.4
		120	51.8	56.7	61.9	65.9	64.4	60.1
		150	57.8	66.4	65.3	62	50.7	60.4
		180	60.2	68.3	65.0	66.3	63.1	64.6
		LSD P=0.10			8.8	10.1	6.5	8.1
CV			13.4	14.7	9.1	11.1	14.0	
Grand Mean			53.0	55.6	58.1	58.8	53.1	54.4

Double-Crop	AG47X6	80	50.8	48.2	43.4	47.5
		120	55.3	50.7	45.5	50.5
		160	54.7	51.7	51.9	52.8
		200	62.4	57.6	55.9	58.6
		240	60.9	55.0	52.9	56.3
		280	63.1	57.9	47.0	56.0
LSD P=0.10			8.8	10.1	6.5	7.1
CV			13.4	14.7	9.1	8.7
Grand Mean			53.0	55.6	58.1	66.2
Double-Crop	AG54X6	80	43.6	45.7	45.1	44.8
		120	45.2	49.0	45.2	46.5
		160	51.9	54.0	48.0	51.3
		200	52.3	52.2	53.7	52.7
		240	50.9	42.7	51.8	48.5
		280	53.1	41.0	48.6	47.6
LSD P=0.10			8.8	10.1	6.5	7.1
CV			13.4	14.7	9.1	8.7
Grand Mean			53.0	55.6	58.1	66.2

Discussion: It is important to maximize economic yield when choosing seeding rates. Past research in Virginia indicated that 90,000 to 120,000 seed/acre is needed when planted in May and 180,000 to 220,000 seed/acre are needed when planted in late-June to early-July to maximize economic yield. This is the first of a 3-year study to update current recommendations.

When averaged over five locations, maximum yield for full-season soybean was estimated at 170,000 seed per acre for maturity group (MG) IV and V soybean (Figures 1 and 2). In a double-crop system, averaged over three locations, maximum yield was estimated at 235,000 and 210,000 seed/acre for MG IV and V soybean, respectively (Figures 3 and 4). While these appear to be greater than current recommendations, they do not account for seed cost and crop price. Furthermore, additional research is needed under different environments before new recommendations will be issued. These experiments will continue in 2018 and 2019.

Figure 1. Full-season maturity group IV soybean yield response to seeding rate.

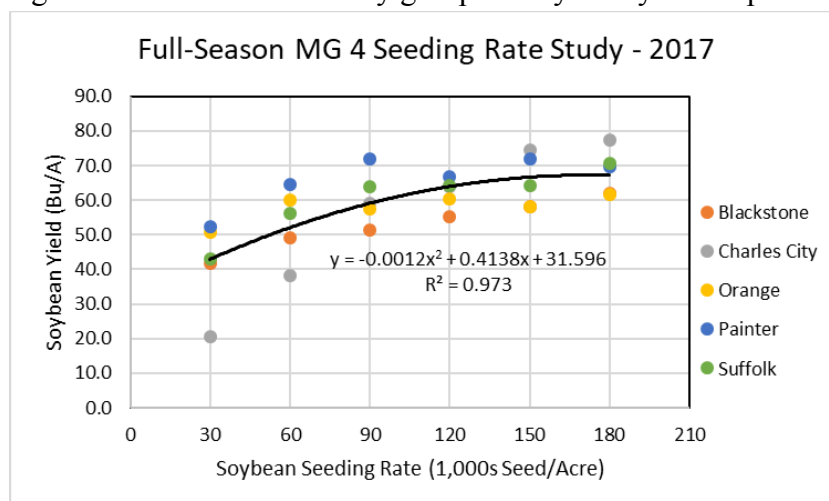


Figure 2. Full-season maturity group V soybean yield response to seeding rate.

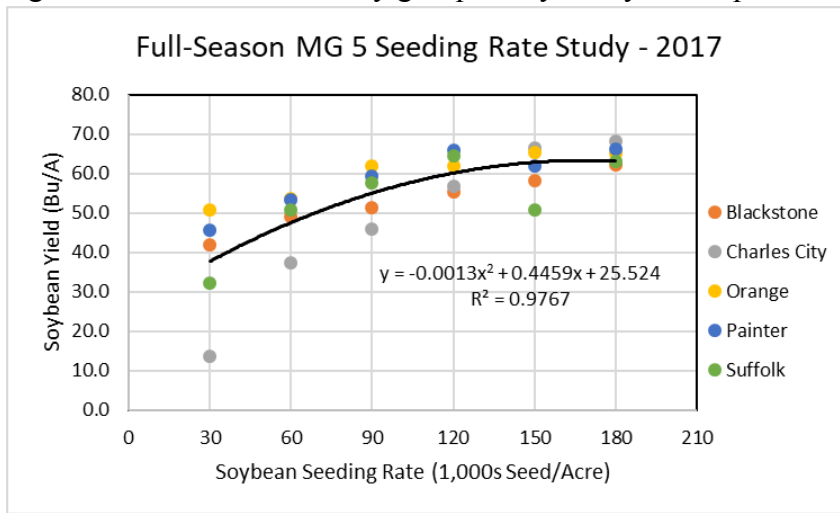


Figure 3. Double-crop maturity group IV soybean yield response to seeding rate.

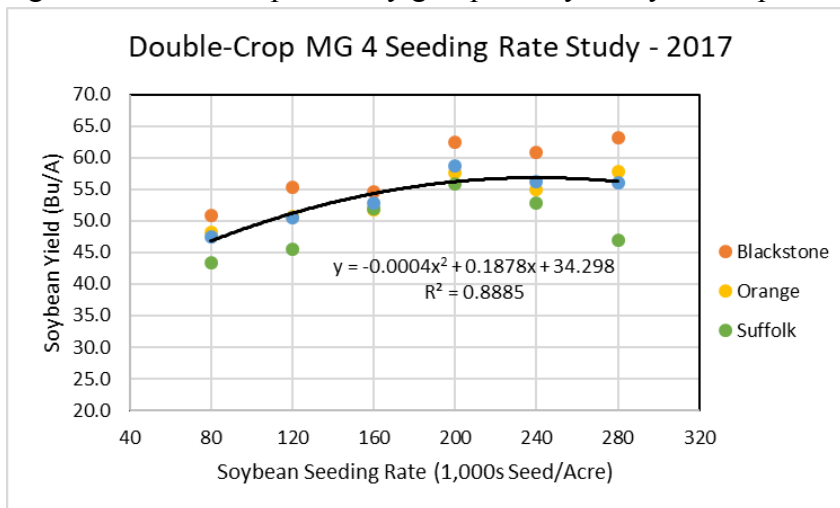
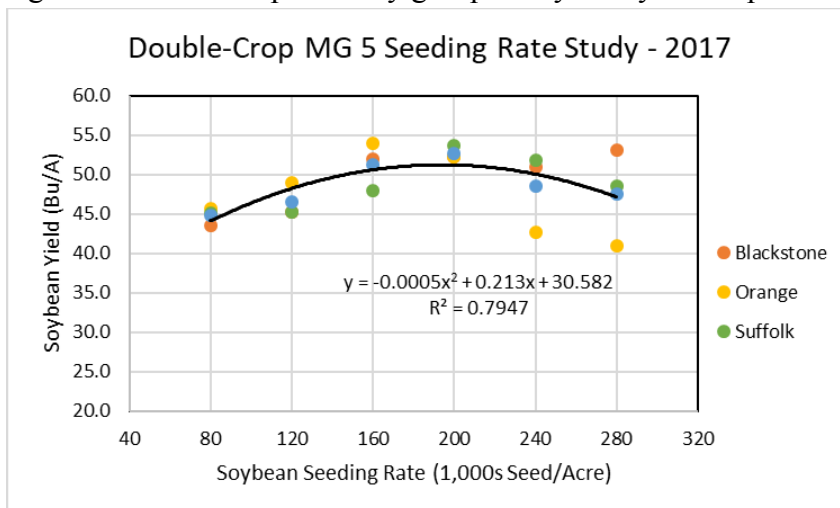


Figure 4. Double-crop maturity group V soybean yield response to seeding rate.



2017 PRINCE GEORGE DOUBLE CROP SEEDING RATE PLOT

Cooperators: **Producer:** Paul Cerny and Sean Finney
Extension: Scott Reiter
Previous Crop: Soybeans
Soil Type: Montross and Aycock silt loam
Tillage: No-till double crop behind wheat with straw removed
Planting Date: June 14, 2017
Seeding Rate/Row Spacing: 220,000 or 180,000 seed/acre, 7.5 inch rows, John Deere 1590 drill
Fertilization: 120 N – 60 P2O5 – 120 K2O to wheat crop
Crop Protection: Post-emerge – 1 qt glyphosate, July
Harvest Date: November 27, 2017
Harvest Equipment: John Deere 9500 w/918 flex head, Weigh wagon

Treatment (seed/acre)	Replication	Stand Count 7/14/17 (plants/acre)	Stand Count 11/14/17 (plants/acre)	Moisture (%)	Test Weight (lbs/bu)	Yield @ 13% (bu/A)
220,000	1	146,600	136,800	11.4	57.8	46.5
180,000	1	110,300	91,500	11.6	56.1	43.7
220,000	2	161,200	130,700	11.5	57.8	44.3
180,000	2	120,500	83,600	11.4	57.4	42.5
220,000	3	169,900	128,900	11.5	57.5	43.5
180,000	3	72,600	80,200	11.5	57.0	42.7
Average	220,000	159,200	132,100	11.5	57.7	44.8b
	180,000	101,300	85,100	11.5	56.8	43.0a
	Difference	57,900	47,000	0.0	0.9	1.8
	LSD (0.10)					1.7

Discussion: Seeding rates are always a concern with trying to balance high yields and cost of production. This plot was to evaluate a 40,000 seed per acre difference in seeding rate representing about \$14 per acre seed cost (\$50 per unit). Stand counts taken 30 days after planting indicated an emergence rate of 72% and 56% respectively for the high and low seeding rates. Seed spacing with the drill was non-uniform with notable gaps and doubled seed, which is not uncommon. It is interesting to note that another 27,000 plants were lost from the high seeding rate and 16,000 from the low seeding rate. While the exact cause is not known, competition among plants and drought stress for 3 weeks in July are suspected.

Yields were impacted by the reduced seeding rate. Statistical analysis shows that we are 90% confident the difference is significant, meaning the higher seeding rate was needed in this field. Also, the 1.8-bushel increase @ \$9.50 per bushel would yield \$17.10 per acre in increased revenue or \$3.10 more per acre over the cost of additional seed. Growers should continue to evaluate stand uniformity and seeding rates to maximize profitability in soybeans.

2017 PLANTING DEPTH COMPARISON DOUBLE-CROP SOYBEAN TREATMENT PLOT

Cooperators: **Producer:** William Wright
Extension: Taylor Clarke and Lindy Tucker
Previous Crop: Wheat
Soil Type: Appling-Mattaponi Complex
Tillage: No-till
Planting Date: June 26, 2017
Variety: Doebler's DB5711RR
Seeding Rate/Row Spacing: 200,000/15", 11 row JD 1780 Max-emerge vacuum planter
Fertilization: None on beans
Crop Protection: Burndown: Roundup, 2,4-D, and Surveil
 Post: Roundup and Flexstar
Harvest Date: November 22, 2017
Harvest Equipment: Gleaner R50 with 15' flex head

Treatment	Replication	Moisture%	Yield (bu/A)
0.75 in	1	13.5	22.3
1.5 in	1	13.3	22.2
0.75 in	2	13.6	23.0
1.5 in	2	13.6	28.2
1.5 in	3	13.5	26.3
0.75 in	3	13.6	24.8
1.5 in	4	13.4	26.6
0.75 in	4	13.4	22.8
		Depth 0.75 in Average	23.2
		Depth 1.5 in Average	25.8
		Difference	2.6
		LSD (0.10)	Not significant

Discussion: Even though there was adequate moisture at planting, the deeper planting depth resulted in 2.6 bu/acre more than the shallower planting depth. Statistical analysis showed the difference is not significant with 90% confidence.

2017 MATURITY GROUP COMPARISON DOUBLE-CROP SOYBEAN TREATMENT PLOT

Cooperators: **Producer:** William Wright
Extension: Taylor Clarke and Lindy Tucker
Previous Crop: Wheat
Soil Type: Appling-Mattaponi Complex
Tillage: No-till
Planting Date: June 26, 2017
Variety: Asgrow AG53X6 and Asgrow AG48X7
Seeding Rate/Row Spacing: 200,000/15", 11 row JD 1780 Max-emerge vacuum planter
Fertilization: None on beans
Crop Protection: Burndown: Roundup, 2,4-D, and Surveil
Post: Roundup and Flexstar
Harvest Date: November 22, 2017
Harvest Equipment: Gleaner R50 with 15' flex head

Treatment	Replication	Moisture%	Yield (bu/A)
AG 53X6	1	13.3	18.8
AG 48X7	1	13.2	25.1
AG 53X6	2	13.1	16.9
AG 48X7	2	13.2	21.1
AG 48X7	3	13.1	20.5
AG 53X6	3	13.2	11.6
AG 48X7	4	13.2	14.1
AG 53X6	4	13.2	14.0
		AG53X6 Average	15.3a
		AG48X7 Average	20.2b
		Difference	4.9
		LSD (0.10)	4.4

Discussion: One end of the plot was severely affected by deer feeding but was very consistent by replication for each variety. The timing of drought periods restricted the height of AG 53X6 compared to AG 48X7 more severely. Statistical analysis found a yield difference of 4.4 bushels was needed for significance. Timing of rainfall (or soil moisture depletion) makes or breaks many of these maturity comparisons. Judging by the low yields this plot was greatly affected by lack of moisture.

2017 SOYBEAN FOLLOWING ROLLED GREEN RYE COVER TREATMENT PLOT

Cooperators: **Producer:** Rob Hinton
Extension: Trent Jones
USDA: Emily Brown
 Chris Lawrence
 Dr. Ted Kornecki
Previous Crop: Corn—Rye
Soil Type: Sassafras fine sandy loam
Tillage: No-till
Planting Date: May 9, 2017
Variety: Credenz 3841LL
Seeding Rate/Row Spacing: 150,000(final 108,000)/15” rows
Fertilization: Residual from rye, rye N strips fertilized with 30 lb/A
Crop Protection: Post-emergence: Liberty
Harvest Date: October 6, 2017
Harvest Equipment: Combine with draper header

Treatment	Replication	Moisture%	Yield @ 13% moisture (bu/A)
0 N rolled, then planted	1	11.53	78.6
0 N rolled, then planted	2	11.65	80.8
AVERAGE OF 2 REPS		11.59	79.7
0 N planted standing, then burndown	1	11.36	81.4
0 N burndown, planted standing	1	11.79	82.6
0 N burndown, rolled, then planted	1	11.75	82.2
N strip, planted standing	1	11.39	83.3
0 N planted standing, then rolled	1	11.72	83.4
N strip, planted standing, then rolled	1	11.75	83.6
N strip, rolled, then planted	1	11.5	85.9
N strip, rolled, then planted	2	11.83	86.2
AVERAGE OF 2 REPS		11.67	86.1

Discussion: The average yield of the entire plot was 82.8 bu/A at 13% moisture. Overall, this was an excellent year for soybeans on the Northern Neck. This farm in particular received timely rain throughout the growing season. One interesting point from this experiment was that the soybeans planted into standing rye that was not rolled or burned down prior to planting were spindlier than other treatments in the field. This resulted in those two treatments lodging by the time we harvested. Also, there was very low weed pressure in the early growing season in rolled treatments. However, there were not enough replications of any treatment to draw statistical conclusions from. This year was an

experimental plot to determine what we would like to look at more seriously in the future. We have plans to repeat this next year with fewer treatments and more replications.



Soybean plot 21 days after planting that did not receive nitrogen, was planted with the rye standing, and then rolled with a roller-crimper.

2017 FOLIAR YIELD ENHANCERS FOR SOYBEAN

Cooperators: **Producer:** Renwood Farms (Hula family)
Extension: David Holshouser, Mike Ellis
Industry: Cooperating Crop Protection Companies
Previous Crop: Corn
Soil Type: Pamunkey loam
Tillage: No-till
Planting Date: May 19, 2017
Variety: Asgrow AG5632
Seeding Rate/Row Spacing: 160,000 seed/acre; 15-inch rows
Fertilization: 300 lbs potash
Crop Protection: Herbicides: Burndown: Gramoxone, Warrant
Preemergence: Roundup PowerMax
Insecticides: Prevathon
Foliar Treatments: Applied in combination with either Roundup PowerMax at V6-V7 on 7/5/17 or with Priaxor fungicide at R3 on 7/16/17 using a backpack sprayer at 15 GPA with 8003 flat fan nozzles. No fungicide was applied to the checks.
Experiment Design: RCB with 3 replications
Harvest Date: October 23, 2017
Harvest Equipment: Wintersteiger Delta plot combine

Treatment	Replication	Moisture%	Yield (bu/A)
CHECK	1	14.3	48.9
	2	14.4	58.2
	3	14.3	53.4
	Average	14.3	53.5
BRANDT Smart Quatro + N Boost at V6-7 Smart B-Mo + N Boost at R3	1	14.5	61.5
	2	14.2	46.8
	3	14.0	55.2
	Average	14.2	54.5
BASF Priaxor at R3	1	14.9	59.2
	2	14.8	49.8
	3	14.6	53.2
	Average	14.8	54.1
MEHERRIN System Advance at V6-7	1	14.9	57.5
	2	14.9	62.8
	3	15.7	52.0
	Average	15.2	57.4
TIMAC AGRO Fertileader at V6-7 and R3	1	14.6	56.6
	2	14.0	63.5
	3	14.6	59.0
	Average	14.4	59.7

CHECK	1	15.0	58.6
	2	14.6	53.0
	3	15.1	53.9
	Average	14.9	55.2
CHECK	1	15.2	48.0
	2	14.2	56.2
	3	14.3	60.0
	Average	14.6	54.7
Ammonium sulfate (25#) at R3	1	14.4	50.6
	2	14.9	52.6
	3	14.2	50.1
	Average	14.5	51.1
Potassium chloride (25#) at R3	1	15.0	58.8
	2	14.5	52.2
	3	14.3	56.0
	Average	14.6	55.7
TIMAC AGRO Corona K at V6-7 & R3	1	14.7	45.1
	2	14.3	48.6
	3	14.8	57.7
	Average	14.6	50.5
CHECK	1	15.4	55.5
	2	14.6	61.7
	3	14.7	48.0
	Average	14.9	55.1
	LSD (P=0.10)	0.5	7.5
	CV	2.2	9.8
	Grand Mean	14.6	54.7

Discussion: Ag Expo exhibitors and sponsors were solicited to enter a foliar “yield enhancing” product into this experiment. Yields were good, but none of the products yielded more than the check. Some foliar burn occurred with the ammonium sulfate treatment. While such treatments may result in a yield benefit in some years, multi-year testing of the products on your farm would be most beneficial.

2017 IN-FURROW YIELD ENHANCERS FOR SOYBEAN

Cooperators: **Producer:** Renwood Farms (Hula family)
Extension: David Holshouser, Mike Ellis
Industry: Cooperating Crop Protection Companies
Previous Crop: Corn
Soil Type: Pamunkey loam
Tillage: No-till
Planting Date: May 19, 2017
Variety: Asgrow AG5632
Seeding Rate/Row Spacing: 160,000 seed/acre; 15-inch rows
Fertilization: 300 lbs potash
Crop Protection: Herbicides: Burndown: Gramoxone, Warrant
 Preemergence: Roundup PowerMax
 Postemergence: Roundup PowerMax
 Insecticides: Prevathon
 Fungicides: Priaxor
In-Furrow Treatments: Applied with Great Plains drill
Experiment Design: RCB with 3 replications
Harvest Date: October 23, 2017
Harvest Equipment: Wintersteiger Delta plot combine

Treatment	Replication	Moisture%	Yield (bu/A)
Check	1	14.0	66.1
	2	14.1	58.3
	3	14.1	63.9
	Average	14.1	62.8
Bio-Cat Biostart	1	14.3	53.3
	2	14.1	58.5
	3	13.9	50.0
	Average	14.1	54.0
Brandt AfriKelp	1	13.8	61.1
	2	14.2	51.9
	3	14.0	52.9
	Average	14.0	55.3
BASF Xanthion	1	14.6	58.5
	2	13.9	52.0
	3	13.9	63.9
	Average	14.1	58.1
MEHERRIN Micro Amp	1	14.1	63.0
	2	13.8	49.8
	3	14.3	60.8
	Average	14.1	57.9

TIMAC Fertiactyl GZ	1	14.5	53.3
	2	14.0	62.2
	3	13.9	56.6
	Average	14.1	57.3
CONKLIN Magnify LST (seed treatment)	1	14.2	62.3
	2	14.0	56.0
	3	14.3	63.0
	Average	14.2	60.4
CPS Accomplish	1	14.5	60.7
	2	13.8	62.2
	3	13.8	57.8
	Average	14.0	60.2
	LSD (P=0.10)	0.4	6.9
	CV	1.8	8.3
	Grand Mean	14.0	58.3

Discussion: Ag Expo exhibitors and sponsors were solicited to enter an in-furrow “yield enhancing” product into this experiment. Yields were good, but none of the products yielded more than the check. While such treatments may result in a yield benefit in some years, multi-year testing of the products on your farm would be most beneficial.