

Virginia On-Farm Soybean Research

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

2018



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Introduction

These demonstration and research experiment 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 experiments 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 sromelcz@vt.edu.

This is the 22nd year of this multi-county cooperative effort and further work is planned for 2019. 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 Fimon, Laura Siegle, Scott Reiter, Trent Jones, 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 tests for a discussion of results.

First, we would like to thank everyone that participated in on-farm plot work: seed and input suppliers for providing materials for the trials, our farmer-cooperators for supplying equipment, land, and patience to get these tests from planting to harvest, the Virginia Soybean Board for funding to assist with expenses, Extension agents for securing locations, hauling seed, and sending in data, and you, the soybean grower, for showing interest in our work and taking time to review this publication.

I don't think anyone needs a reminder of the weather in 2018. It provided challenges with research work as well. At the time of publication, we still have three experiments to harvest. We lost three experiments to historic river flooding where the entire field was wiped out – two times. And at some locations the saturated conditions introduced more variability than normal which we tried to account for with statistical analysis. And as always, next year will be different.

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 Essex County. Two Liberty Link trials are reported from Southside VA.

Roundup Ready 2 Xtend soybeans dominated the trial offerings. Fourteen of 17 varieties carried the RR2X trait in the MG 4 tests; 11 of 17 in the MG 5 tests. There are still plenty of good genetics in the RR, RR2, and LL offerings. Weed control system, nematode resistance, and disease package should be considered when selecting varieties for 2019.

The widespread use of cover crops and a focus on soil health continue to look at yield advantage and return on investment. Two studies on the Northern Neck evaluated wheat, barley, and rye cover crop effect on nitrogen scavenging potential, plant stands, and soybean yields.

A seed treatment trial was conducted at one location. This full service seed treatment did not provide a yield increase however the location did not have a historic nematode or disease problem.

Dr. David Holshouser and Carl Stafford cooperated in Culpeper County to evaluate full-season seeding rates with MG 4 & MG 5 varieties in full-season and double-crop plantings. As with past results, high seeding rates for full-season soybean are rarely beneficial.

We hope you find this information useful. If you have ideas for 2019 on-farm research or would like to be a cooperator in 2019, please contact your local Virginia Cooperative Extension agriculture agent.

Trait Data for 2018 VCE On-farm Soybean RR Variety Plots

<u>Company</u>	<u>Brand</u>	<u>Relative Maturity</u>	<u>Herbicide Traits</u>	<u>Soybean Cyst Nematode</u>	<u>Root Knot Nematode</u>	<u>Frogeye leafspot</u>	<u>Sudden death syndrome</u>	<u>Brown stem rot</u>	<u>Cercospora blight</u>
Asgrow	AG46X6	4.6	RR2X	R 3	S	G	F		
Asgrow	AG48X7	4.8	RR2X/SR	R 3	S	G	G		
Pioneer	P46A93X	4.6	RR2X	R 3,14	S	F	VG		
Pioneer	P48A60X	4.8	RR2X	R 3,14	S	F	VG		
USG	7447XTS	4.4	RR2X/STS	R 3, MR 14		G	G		
USG	7496XTS	4.9	RR2X/STS	R 3, MR 14	MR	G	G		
Hubner	H43-27R2X	4.3	RR2X/SR	R 3,14	S	G	G		
Hubner	H49-27R2X	4.9	RR2X/SR	MR/MS1, R3	S	G	G		
Dyna-Gro	S46XS87	4.6	RR2XT/STS	R 3, MR 14	P	G	G		
Dyna-Gro	S48XS78	4.8	RR2XT/STS	R 3, MR 14	S	VG	G		
Progeny	P4816RX	4.8	RR2X	R 3	S	MR	MR		
Progeny	P4757RY	4.7	RR2	R 3, MR 14	MR	R	MR		
Doebblers	4817X	4.8	RR2X	R 3,14	S	F	G	E	
Doebblers	49R9	4.9	GT	R 3, MR 14		VG	G	F	
NK Seed	S45-K5X	4.5	RR2X	R 3, MR 14	MR	VG	G		
NK Seed	S43-V3X	4.3	RR2X	R 3, MR 14	S	VG	G	G	
VCIA	MO4901D GT	4.9	GT	MR 1,2,3,5,14	MR	R	MR		
Asgrow	AG56X8	5.6	RR2X	R 1,3	R	VG	G		
Asgrow	AG55X7	5.5	RR2X	S	R	G	G		
Pioneer	P52A26R	5.2	RR	R 3,14	S	F	G	HT	
Pioneer	P55A49X	5.5	RR2X	R 3,14	R	G	G		
USG	7547XT	5.4	RR2X	R 3, MR 14	R	G	G		F
USG	7568XT	5.6	RR2X	R 1,3	R	E	G		VG
Hubner	H52-18R2X	5.2	RR2X/SR	R 3	R	VG	F		
Hubner	H57-18R2X	5.7	RR2X/SR	R 3	R	VG	G		
Dyna-Gro	S52RS86	5.2	RR2/STS	R 3, MR 14	G	F	VG		F
Dyna-Gro	S58RY78	5.8	RR2	R 3	VG	VG	G		
Progeny	P5688RX	5.6	RR2X	R 1,3	R	R	MR/MS		MR
Progeny	P5752RY	5.7	RR2		R	R	MR		
Doebblers	E52X9	5.2	RR2X						
Doebblers	56R8	5.6	GT	R 3,14	R	VG		F	
NK Seed	S52-Y7X	5.2	RR2X	MR 3,14	R	G	G		
NK Seed	S57-A7X	5.7	RR2X	R 3, MR 14	MR	VG	VG		
VCIA	Corbin	5.3	RR						

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

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.

Trait Data for 2018 VCE On-farm Soybean LL Variety Plots

<u>Company</u>	<u>Brand</u>	<u>Relative Maturity</u>	<u>Herbicide Traits</u>	<u>Soybean Cyst Nematode</u>	<u>Root Knot Nematode</u>	<u>Frogeye leafspot</u>	<u>Sudden death syndrome</u>	<u>Brown stem rot</u>	<u>Cercospora blight</u>
Credenz	CZ 4938 LL	4.9	LL		P	VG	VG	G	
Credenz	CZ 4748 LL	4.7	LL	VG	VG	E	VG	E	
Credenz	CZ 5150 LL	5.1	LL	VG	P	E	F	E	
Credenz	CZ 5947 LL	5.9	LL		P	E	E	E	
Southern Harvest	SH 3814 LL	3.8	LL	G		G	G		
Southern Harvest	SH 4817 LL	4.8	LL	G	F	G			
Southern Harvest	SH 5215 LL	5.2	LL	G		E	G		
Southern Harvest	SH 5515 LL	5.5	LL	G		G	G		
Progeny	P 4930LL	4.9	LL	MR3	MS	R	MR		
Progeny	P 4247LL	4.2	LL		MS	MR	MR		
Progeny	P 5414LLS	5.4	LL/STS	S	MR				
Progeny	P 5909LLS	5.9	LL/STS	S	MR	R	MS		
Dyna-Gro	S45LL97	4.5	LL	MR3	F	VG	VG		
Dyna-Gro	S49LL34	4.9	LL	R3, MR14	P	VG	G		
Dyna-Gro	S52LL66	5.2	LL	MR3	G	VG	G		
Dyna-Gro	S55LS75	5.5	LL/STS	S	G	VG	G		

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

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.

Seed Treatments on Submitted Varieties

Company	Brand	Treatment Brand Name (Contents)	None					Insecticide	Fungicide	Nematicide	Inoculant	Biological
Asgrow	AG46X6	Acceleron Seed Applied Solutions (Basic + Poncho/Votivo, Acceleron B-200SAT)						X	X	X		X
Asgrow	AG48X7	Acceleron Seed Applied Solutions (Basic + Poncho/Votivo, Acceleron B-200SAT)						X	X	X		X
Pioneer	P46A93X	Pioneer Premium FST/IST (Evergol Energy SB, Lumisena)						X	X			
Pioneer	P48A60X	Pioneer Premium FST/IST (Evergol Energy SB, Lumisena)						X	X			X
USG	7447XTS	RenPro Plus BioST riznate + molybdenum						X	X	X		X
USG	7496XTS	RenPro Plus BioST riznate + molybdenum						X	X	X		X
Hubner	H43-27R2X	Acceleron Seed Applied Solutions (Basic + Poncho/Votivo, Acceleron B-200SAT)						X	X	X		X
Hubner	H49-27R2X	Acceleron Seed Applied Solutions (Basic + Poncho/Votivo, Acceleron B-200SAT)						X	X	X		X
Dyna-Gro	46XS87	Equity VIP + Clariva						X	X	X		
Dyna-Gro	48XS78	Equity VIP						X	X			
Progeny	P4816RX	Poncho/Votivo, Trilex 2000, llevo						X	X	X		
Progeny	P4757RY	Poncho/Votivo, Trilex 2000, llevo						X	X	X		
Doebler	4817X	DPH Boost+Lumisena (Evergol Energy SB)						X	X	X	X	X
Doebler	49R9	DPH Boost+Lumisena (Evergol Energy SB)						X	X	X	X	X
NK Seed	S45-K5X						X					
NK Seed	S43-V3X						X					
VCIA	MO4901D GT								X			
Asgrow	AG56X8	Acceleron Seed Applied Solutions (Basic + Poncho/Votivo, Acceleron B-200SAT)						X	X	X		X
Asgrow	AG55X7	Acceleron Seed Applied Solutions (Basic + Poncho/Votivo, Acceleron B-200SAT)						X	X	X		X
Pioneer	P52A26R	Pioneer Premium FST/IST (Evergol Energy SB, Lumisena)						X	X	X		X
Pioneer	P55A49X						X					
USG	7547XT	RenPro Plus Votivo Riznate						X	X	X		X
USG	7568XT	RenPro Plus Votivo Riznate						X	X	X		X
Hubner	H52-18R2X	Acceleron Seed Applied Solutions (Basic + Poncho/Votivo, Acceleron B-200SAT)						X	X	X		X
Hubner	H57-18R2X	Acceleron Seed Applied Solutions (Basic + Poncho/Votivo, Acceleron B-200SAT)						X	X	X		X
Dyna-Gro	52RS86						X					
Dyna-Gro	58RY78	Apron Maxx + DynaStart PBC + imidacloprid						X	X		X	X
Progeny	P5688RX	Poncho/Votivo, Trilex 2000, llevo						X	X	X		
Progeny	P5752RY	Poncho/Votivo, Trilex 2000, llevo						X	X	X		
Doebler	E52X9	DPH Boost+llevo+Lumisena (Evergol Energy SB)						X	X		X	X
Doebler	56R8	DPH Boost+Lumisena (Evergol Energy SB)						X	X		X	X
NK Seed	S52-Y7X						X					
NK Seed	S57-A7X						X					
VCIA	Corbin								X			



MATURITY GROUP 4 VARIETY COMPARISONS

2018 VIRGINIA COOPERATIVE EXTENSION ON-FARM VARIETY TESTS -- GROUP 4

Company	Brand	Northumberland					Middlesex					Prince George					Caroline					Essex Ag Expo					Chesapeake					Brunswick					AVERAGE		AVERAGE RELATIVE YIELD
		Westmoreland	Northumberland	Middlesex	Prince George	Caroline	Essex Ag Expo	Chesapeake	Brunswick	AVERAGE		AVERAGE		AVERAGE		AVERAGE		AVERAGE		AVERAGE		AVERAGE		AVERAGE		AVERAGE		AVERAGE		AVERAGE									
Doeblers	4817X	57.5	49.2	61.5	62.8	59.5	69.8	48.9	53.5	57.8	57.8	59.5	69.8	48.9	53.5	57.8	57.8	59.5	69.8	48.9	53.5	57.8	57.8	59.5	69.8	48.9	53.5	57.8	57.8	59.5	69.8	110							
Hubner	H43-27R2X	52.5	47.3	52.6	54.2	61.2	67.6	51.2		55.2	55.2	61.2	67.6	51.2		55.2	55.2	61.2	67.6	51.2		55.2	55.2	61.2	67.6	51.2		55.2	55.2	61.2	67.6	105							
Pioneer	P48A60X	53.9	47.4	60.9	58.8	63.3	53.0	47.0	53.3	54.7	54.7	63.3	53.0	47.0	53.3	54.7	54.7	63.3	53.0	47.0	53.3	54.7	54.7	63.3	53.0	47.0	53.3	54.7	54.7	63.3	53.0	104							
Asgrow	AG46X6	55.1	50.8	54.2	56.0	54.8	59.7	48.4	54.5	54.2	54.2	54.8	59.7	48.4	54.5	54.2	54.2	54.8	59.7	48.4	54.5	54.2	54.2	54.8	59.7	48.4	54.5	54.2	54.2	54.8	59.7	103							
NK Seed	S45-K5X	54.6	47.6	64.5	57.0	55.1	57.4	42.7	51.6	53.8	53.8	55.1	57.4	42.7	51.6	53.8	53.8	55.1	57.4	42.7	51.6	53.8	53.8	55.1	57.4	42.7	51.6	53.8	53.8	55.1	57.4	102							
NK Seed	S43-V3X	54.2	47.7	67.9	58.3	54.4	55.4	40.3	51.4	53.7	53.7	54.4	55.4	40.3	51.4	53.7	53.7	54.4	55.4	40.3	51.4	53.7	53.7	54.4	55.4	40.3	51.4	53.7	53.7	54.4	55.4	101							
Doeblers	49R9	58.6	51.0	64.2	59.8	55.7	60.0	28.0	55.5	54.1	54.1	55.7	60.0	28.0	55.5	54.1	54.1	55.7	60.0	28.0	55.5	54.1	54.1	55.7	60.0	28.0	55.5	54.1	54.1	55.7	60.0	101							
Progeny	P4816RX	56.1	50.2	63.1	61.0	53.5	54.2	35.0	55.6	53.6	53.6	53.5	54.2	35.0	55.6	53.6	53.6	53.5	54.2	35.0	55.6	53.6	53.6	53.5	54.2	35.0	55.6	53.6	53.6	53.5	54.2	101							
USG	7447XTS	51.1	56.0	52.3	56.3	62.5	55.2	37.7	55.8	53.4	53.4	62.5	55.2	37.7	55.8	53.4	53.4	62.5	55.2	37.7	55.8	53.4	53.4	62.5	55.2	37.7	55.8	53.4	53.4	62.5	55.2	101							
Progeny	P4757RY	59.3	35.6	61.4	62.3	57.4	60.7	40.2	50.3	53.4	53.4	57.4	60.7	40.2	50.3	53.4	53.4	57.4	60.7	40.2	50.3	53.4	53.4	57.4	60.7	40.2	50.3	53.4	53.4	57.4	60.7	101							
Pioneer	P46A93X	51.1	52.6	56.8	55.4	59.0	59.8	37.0	53.2	53.1	53.1	59.0	59.8	37.0	53.2	53.1	53.1	59.0	59.8	37.0	53.2	53.1	53.1	59.0	59.8	37.0	53.2	53.1	53.1	59.0	59.8	100							
Asgrow	AG48X7	50.0	52.4	56.1	54.3	58.5	58.3	44.5	46.1	52.5	52.5	58.5	58.3	44.5	46.1	52.5	52.5	58.5	58.3	44.5	46.1	52.5	52.5	58.5	58.3	44.5	46.1	52.5	52.5	58.5	58.3	100							
Dyna-Gro	S46XS87	47.0	47.3	57.3	57.0		63.2	44.7	42.1	51.2	51.2		63.2	44.7	42.1	51.2	51.2		63.2	44.7	42.1	51.2	51.2		63.2	44.7	42.1	51.2	51.2	63.2	44.7	98							
Dyna-Gro	S48XS78	36.9	53.1	57.6	60.4	58.6	59.0	37.7	51.2	51.8	51.8	58.6	59.0	37.7	51.2	51.8	51.8	58.6	59.0	37.7	51.2	51.8	51.8	58.6	59.0	37.7	51.2	51.8	51.8	58.6	59.0	98							
USG	7496XTS	55.0	49.3	57.4	56.8	49.0	53.0	31.0	53.6	50.6	50.6	49.0	53.0	31.0	53.6	50.6	50.6	49.0	53.0	31.0	53.6	50.6	50.6	49.0	53.0	31.0	53.6	50.6	50.6	49.0	53.0	95							
Hubner	H49-27R2X	48.1	45.0	53.4	54.9	59.3	59.3	26.7	43.1	48.7	48.7	59.3	59.3	26.7	43.1	48.7	48.7	59.3	59.3	26.7	43.1	48.7	48.7	59.3	59.3	26.7	43.1	48.7	48.7	59.3	59.3	91							
VCIA	MO4901D GT	38.7		49.7	45.7	46.0	42.6	51.3	50.0	46.3	46.3	46.0	42.6	51.3	50.0	46.3	46.3	46.0	42.6	51.3	50.0	46.3	46.3	46.0	42.6	51.3	50.0	46.3	46.3	46.0	42.6	88							
AVG		51.8	48.9	58.3	57.1	56.7	58.1	40.7	51.3			56.7	58.1	40.7	51.3			56.7	58.1	40.7	51.3			56.7	58.1	40.7	51.3			56.7	58.1	51.3							

Yields are bushels/A corrected to 13% moisture.

Adjusted yields are used for Essex-Ag Expo location. Yields were adjusted by linear interpolation using the check plot yields.

Average Relative Yield ranks varieties based on their performance compared to the location average. It is a percentage above or below the location average.

2018 BRUNSWICK COUNTY MATURITY GROUP 4 SOYBEAN COMPARISONS

Cooperators: **Producer:** TTP Farm Operations
 Extension: Taylor Clarke, Mecklenburg
 Lindy Fimon, Lunenburg
 Laura Siegle, Amelia
 Industry: Participating seed companies
Previous Crop: Soybeans
Soil Type: Applying sandy loam
Tillage: No-till
Planting Date: June 14, 2018
Seeding Rate/Row Spacing: 15 inch rows
Fertilization: P&K applied variable rate based on 1 acre grid
Crop Protection: Burndown: Roundup PowerMax(1qt), Barrage(10oz), BroadAxe
 Post: Roundup PowerMax, Warrant Ultra
Harvest Date: October 25, 2018
Harvest Equipment: JD 9500, Weigh Wagon

Brand	Variety	Moisture%	Yield (bu/A)
Check	AG 49X6	13.8	43.9
Dyna-Gro	S46XS87	13.7	42.1
Progeny	P4757RY	13.7	50.3
Pioneer	P48A60X	13.5	53.3
Dyna-Gro	S48XS78	13.4	51.2
Asgrow	AG46X6	13.2	54.5
NK Seed	S45-K5X	13.3	51.6
Hubner	H49-27R2X	13.4	43.1
Asgrow	AG48X7	13.6	46.1
Check	AG 49X6	13.4	46.1
USG	7447XTS	13.3	55.8
USG	7496XTS	14.2	53.6
VCIA	Corbin	17.5	45.9
Progeny	P4816RX	14.9	55.6
Pioneer	P46A93X	13.8	53.2
NK Seed	S43-V3X	13.8	51.4
Doebblers	4817X	14.2	53.5
VCIA	MO4901D GT	13.9	50.0
Doebblers	49R9	13.7	55.5
	AVERAGE	13.9	50.1

Discussion: MO4901D GT and Corbin were completely lodged (flat).

2018 CAROLINE COUNTY MATURITY GROUP 4 SOYBEAN COMPARISONS

Cooperators: **Producer:** Airy Hill Farm
 Extension: M. Broaddus, T. Jones
 Industry: Various Soybean Seed Companies
Previous Crop: Soybeans
Soil Type: Kempsville-Emporia Complex, 2-6 % slopes
Tillage: No-till
Planting Date: May 11, 2018
Seeding Rate/Row Spacing: 120,000; 30"
Fertilization: 8-40-80 (DAP and Muriate of Potash) applied early March
Crop Protection: Burndown: 32 oz/ac Liberty, 5 oz/ac Antares Prime,
 1 qt/100 gal water of Hel-Fire surfactant
 Over the top weed control: 1 qt/acre glyphosate June 16
 Over the top weed control: 1 qt/acre glyphosate August 11
Harvest Date: December 6, 2018
Harvest Equipment: Case/IH 1660 Rotary w/ 25' 1020 flex head

Brand	Variety	Moisture%	Yield (bu/A)
Hubner	H49-27R2X	17.9	59.3
Progeny	P4757RY	19.4	57.4
NK Seed	S45-K5X	18.5	55.1
Asgrow	AG46X6	17.5	54.8
USG	7447XTS	17.8	62.5
Doeblers	4817X	17.7	59.5
Hubner	H43-27R2X	18.1	61.2
Pioneer	P48A60X	17.4	63.3
NK Seed	S43-V3X	17.9	54.4
Dyna-Gro	S48XS78	16.7	58.6
VCIA	MO4901D GT	17.3	46.0
Asgrow	AG48X7	17.4	58.5
Doeblers	49R9	18.1	55.7
USG	7496XTS	17.7	49.0
Progeny	P4816RX	17.8	53.5
Pioneer	P46A93X	19.4	59.0
	AVERAGE	17.9	56.7

Discussion: This was a very good test with all varieties showing very similar yields. Two varieties, USG7496 and the VCIA variety shared the feeding of a groundhog that lived nearby, and this may have contributed to lower yields in those plots. It is also believed that the combination of extremely excessive spring, fall, and winter rainfall with a not-so-well drained Kempsville-Emporia complex may have led to lower yields (and higher than average moistures) than the farmer experienced in soybean fields in sandier soils nearby.

2018 ESSEX COUNTY MATURITY GROUP 4 SOYBEAN COMPARISONS

Cooperators: **Producer:** Jay Hundley
 Extension: Robbie Longest, David Holshouser
 Industry: Various Seed Companies
Previous Crop: Corn, Wheat
Soil Type: State fine sandy loam
Tillage: No-till
Planting Date: July 9, 2018
Seeding Rate/Row Spacing: 200,000 seed/acre/15-inch
Fertilization: 0-90-131 (N-P-K) on 10/1/17
Crop Protection: Roundup PowerMaxx 2 qt/A Postemergence
 Tombstone 2.55 oz/A R3
 Quadris Top SBX 7.0 oz/A R5
Harvest Date: November 30, 2018
Harvest Equipment: Wintersteiger plot combine

Brand	Variety	Moisture%	Yield (bu/A)	Adjusted Yield (bu/A)
AMP	A4447NSXR2	13.6	63.4	59.4
AMP	A4847NSXR2	13.2	61.4	57.8
Channel	4916R2XSR	13.7	51.9	49.1
Channel	4919R2XSR	13.2	58.1	55.3
check	Corbin	13.8	44.0	42.1
VCIA	MO4901D GT	14.0	44.3	42.6
Asgrow	AG46X6	12.9	61.8	59.7
Asgrow	AG48X7	13.3	60.1	58.3
Dyna-Gro	S46XS87	13.5	64.8	63.2
Dyna-Gro	S48XS78	13.2	60.2	59.0
Pioneer	P48A60X	12.5	53.8	53.0
Pioneer	P46A93X	13.1	60.4	59.8
NK Seed	S45-K5X	12.8	57.7	57.4
check	Corbin	13.3	42.7	42.7
NK Seed	S43-V3X	12.7	55.1	55.4
Progeny	P4816RX	12.8	53.6	54.2
Progeny	P4757RY	13.8	59.8	60.7
Hubner	H43-27R2X	12.9	66.2	67.6
Hubner	H49-27R2X	13.0	57.8	59.3
USG	7447XTS	12.4	53.5	55.2
USG	7496XTS	13.3	51.1	53.0
Doebler	4817X	12.8	66.9	69.8
check	Corbin	13.3	40.1	42.0

Doeblers	49R9	12.8	56.9	60.0
	AVERAGE	13.2	56.1	55.7

Discussion: Planting was delayed due to very wet soil conditions. Still, yields were good. Yield of the checks declined by over 4 bushels/acre from one end of the field to the other; therefore, yields were adjusted with linear interpolation. The adjusted yields are more reflective of how varieties compare. Use these data as well as other test results for making your variety selections.

2018 MIDDLESEX COUNTY MATURITY GROUP 4 SOYBEAN COMPARISONS

Cooperators: **Producer:** Poplargrove Landscaping Inc. Craig Leggett- Owner
 Extension: M. Rachael Miller- Extension Middlesex County
Previous Crop: Corn w/cover crop planted fall 2017 of wheat, crimson clover & tillage radishes
Soil Type: Emporia sandy loam
Tillage: No-till
Planting Date: May 15, 2018
Seeding Rate/Row Spacing: 140,000; 7 inch rows
Fertilization: 265 lbs of 7-15-31 per acre
Crop Protection: Burndown: Glyphosate + 2,4-D
 Post-emergence: Glyphosate + Firstrate
Harvest Date: November 23, 2018
Harvest Equipment: John Deere 7720 w/ 20 ft head

Brand	Variety	Moisture%	Yield (bu/A)	% of Check
Asgrow	AG46X6	13.3	54.2	96
Check		13.6	56.6	
Asgrow	AG48X7	13.6	56.1	96
Check		13.8	58.7	
Pioneer	P46A93X	13.4	56.8	100
Check		13.9	57.0	
Pioneer	P48A60X	13.9	60.9	107
Check		14.1	57.1	
USG	7447XTS	13.8	52.3	93
Check		13.8	55.9	
USG	7496XTS	13.8	57.4	100
Check		14.0	57.7	
Hubner	H43-27R2X	14.0	52.6	93
Check		14.3	56.6	
Hubner	H49-27R2X	14.0	53.4	94
Check		13.8	56.9	
Dyna-Gro	S46XS87	13.8	57.3	92
Check		13.8	62.2	
Dyna-Gro	S48XS78	13.9	57.6	87
Check		14.2	66.2	
Progeny	P4816RX	14.2	63.1	104
Check		14.4	60.9	
Progeny	P4757RY	14.7	61.4	96
Check		14.7	64.1	
Doeblers	4817X	14.5	61.5	97

Check		14.6	63.7	
Doebblers	49R9	14.5	64.2	110
Check		14.6	58.5	
NK Seed	S45-K5X	14.5	64.5	97
Check		14.3	66.3	
NK Seed	S43-V3X	14.6	67.9	104
Check		14.3	65.3	
VCIA	MO4901D GT	14.2	49.7	76
	AVERAGE	14.1	59.2	
	CHECK AVERAGE	14.1	60.2	

Discussion: Check variety used was NK 52Y2. Although the season was extremely wet, yields were good. Use these data, as well as other test plot results, when making variety selections.

2018 NORTHUMBERLAND COUNTY MATURITY GROUP 4 SOYBEAN COMPARISONS

Cooperators:	Producer:	Melville Farms, Mike Bryant
	Extension:	Trent Jones, Stephanie Romelczyk, Mike Broaddus, Makenzie Hall
Previous Crop:		Soft Red Wheat
Soil Type:		63% Sassafras fine sandy loam, 37% Woodstown fine sandy loam
Tillage:		No-till
Planting Date:		June 20, 2018
Seeding Rate/Row Spacing:		175,000 plants/Acre, 7 1/2 in.
Fertilization:		40-100-100 Pre-Plant
Crop Protection:		First Pass - Roundup 32 oz./Acre Second Pass- Sultrus 2 oz./Acre, Stratego Yield 4 oz./Acre Full Bor 1 pt./Acre, 10-0-10-.5B 1 gallon/Acre
Harvest Date:		November 12, 2018
Harvest Equipment:		9500 John Deere

Brand	Variety	Moisture%	Yield (bu/A)
USG	7496XTS	14.9	49.3
USG	7447XTS	15.1	56.0
Dyna-Gro	S46XS87	14.9	47.3
Dyna-Gro	S48XS78	15.1	53.1
NK Seed	S45-K5X	15.8	47.6
NK Seed	S43-V3X	15.1	47.7
Pioneer	P48A60X	15.5	47.4
Pioneer	P46A93X	15.1	52.6
Asgrow	AG48X7	14.7	52.4
Asgrow	AG46X6	15.5	50.8
Doeblers	49R9	16.0	51.0
Doeblers	4817X	15.3	49.2
Hubner	H49-27R2X	15.2	45.0
Hubner	H43-27R2X	15.3	47.3
Progeny	P4816RX	15.3	50.2
Progeny	P4757RY	16.2	35.6
	AVERAGE	15.3	48.9

Discussion: Use these data, as well as other test plot results, when making variety selections.

2018 PRINCE GEORGE COUNTY MATURITY GROUP 4 SOYBEAN COMPARISONS

Cooperators: **Producer:** Sean Finney
 Extension: Scott Reiter, Prince George
Previous Crop: Wheat with straw removed
Soil Type: Aycock and Montross silt loam
Tillage: No-till
Planting Date: June 19, 2018
Seeding Rate/Row Spacing: 220,000 seed/A, 7.5 inch rows
Fertilization: 120 N-40 P2O5-100 K2O to wheat
Crop Protection: 1 qt Roundup Powermax - July
Harvest Date: December 7, 2018
Harvest Equipment: JD 9500, Weigh Wagon, DickeyJohn
 MiniGAC Moisture Meter

Brand	Variety	Moisture%	Yield (bu/A)
USG	7568XT	16.7	52.7
Asgrow	AG46X6	16.3	56.0
Asgrow	AG48X7	18.0	54.3
Pioneer	P46A93X	18.9	55.4
Pioneer	P48A60X	17.7	58.8
USG	7447XTS	17.4	56.3
USG	7496XTS	17.6	56.8
Hubner	H43-27R2X	17.8	54.2
Hubner	H49-27R2X	17.7	54.9
Dyna-Gro	S46XS87	18.1	57.0
Dyna-Gro	S48XS78	18.1	60.4
Progeny	P4816RX	17.7	61.0
Progeny	P4757RY	18.4	62.3
Doebblers	4817X	18.1	62.8
Doebblers	49R9	18.3	59.8
NK Seed	S45-K5X	18.1	57.0
NK Seed	S43-V3X	18.9	58.3
VCIA	MO4901D GT	17.9	45.7
USG	7568XT	17.0	56.4
	AVERAGE	17.8	56.8

Discussion: This was an excellent crop of double-crop soybeans. The seeding rate of 220,000 seed/acre was too high for this season as growth was rank and many varieties had some degree of leaning plants. Progeny 4757RY and MO4901D GT had noticeable lodging but were not flat on the ground. They still harvested well. Overall seed quality was good with minimal damage.

2018 VIRGINIA BEACH-CHESAPEAKE MATURITY GROUP 4 SOYBEAN COMPARISONS

Cooperators: **Producer:** Brickhouse Farms/Frank Brickhouse
 Extension: Roy Flanagan III-Virginia Beach
 Watson Lawrence-Chesapeake
Previous Crop: Corn
Soil Type: Acredale silt loam
Tillage: Conventional
Planting Date: July 3, 2018
Seeding Rate/Row Spacing: 200,000 seeds/acre; 30 inch rows
Fertilization: 500 lbs./acre 15-15-15
Crop Protection: Post Emergence: 1 qt. Roundup plus 16 oz. Reflex/acre
Harvest Date: December 7, 2018
Harvest Equipment: JD 9860 with 935 grain platform

Brand	Variety	Moisture%	Yield (bu/A)
Hubner	H43-27R2X	15.2	51.2
NK Seed	S43-V3X	15.5	40.3
NK Seed	S45-K5X	15.3	42.7
Dyna-Gro	S46XS87	15.4	44.7
Asgrow	AG46X6	14.8	48.4
Pioneer	P46A93X	15.3	37.0
Progeny	P4757RY	15.6	40.2
USG	7447XTS	15.3	37.7
Dyna-Gro	S48XS78	15.3	37.7
Progeny	P4816RX	15.3	35.0
Asgrow	AG48X7	15.0	44.5
Doebblers	4817X	15.1	48.9
Pioneer	P48A60X	14.9	47.0
USG	7496XTS	15.1	31.0
Doebblers	49R9	15.0	28.0
VCIA	MO4901D GT	15.0	51.3
Hubner	H49-27R2X	14.8	26.7
	AVERAGE	15.2	40.7

Discussion: Use this and other location yields when selecting varieties for 2019.

2018 WESTMORELAND COUNTY MATURITY GROUP 4 SOYBEAN COMPARISONS

Cooperator: **Producer:** F. F. Chandler, Jr. and Louis Chandler
Extension: Stephanie Romelczyk, ANR-Westmoreland
 Trent Jones, ANR -Northumberland/Lancaster
 Robbie Longest, ANR-Essex
 Makenzie Hall, Extension Intern
 Caroline Campbell, Extension Intern
Industry: Participating Seed Company Representatives
Previous Crop: Corn
Soil Type: Kempsville loam
Tillage: No-till
Planting Date: June 6, 2018
Seeding Rate/Row Spacing: 120,000/30" rows
Fertilization: 20-50-75
Crop Protection: **Burndown:** Gramoxone (3 pts/A) + Scanner (1 pt/A) + Broadaxe (24 ozs/A)
 Post-emergence:
 1. Makaze (1.5 qts/A) + Weather Gard (1qt/100 gal) + Radiate (2 ozs/A) + Task Force (1 qt/A)
 2. Quadris Top SBX (7 ozs/A) + Franchise (3 ozs/A) + Sniper (6 ozs/A) + Renforce K (1gal/A)
Harvest Date: October 31, 2018
Harvest Equipment: John Deere 9400

Brand	Variety	Moisture%	Yield (bu/A)
Dyna-Gro	S48XS78	15.1	36.9
Dyna-Gro	S46XS87	15.5	47.0
Hubner	H49-27R2X	15.6	48.1
Hubner	H43-27R2X	14.9	52.5
USG	7496XTS	15.4	55.0
USG	7447XTS	15.0	51.1
Doebler	49R9	15.5	58.6
Doebler	4817X	15.6	57.5
Asgrow	AG48X7	15.2	50.0
Asgrow	AG46X6	14.8	55.1
NK Seed	S45-K5X	15.0	54.6
NK Seed	S43-V3X	15.0	54.2
Progeny	P4816RX	15.0	56.1
Progeny	P4757RY	15.2	59.3
Pioneer	P46A93X	15.4	51.1
Pioneer	P48A60X	15.1	53.9

VCIA	MO4901D GT	15.5	38.7
	AVERAGE	15.2	51.8

Discussion: The combine clogged while cutting VCIA MO4901D GT, so yield may not be fully accurate. Yields were good considering the very wet weather experienced during the 2018 growing season.



MATURITY GROUP 5 VARIETY COMPARISONS

2018 VIRGINIA COOPERATIVE EXTENSION ON-FARM VARIETY TESTS -- GROUP 5

Company	Brand	Prince George	Dinwiddie	Ft Essex	Ag Expo	Chesapeake	Brunswick	Appomattox	AVERAGE	AVERAGE RELATIVE YIELD
NK Seed	S57-A7X	53.3	54.8	40.4	68.4	34.3	46.4	49.6	107	
Pioneer	P55A49X	55.7	62.2	47.8	57.6	32.7	41.9	49.7	107	
Progeny	P5752RY	54.0	54.1	54.0	61.4	27.6	47.3	49.7	107	
Hubner	H52-18R2X	59.2	59.9	46.5	46.4	33.1	51.8	49.5	106	
Dyna-Gro	S52RS86	51.4	53.3	51.4	56.3	37.5	40.4	48.4	105	
Doebblers	52X9	57.3	56.3	40.4	47.6	38.2	48.1	48.0	104	
Pioneer	P52A26R	57.2	64.5	49.3	31.4	36.4	50.0	48.1	103	
NK Seed	S52-Y7X	50.2	59.6	50.8	52.0	32.7	40.9	47.7	103	
VCIA	Corbin	53.1	54.8	35.1	54.3	34.1	47.5	46.5	101	
Asgrow	AG56X8	56.8	58.0	56.3	30.4	32.0	45.0	46.4	99	
Progeny	P5688RX	52.3	53.1	54.9	34.8	30.2	52.1	46.2	99	
Hubner	H57-18R2X	53.2	50.9	52.7	37.9	35.1	42.6	45.4	98	
USG	7568XT	59.5	51.7	46.8	34.5	29.6	50.8	45.5	97	
Doebblers	56R8	50.4	45.1	42.5	44.3	34.5	41.5	43.0	94	
Dyna-Gro	S58RY78	49.0	57.2	40.7	30.7	34.3	45.6	42.9	93	
Asgrow	AG55X7	56.7	44.7	42.2	35.8	33.1	42.2	42.4	92	
USG	7547XT	54.3	39.4	48.5	35.2	20.1	43.1	40.1	85	
AVG		54.3	54.1	47.1	44.6	32.7	45.7			

Yields are bushels/A corrected to 13% moisture.

Adjusted yields are used for Essex-Ag Expo and Brunswick locations. Yields were adjusted by linear interpolation using the check plot yields.

Average Relative Yield ranks varieties based on their performance compared to the location average. It is a percentage above or below the location average.

2018 APPOMATTOX COUNTY MATURITY GROUP 5 SOYBEAN COMPARISONS

Cooperators: **Producer:** Cole Farms; Ben Cole
Extension: Bruce Jones
Previous Crop: Wheat
Soil Type: Cecil sandy loam
Tillage: No-till
Planting Date: July 3, 2018
Seeding Rate/Row Spacing: 120,000 seeds/A; 15 inch rows
Fertilization: 0-40-40 plus 1 lb. zinc and boron
Crop Protection: Glyphosate; Fierce and Classic burndown
 No post spray
Harvest Date: December 7, 2018
Harvest Equipment: Gleaner R52

Brand	Variety	Moisture %	Yield (bu/A)
Asgrow	AG56X8	12.4	45.0
Asgrow	AG55X7	12.3	42.2
Hubner	H52-18R2X	13.2	51.8
Hubner	H57-18R2X	13.0	42.6
Dyna-Gro	S52RS86	12.2	40.4
Dyna-Gro	S58RY78	12.5	45.6
VCIA	Corbin	13.2	47.5
Pioneer	P52A26R	13.3	50.0
Pioneer	P55A49X	12.4	41.9
Progeny	P5688RX	13.3	52.1
Progeny	P5752RY	13.4	47.3
Doebblers	52X9	12.5	48.1
Doebblers	56R8	12.6	41.5
USG	7547XT	12.3	43.1
USG	7568XT	12.2	50.8
NK Seed	S52-Y7X	12.2	40.9
NK Seed	S57-A7X	12.6	46.4
	AVERAGE	12.7	45.7

Discussion: Despite the late planting date, yields were good. Adequate moisture throughout the growing season and a late fall may have attributed to the good yields. According to visual observation, Dyna-Gro S52RS86 had more damaged seed going into the weigh wagon than other varieties.

Cooperators:	Producer:	William Wright
	Extension:	Taylor Clarke, Mecklenburg Lindy Fimon, Lunenburg
	Industry:	Participating seed companies
Previous Crop:		Wheat
Soil Type:		Appling Mattaponi Complex
Tillage:		No-till
Planting Date:		June 27, 2018
Seeding Rate/Row Spacing:		180,000 seed/acre; 18 inch row
Crop Protection:		Burndown: Roundup, 2,4-D, Warrant Post: Roundup, Flexstar
Harvest Date:		November 28, 2018
Harvest Equipment:		Gleaner R50 w/ 15 ft flex head

Brand	Variety	Moisture%	Yield (bu/A)	Adjusted Yield (bu/A)
Check	USG 75B75	14.3	33.4	30.9
USG	7568XT	14.4	32.8	29.6
Hubner	H57-18R2X	14.4	39.6	35.1
USG	7547XT	15.1	23.0	20.1
Progeny	P5688RX	14.2	35.1	30.2
Doeblers	56R8	14.4	40.4	34.5
Pioneer	P55A49X	14.4	38.6	32.7
Progeny	P5752RY	14.1	32.7	27.6
Asgrow	AG56X8	14.0	37.9	32.0
Check	USG 75B75	13.8	37.0	31.3
Dyna-Gro	S58RY78	14.7	40.3	34.3
Asgrow	AG55X7	14.3	38.6	33.1
NK Seed	S57-A7X	14.5	39.5	34.3
VCIA	Corbin	14.5	38.7	34.1
Hubner	H52-18R2X	14.2	36.9	33.1
Doeblers	52X9	14.1	41.7	38.2
Pioneer	P52A26R	14.4	38.7	36.4
Dyna-Gro	S52RS86	13.9	38.7	37.5
NK Seed	S52-Y7X	14.0	32.7	32.7
Check	USG 75B75	13.7	29.1	30.3
Doeblers	4817X	14.2	32.4	35.2
Dyna-Gro	S48XS78	14.0	28.6	32.7
Dyna-Gro	S46RS86	14.6	21.9	26.5
Check	USG 75B75	13.6	24.4	31.5

	AVERAGE	14.2	34.7	32.2
	CHECK AVERAGE	13.9	31.0	31.0

Discussion: Weather conditions and deer feeding pressure limited plant height in this test. Yields were greater than expected based on visual appearance. Plots of USG 75B75 (check) and Dyna-Gro S46RS86 suffered the most severe deer feeding. Check yields declined along the test; therefore, yields were adjusted with linear interpolation.

2018 DINWIDDIE COUNTY MATURITY GROUP 5 SOYBEAN COMPARISONS

Cooperators:	Producer:	Nick Moody
	Extension:	Mike Parrish - Dinwiddie
Previous Crop:		Corn
Soil Type:		Cecil/Apling sandy loam
Tillage:		No-till
Planting Date:		July 3, 2018
Seeding Rate/Row Spacing:		165,000; 15 in. rows
Fertilization:		120 units K before soybeans
Crop Protection:		Burndown: 1.5 pt Gramoxone, 3 oz Envive Over top - 7/11/18: 1.3 pt Reflex with 22 oz Power Max
Harvest Date:		November 21, 2018
Harvest Equipment:		JD 9750 STS

Brand	Variety	Moisture%	Yield (bu/A)
Asgrow	AG56X8	14.5	58.0
Asgrow	AG55X7	14.8	44.7
Pioneer	P52A26R	14.8	64.5
Pioneer	P55A49X	14.8	62.2
USG	7547XT	14.9	39.4
USG	7568XT	14.4	51.7
Hubner	H52-18R2X	14.4	59.9
Hubner	H57-18R2X	14.7	50.9
Dyna-Gro	S52RS86	14.5	53.3
Dyna-Gro	S58RY78	15.4	57.2
Progeny	P5688RX	14.2	53.1
Progeny	P5752RY	14.2	54.1
Doeblers	52X9	14.7	56.3
Doeblers	56R8	15.5	45.1
NK Seed	S52-Y7X	14.4	59.6
NK Seed	S57-A7X	15.6	54.8
VCIA	Corbin	14.8	54.8
	AVERAGE	14.7	54.1

Discussion: Use these data, as well as other test plot results, when making variety selections.

2018 ESSEX COUNTY MATURITY GROUP 5 SOYBEAN COMPARISONS

Cooperators: **Producer:** Jay Hundley
 Extension: Robbie Longest, David Holshouser
 Industry: Various Seed Companies
Previous Crop: Corn, Wheat
Soil Type: State fine sandy loam
Tillage: No-till
Planting Date: July 9, 2018
Seeding Rate/Row Spacing: 200,000 seed/acre/15-inch
Fertilization: 0-90-131 (N-P-K) on 10/1/17
Crop Protection: Roundup PowerMaxx 2 qt/A Postemergence
 Tombstone 2.55 oz/A R3
 Quadris Top SBX 7.0 oz/A R5
Harvest Date: November 30, 2018
Harvest Equipment: Wintersteiger plot combine

Brand	Variety	Moisture%	Yield (bu/A)	Adjusted Yield (bu/A)
check	Corbin	13.3	40.1	35.2
USG	7568XT	13.1	51.9	46.8
USG	7547XT	13.0	53.1	48.5
Doebblers	56R8	13.1	45.8	42.5
Doebblers	52X9	13.1	43.0	40.4
Pioneer	P55A49X	12.4	50.1	47.8
Pioneer	P52A26R	12.8	50.9	49.3
Hubner	H52-18R2X	12.2	47.3	46.5
VCIA	Corbin	12.8	35.2	35.1
Hubner	H57-18R2X	12.5	52.0	52.7
Dyna-Gro	S58RY78	12.8	39.5	40.7
Dyna-Gro	S52RS86	12.0	49.1	51.4
NK Seed	S52-Y7X	12.4	47.8	50.8
NK Seed	S57-A7X	13.6	37.4	40.4
Progeny	P5688RX	12.1	49.9	54.9
Progeny	P5752RY	11.7	48.3	54.0
Asgrow	AG55X7	11.6	37.1	42.2
check	Corbin	12.1	28.3	32.8
Asgrow	AG56X8	11.8	47.7	56.3
check	Corbin	12.0	30.9	37.1
	AVERAGE	12.5	44.3	45.3

Discussion: Planting was delayed due to very wet soil conditions. Still, yields were good. Yield of the checks declined by nearly 10 bushels/acre from one end of the field to the other; therefore, yields were adjusted with linear interpolation. The adjusted yields are more reflective of how varieties compare. Use these data as well as other test results for making your variety selections.

2018 PRINCE GEORGE COUNTY MATURITY GROUP 5 SOYBEAN COMPARISONS

Cooperators: **Producer:** Sean Finney
 Extension: Scott Reiter, Prince George
Previous Crop: Wheat with straw removed
Soil Type: Aycock and Montross silt loam
Tillage: No-till
Planting Date: June 19, 2018
Seeding Rate/Row Spacing: 220,000 seed/acre; 7.5 inch row
Fertilization: 120 N-40 P2O5-100 K2O to wheat
Crop Protection: 1 qt/A Roundup PowerMax - early July
Harvest Date: December 7, 2018
Harvest Equipment: JD 9500, Weigh Wagon, DickeyJohn MiniGAC Moisture Meter

Brand	Variety	Moisture%	Yield (bu/A)
USG	7568XT	17.0	56.4
Asgrow	AG56X8	16.9	56.8
Asgrow	AG55X7	17.4	56.7
Pioneer	P52A26R	18.2	57.2
Pioneer	P55A49X	18.4	55.7
USG	7547XT	18.2	54.3
USG	7568XT	17.2	59.5
Hubner	H52-18R2X	17.6	59.2
Hubner	H57-18R2X	18.3	53.2
Dyna-Gro	S52RS86	17.7	51.4
Dyna-Gro	S58RY78	18.6	49.0
Progeny	P5688RX	17.5	52.3
Progeny	P5752RY	17.4	54.0
Doebler	52X9	18.0	57.3
Doebler	56R8	18.0	50.4
NK Seed	S52-Y7X	18.8	50.2
NK Seed	S57-A7X	18.9	53.3
VCIA	Corbin	18.6	53.1
USG	7568XT	17.4	54.9
	AVERAGE	17.9	54.5

Discussion: This was an excellent crop of double-crop soybeans. The seeding rate of 220,000 seed/acre was too high for this season as growth was rank and many varieties had some degree of leaning plants. Doebler 56R8 and Corbin had noticeable lodging but were not flat on the ground. They still harvested well. Overall seed quality was good with minimal damage.

2018 VIRGINIA BEACH-CHESAPEAKE MATURITY GROUP 5 SOYBEAN COMPARISONS

Cooperators: **Producer:** Brickhouse Farms/ Frank Brickhouse
 Extension: Roy Flanagan III-Virginia Beach
 Watson Lawrence-Chesapeake
Previous Crop: Corn
Soil Type: Acredale silt loam
Tillage: Conventional
Planting Date: July 3, 2018
Seeding Rate/Row Spacing: 200,000 seed/acre; 30 inch rows
Fertilization: 500 lbs./acre 15-15-15
Crop Protection: Post Emergence: 1 qt. Roundup plus 16 oz. Reflex/acre
Harvest Date: December 7, 2018
Harvest Equipment: JD 9860 with 935 grain platform

Brand	Variety	Moisture%	Yield (bu/A)
Doeblers	52X9	15.0	47.6
Hubner	H52-18R2X	14.8	46.4
NK Seed	S52-Y7X	15.1	52.0
Pioneer	P52A26R	15.1	31.4
Dyna-Gro	S52RS86	15.1	56.3
USG	7547XT	14.9	35.2
Asgrow	AG55X7	14.9	35.8
Pioneer	P55A49X	14.8	57.6
Progeny	P5688RX	15.0	34.8
Asgrow	AG56X8	14.9	30.4
Doeblers	56R8	14.9	44.3
USG	7568XT	14.8	34.5
Progeny	P5752RY	14.6	61.4
NK Seed	S57-A7X	15.2	68.4
Hubner	H57-18R2X	14.8	37.9
Dyna-Gro	S58RY78	15.2	30.7
VCIA	Corbin	15.2	54.3
	AVERAGE	15.0	44.6

Discussion: Use this and other location yields when selecting varieties for 2019.



OTHER SOYBEAN WEED CONTROL SYSTEM TESTS

2018 VIRGINIA COOPERATIVE EXTENSION ON-FARM VARIETY TESTS -- LIBERTY LINK

Company	Brand	Brunswick Wright	Brunswick Harrison	AVERAGE	AVERAGE RELATIVE YIELD
Credenz	CZ 4938 LL	57.3	36.3	46.8	111
Progeny	P4930LL	49.6	41.1	45.4	110
Southern Harvest	SH 4817 LL	48.1	40.1	44.1	107
Credenz	CZ 4748 LL	52.5	34.9	43.7	104
Dyna-Gro	S 49LL34	59.9	29.5	44.7	103
Dyna-Gro	S 45LL97	46.8	31.5	39.2	93
Progeny	P4247LL	42.0	33.4	37.7	91
Southern Harvest	SH 3814 LL	42.1	26.7	34.4	81

AVG	49.8	34.2
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Company	Brand	Brunswick Wright	Brunswick Harrison	AVERAGE	AVERAGE RELATIVE YIELD
Dyna-Gro	S 52LL66	52.0	50.8	51.4	111
Credenz	CZ 5150 LL	53.4	46.8	50.1	108
Southern Harvest	SH 5515 LL	45.5	50.4	47.9	104
Southern Harvest	SH 5215 LL	45.4	49.0	47.2	102
Progeny	P5414LL	47.2	45.7	46.5	101
Progeny	P5909LLS	46.5	43.1	44.8	97
Credenz	CZ 5947 LL	45.1	39.9	39.9	92
Dyna-Gro	S 55LS75	41.2	36.6	38.9	84

AVG	47.1	45.3
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2018 BRUNSWICK COUNTY LIBERTY LINK SOYBEAN COMPARISONS

Cooperators:
Producer: Doug and Jonathan Harrison
Extension: Taylor Clarke, Mecklenburg
 Lindy Fimon, Lunenburg
 Cynthia Gregg, Brunswick
Previous Crop: Flue-cured tobacco/wheat cover crop
Soil Type: Appling Mattaponi complex
Tillage: No-till
Planting Date: June 8, 2018
Seeding Rate/Row Spacing: 150,000 seed/A, 15 inch rows w/JD 1590 no-till drill
Fertilization: 0-40-60
Crop Protection: Burndown: Liberty, Roundup, Authority Elite
 Post: Liberty plus Intensity
Harvest Date: November 28, 2018
Harvest Equipment: JD 9500 with 920F head

Brand	Variety	Moisture%	Yield (bu/A)
Check	S55LS75	17.2	35.7
Credenz	CZ 4938 LL	16.3	36.3
Dyna-Gro	S49LL34	15.7	29.5
Dyna-Gro	S45LL97	15.4	31.5
Credenz	CZ 4748 LL	15.2	34.9
Progeny	P4247LL	14.8	33.4
Southern Harvest	SH 3814 LL	15.3	26.7
Progeny	P4930LL	15.2	41.1
Southern Harvest	SH 4817 LL	15.1	40.1
Check	S55LS75	15.2	38.8
Credenz	CZ 5150 LL	15.2	46.8
Dyna-Gro	S52LL66	15.2	50.8
Southern Harvest	SH 5215 LL	15.3	49.0
Southern Harvest	SH 5515 LL	15.3	50.4
Progeny	P5414LLS	15.4	45.7
Progeny	P5909LLS	15.3	43.1
Credenz	CZ 5947 LL	15.4	39.9
Dyna-Gro	S55LS75	15.3	35.2
Check	S55LS75	15.3	32.8
	AVERAGE	15.4	39.1

Discussion: Southern Harvest SH3814 LL may not have gotten a fair test. Seed were much larger than the rest of the varieties and seed treatment was very sticky, causing the drill to plant it at a lower population than the rest of the test.

2018 BRUNSWICK COUNTY LIBERTY LINK SOYBEAN COMPARISONS

Cooperators:
Producer: Edward and William Wright
Extension: Taylor Clarke, Mecklenburg
 Lindy Fimon, Lunenburg
Industry: Participating seed companies
Previous Crop: Wheat
Soil Type: Appling Mattaponi complex
Tillage: No-till
Planting Date: June 28, 2018
Seeding Rate/Row Spacing: 180,000 seed/A, 18 inch rows
Crop Protection: Burndown: Roundup
 Post: 32 oz Liberty + 10 oz Intensity
Harvest Date: November 28, 2018
Harvest Equipment: Gleaner R50 with 15 flex head

Brand	Variety	Moisture%	Yield (bu/A)
Dyna-Gro	S55LS75	14.2	41.2
Southern Harvest	SH 4817 LL	13.8	48.1
Progeny	P4247LL	13.7	42.0
Dyna-Gro	S45LL97	13.8	46.8
Southern Harvest	SH 3814 LL	13.8	42.1
Credenz	CZ 4748 LL	13.8	52.5
Progeny	P4930LL	13.6	49.6
Credenz	CZ 4938 LL	13.7	57.3
Dyna-Gro	S49LL34	13.8	59.9
Southern Harvest	SH 5515 LL	13.7	45.5
Progeny	P5414LLS	13.7	47.2
Southern Harvest	SH 5215 LL	13.8	45.4
Credenz	CZ 5150 LL	13.6	53.4
Dyna-Gro	S52LL66	13.6	52.0
Progeny	P5909LLS	13.7	46.5
Credenz	CZ 5947 LL	13.7	45.1
	AVERAGE	13.8	48.4

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



Other Research

2018 RICHMOND COUNTY SOYBEAN FOLLOWING COVER CROP STUDY

Cooperators:
Producer: Robert Taylor, Jerry Withers, and Allen Clarke
Extension: Robbie Longest, ANR – Essex
 Trent Jones, ANR – Lancaster and Northumberland
Industry: Danny Withers, Northern Neck & Three Rivers SWCD
 Keith Balderson, NRCS
Previous Crop: Corn
Soil Type: Suffolk sandy loam and Rumford loamy sand
Tillage: Continuous no-till
Planting Date: June 9, 2018
Variety: Dyna-Gro 48RS53
Seeding Rate/Row Spacing: 140,000 seeds per acre in 15 inch rows
Fertilization: 30-70-60-5S
Harvest Date: December 6, 2018
Harvest Equipment: Case IH 2388 with 30-foot header

Treatment	Rep.	Soybean Plant Ht. (inches)	Soybean Plant Pop. (Plants/Acre)	Moisture %	Yield (Bu./Acre)
Rye	1	17.25	90,500	17.5	42.9
Wheat	1	15.75	96,500	17.0	46.7
Barley	1	15.20	105,500	16.8	46.0
Fallow	1	12.88	121,000	17.0	49.2
Fallow	2	12.56	130,000	16.5	50.0
Rye	2	16.81	97,000	16.3	46.3
Wheat	2	15.00	125,500	16.9	47.6
Barley	2	16.38	132,000	17.2	46.7
Fallow	3	13.81	128,500	16.4	49.7
Wheat	3	17.13	134,500	16.3	46.9
Barley	3	15.19	111,500	16.5	47.3
Rye--inadvertently harvested prior to plot harvest	3	19.14	94,000		
Avg. Rye—2 Reps.		17.98 A	93,800 B	16.9	44.6 C
Avg. Wheat		15.96 AB	118,800 A	16.7	47.1 B
Avg. Barley		15.58 B	116,300 A	16.8	46.7 B
Avg. Fallow		13.08 C	126,500 A	16.6	49.6 A
LSD (p=0.10)		1.4	17,966	NS	1.4

Discussion: In the table, averages followed by the same letter are not significantly different at the 90% probability level. The purpose of this experiment was to evaluate the performance of full-season soybean following small grain cover crops and fallow land (corn residue). Barley, rye, and wheat cover crops were established on September 26, 2017 following corn harvest using a no-till drill. An excellent stand of all three species was achieved. Biomass samples were taken by cutting all plant material from

three 1 square foot samples in each species on March 27th. Samples were air-dried for several days until the samples were crispy and biomass was calculated on a dry matter per acre basis. Samples were analyzed for nitrogen content and nitrogen uptake was calculated. The results are reported below.

Sampled March 27, 2018

Species	Biomass (lbs. per acre)	N Content (%)	N Uptake (lbs./A)
Barley	1,120	2.09	23.4
Rye	3,809	2.35	89.5
Wheat	1,665	2.28	38.0

Each species was sampled again on May 7th and biomass only was calculated. The results are reported below.

Sampled May 7, 2018

Species	Biomass (lbs. per acre)
Barley	4,530
Rye	9,583
Wheat	5,314

Cover crops were terminated approximately two weeks prior to planting using herbicides and full-season soybeans were planted with a no-till planter in 15-inch rows. Plant stands were taken on July 10th. The biomass produced by the cover crops affected seed to soil contact and reduced stands, most notably in the rye cover crop. Soybean plant height was also taken from each plot on July 10th and soybeans were taller in the cover crop plots compared to fallow. Many of the benefits of cover crops take several years to achieve and are very difficult to quantify. This study does illustrate the important role cover crops can have in “trapping nitrogen” and potentially decreasing the loss of this nutrient to the environment.

Soybean yields were good in all treatments. Soybeans following fallow yielded higher than soybeans following the cover crops, possibly due to the higher plant stands in the fallow plots.

Remember these are results from only one location in one year so no hard conclusions should be drawn from this study. Further work is planned.

2018 WESTMORELAND COUNTY SOYBEAN FOLLOWING COVER CROP STUDY

Cooperators:
Producer: Keith Balderson
Extension: Robbie Longest, ANR – Essex
 Stephanie Romelczyk, ANR – Westmoreland
Industry: Danny Withers, Three Rivers SWCD
 Max Comerford, Three Rivers SWCD
Previous Crop: Corn
Soil Type: Suffolk sandy loam
Tillage: Continuous no-till
Planting Date: May 3, 2018
Variety: Dyna-Gro 43XS27
Seeding Rate/Row Spacing: 120,000 seeds/A; 7.5 inch rows
Fertilization: 14-65-60 per acre
Crop Protection: Burndown: Makaze (40 oz/A)
 Pre-emergence: Broadaxe XC (1 qt/A) + Metribuzin 75 (1 lb/A)
 Post-emergence: Synchrony XP (75 oz/A) + Makaze (40 oz/A)
Harvest Date: October 18, 2018
Harvest Equipment: John Deere 7720 w/18 foot header

Treatment	Replication	Moisture%	Yield (bu/A)
wheat	1	14.3	56.7
rye	1	14.2	55.3
barley	1	14.3	57.3
fallow	1	14.2	57.8
fallow	2	14.3	57.7
rye	2	14.0	56.2
wheat	2	14.1	59.6
barley	2	14.2	57.7
fallow	3	14.7	63.4
wheat	3	14.7	62.8
barley	3	14.3	63.7
rye	3	14.7	60.0
	AVERAGE	14.3	59.0
Fallow Average		14.4	59.6 A
Wheat Average		14.4	59.7 A
Barley Average		14.3	59.6 A
Rye Average		14.3	57.2 B
LSD (0.10)		NS	1.3

Discussion: Cover crop averages in the table containing the same letter are not significantly different. The purpose of this experiment was to evaluate the performance of full-season soybean following small grain cover crops and fallow land (corn residue). Barley, rye, and wheat cover crops were established

on September 27, 2017 following corn harvest using a no-till drill. An excellent stand of all three species was achieved. Biomass samples were taken by cutting all plant material from three 1 foot samples in each species on March 16th. Samples were air-dried for several days until the samples were crispy and biomass was calculated on a dry matter per acre basis. Samples were analyzed for nitrogen content and nitrogen uptake was calculated. The results are reported below.

Sampled March 16, 2018

Species	Biomass (lbs. per acre)	N Content (%)	N Uptake (lbs./A)
Barley	1,387	1.96	27.2
Rye	3,343	2.36	78.9
Wheat	1,850	2.12	39.2

Each species was sampled again on April 22 and biomass only was calculated. The results are reported below.

Sampled April 22, 2018

Species	Biomass (lbs. per acre)
Barley	4,225
Rye	6,146
Wheat	4,706

Cover crops were terminated approximately two weeks prior to planting using herbicides and full-season soybeans were planted with a no-till drill. A successful stand of soybeans was achieved in all plots. Plant stands were not taken, but final stands in the rye cover were most likely somewhat lower due to the significant amount of residue.

Many of the benefits of cover crops take several years to achieve and are very difficult to quantify. This study does illustrate the important role cover crops can have in “trapping nitrogen” and potentially decreasing the loss of this nutrient to the environment.

Soybean yields were good in all treatments. Yields following wheat and barley cover crops were essentially the same as yields in the fallow treatment while yields behind the rye cover crop were about two bushels less, possibly a result of reduced soybean stand in the rye cover crop.

Remember these are results from only one location in one year so no hard conclusions should be drawn from this study. Further work is planned.

2018 PRINCE GEORGE SEED TREATMENT STUDY

Cooperators:
Producer: Sean Finney
Extension: Scott Reiter, Prince George
Industry: Zack Gurkin, Coastal AgroBusiness
Previous Crop: Wheat with straw removed
Soil Type: Aycock and Montross silt loam
Tillage: No-till
Planting Date: June 19, 2018
Variety: NK S57A7X
Seeding Rate/Row Spacing: 220,000 seed/acre, 7.5 inch rows
Fertilization: 120 N-40 P2O5-100 K2O to wheat
Crop Protection: 1 qt/A Roundup PowerMax - early July
Harvest Date: December 7, 2018
Harvest Equipment: JD 9500, Weigh wagon, DickeyJohn Mini GAC moisture tester

Treatment	Replication	Stand Count	Moisture%	Yield (bu/A)
Untreated	1	197,299	18.4	60.2
Seed Treatment	1	147,975	18.8	57.2
Seed Treatment	2	191,134	18.7	57.6
Untreated	2	201,410	19.0	56.2
Seed Treatment	3	182,913	18.6	53.4
Untreated	3	176,747	18.6	50.6
Seed Treatment	4	178,803	18.7	54.5
Untreated	4	201,410	18.8	54.0
Seed Treatment	AVG	175,206	18.7	55.7
Untreated	AVG	194,217	18.7	55.3
Difference		-19,011	0.0	0.4
LSD (0.1)		27,529		2.9 bu
		NS		NS

Discussion: This trial evaluated Coastal AgroBusiness ProShield Xtra A & Inoculant seed treatment versus an untreated control. The seed treatment included: abamectin nematicide; sedexane, mefenoxam, fludioxonil, thiabendazole fungicides; thiamethoxam insecticide; Impact ST biological; and *B. japonicum* rhizobia inoculant. This field does not have a history of nematode problems, but is a wetter soil type for the area. However, approximately 4.5 inches of rain was received over the next 4 days after planting. Stand

counts were taken on July 18 by counting all plants in a 36 inch hula hoop. The stand count values are the average of 3 locations in each plot. Though there were 19,000 fewer plants in the treated plots it was not statistically different from the untreated plots. There were no visual differences in early season growth. No differences in yield were observed at this location. We would like to repeat this test in an area with known nematode issues in 2019.

2018 CULPEPER SEEDING STUDY

Cooperators:	Producer:	Jamie Shenk, Beauregard Farms
	Extension:	Carl Stafford, David Holshouser
	Industry:	Channel Seed
Previous Crop:		Corn
Soil Type:		Fauquier silt loam
Tillage:		No-till
Variety:		Channel 4717R2X/SR
Harvest Date:		November 6, 2018

Treatment	Replication	Moisture%	Yield (bu/A)
130,000 seed/acre	1	13.1	40.3
90,000 seed/acre	1	13.5	49.5
90,000 seed/acre	2	13.9	48.4
130,000 seed/acre	2	13.5	49.2
90,000 seed/acre	3	13.5	49.4
130,000 seed/acre	3	13.4	52.3
130,000 seed/acre	4	13.1	50.6
90,000 seed/acre	4	13.3	52.3
130,000 Average (Reps 2-4)		13.3	50.7
90,000 Average (Reps 2-4)		13.5	50.1
	AVERAGE	13.4	49.3

Discussion: A large part of rep 1 was not harvestable due to equipment problems; therefore, that rep was not included in the average. Regardless, there were no yield differences between seeding rates for this experiment. The 40,000 additional seeds used in this test could cost \$14 to 16 per acre; requiring at least 1.5 bushels/acre in greater yield. These results are similar to past seeding rate research that suggests a final stand of 70 to 80 thousand plants/acre is adequate for full-season soybean.