



Virginia On-Farm Soybean Test Plots

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



2016



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Introduction

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

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

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

This is the 20th year of this multi-county cooperative effort and further work is planned for 2017. 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 Google Images, Middlesex Extension, Lindy Tucker and Laura Siegle

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 Dinwiddie County. .

In several locations, new Roundup Ready Xtend soybeans were compared. That information was compiled in each location with the associated maturity group. (There is an overall evaluation of those varieties in the book following the maturity group 5 variety information.) Testing shows that they can yield as well as Roundup Ready technology and can offer some valuable weed control options for resistance issues. Please read label directions on seed bags and pesticide containers when using this new dicamba tolerant system. Look for all the “non-glyphosate” weed control system information in the section following the Maturity Group 5 information.

Results of plot work conducted to validate a decision-aid for foliar fungicides show promise. This work, headed by Dr. Hillary Mehl, took place in six locations across Virginia and Maryland.

In Essex, King & Queen, and Middlesex Counties, Keith Balderson and David Moore looked at the addition of foliar Potassium applied at development stages R2-R3 (early pod set). The 28% potassium product was used to increase plant K later in the season, especially in double crop situations where K fertility could be low. Also in 2016, above normal moisture during the growing season could have caused some K fertility to drop below the root zone. Results here show no significant benefit.

Yield “enhancers” are always of great interest as producers try to get that extra bushel out of there production systems. Take a look at the study conducted by Mike Parrish and Dr. Holshouser at 2016 Virginia AG-EXPO site in Dinwiddie County.

One of the tools farmers use to help spread production risk is to plant hybrids and varieties of crops with different maturities. A study conducted at the AG-EXPO site showed some interesting results worth reading. Additional variety comparison studies were conducted in Goochland and Mecklenburg.

Note studies conducted in Lancaster, Mecklenburg and Nottoway Counties looking at planting populations. University research has shown that producers can benefit from lower full season populations and higher double crop populations.

The need for additional Sulfur fertility in Soybeans discussed.

Trait Data for 2016 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	AG4632	4.6	RR2/STS	MR 3	S	Very Good	Moderate		
Asgrow	AG4835	4.8	RR2/SR	MR 3	MR	Good	Good		
DuPont/Pioneer	P46T21R	4.6	RR	R 3 ,14	S	Very Good	Good		
DuPont/Pioneer	P48T53R	4.8	RR	R 3 ,14	S	Very Good	Good		
Southern States	SS4915NS R2	4.9	RR2/STS	R 3 ,14					
Southern States	SS4917N R2	4.9	RR2	R 3, MR14	S	Very Good	Good		
USG	74D95RS	4.9	RR2/STS		R	Moderate	Moderate		
USG	74K95RS	4.9	RR2/STS			Good	Good		
Hubner	H48-13R2/STS	4.8	RR2/STS	MR 3	S	Good	Good		
CPS/Dyna-gro	S43RY95	4.3	RR2	R 3, MR14		Very Good	Good		
CPS/Dyna-Gro	S48RS53	4.8	RR2/STS	R 3, MR 14		Very Good	Good		Good
Credenz	CZ 4959 RY	4.9	RR2	R 3	S	Very Good	Moderate		
Credenz	CZ 4590 RY	4.5	RR2	R 3	S	Low	Good		
Dow/Mycogen	5N490R2	4.9	RR2/STS	R3, MR 14	MS	Good	Good		
Dow/Mycogen	5N479R2	4.7	RR2/STS	R 3, MR 14	MS	Very Good	Very Good		
Doebler	DB4214SR	4.2	GT/STS	R 3		Very Good	Very Good	Good	
Doebler	DB4715RR	4.7	GT	R 3,14	S	Good	Moderate	Low	
Seed Consultants	SCS9474RR	4.7	RR	R 3,14	S		Very Good		
Seed Consultants	SC9497R	4.9	GT	R 3,14		Good	Moderate	Moderate	
Syngenta/NK	S45-R7	4.5	RR2/STS	R 3, MR 14	MR	Good	Very Good	Very Good	
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Asgrow	AG5533	5.5	RR2/SR	R 3	S	Very Good	Moderate		
Asgrow	AG5335	5.3	RR2/SR	R 3	S	Good	Good		
DuPont/Pioneer	P56T29R2	5.6	RR2	R 3,14	S	Poor			
DuPont/Pioneer	P52T50R	5.2	RR	MR 3,14	S	Moderate	Good		
USG	75J90R	5.8	RR2	R 3, MR 14	R	Good	Good		Good
USG	7553nRS	5.5	RR/STS	MR 3,14		Moderate	Good		Moderate
Hubner	H56-16R2	5.6	RR2	MR 1, R 3	R	Very Good	Very Good		
CPS/Dyna-Gro	S52RS86	5.2	RR2/STS						
CPS/Dyna-Gro	S56RY84	5.6	RR2	R 3	R	Very Good	Very Good		Very Good
Southern States	SS 5215NS R2	5.2	RR2/STS	R 3, MR 14					
Dow/Mycogen	5N523R2	5.2	RR2/STS	R 3, MR 14	MR	Moderate	Good		
Dow/Mycogen	5N550R2	5.5	RR2	R 3, MR 14	R	Excellent	Excellent		
Seed Consultants	9544RR	5.4	RR	R 3,14	S		Moderate		
Seed Consultants	9574RR	5.7	RR	R 3		Very Good	Good		
Credenz	CZ 5375RY	5.3	RR2			Excellent	Very Good		
Doebler	DB5710RR	5.7	GT	none	Moderate	Very Good	Good	Good	
Syngenta/NK	S52-Y2	5.2	RR2	R 3, MR 14	R	Moderate	Good		
Doebler	DB5416R	5.4	GT	R 3,14	R	Moderate	Moderate		
<hr/>									
Channel	4916R2X/SR	4.9	RR2/X/SR	R 3	MR	Good	Good		
Channel	4616R2X/SR	4.6	RR2/X/SR	R 3	MR	Moderate	Moderate		
Hubner	H49-27R2X	4.9	RR2/X						
Southern States	SS 5517NX	5.5	RR2/X						
Hubner	H55-27R2X	5.5	RR2/X						

R = resistant
MR = moderately resistant
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 = 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 2015, 2016 or 2017 catalogs or current websites.



MATURITY GROUP 4

VARIETY COMPARISONS

2016 Maturity Group 4 On-Farm Soybean Results

Brand	Variety	King & Queen	Westmoreland	Lancaster	Prince George	Brunswick	Mecklenburg	VA Beach	Dinwiddie	Avg.	Rel. Yield
USG	74D95RS	57.4	65.7	49.6	31.4	52.4	31.1	56.1	83.4	53.4	106
Asgrow	AG4835	59.5	58.6	52.5	35.4	49.8	28.6		82.6	52.4	105
Seed Consultants	SCS9474RR	54.7	59.7	51.9	35.6	51.7	30.2	59.9	75.9	52.5	105
Seed Consultants	SC9497R	58.5	60.2	52.4	36.1	53.9	27.8	57.4	72.2	52.3	105
DynaGro	S48RS53	62.4	59.2	55.0	34.6	47.6	26.6	53.9	81.8	52.6	104
USG	74K95RS	52.1	63.9	51.6	36.7	48.4	26.4	56.3		47.9	103
Asgrow	AG4632	51.0	57.2	53.1	36.8	48.6	27.7		80.5	50.7	102
Credenz	CZ4959RY	61.7	61.9	47.2	33.7	54.2	24.4		73.9	51.0	102
Hubner	H48-13R2/STS	62.7	61.2	48.2	34.0	47.8	27.4	49.5	78.8	51.2	102
Southern States	SS4915NSR2	51.7	56.6	53.2	31.4	47.0	30.2	53.3	81.7	50.6	101
Doebler's	DB4715RR	55.3	53.1	48.3	36.8	53.8	27.1		72.8	49.6	101
DynaGro	S43RY95	51.3	57.6	52.0	34.5			53.0		49.7	99
Pioneer	P48T53R	60.7	57.4	51.6	31.6	52.1	20.0	56.0	76.1	50.7	99
Southern States	SS4917NR2	57.4	60.1	50.2	28.2	54.2	22.7	53.5	77.8	50.5	98
Mycogen	5N490RS	48.1	58.7	49.3	34.1	55.2	24.6	48.8	77.1	49.5	98
Mycogen	5N479R2	46.8	54.7	52.3	33.4	46.5	27.0		77.8	48.4	97
Pioneer	P46T21R	57.9	53.8	53.1	28.4	48.8	22.8	56.5	77.5	49.9	97
Credenz	CZ4590RY	52.8	55.4	45.8	31.3	48.9	24.5		85.4	49.2	97
NK	S45-R7	47.3	49.8	46.2	31.6	51.5	20.1	54.2	66.3	45.9	91
Doebler's	DB4214SR	49.5	53.1	47.4	29.8	49.3	16.8		59.9	43.7	87
Location Average		54.9	57.9	50.5	33.3	50.6	25.6	54.5	76.8	50.1	100

2016 VIRGINIA BEACH/CHESAPEAKE MATURITY GROUP 4 SOYBEAN COMPARISON

Producer: North Landing Farms/ Curtis Wolfarth
Extension: Roy D. Flanagan III and M. Watson Lawrence, Jr.
Previous Crop: Soybeans
Soil Type: Acredale Silt Loam
Tillage: Conventional
Planting Date: June 24, 2016
Seeding Rate/Row Spacing: 165,000 seeds/acre in 18-inch rows
Fertilization: 250 lbs./acre 7-18-36
Crop Protection: Pre-emergence: 1 qt./acre Prefix incorporated
 Post emergence: 28 oz. Powermax + .3 oz. First Rate herbicides
 8 oz/acre Quadris Top SB fungicide + 2 oz Belt + 4 oz Lamba-Cy
 9oz. Besiege insecticide
Harvest Date: November 22, 2016
Harvest Equipment: JD 9500 with 925 grain platform

Brand	Variety	Moisture%	Yield (bu/A at 13%)
Seed Consultants	SCS9474RR	9.8	59.9
Seed Consultants	SC9497R	10.0	57.4
DuPont/Pioneer	P46T21R	10.3	56.5
USG	74K95RS	10.5	56.3
USG	74D95RS	10.7	56.1
DuPont/Pioneer	P48T53R	10.0	56.0
Hubner	H51-13R2	9.8	55.9
Syngenta/NK	S45-R7	9.6	54.3
CPS/Dyna Gro	S48RS53	10.0	53.9
Southern States	SS4917NR2	10.9	53.5
Southern States	SS4915NSR2	10.3	53.3
CPS/Dyna Gro	S43RY95	9.1	53.0
Hubner	H48-13R2/STS	10.2	49.5
Dow/Mycogen	5N490R2	10.5	48.8
AVERAGE		10.1	54.6

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

2016 WESTMORELAND MATURITY GROUP 4 SOYBEAN COMPARISON

Cooperators: Producer: F.F. Chandler and Louis Chandler
 Extension: Stephanie Romelczyk, VCE-Westmoreland
 Keith Balderson, VCE-Essex
 Trent Jones, VCE-Northumberland/Lancaster
 Industry: Participating Companies
Previous Crop: Corn
Soil Type: Kempsville Loam; Suffolk Sandy Loam
Tillage: No-Till
Planting Date: June 6, 2016
Seeding Rate/Row Spacing: 140,000 seeds/acre in 30-inch rows
Fertilization: 15-50-50
Crop Protection: Burndown: Gramoxone (2.5 pt) + Envive (3.5 oz)
 Post: Touchdown (36 oz.) + Radiate (2 oz.) + Tombstone (20 oz.)
 Quadris Top SBX (7.5oz.) + Sniper (6 oz.) + Re-Nforce K (1 gal.)
Harvest Date: October 28, 2016

Brand	Variety	Moisture%	Yield (bu/A)
USG	74D95RS	13.6	65.7
USG	74K95RS	13.2	63.9
Channel	4916R2X/SR*	12.7	62.4
Credenz	CZ4959RY	12.8	61.9
Hubner	H49-27R2X*	12.2	61.9
Hubner	H48-13R2/STS	12.6	61.2
Seed Consultants	SC9497R	13.9	60.2
Southern States	SS4917NR2	13.2	60.1
Seed Consultants	SCS9474RR	13.6	59.7
CPS/Dyna-Gro	S 48RS53	13.2	59.2
Channel	4616R2X/SR*	12.7	59.0
Dow/Mycogen	5N490R2	13.3	58.7
Asgrow	AG4835	12.8	58.6
CPS/Dyna-Gro	S 43RY95	13.8	57.6
DuPont/Pioneer	P48T53R	14.3	57.4
Asgrow	AG4632	14.0	57.2
Southern States	SS4915NSR2	13.3	56.6
Credenz	CZ4590RY	13.4	55.4
Dow/Mycogen	5N479R2	14.0	54.7
DuPont/Pioneer	P46T21R	14.0	53.8
Doebler's	DB4214SR	15.1	53.1
Doebler's	DB4715RR	15.6	53.1
Syngenta/NK	S45-R7	15.3	49.8

Comments: Asterisks indicate X-tend soybean varieties. The NK variety had multiple tracks from the sprayer which may have contributed to lower yield.

2016 PRINCE GEORGE MATURITY GROUP 4 SOYBEAN COMPARISON

Cooperators: **Producer:** Paul Cerny and Sean Finney
Extension: Scott Reiter, Prince George

Previous Crop: Wheat with straw removed
Soil Type: Montross silt loam and Lynchburg loam
Tillage: No-till
Planting Date: June 15, 2016
Seeding Rate/Row Spacing: 220,000 seed/acre, 7.5 inch rows, John Deere 1590 drill
Fertilization: 120 N – 50 P₂O₅ – 120 K₂O to wheat
Crop Protection: 1 qt Roundup + 0.375 oz Synchrony STS - July
Harvest Date: November 21, 2016
Harvest Equipment: John Deere 9660-625F Platform

Brand	Variety	Moisture%	Yield (bu/A) @ 13%
CHECK- Doeblers	DB5416	12.5	34.6
Asgrow	AG4632	11.9	36.8
Asgrow	AG4835	11.8	35.4
DuPont/Pioneer	P46T21R	11.5	28.4
DuPont/Pioneer	P48T53R	11.3	31.6
Southern States	SS4915NS R2	11.7	31.4
Southern States	SS4917N R2	11.1	28.2
USG	74D95RS	11.7	31.4
USG	74K95RS	11.5	36.7
Hubner	H48-13R2/STS	11.8	34.0
CPS/ Dyna-Gro	S43RY95	11.9	34.5
CPS/Dyna-Gro	S48RS53	11.7	34.6
Credenz	CZ 4959 RY	11.1	33.7
Credenz	CZ 4590 RY	11.3	31.3
Dow/Mycogen	5N490R2	11.4	34.1
Dow/Mycogen	5N479R2	11.7	33.4
Doeblers	DB4214SR	11.5	29.8
Doeblers	DB4715RR	11.2	36.8
Seed Consultants	SCS9474RR	11.2	35.6
Seed Consultants	SC9497R	11.4	36.1
Syngenta/NK Seed	S45-R7	11.2	31.6
CHECK - Doeblers	DB5416	12.0	31.9
	Average*	11.5	33.3

Discussion: This turned out to be some of the best soybean yields in the area for 2016. The seed quality of these Group 4 varieties was not as good as the mid to late Group 5's but was not terrible. Full

season Group 4's suffered heavy losses in yield and quality in the Prince George area. Consider the multi-location averages when selecting high yielding varieties for 2017. *Average does not include check plots.



2016 MECKLENBURG MATURITY GROUP 4 SOYBEAN VARIETY COMPARISON

Cooperators:
Previous Crop:
Soil Type:
Tillage:
Planting Date:
Crop Protection:
Harvest Date:
Harvest Equipment:

Producer: John Manning
Extension: Taylor Clarke, Lindy Tucker, Laura Siegle
Industry: Participating Companies
 Soybeans followed by wheat for grain
 Applying Fine Sandy Loam
 No-till
 June 14, 2016
Seeding Rate/Row Spacing: 140-150,000/18" rows-Kinze
 9 row planter with
 brush meters
 Pre: Roundup PowerMax and Envive,
 Post: Roundup PowerMax
 November 23, 2016
 John Deere 4420 with 13' flex head

Brand	Variety	Moisture%	Yield (bu/A)
Doebler's	DB4214SR	13.7	16.8
Syngenta/NK	S 45-R7	13.3	20.1
Credenz	CZ4590RY	13.5	24.5
Asgrow	AG4632	13.5	27.7
Seed Consultants	SCS9474RR	13.3	30.2
DuPont/Pioneer	P46T21R	13.6	22.8
Asgrow (Check)	AG4835	12.8	31.3
Doebler's	DB4715RR	12.9	27.1
USG	74D95RS	13.1	31.1
Southern States	SS4915NSR2	13.1	30.2
Seed Consultants	SC9497R	13.0	27.8
Hubner	H48-13R2/STS	13.1	27.4
Dow/Mycogen	5N479R2	12.8	27.0
Asgrow (Check)	AG4835	12.5	29.3
CPS/Dyna-Gro	S48RS53	12.8	26.6
USG	74K94RS	12.6	26.4
DuPont/Pioneer	P48T53R	12.4	20.0
Credenz	CZ4959RY	12.3	24.4
Southern States	SS4917NR2	12.4	22.7
Dow/Mycogen	5N490R2	12.7	24.6
Asgrow (Check)	AG4835	12.4	25.1
Asgrow	AG5233	12.6	23.3
CPS/Dyna-Gro	S 52RY75	12.3	27.5

DuPont/Pioneer	P52T50R	12.2	30.2
Credenz	CZ5375RY	12.1	31.2
Dow/Mycogen	5N523R2	12.1	29.6
Asgrow	AG5335	12.6	26.2
CPS/Dyna-Gro	S 48RS53	12.2	25.0
Southern States	SS5215NSR2	12.1	29.2
Plot Average			26.2
Check Average			28.6

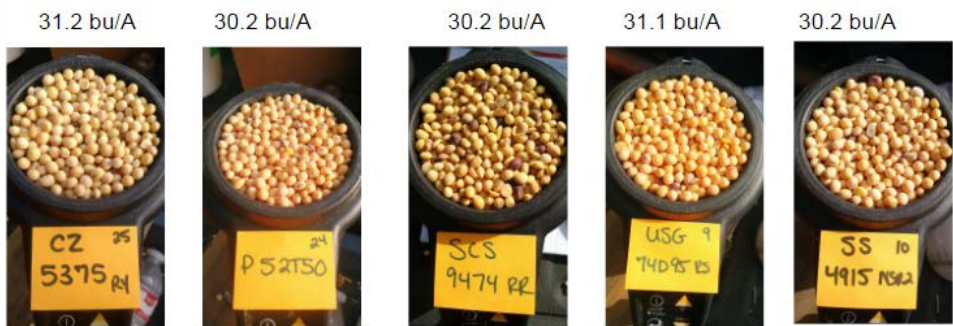
Comments

The plot yields ranged from 16.8 to 31.3 bu/acre. The overall test average including checks was 26.2 bu/acre. The check variety, Asgrow 4835 averaged 28.6 bu/acre across 3 replications. The five highest yielding varieties were, (1) CZ 5375 RY, (2) USG 74D95 RS (3) SCS 9474 R2, and (4) P52T50 , and (5) SS 4915 NS R2. The five poorest performing varieties were, (1) Doeblers 4214 RR, (2) NK 45-R7, (3) Pioneer 46T21 R, (4) Southern States 4917 NR2, and (5) Pioneer 48T53 R.

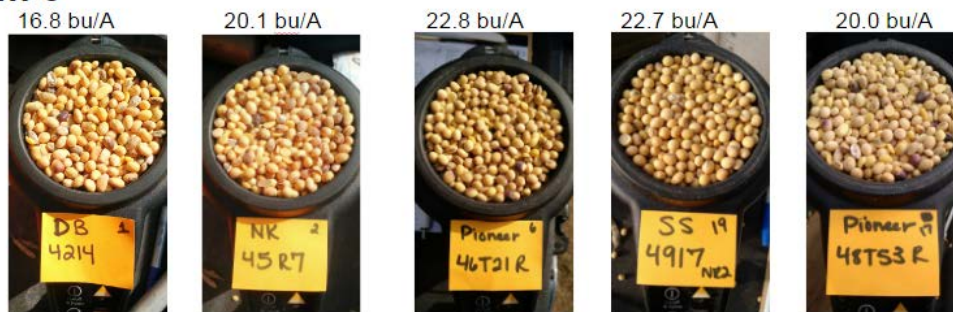
Soybean Variety Trials: Manning

Plots Avg: 26.2

Top 5



Bottom 5



2016 BRUNSWICK MATURITY GROUP 4 SOYBEAN VARIETY COMPARISON

Cooperators:
Producers: Sam and Josh Griffin
Extension: Taylor Clarke, Lindy Tucker, Laura Siegle, Nikki Norton
Intern: Marissa Eastep, Gabi Shook
Industry: Johnny Hawthorne
Previous Crop: Soybean
Soil Type: Chewada Silt Loam (river bottom)
Tillage: No-till
Planting Date: June 15, 2016
Seeding Rate/Row Spacing: 150-160,000 seeds/15" rows with Kinze 15 row planter
Fertilization: 18-40-80
Crop Protection: Pre: Roundup PowerMAX, Envive, Sharpen, Flexstar Post: Roundup PowerMAX, Quadris
Harvest Date: November 10, 2016
Harvest Equipment: AGCO Gleaner R62 with 25' flex head

Brand	Variety	Moisture%	Yield (bu/A)
Hubner (check)	H48-13R2/STS	16.9	43.1
Doebler's	DB4214SR	16.8	49.3
Syngenta/NK	S45-R7	16.9	51.5
Credenz	CZ4590RY	16.8	48.9
Asgrow	AG4632	16.6	48.6
Seed Consultants	SCS9474RR	16.8	51.7
DuPont/Pioneer	P46T21R	17.0	48.8
Doebler's	DB4715RR	15.8	53.8
USG	74D95RS	16.0	52.4
Hubner (check)	H48-13R2/STS	16.2	48.0
Asgrow	AG4835	15.5	49.8
Southern States	SS4915NSR2	15.4	47.0
Seed Consultants	SC9497R	15.0	53.9
Dow/Mycogen	5N479R2	15.5	46.5
CPS/Dyna-Gro	S48RS53	15.3	47.6
USG	74K95RS	15.3	48.4
DuPont/Pioneer	P48T53R	14.8	52.1
Credenz	CZ4959RY	14.7	54.2
Hubner (check)	H48-13R2/STS	14.7	52.2
Southern States	SS4917NR2	14.2	54.2
Dow/Mycogen	5N490R2	14.3	55.2
Asgrow	AG4934	14.6	54.7
Armor	50-R44	14.9	50.2

Asgrow	AG5233	15.3	53.0
CPS/Dyna-Gro	S52RS86	15.8	51.5
Southern States	SS5215NSR2	14.7	49.7
DuPont/Pioneer	P52T50R	16.4	41.7
Credenz	CZ5375RY	16.1	45.8
Armor (check)	47-R13	15.4	43.7
Plot Average			50.2
Check Average			46.8

Comments

The plots produced good yields, with a range from 41.7 to 55.2 bu/acre. The overall test average including checks was 50.2 bu/acre. The check variety, Hubner 48-13R2 averaged 46.8 bu/acre across 4 replications. Portions of the plot area were completely flooded by the Meherrin River following rains from Hurricane Matthew, however, only a few varieties were lodged due to water in low drainage areas of low ground. Four varieties yielded 10% or greater when compared to the average of the two closest checks and 5% more than plot average, (1) Mycogen 5N490 R2, (2) Doebler's 4715 RR, (3) SS 4917 N R2 (4) AG 4934, and (5) AG 5233. The five lowest yielding varieties were, (1) CZ 5375RY, (2) DG 48RS53, (3) SS 4915 NS R2, (4) Mycogen 5N479 R2, and (5) Pioneer 52T50 R. One variety was completely lodged (flat), Dyna-Gro 52RS86.

Soybean Variety Trials: Griffin

Plots Avg: 50.2

Top 5

55.2 bu/A

53.8 bu/A

54.2 bu/A

54.7 bu/A

53.0 bu/A



Bottom 5

45.8 bu/A

47.6 bu/A

47.0 bu/A

46.5 bu/A

41.7 bu/A



2016 LANCASTER MATURITY GROUP 4 SOYBEAN COMPARISON

Cooperators: Producer: Jock Chilton, Jonathan Chilton, RJ Reynolds, Mitchell Simpson
Extension: Trent Jones, Keith Balderson, Stephanie Romelczyk, Tara Brent
Industry: Participating Seed Companies, Helena Chemical Wheat
Soil Type: Sassafras Fine Sandy Loam, Kempsville Fine Sandy Loam
Tillage: No Till
Planting Date: June 28, 2016
Seeding Rate/Row Spacing: 170,000 Seeds / Acre, 7 inch rows
Fertilization: **First Pass-** 1 qt. / Acre Ele-Max Nutrient Concentrate
Second Pass- 1 Gallon / Acre Coron 10-0-10-0.5B
Crop Protection: **Pre** – 4.5 oz / Acre HM-1512 AG & 24 oz. / Acre Roundup
Post – .3 oz. / Acre First Rate, 32 oz. / Acre Roundup
4 oz./A Stratego YLD; 3 oz. / A Mustang Maxx; 2 oz/A. Belt
Harvest Date: November 10, 2016
Harvest Equipment: 660 John Deere & Macdon FD70 FlexDraper

Brand	Variety	Moisture%	Yield (bu/A)
Asgrow	AG4632	13.1	53.1
Asgrow	AG4835	12.7	52.5
Seed Consultants	SCS9474RR	12.8	51.9
Seed Consultants	SC9497R	13.0	52.4
DuPont Pioneer	P46T21R	12.7	53.1
DuPont Pioneer	P48T53R	12.2	51.6
CPS/Dyna-Gro	S48RS53	13.3	55.0
CPS/Dyna-Gro	S43RY95	10.6	52.0
Southern States	SS4915NSR2	10.9	53.2
Southern States	SS4917NR2	11.9	50.2
USG	74K95RS	12.3	51.6
USG	74D95RS	12.5	49.6
Dow/Mycogen	5N479R2	12.2	52.3
Dow/Mycogen	5N490R2	11.8	49.3
Doebblers	DB4214SR	12.4	47.4
Doebblers	DB4715RR	12.3	48.3
Credenz	CZ4590RY	12.4	45.8
Credenz	CZ4959RY	12.6	47.2
Syngenta/NK	S45-R7	12.2	46.2
Channel	4616R2X/SR	12.0	47.4
Channel	4916R2X/SR	11.3	47.3
Hubner	H49-27R2X	12.0	46.3
Hubner	H48-13R2/STS	11.4	48.2

2016 KING & QUEEN MATURITY GROUP 4 SOYBEAN COMPARISON

Cooperators: Producer Craig, Will & Josh Leggett
 Extension: David Moore, VCE Middlesex
 Keith Balderson, VCE Essex
 MacKenzie Moore, VCE Intern
 Industry: Seed Company Representatives
Previous Crop: Corn
Soil Type: Emporia Sandy Loam
Plant Date: June 8, 2016
Tillage/Population: No Till @140,000 seeds/A
Fertilization: 100# Potash
Crop Protection: Burndown: Glyphosate + 2,4-D + Quadfire
 Post: Glyphosate
Harvest Date: November 2, 2016
Harvest Equipment: John Deere 7720

Company	Variety	M%	TW	Yield @ 13%	% of Check
Channel	4616R2X/SR	14.4	56.5	54.3	110
Check	P48T53R	14.5	58.5	49.3	
Channel	4916R2X/SR	14.3	58	61.7	121
Check		14.4	57	53.0	
Hubner	H49-27R2X	14.4	57	61.6	120
Check		14.3		50.0	
Hubner	H48-13R2/STS	14.6	57.5	62.7	118
Check		14.4		56.7	
Credenz	CZ4590RY	14.7	57.5	52.8	94
Check		14.5		55.4	
Credenz	CZ4959RY	14.3	58	61.7	115
Check		14.5		52.3	
Doebler's	DB4214SR	14.1	56	49.5	97
Check		14.1		49.5	
Doebler's	DB4715RR	13.7	58	55.3	111
Check		14.2		50.1	
Asgrow	AG4632	13.7	56.5	51.0	102
Check		13.9		49.6	
Asgrow	AG4835	14.0	57	59.5	119
Check		13.9		50.2	
Seed Consultants	SCS9474RR	13.7	57.5	54.7	112
Check		13.9	57.5	47.1	
Seed Consultants	SC9497R	13.6	58	58.5	119
Check		13.8		50.9	

Southern States	SS4915NSR2	13.5	58	51.7	104
Check		13.8		49.0	
Southern States	SS4917NR2	13.4	57	57.4	114
Check		14.0		51.4	
CPS/Dyna-Gro	S 43RY95	13.2	58	51.3	101
Check		14.0		50.5	
CPS/Dyna-Gro	S 48RS53	13.3	57	62.4	124
Check		13.9		50.2	
DuPont/Pioneer	P46T21R	13.6	58	57.9	116
Check		13.9		49.6	
DuPont/Pioneer	P48T53R	13.1	57	60.7	118
Check		14.0		53.3	
USG	74D95RS	13.1	57	57.4	111
Check		13.7		50.1	
USG	74K95RS	13.4	58	52.1	104
Check		13.6		50.0	
Dow/Mycogen	5N479R2	13.2	58	46.8	93
Check		13.7		50.3	
Dow/Mycogen	5N490R2	13.4	58	48.1	96
Check		13.6	57	50.2	
Syngenta/NK	S45-R7	13.5	57	47.3	94
Average Check		14.0		50.9	
Average Variety		13.7		55.5	109

Comments

Very nice plot! This area received very good rains up until late August and early September. If you notice, each company's later maturing variety out yielded the earlier variety. Sometimes, it's all a "timing of rainfall thing".

Use this and other Virginia Tech on-farm soybean variety information when making planting decisions for 2017. Look for overall variety comparison information elsewhere in this publication.

2016 DINWIDDIE MATURITY GROUP 4 SOYBEAN COMPARISON

Cooperators: **Producer:** Double "B" Farms (Billy Bain & family)
Extension: Mike Parrish, David Holshouser
Industry: Ag Expo Exhibitors and/or Sponsors
Previous Crop: Soybean
Soil Type: Emporia sandy loam
Tillage: Conventional; no-till into wheat cover crop
Planting Date: May 20, 2016
Seeding Rate/Row Spacing: 140,000 seed/acre; 15 inch
Fertilization: 350# 5-10-30
Crop Protection: Herbicides:
 Burndown: Roundup-1 qt/A + Prowl-1 qt/A + 2,4-D-1 pt/A
 Post: Roundup-1 qt/A + Prefix-2.5 pt/A-Synchrony at 1/3 oz/A
 Late Post: Roundup-1 qt/A + Flexstar-4 oz/A
 Insecticides: July 22 – Baythroid XL at 2.8 oz/A; July 30 - Lambda
 Fungicides: With or without Quadris Top SB at 12 oz/A
Harvest Date: November 8, 2016
Harvest Equipment: Wintersteiger plot combine

Brand	Variety	Yield (Bu/A)		
		No Fungicide	Quadris Top	Average
Hubner	H49-27R2X	66.5	70.5	68.2
Channel	4616R2X/SR	57.3	62.4	59.9
Channel	4916R2X/SR	72.9	79.2	76.0
CPS/Dyna-Gro	S 48XT56	73.8	75.8	74.8
Hubner	H55-27R2X	68.6	76.1	72.3
Southern States	SS5517NX	74.8	75.9	75.3
Check		68.4	68.6	68.5
Credenz	CZ 4590RY	84.4	86.4	85.4
Credenz	CZ 4959RY	75.7	72.1	73.9
Hubner	H48-13R2/STS	85.0	72.5	78.8
Doebler's	DB4214SR	60.3	59.5	59.9
Doebler's	DB4715RR	72.7	72.9	72.8
Asgrow	AG4632	81.5	79.5	80.5
Check		72.0	76.0	74.0
Asgrow	AG4835	84.6	80.6	82.6
Seed Consultants	SCS 9474RR	77.9	73.8	75.9
Seed Consultants	SC 9497R	72.9	71.4	72.2
Southern States	SS 4915NSR2	82.0	81.3	81.7
Southern States	SS4917NR2	76.4	79.1	77.8
CPS/Dyna-Gro	S 48RS53	78.0	85.6	81.8
Check		75.6	82.4	79.0
DuPont/Pioneer	P46T21R	75.6	79.5	77.5

DuPont/Pioneer	P48T53R	73.9	78.3	76.1
USG	74D95RS	79.6	87.2	83.4
Dow/Mycogen	5N479R2	82.5	73.0	77.8
Dow/Mycogen	5N490R2	73.2	81.0	77.1
Syngenta/NK	S 45-R7	66.0	66.6	66.3
Check		66.9	62.6	64.8
Average		74.3	75.3	74.8

Comments:

Past research has indicated differences in variety response to foliar fungicide. At this location, foliar fungicide did not result in a yield increase; therefore, little can be concluded about variety response. See this and other information when selecting varieties.





MATURITY GROUP 5 VARIETY COMPARISONS

2016 Overall MG 5 On-Farm Soybean Variety Results

Brand	Variety	King & Queen	Surry	Prince George	Northampton	Lunenburg	Mecklenburg	Brunswick	VA Beach	Dinwiddie	Avg. Yield	Rel. Yield
DynaGro	S52RS86	36.1	39.8	37.6			31.2		59.2	61.9	44.3	113
Credenz	CZ5375RY	40.5	49.7	39.8	40.0		27.1	20.5	54.9	72.9	43.2	110
Southern States	SS5215NSR2		43.8	36.3		40.4	31.0	19.4	63.3	62.1	42.3	108
USG	75J90	41.4	44.9	34.6		38.9	27.3	23.7	51.0	71.5	41.7	106
Hubner	H56-16R2	33.8		41.0	38.0	40.3	27.3	21.4	55.9	69.8	40.9	104
DynaGro	S56RY84	40.6	38.3	35.5		38.7	26.0	20.9	53.4	72.4	40.7	103
Doebler's	DB5416R	33.8	45.1	33.6			26.6	22.2	48.5	72.7	40.4	103
Pioneer	P56T29R	42.1	41.0	35.3	30.0	36.0	26.9	23.7	52.5	73.2	40.1	102
DB	DB5710RR	38.2	43.4	34.9	29.0	38.1	26.9	21.5	50.9	69.6	39.2	100
Mycogen	5N523R2	38.5	32.7	35.5	29.0	39.6	27.1	18.6	54.5	69.0	38.3	97
Consultants	SCS9574RR	35.7	38.9	36.9	21.0	42.2	25.5	21.3	52.4	70.0	38.2	97
Asgrow	AG5533	34.3		35.6	38.0	40.6	25.9	23.1		69.2	38.1	97
Pioneer	P52T50R	36.5	29.6	34.0	27.0	40.2	24.6		52.2	57.5	37.7	96
Consultants	SCS9544RR	30.5	37.7	35.2	27.0	38.1	26.9	19.3	53.3	70.3	37.6	96
AG	AG5335	34.6		33.4		41.9	27.9	20.0		65.8	37.3	95
NK	S52-Y2	36.5	28.6	34.8	24.0	38.2	23.0	14.0	54.6	78.2	36.9	94
Mycogen	5N550R2	36.8	24.5	38.5	30.0	36.3	24.6	19.8	50.1	69.7	36.7	93
USG	7553nRS	35.7	35.0	28.7	38.0	36.4	24.6	25.7	51.6		34.5	88
Location Average		36.8	38.2	35.6	30.9	39.1	26.7	20.9	53.6	69.2	39.3	100

2016 DINWIDDIE MATURITY GROUP 5 SOYBEAN COMPARISON

Cooperators: **Producer:** Double "B" Farms (Billy Bain & family)
Extension: Mike Parrish, David Holshouser
Industry: Ag Expo Exhibitors and/or Sponsors
Previous Crop: Soybean
Soil Type: Emporia sandy loam
Tillage: Conventional; no-till into wheat cover crop
Planting Date: May 20, 2016
Seeding Rate/Row Spacing: 140,000 seed/acre; 15 inch
Fertilization: 350# 5-10-30
Crop Protection: Herbicides:
 Burndown: Roundup-1 qt/A + Prowl-1 qt/A + 2,4-D-1 pt/A
 Post: Roundup-1 qt/A + Prefix-2.5 pt/A-Synchrony at 1/3 oz/A
 Late Post: Roundup-1 qt/A + Flexstar-4 oz/A
 Insecticides: Lambda
 Fungicides: With or without Quadris Top SB at 12 oz/A
Harvest Date: November 8, 2016
Harvest Equipment: Wintersteiger plot combine

Brand	Variety	Yield (Bu/A)		
		No Fungicide	Quadris Top	Average
Check		66.0	66.6	66.3
Credenz	CZ 5375RY	70.7	75.2	72.9
Hubner	H56-16R2	71.5	68.0	69.8
Doebler's	DB5416R	77.1	68.3	72.7
Doebler's	DB5710RR	73.6	65.6	69.6
Asgrow	AG5335	64.8	66.9	65.8
Asgrow	AG5533	71.8	66.5	69.2
Check		54.9	57.1	56.0
Seed Consultants	SCS9544RR	69.3	71.3	70.3
Seed Consultants	SCS9574RR	72.1	68.0	70.0
Southern States	SS5215NSR2	60.5	63.8	62.1
CPS/Dyna-Gro	S52RS86	59.0	64.9	61.9
CPS/Dyna-Gro	S56RY84	72.2	72.7	72.4
DuPont/Pioneer	P52T50R	57.8	57.1	57.5
Check		65.1	66.2	65.6
DuPont/Pioneer	P56T29R2	74.6	71.7	73.2
USG	75J90R	74.0	69.0	71.5
Dow/Mycogen	5N523R2	66.5	71.4	69.0
Dow/Mycogen	5N550R2	72.3	67.1	69.7
Syngenta/NK	S 52-Y2	75.8	80.7	78.2
Average		68.5	67.7	68.1

2016 SURRY COUNTY MATURITY GROUP 5 SOYBEAN COMPARISON

Cooperators: Producer: Giron Wooden and Sons
 Extension: Glenn Slade, VCE-Surry
 Industry: Participating Companies
Previous Crop: Wheat
Soil Type: Kempsville Fine Sandy Loam
Tillage: No-Till
Planting Date: June 28, 2016
Seeding Rate/Row Spacing: 160,000 seeds/A; 7.5" rows
Fertilization: 90-30-60 on Wheat Crop
Crop Protection: Glyphosate + Asana
Harvest Date: November 11, 2016
Harvest Equipment: John Deere 9400

Brand	Variety	Moisture%	Yield (bu/A)
Credenz	CZ5375RY	12.4	49.7
Hubner	H55-27R2X	12.1	47.6
Doebler's	DB5416R	12/4	45.1
Doebler's	DB5710RR	12.9	43.4
Seed Consultants	SCS9544RR	12.4	37.7
Seed Consultants	SCS9574RR	12.4	38.9
Southern States	SS5215NSR2	12.6	43.8
Southern States	SS5716NX	12.4	42.6
Southern States	SS5517NX	12.4	41.1
CPS/Dyna-Gro	S52RS86	12.5	39.8
CPS/Dyna-Gro	S56RY84	12.3	38.3
DuPont/Pioneer	P52T50R	12.2	29.6
DuPont/Pioneer	P56T29R2	12.2	41.0
USG	7553nRS	12.5	35.0
USG	75J90R	12.7	44.9
Dow/Mycogen	5N523R2	12.6	32.7
Dow/Mycogen	5N550R2	12.5	24.5
Syngenta/NK	S52-Y2	12.4	28.6

Discussion:

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

2016 VIRGINIA BEACH/CHESAPEAKE MATURITY GROUP 5 SOYBEAN COMPARISON

Producer: North Landing Farms/ Curtis Wolfarth
Extension: Roy D. Flanagan III and M. Watson Lawrence, Jr.
Previous Crop: Soybeans
Soil Type: Acredale Silt Loam
Tillage: Conventional
Planting Date: June 23, 2016
Seeding Rate/Row Spacing: 165,000 lbs./acre in 18 inch rows
Fertilization: 250 lbs./acre 7-18-36
Crop Protection: Pre emergence: 1 qt./acre Prefix incorporated
 Post emergence: 28 oz. Powermax + .3 oz. First Rate herbicides
 8 oz/acre Quadris Top SB fungicide + 2 oz Belt + 4 oz Lamba-Cy
 9oz. Besiege insecticide
Harvest Date: November 22, 2016
Harvest Equipment: JD 9500 with 925 grain platform

Brand	Variety	Moisture%	Yield (bu/A at 13%)
Southern States	SS5215NSR2	9.9	63.3
CPS/Dyna Gro	S52RS86	9.7	59.2
Great Heart	GT572	10.0	58.9
Hubner	H56-16R2	9.8	55.9
Credenz	CZ5375RY	9.3	54.9
Syngenta/NK	S52-Y2	9.9	54.6
Dow/Mycogen	5N523R2	10.6	54.5
Great Heart	516	9.4	54.4
CPS/Dyna Gro	S56RY84	9.7	53.4
Seed Consultants	SCS9544RR	9.8	53.3
DuPont/Pioneer	P56T29R2	9.9	52.5
Seed Consultants	SCS9574RR	10.2	52.4
Pioneer	P52T50R	9.9	52.2
USG	7553nRS	10.0	51.6
USG	75J90R	9.9	51.0
Doebblers	DB5710RR	10.3	50.9
Dow/Mycogen	5N550R2	10.1	50.1
Doebblers	DB5416R	9.9	48.5
Hubner	H58-12R2	10.0	45.5
AVERAGE		9.9	53.5

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

2016 KING & QUEEN MATURITY GROUP 5 SOYBEAN COMPARISON

Cooperators: Producer: Craig, Will & Josh Leggett
 Extension: David Moore, VCE Middlesex
 Keith Balderson, VCE-Essex
 MacKenzie Moore, VCE Intern
 Industry: Seed Company Representatives
Previous Crop: Corn
Soil Type: Emporia Sandy Loam
Plant Date: June 8, 2016
Tillage/Population: No-Till/140,000 seed/A.
Fertilization: 0-0-100
Crop Protection: Burndown: Glyphosate + 2, 4-D + Quadfire
 Post: Glyphosate + First Rate + Synchrony (1/2)
Harvest Date: November 8, 2016
Harvest Equipment: John Deere 7720

Company	Variety	M%	TW	Yield @ 13%	% of Check
Credenz	CZ5375RY	16.0	56	40.5	129
Check	P50T15BR	14.8	57	31.3	
Hubner	H56-16R2	16.0	58	33.8	108
Check		14.8		31.3	
Hubner	H55-27R2X	16.6	56	33.1	109
Check		14.2		29.5	
Doebler's	DB5416R	16.1	56	33.8	111
Check		14.5		31.4	
Doebler's	DB5710RR	13.8	56	38.2	120
Check		14.0		32.4	
Asgrow	AG 5335	14.2	56	34.6	108
Check		14.3		31.7	
Asgrow	AG 5533	14.8	57	34.3	107
Check		14.6		32.2	
Seed Consultants	SCS9544RR	14.5	55	30.5	87
Check		14.8		37.7	
Seed Consultants	SCS9574RR	15.5	57	35.7	95
Check		*** Planter	Malfunction	***	
Southern States	SS5215NSR2	*** Planter	Malfunction	***	
Check		*** Planter	Malfunction	***	
Southern States	SS5517NX	*** Planter	Malfunction	***	
Check		14.0	57	34.1	
CPS/Dyna-Gro	S 52RS86	15.9	55	36.1	104
Check		13.8		35.1	
CPS/Dyna-Gro	S 56RY84	13.5	58	40.6	118

Check		13.9		33.6	
DuPont/Pioneer	P52T50R	13.7	58	36.5	107
Check		14.1		34.8	
DuPont/Pioneer	P56T29R2	13.8	58	42.1	124
Check		13.5		33.1	
USG	7553nRS	14.2	57.5	35.7	102
Check		13.6		37.1	
USG	75J90R	14.2	58	41.4	110
Check		14.2		38.5	
Dow/Mycogen	5N523R2	14.2	57.5	38.5	103
Check		13.7		35.9	
Dow/Mycogen	5N550R2	16.8	58	36.8	104
Check		13.6	57	34.8	
Syngenta/NK	S 52-Y2	14.5	57	36.5	105
Average Check		14.1	57	33.8	
Average Variety		14.9	56.8	36.6	108

Comments

Sandy soil, heat and lack of moisture hurt the yields some here. Moisture a little high at beginning harvest and also affected by undergrowth of Grape Hyacinth. Drill malfunctioned during planting and did not find it out until soybeans were well emerged, so varieties could not be re-planted.

Use this and other Virginia Tech on-farm soybean variety information when making planting decisions for 2017. See overall yield comparisons elsewhere in this publication.



2016 PRINCE GEORGE MATURITY GROUP 5 SOYBEAN COMPARISON

Cooperators: **Producer:** Paul Cerny and Sean Finney
Extension: Scott Reiter, Prince George

Previous Crop: Wheat with straw removed
Soil Type: Montross silt loam and Lynchburg loam
Tillage: No-till
Planting Date: June 15, 2016
Seeding Rate/Row Spacing: 220,000 seed/acre, 7.5 inch rows, John Deere 1590 drill
Fertilization: 120 N – 50 P₂O₅ – 120 K₂O to wheat
Crop Protection: 1 qt Roundup + 0.375 oz Synchrony STS - July
Harvest Date: November 21, 2016
Harvest Equipment: John Deere 9660-625F Platform

Brand	Variety	Moisture%	Yield (bu/A) @ 13%
Doebblers (Check)	DB5416R	12.0	31.9
Asgrow	AG5533	11.6	35.6
Asgrow	AG5335	11.5	33.4
DuPont/Pioneer	P56T29R2	11.1	35.3
DuPont/Pioneer	P52T50R	11.1	34.0
USG	75J90R	11.5	34.6
USG	7553nRS	11.1	28.7
Hubner	H56-16R2	10.8	41.0
CPS/Dyna-Gro	S 52RY86	11.0	37.6
CPS/Dyna-Gro	S 56RY84	11.2	35.5
Southern States	SS5215NS R2	11.2	36.3
Dow/Mycogen	5N523R2	11.1	35.5
Dow/Mycogen	5N550R2	11.2	38.5
Seed Consultants	SCS9544RR	10.7	35.2
Seed Consultants	SCS9574RR	11.0	36.9
Credenz	CZ5375RY	11.3	39.8
Doebblers	DB5710RR	11.4	34.9
NK Seed	S 52-Y2	11.1	34.8
Doebblers	DB5416R	11.6	33.6
Doebblers (Check)	DB5416R	11.6	33.3
*Average		11.2	35.6

Comments: This turned out to be some of the best soybean yields in the area for 2016. There was a noticeable difference in damage and shriveled seed in the early maturity varieties. However, based on estimates a deduction would not have been taken at the buying point. Consider the multi-location averages when selecting high yielding varieties for 2017. *Average does not include check plots.

2016 BRUNSWICK MATURITY GROUP 5 SOYBEAN VARIETY COMPARISON

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

Brand	Variety	Moisture%	Yield (bu/A)
CPS/Dyna-Gro	S56RY84	13.2	20.9
Credenz	CZ5375RY	12.8	20.5
Dow/Mycogen	5N523R2	12.3	18.6
Asgrow	AG5335	12.4	20.0
Seed Consultants	SCS9544RR	13.1	19.3
Doebler's	DB5710RR	12.0	21.5
CPS/Dyna-Gro (Check)	32RY55	12.3	20.7
Doebler's	DB5416R	12.5	22.2
Dow/Mycogen	5N550 R2	12.3	19.8
Seed Consultants	SCS9574RR	12.4	21.3
DuPont/Pioneer	P56T29R	12.4	23.7
Hubner	H56-16R2	12.1	21.4
USG	75J90R	12.3	23.7
CPS/Dyna-Gro (Check)	32RY55	12.6	24.0
USG	7553nRS	12.5	25.7
Asgrow	AG5533	12.7	23.1
Southern States	SS5215NSR2	12.6	19.4
Syngenta/NK	S52-Y2	12.4	14.0
CPS/Dyna-Gro	39RY57	12.3	19.9
Plot Average			21.0
Check Average			22.4

Comments

The overall test average including checks was 21 bu/acre. The check variety, Dyna-Gro 32RY55 averaged 22.4 bu/acre over 2 replications. The top four yielding varieties compared to the average of the two check plots (DG 32RY55) were (1) USG 7553 RS, (2) Pioneer 56T29 R, (3) USG 75J90 R, and (4) Asgrow 5533. The 4 lowest yielding varieties as compared to the average of the two check plots (DG 32RY55) were (1) NK 52Y2, (2) Mycogen 5N523 R2, (3) SCS 9544 RR, and (4) SS 5215.

Soybean Variety Trials: Harrison

Plots Avg: 21.0

Top 4



Bottom 4



2016 MECKLENBURG MATURITY GROUP 5 DOUBLE CROP SOYBEAN VARIETY COMPARISON

Cooperators:
Previous Crop:
Soil Type:
Tillage:
Planting Date:
Crop Protection:
Harvest Date:
Harvest Equipment:

Producer: John Manning
Extension: Taylor Clarke, Lindy Tucker, Laura Siegle
Industry: Austin Puryear
 Wheat
 Appling Fine Sandy Loam
 No-till
 June 29, 2016
Seeding Rate/Row Spacing: 200,000 seeds/ 18" rows with Kinze
 Pre: Roundup PowerMax and Envive,
 Post: Roundup PowerMax,
 November 23, 2016
 John Deere 4420 with 13' flex head

Brand	Variety	Moisture%	Yield (bu/A)
USG (Check)	75J90R	11.6	27.1
Doebler's	DB5710RR	11.5	26.9
Seed Consultants	SCS9574RR	11.3	25.5
USG	7553nRS	11.2	24.6
DuPont/Pioneer	P56T29R2	10.8	26.9
CPS/Dyna-Gro	S 56RY84	11.2	26.0
Hubner	H56-16R2	10.7	25.0
USG (Check)	75J90	11.3	27.3
Asgrow	AG5533	11.2	25.9
Dow/Mycogen	5N550R2	11.1	24.6
Seed Consultants	SCS9544RR	10.4	26.9
Doebler's	DB5416R	11.3	26.6
Credenz	CZ5375RY	10.7	27.1
CPS/Dyna-Gro	32RY55	11.1	27.6
USG (Check)	75J90R	11.2	26.5
CPS/Dyna-Gro	39RY57	10.8	22.4
Syngenta/NK	S 52-Y2	10.9	23.0
Dow/Mycogen	5N523R2	11.0	27.1
DuPont/Pioneer	P52T50R	11.0	24.6
CPS/Dyna-Gro	S 52RS86	11.1	31.2
Southern States	SS5215NSR2	11.1	31.0
USG (Check)	75J90R	11.2	28.3
Asgrow	AG5335	11.1	27.9
Plot Average			26.5
Check Average			27.3

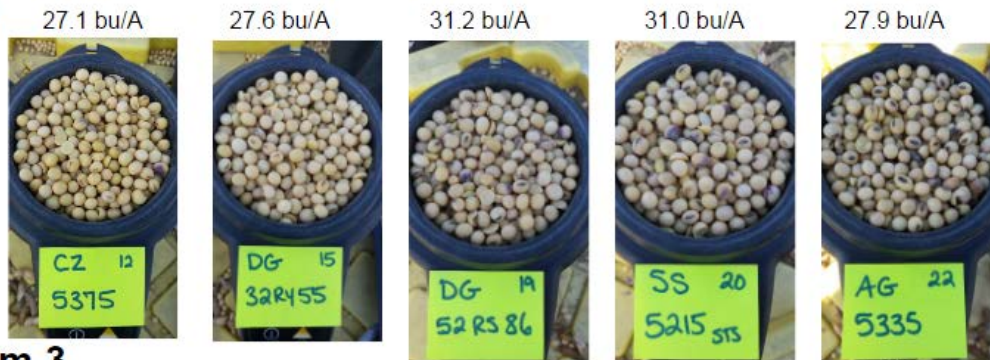
Comments

The overall test average including checks was 26.5 bu/acre. The check variety, USG 75J90, averaged 27.3 bu/acre across 4 replications. Five varieties yielded greater than the average of the two closest checks, (1) CZ 5375 RY,(2) DG 32RY55 (3) DG 52RS86, and (4) SS 5215, and (5) AG 5335. Three varieties yielded 10% less than the average of the two closest checks, (1) DG 39RY57, (2) NK 52Y2, (3) Pioneer 52T50 R.

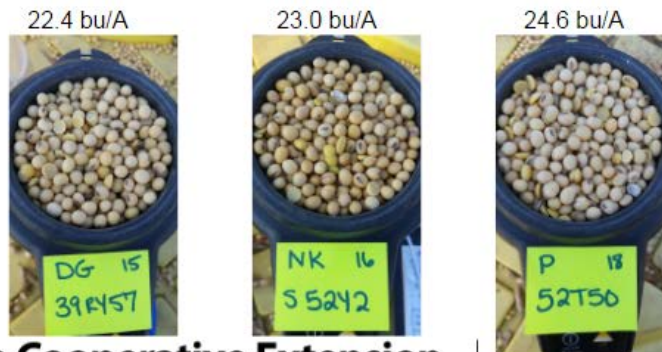
Soybean Variety Trials: Manning

Plots Avg: 26.5

Top 5



Bottom 3



2016 LUNENBURG COUNTY MATURITY GROUP 5 DOUBLE-CROP SOYBEAN VARIETY COMPARISONS

Cooperators:
Producers: Danny Moore, Ryan Parrish
Extension: Taylor Clarke, Lindy Tucker, Laura Siegle
Previous Crop: Flue-cured tobacco followed by wheat for grain
Soil Type: Appling sandy loam
Tillage: No-till
Planting Date: July 3, 2016
Seeding Rate/Row Spacing: 200,000 seeds/15" rows-Kinze 15 row no-till planter
Crop Protection: Glyphosate 4 weeks after planting
Harvest Date: November 22, 2016
Harvest Equipment: AGCO Gleaner R52 with 18' flex head

Brand	Variety	Moisture%	Yield (bu/A)
Asgrow (Check)	AG5935	10.9	38.6
Doebler's	DB5710RR	11.3	38.1
Seed Consultants	SCS9574RR	11.2	42.2
CPS/Dyna-Gro	39RY57	11.1	40.3
DuPont/Pioneer	P56T29R2	11.2	36.0
CPS/Dyna-Gro	S 56RY84	11.1	38.7
Hubner	H56-16R2	11.0	40.3
Asgrow (Check)	AG5935	10.7	42.0
USG	75J90R	11.4	38.9
CPS/Dyna-Gro	32RY55	11.5	41.4
Asgrow	AG5533	11.3	40.6
Dow/Mycogen	5N550R2	11.0	36.3
Seed Consultants	SCS9544RR	10.6	38.1
USG	7553nRS	10.8	36.4
Syngenta/NK	S 52-Y2	11.0	38.3
Asgrow (Check)	AG 5935	10.7	41.6
Dow/Mycogen	5N523R2	11.1	39.6
DuPont/Pioneer	P52T50R	11.0	40.2
CPS/Dyna-Gro	S 48RS53	11.1	43.4
Southern States	SS5215NSR2	10.9	40.4
Asgrow	AG5335	10.9	41.9
Asgrow (Check)	AG5935	10.7	40.5
Plot Average			39.7
Check Average			40.7

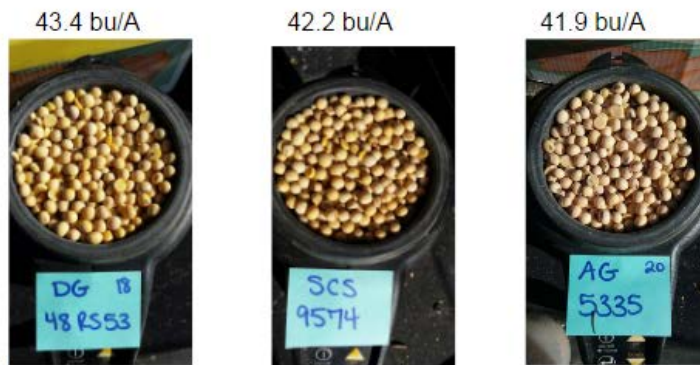
Comments

The overall test average including checks was 39.7 bu/acre. The check variety, Asgrow 5935 averaged 40.7 bu/acre over 4 replications. The top 3 yielding varieties compared to the average of the two nearest check plots were (1) Dyna-gro 48RS53, (2) Seed Consultants 9574 RR, and (3) Asgrow 5335. The 3 lowest yielding varieties as compared to the average of the two nearest check plots were (1) Mycogen 5N550 R2, (2) USG 7553 RS, and (3) Pioneer 56T29 R.

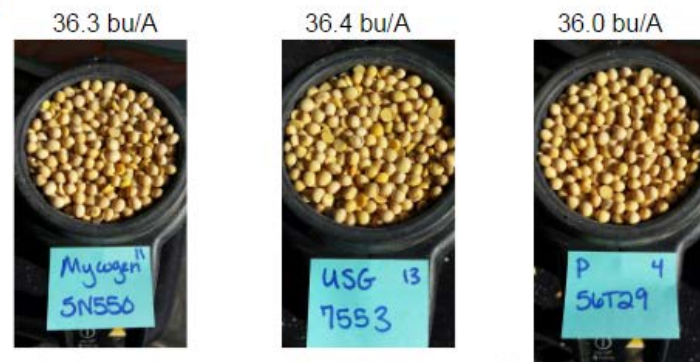
Soybean Variety Trials: Moore

Plots Avg: 39.7

Top 3



Bottom 3



2016 EASTERN SHORE MATURITY GROUP 5 SOYBEAN COMPARISON

Cooperators: Producer: Sturgis Farms
 Extension: Theresa Pittman, VCE-Accomack
 Industry: Participating Companies
Previous Crop: Wheat
Soil Type: Bojac Sandy Loam
Tillage: No-Till into Wheat Stubble
Planting Date: July 18, 2016
Seeding Rate/Row Spacing: 175,000 seeds/ 15 inch rows
Fertilization: 18-46-60/A
Crop Protection: Post: Touchdown
Harvest Date: November 28, 2016

Brand	Variety	Moisture%	Yield (bu/A)
USG	75J90R		**harvest malfunction
Syngenta/NK Seeds	S 52-Y2	14.4	24
Asgrow	AG5533	14.2	38
USG	7553nRS	13.3	38
Credenz	CZ5375RY	14.3	40
Hubner	H56-16R2	13.3	38
DuPont/Pioneer	P52T50R	14.6	27
Dow/Mycogen	5N523R2	14.2	29
Dow/Mycogen	5N550R2	14.0	30
Seed Consultants	SCS9533RR	13.3	27
DuPont/Pioneer	P56T29R2	13.6	30
Doebler's	DB5710RR	13.8	29
Seed Consultants	SCS9574RR	14.2	21
Plot Average		13.9	30.9

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



OTHER

HERBICIDE-TOLERANT VARIETY TESTS

2016 On-Farm Dicamba-Tolerant Soybean Yield Results

Brand	Variety	King & Queen	West-moreland	Lan-caster	Prince George	Surry	Din-widdie	Avg.
Channel	4616R2X/SR	54.3	59.0	47.4	34.7		59.9	51.1
Channel	4916R2X/SR (MG4)	61.7	62.4	47.3	35.2		76.0	56.5
DynaGro	D48XT56						74.8	---
Hubner	H49-27R2X	61.6	61.9	46.3	38.6		68.2	55.3
Hubner	H55-27R2X	33.1			34.1	47.6	72.3	46.8
Southern	SS5516NX					42.6		---
Southern	SS5517NX				32.4	41.1	75.3	49.6
Location Average		52.7	61.1	47.0	35.0	43.8	71.1	51.9



2016 VIRGINIA BEACH/CHESAPEAKE LIBERTY LINK SOYBEAN COMPARISON

Producer: North Landing Farms/ Curtis Wolfarth
Extension: Roy D. Flanagan III and M. Watson Lawrence, Jr.
Previous Crop: Soybeans
Soil Type: Acredale Silt Loam
Tillage: Conventional
Planting Date: June 24, 2016
Seeding Rate/Row Spacing: 165,000 lbs. /acre in 18 inch rows
Fertilization: 250 lbs./acre 7-18-36
Crop Protection: Pre emergence: 1 qt./acre Prefix incorporated
 Post emergence: 28 oz. Powermax + .3 oz. First Rate herbicides
 8 oz/acre Quadris Top SB fungicide + 2 oz Belt + 4 oz Lamba-Cy
 9oz. Besiege insecticide
Harvest Date: Nov. 22, 2016
Harvest Equipment: JD 9500 with 925 grain platform

Brand	Variety	Moisture%	Yield (bu/A at 13%)
Southern Harvest	SH5215LL	9.3	52.1
Southern Harvest	SH4817LL	9.1	44.1
Credenz	CZ5445LL	9.8	32.6
Credenz	CZ4748LL	9.2	27.8
AVERAGE		9.4	39.2

Comments: Liberty-Link soybean varieties continue to provide an alternative to weed control without repeated use of glyphosate. Suspect soil/soil moisture differences here as moving across field.

2016 PRINCE GEORGE ROUNDUP READY2/XTEND SOYBEAN COMPARISON

Cooperators: **Producer:** Paul Cerny and Sean Finney
Extension: Scott Reiter, Prince George
Previous Crop: Wheat with straw removed
Soil Type: Montross silt loam and Lynchburg loam
Tillage: No-till
Planting Date: June 15, 2016
Seeding Rate/Row Spacing: 220,000 seed/acre, 7.5 inch rows, John Deere 1590 drill
Fertilization: 120 N – 50 P₂O₅ – 120 K₂O to wheat
Crop Protection: 1 qt Roundup + 0.375 oz Synchrony STS - July
Harvest Date: November 21, 2016
Harvest Equipment: John Deere 9660-625F Platform

Brand	Variety	Moisture%	Yield (bu/A) @ 13%
Channel	4916R2X/SR	11.5	35.2
Channel	4616R2X/SR	11.2	34.7
Hubner	H49-27R2X	11.6	38.6
Southern States	5517NX	11.6	32.4
Hubner	H55-27R2X	11.7	34.1
	Average	11.5	35.0

Discussion: The Roundup Ready2/XTEND varieties were planted in a separate block due to concerns about marketing in June. They performed well this season – comparable to the other Group 4 and Group 5 varieties planted at this location. Consider the multi-location averages when selecting high yielding varieties for 2017.

2016 MIDDLESEX DOUBLE-CROP STS SOYBEAN VARIETY COMPARISON

Cooperators: Producer: Jason Benton
 Extension: David Moore, VCE-Middlesex
 MacKenzie Moore, VCE Intern
Previous Crop: Wheat
Soil Type: Suffolk Fine Sandy Loam
Plant Date: July 6, 2016
Tillage: No-Till into wheat stubble
Row Space/Population: 7.5 inch rows at 210,000 seeds/A.
Fertilization: Wheat Fertilizer
Crop Protection: Post: Synchrony + Glyphosate
Check Variety: Pioneer P50T15BR
Harvest Date: November 22, 2016
Harvest Equipment: AGCO Gleaner R62

Company	Variety	TW	M%	Yield @ 13%	% of Check
Asgrow	AG4734	57.5	12.2	36.3	103
Check	P50T15BR	57.5	10.4	35.3	
Doebler's	DB4914SR2	57	12.4	36.7	105
Check		57.5	12.0	34.7	
Doebler's	DB RJS 51006RS	58	11.3	33.3	93
Check		57	11.1	36.7	
USG	7553nRS	57	10.7	40.3	107
Check		57.5	11.9	38.6	
USG	74D95RS	57	11.2	45.0	118
Check		57.5	11.0	37.9	
Southern States	SS4915NSR2	57	10.7	44.7	116
Check		57.5	11.3	38.9	
Southern States	SS4714NSR2	57	11.4	42.2	107
Check		57	11.6	39.8	
CPS/Dyna-Gro	S 48RS53	58	11.0	41.8	102
Check		57.5	11.6	42.1	
Asgrow	AG4730	58	11.5	42.7	101
Average Check		57.4	11.4	38.0	
Average Variety		57.4	11.4	40.3	106

Discussion:

Jason has been a loyal user of the Finesse wheat/STS Soybean system for many years. He is always interested in finding out more about STS varieties that are on the market. With this in mind we conducted a small comparison plot looking at some late 4 to mid-5 maturity beans. Thanks to Pioneer for supplying the check variety and to all the participating companies.

Use this and other on-farm replicated soybean research when making planting decisions for 2017.
 Other Varietal Information:

Variety	Treatment	Seeds/Lb.
P50T15BR	Pioneer Premium Treatment	3102
AG4734	Untreated	3100
DB4914SR2	DPH Boost	3474
DB RJS 51006RS	DPH Boost	3186
USG 7553nRS	RenPro Plus Riznate	3792
USG 74D95RS	RenPro Plus Riznate	2452
SS4915NSR2	Trilex + Gaucho	3500
SS4714NSR2	Trilex + Gaucho	3000
CPS/DG S 48RS53	Untreated	2820
AG4730	Untreated	3550

Pioneer Premium: Metalaxyl, Prothioconazole, Penflufen, Imidacloprid

DPH Boost: Metalaxyl, Prothioconazole, Penflufen, Imidacloprid, Bacillus

RenPro Plus Riznate: Mefanoxam, Azoxystrobin, Molybdenum, Ipconazole, Imidacloprid, Bacillus





FOLIAR FUNGICIDE & POTASSIUM PLOTS

2016 VALIDATION OF A FOLIAR FUNGICIDE DECISION AID IN SOYBEAN

Cooperators:

Producers: Donald Meek, Curtis Wolfarth, Ronnie Russell, Craig Giese, John and Fred Holland, Travis Hutcheson

Extension: Hillary Mehl, David Holshouser, Tian Zhou, David Moore, Watson Lawrence, Corey Whaley

Treatments: 1) Control (no fungicide)
2) Fungicide applied at R3 stage
3) Fungicide applied based on decision aid (temperature & relative humidity)

Experimental Design: Randomized Complete Block with 3 replicates

County/City (State)	Variety	Treatment	Spray Date	Fungicide & Rate	Yield (bu/A) ^a
Culpeper (VA)	NK S44K7	Control	NA		55.5 A
		R3	Aug 2	Quadris Top SB – 7 oz/A	57.2 A
		Decision Aid	Aug 20 ^b	Quadris Top SB – 7 oz/A	56.7 A
Lancaster (VA)	n/a	Control	NA		34.4 C
		R3	Aug 20	Fungicide pre-mix ^c	41.1 A
		Decision Aid	Sept 7 ^b	Fungicide pre-mix	37.9 B
Middlesex (VA)	Pioneer P52T50R	Control	NA		42.9 A
		R3	Sept 2	Aproach Prima – 6 oz/A	40.5 A
		Decision Aid	Sept 6	Aproach Prima – 6 oz/A	43.4 A
VA Beach (VA)	Great Heart GT476CR2	Control	NA		59.2 A
		R3	Aug 12	Quadris Top SB – 10 oz/A	55.8 A
		Decision Aid	Sept 7 ^b	Quadris Top SB – 10 oz/A	51.0 A
Accomack (VA)	Asgrow AG4135	Control	NA		57.5 A
		R3	Sept 6	Fungicide pre-mix ^c	59.9 A
		Decision Aid	Sept 7	Fungicide pre-mix	60.2 A
Talbot (MD)	T.A. Seeds TS4729GTS	Control	NA		57.5B
		R3	Aug 18	Quadris Top SB – 12 oz/A	61.2A
		Decision Aid	Sept 6 ^b	Quadris Top SB – 12 oz/A	59.3AB

^a Yields followed by the same letter within a location are not significantly different at 95% confidence level.

^b Favorable days occurred more the two weeks after the R3 growth stage and therefore did not meet the criteria for the decision aid spray. However, fungicides were still applied so that different application timings could be compared.

^c Information on the fungicide product and rate applied were not available at the time of publication, but in all trials a fungicide pre-mix was applied at the labelled rate.

DISCUSSION: Over 10 years of research in Virginia indicate that foliar fungicides only result in a significant soybean yield response one-third of the time. Foliar fungal disease development depends on optimum environmental conditions, primarily temperature (between 65 and 85°F) and relative humidity ($\geq 95\%$ for ≥ 10 hrs/day). On-farm trials have been conducted in 2014-2016 growing seasons to

determine the extent to which environmental conditions can be used to predict if and when to make a foliar fungicide application to optimize yield response in soybean. Treatments included a control, an R3 growth stage (early pod development) application, and application based on the decision aid. Based on data generated in 2014 and 2015, the weather-based decision aid was modified, and conditions required to trigger a decision aid application in 2016 were three disease “favorable days” (temperatures between 65 and 85°F and relative humidity $\geq 95\%$ for ≥ 10 hrs/day) within two weeks of the R3 growth stage. Two on-farm locations met these criteria for the decision aid application, but at the other locations three disease favorable days did not occur until 18 to 26 days after the R3 growth stage. Two of the locations had a significant yield response to fungicide applications, and in both cases the R3 application resulted in the highest yields followed by the decision aid application and the control had the lowest yields. At these two locations, disease favorable days occurred more than two weeks after the R3 growth stage, but disease favorable conditions were present prior to the R3 growth stage. This suggests environmental conditions during the early reproductive growth stages may be critical for predicting disease severity and yield response. Data from the three years of on-farm trials will be analyzed further to determine the optimum environmental conditions and most critical growth stages for predicting the need for fungicide applications in soybean.

2016 ESSEX FOLIAR POTASH SOYBEAN TREATMENT

Cooperators:
Producer: Hundley Brothers Farm
Extension: Keith Balderson, VCE, Essex County
 MacKenzie Moore, VCE Summer Intern
Previous Crop: Wheat
Soil Type: Atlee silt loam and Kempsville fine sandy loam
Tillage: No-till
Planting Date: June 30, 2016
Variety: Dyna-Gro S48XT56
Seeding Rate/Row Spacing: 170,000 seeds per acre in 15 inch rows
Fertilization: Residual P and K applied to wheat
 Foliar: 2 qts./acre Monty's Plant Food K28 Liquid Potash applied on treated plots on 8/24/16
Crop Protection: Herbicides: 30 oz./acre Roundup and .5 oz./acre Classic on 7/20/16
 Insecticide: 3 oz./acre DoubleTake on 8/24/16
 Fungicide: 6 oz./acre Approach Prima on 8/24/16
Harvest Date: November 11, 2016

Treatment	Replication	Moisture%	Yield (bu./A)
Treated (Foliar K)	1	14.28	68.8
Check	1	14.81	65.5
Treated (Foliar K)	2	13.94	71.8
Check	2	14.07	72.2
Treated (Foliar K)	3	13.61	67.0
Check	3	13.67	69.7
Ave. Treated (Foliar K)		13.94	69.2
Ave. Check		14.18	69.1

Discussion:

The purpose of this plot was to evaluate a foliar potash application as part of a system to increase double-crop soybean yields. Tissue samples taken about 1 week after application showed potassium levels in the plant tissue to be higher in the treated plots in all three replications.

Potassium Tissue Test Levels (%)

Treatment	Replication 1	Replication 2	Replication 3
Treated (Foliar K)	1.80	1.99	1.77
Check	1.55	1.55	1.72

The application did result in some phytotoxicity (leaf burn), but this was minimal and cosmetic in nature. See picture below.



Figure 1. Foliar burn from foliar application of Potash.

Overall yields in this plot were excellent, but there was no difference in yield between treatments. More work should be conducted to determine if this practice can play a role in increasing double-crop soybean yields.

2016 KING & QUEEN FOLIAR POTASSIUM SOYBEAN TREATMENT

Cooperators:
Producer: Robert Bland IV
 Sara E. Bland
Extension: David Moore, VCE-Middlesex
 MacKenzie Moore, VCE Intern
Previous Crop: Corn
Soil Type: Suffolk and Slagle Sandy Loams
Tillage: Turbo-Till (1X)
Planting Date: June 12, 2016
Variety: Pioneer P52T86R
Seeding Rate/Row Spacing: 140,000 seeds/A; 7.5 inches
Fertilization: 0-0-90 Preplant
 1 qt. Smart Trio (at 4 WAP)
Crop Protection: Glyphosate + First Rate
Harvest Date: November 16, 2016
Harvest Equipment: AGCO Gleaner R-52

Treatment	Replication	Moisture%	TW	Yield (bu/A)
With 1 qt. K-28	1	14.5	58	30.3
Without	1	14.4	58	29.6
With 1 qt. K-28	2	14.4	59	30.9
Without	2	14.7	59	29.6
With 1 qt. K-28	3	14.5	58	28.7
Without	3	14.0	59	29.4
Average With		14.5	58.3	30.0
Average Without		14.4	58.7	29.5

Discussion:

Foliar additives for fields suspected low in potassium. Since spring of 2016 had ample rainfall, it was suspected that soil potassium levels could be low. Thus the reason for the plot. The cooperators had already made a 0-0-90 application of potassium per acre and we wanted to see if the foliar treatment would make a difference. In this plot, there was no significant yield difference.

Use this and other on-farm soybean plot results when making production decisions for 2017.

2016 MIDDLESEX FOLIAR POTASSIUM SOYBEAN TREATMENT PLOT

Cooperators: Producer: Jason Benton
 Extension: David Moore, VCE-Middlesex
 MacKenzie Moore, VCE Intern
Previous Crop: Wheat
Soil Type: Suffolk Fine Sandy Loam
Tillage: No-Till into Wheat Stubble
Planting Date: July 5, 2016
Variety: Asgrow AG4730
Seeding Rate/Row Spacing: 7.5 inches @ 210,000 seed/A.
Fertilization: Wheat Fertilizer
Treatment: 2 Quarts K-28 Foliar Potassium on alternating strips
Crop Protection: Post: Synchrony + Glyphosate
Harvest Date: November 22, 2016
Harvest Equipment: AGCO Gleaner R62

Treatment	Replication	Moisture%	TW	Yield (bu/A)
With K-28	1	11.8	58	36.8
Without	1	11.3	57	40.3
With K-28	2	11.6	57	42.5
Without	2	11.7	58	38.7
With K-28	3	11.9	57.5	37.5
Without	3	12.4	57	36.1
Average K-28		11.8	57.5	38.9
Average Without		11.8	57.3	38.4

Discussion:

Foliar additives for fields suspected low in potassium. Since spring of 2016 had ample rainfall, it was suspected that soil potassium levels could be low. Thus the reason for the plot. The cooperators had already made a 0-0-90 application of potassium per acre and we wanted to see if the foliar treatment would make a difference. In this plot, there was no significant yield difference.

Use this and other on-farm soybean plot results when making production decisions for 2017.



Other Research

2016 DINWIDDIE SOYBEAN YIELD ENHANCERS

Cooperators: **Producer:** Double “B” Farms (Billy Bain & family)
Extension: Mike Parrish, David Holshouser
Industry: Ag Expo Exhibitors and/or Sponsors
Previous Crop: Soybean
Soil Type: Emporia sandy loam
Tillage: Conventional; no-till into wheat cover crop
Planting Date: May 25
Variety: Asgrow AG5535
Seeding Rate/Row Spacing: 140,000 seed/acre; 15 inch
Fertilization: 350# 5-10-30
Yield Enhancer Application Timings: AP=at planting; V5=5-leaf stage; R3=beginning pod
Crop Protection: Herbicides:
 Burndown: Roundup-1 qt/A + Prowl-1 qt/A + 2,4-D-1 pt/A
 Postemergence: Roundup-1 qt/A + Prefix-2.5 pt/A-Synchrony at 1/3 oz/A
 Late Post: Roundup-1 qt/A + Flexstar-4 oz/A
 Insecticides: July 22 – Baythroid XL at 2.8 oz/A; July 30 - Lambda
 Fungicides: Tegel 4 oz/A
Experimental Design: Randomized Complete Block with 3 reps
Harvest Date: November 8, 2016
Harvest Equipment: Wintersteiger plot combine

Company	Treatment	Timing	Moisture (%)	Yield (bu/A)
Southern States	Biostart ST	AP	11.4	90.4 ^a
Conklin	Magnify LST + Feast	AP + R3	11.7	89.8 ^a
Brandt	NBoost 5	R3	11.8	87.8
Timac Agro USA	NutriRhize	AP	12	86.3
Nachurs	Topkick	R3	12.1	85.1
Southern States	Biostart ST	AP	11.8	84.8
Conklin	Feast	R3	11.6	84.5
Coastal AgroBusiness	MaxxGro	V5	11.9	84.3
Brandt	Smart Quatro	V5	12.1	84.2
Monty’s Plant Food Co	AgrihanceV	R3	12.3	84.2
Conklin	Magnify LST	AP	11.6	83.6
Check	Untreated		11.7	83.6
Meherrin Ag & Chemical	Bio-Forge ST + System-AdvanceSR	AP + V5	11.9	83.2
Coastal AgroBusiness	MaxxGro + Quantum	V5 + R3	11.4	83.0
Monty’s Plant Food Co	AgrihanceV + Microhanc3	R3	12	82.8
Timac Agro USA	Fertileader Gold	R3	11.8	82.8

Amway	NutriPlant SD	AP	12.4	82.7
Coastal AgroBusiness	Quantum	R3	12.1	82.3
Nachurs	Finish Line	V5	14.1	82.2
Meherrin Ag & Chemical	Bio-Forge ST	AP	11.5	82.2
Amway	NutriPlant AG	V5 + R3	12.3	82.1
Monty's Plant Food Co	Microhance	R3	11.9	82.1
Timac Agro USA	NutriRhize + Fertileader	AP + R3	12.5	81.2
Meherrin Ag & Chemical	System-Advance SR	V5	12.1	81.2
Brandt	Smart Qua + NBoost5	V5 + R3	11.6	80.4
Amway	NutriPlant SD + NutriPlant AG	AP + R3	12	79.9
Nachurs	Triple option	V5 + R3	12.5	79.1
Check	Untreated		12	78.8
Check	Untreated		11.5	78.4
LSD (0.10)			0.8	8.3

^a Significantly different from the average of 3 check plots.

Comments: Ag Expo exhibitors and sponsors were solicited to enter two of their “yield enhancing” products into this experiment. The yield enhancers were used alone and in combination, providing for three treatments. Yields were very good, but variability across the plots resulted in few significant differences (LSD=8.3). Average check yield was 80.2, but varied from 68.5 to 85.3 across the 3 reps. While some treatments appeared to result in yield increases, any decision to use any of these products should take into account costs and returns.

2016 LANCASTER DOUBLE-CROP SOYBEAN SEEDING RATE TEST

Cooperators: Producer: Jock Chilton, Jonathan Chilton, RJ Reynolds, Mitchell Simpson
Extension: Trent Jones, Keith Balderson, Stephanie Romelczyk, Tara Brent
Industry: Participating Seed Companies, Helena Chemical
Previous Crop: Wheat
Soil Type: Sassafras Fine Sandy Loam, Kempsville Fine Sandy Loam
Tillage: No Till
Planting Date: June 28, 2016
Variety/Row Spacing: Hubner H48-13R2/STS, 7 inch rows
Fertilization: **First Pass-** 1 qt. / Acre Ele-Max Nutrient Concentrate
Second Pass- 1 Gallon / Acre Coron 10-0-10-0.5B
Crop Protection: **Pre** – 4.5 oz / Acre HM-1512 AG & 24 oz. / Acre Roundup
Post – .3 oz. / Acre First Rate, 32 oz. / Acre Roundup
4 oz. / Acre Stratego YLD, 3 oz. / Acre Mustang Maxx, 2 oz. / Acre Belt
Harvest Date: November 10, 2016
Harvest Equipment: 660 John Deere & Macdon FD70 FlexDraper

Treatment	Replication	Moisture%	Yield (bu/A)
170,000 Seeds	1	11.2	45.0
150,000 Seeds	1	12.0	48.1
130,000 Seeds	1	12.0	50.0

Discussion: While this test is not replicated, you can see that even in this double-crop situation, that there is a trend for higher yields in lower populations. This is usually the case for full season soybeans and not so much the case in double-crop. Not a difficult plot to put in on your own farm. It could decrease some seed expenses. A decrease in seed by 30,000 can save a little over \$10.00 when using seed with a cost of \$50.00 per unit.

2016 NOTTOWAY DOUBLE-CROP SOYBEAN SEEDING RATE TEST

Cooperators: **Producer:** Nick Moody
Extension: Haley Norton, David Holshouser
Previous Crop: Soybean
Soil Type: Appling coarse sandy loam
Tillage: No-till
Planting Date: June 30, 2016
Variety:
Seeding Rate/Row Spacing: 160K & 200K; 15-inch rows
Fertilization: 0-80-80 in spring
Crop Protection: Herbicide: 6/30: Envive at 3 oz/A + Buccaneer at 1 qt/A;
8/4: Buccaneer at 1 qt/A + Cobra at 12.5 oz/A + 24S at 1 gal/A
Harvest Date: November 18
Harvest Equipment: John Deere 9750STS

Treatment	Replication	Moisture (%)	Yield (Bu/A)
160,000	1	12.7	26.7
200,000	1	12.7	26.8
160,000	2	12.6	28.8
200,000	2	12.7	29.0
160,000	3	12.7	27.1
200,000	3	12.6	28.3
160K Average		12.7	27.5
200K Average		12.7	28.0
LSD (0.10)		0.01	1.0

Comments: Seed cost represents a major soybean production cost. Reducing seeding rates by 40,000 seed per acre could save \$10 to 20 per acre, depending on seed and seed treatment costs, if yield is not affected. The objective of this experiment was to determine if soybean yield is affected by using 40,000 less seed per acre than recommended. Severe drought during the seed-fill stages resulted in low yields. No differences between seeding rates were observed. Assuming a cost of \$3.60 per 10,000 seed and soybean price of \$10/bu, planting 40,000 less seed in this field in 2016 would have resulted in a \$9.29/acre savings. Note that the response (or lack thereof) may be different under different environments (different soil types, rainfall, temperatures, planting dates, maturity groups, etc.).

2016 MECKLENBURG DOUBLE-CROP SOYBEAN SEEDING RATE TEST

Cooperators: **Producer:** John Manning
Extension: Taylor Clarke and Lindy Tucker
 Industry:
Previous Crop: Soybeans followed by wheat for grain
Soil Type: Appling-Mattiponi Complex
Tillage: No-till
Planting Date: 6/29/2016
Variety: Dynagro 32RY55
Seeding Rate/Row Spacing: Goal 200 & 160 K seed/acre (stand counts 8/23 - 142 & 116K respectively, 18" Kinze 9 row planter
Fertilization: none on beans
Crop Protection: Roundup and Flexstar
Harvest Date: 11/23/2016
Harvest Equipment: JD 4420 with 213 flex head

Treatment	Replication	Moisture (%)	Yield (Bu/A)
200,000	1	11.2	27.3
160,000	1	11.1	26.2
160,000	2	11.1	26.6
200,000	2	11.1	27.5
200,000	3	11.2	28.3
160,000	3	11.2	28.5
200,000	4	11.0	25.9
160,000	4	11.2	26.0
200,000 Average		11.1	27.3
160,000 Average		11.1	26.8
LSD (0.10)		0.1	0.8

Comments: Seed cost represents a major soybean production cost. Reducing seeding rates by 40,000 seed per acre could save \$10 to 20 per acre, depending on seed and seed treatment costs, if yield is not affected. The objective of this experiment was to determine if soybean yield is affected by using 40,000 less seed per acre than recommended. Severe drought during the pod- and seed-fill stages resulted in low yields. No differences between seeding rates were observed. Assuming a cost of \$3.60 per 10,000 seed and soybean price of \$10/bu, planting 40,000 less seed in this field in 2016 would have resulted in a \$9.40/acre savings. Note that the response (or lack thereof) may be different under different environments (different soil types, rainfall, temperatures, planting dates, maturity groups, etc.).

2016 DINWIDDIE IRRIGATED SOYBEAN PLANTING DATE BY RELATIVE MATURITY

Cooperators: Producer: Double “B” Farms (Billy Bain & family)
 Extension: Mike Parrish, David Holshouser, Rasel Parvej
 Industry: Participating Seed Companies
Previous Crop: Soybean
Soil Type: Emporia sandy loam
Tillage: Conventional; no-till into wheat cover crop
Planting Date: May 25
Variety: 10 varieties representing a range of relative maturities
Seeding Rate/Row Spacing: April & June plantings: 140,000 seed/acre;
 July planting: 225,000 seed/A; 15 inch rows
Fertilization: 350# 5-10-30
Crop Protection: Herbicides:
 Burndown: Roundup-1 qt/A + Prowl-1 qt/A + 2,4-D-1 pt/A
 Post: Roundup-1 qt/A + Prefix-2.5 pt/A-Synchrony at 1/3 oz/A
 Late Post: Roundup-1 qt/A + Flexstar-4 oz/A
 Insecticides: July 22 – Baythroid XL at 2.8 oz/A; July 30 - Lambda
 Fungicides: Tegel 4 oz/A
Experimental Design: Split-plot (Main plot = plant date; subplot=variety) with 3 reps
Harvest Date: April-planted and May-planted MG 4 varieties:
 October 19
 May-planted, MG 5: October 31; June-planted: November 8
Harvest Equipment: Wintersteiger plot combine

Planting Date	Relative Maturity	Brand	Variety	Yield (bu/A)
April 26	3.8	Hubner	H38-13R2	45.5 de
	3.9	Pioneer	P39T67R	39.2 e
	4.1	Asgrow	AG4135	46.7 de
	4.3	Mid-Atlantic	MA4355RR2/STS	59.0 cd
	4.5	USG	75J45R	64.6 bc
	4.7	Doebler's	DB4715RR	73.0 abc
	4.9	Southern States	SS4915NSR2	70.2 abc
	5.2	Southern States	SS5215NSR2	70.3 abc
	5.5	Mycogen	5N550R2	77.9 ab
	5.7	Progeny	P5752RY	81.8 a
	Average			62.8 AB
May 25	3.8	Hubner	H38-13R2	47.7 g
	3.9	Pioneer	P39T67R	58.1 fg
	4.1	Asgrow	AG4135	62.1 ef
	4.3	Mid-Atlantic	MA4355RR2/STS	81.7 abc
	4.5	USG	75J45R	68.4 cdef
	4.7	Doebler's	DB4715RR	87.6 a
	4.9	Southern States	SS4915NSR2	79.4 abcd

	5.2	Southern States	SS5215NSR2	72.4 bcde
	5.5	Mycogen	5N550R2	85.7 ab
	5.7	Progeny	P5752RY	66.1 def
	Average			70.9 A
June 24	3.8	Hubner	H38-13R2	40.7 d
	3.9	Pioneer	P39T67R	41.8 cd
	4.1	Asgrow	AG4135	46.1 bcd
	4.3	Mid-Atlantic	MA4355RR2/STS	57.4 ab
	4.5	USG	75J45R	56.4 ab
	4.7	Doebler's	DB4715RR	56.5 ab
	4.9	Southern States	SS4915NSR2	64.8 a
	5.2	Southern States	SS5215NSR2	55.7 ab
	5.5	Mycogen	5N550R2	58.7 a
	5.7	Progeny	P5752RY	53.5 abc
		Average		
Average (All Planting Dates)				62.3

^a Means of planting date with the same capital letter are not significantly different at 0.10 probability.

Means within a planting date with the same lowercase letter are not significantly different at the 0.10 probability.

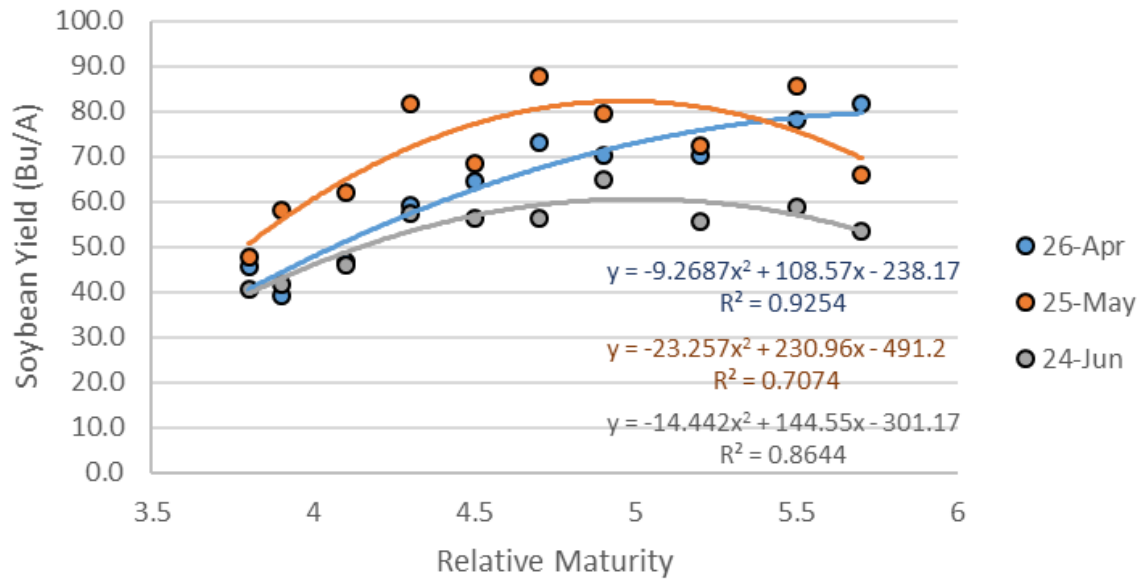
Comments: Planting early-maturing varieties in April has been suggested as a way to improve soybean yield. In rain-fed environments, coincidence of rainfall within the year with pod- and seed-filling stages will ultimately determine which planting date or relative maturity will yield best. However, the effect of rainfall timing can be minimized under irrigated conditions. This experiment was conducted to determine the optimum planting date and relative maturity under irrigated environments in southeast Virginia.

Yields was greatest for the May 25 planting date and lowest for the June 24 planting date. The highest-yielding variety depended on the planting date. In general, yield increased with relative maturity for the April 26 planting date. For the May and June planting dates, yields for late-maturity group 4 and 5 varieties were similar; only maturity group 3 and early 4 varieties did not yield as well.

This study indicates that late-4 and 5 varieties will yield well across planting dates under irrigated conditions in southeast Virginia. More research is needed to verify this conclusion.

See Graph next page

Dinwiddie Co., VA - 2016



2016 GOOCHLAND DOUBLE-CROP SOYBEAN MATURITY GROUP COMPARISON

Cooperators: Producer: Steve & Jacob Bostic
 Extension: Laura Maxey, Charlie Maxwell, David Holshouser
 Industry: Southern States Cooperative
Previous Crop: Wheat
Soil Type: Weedowee fine sandy loam
Tillage: No-till
Planting Date: July 8
Variety: Asgrow AG4135 & Southern States SS4714NSR2
Seeding Rate/Row Spacing: 225,000 seed/acre; 7.5-inch rows
Fertilization: 38-104-120-18S-2Zn-0.75B
Crop Protection: Herbicide: Glyphosate 1.5 qt/acre; Monty's Ag V - 1qt/acre
Harvest Date: November 8
Harvest Equipment: Case IH 2388 w/ 22.5" flex head

Treatment	Replication	Moisture%	Yield (bu/A)
Asgrow AG4135	1	11.3	31.7
Southern States SS4714NSR2	1	10.9	38.1
Asgrow AG4135	2	11.5	31.4
Southern States SS4714NSR2	2	11.9	38.8
Asgrow AG4135	3	10.5	35.9
Southern States SS4714NSR2	3	10.7	44.2
Asgrow AG4135	4	12.3	34.5
Southern States SS4714NSR2	4	10.7	40.1
AG4135 Average		11.4	33.3
SS4714NSR2 Average		11.1	40.3
LSD (0.10)		1.1	1.4

Comments: Although we recommended that farmers choose the latest relative maturity that will mature before a killing frost in double-crop systems, many farmers have found that earlier maturing varieties have performed well. This experiment was conducted to determine yield differences between the relative maturity normally chosen and one that is 0.5 relative maturity units (5 days) earlier. Although genetic differences may have affected this test, the earlier variety yielded 7 bushels or 17% less than the one normally grown in this area.

2016 MECKLENBURG DOUBLE-CROP SOYBEAN MATURITY GROUP COMPARISON

Cooperators: **Producer:** John Manning
Extension: Taylor Clarke and Lindy Tucker
Previous Crop: Soybeans followed by wheat for grain
Soil Type: Appling-Mattiponi Complex
Tillage: No-till
Planting Date: 6/29/2016
Variety: Asgrow AG4835 and Asgrow AG5533
Seeding Rate/Row Spacing: goal 200,000 (stand counts 8/23/2016 Asgrow 4835 – 155,000 and Asgrow 5533 – 127,000), 18” Kinze 9 row planter
Fertilization: none on beans
Crop Protection: Roundup and Flexstar
Harvest Date: 11/23/2016
Harvest Equipment: JD 4420 with 213 flex head

Treatment	Replication	Moisture (%)	Yield (bu/A)
Asgrow AG5533	1	11.1	25.6
Asgrow AG4835	1	11.2	22.1
Asgrow AG4835	2	11.3	23.8
Asgrow AG5533	2	11.2	28.1
Asgrow AG5533	3	11.1	26.2
Asgrow AG4835	3	11.4	26.6
Asgrow AG5533	4	11.1	28.1
Asgrow AG4835	4	11.3	25.6
Average AG5533		11.1	27.0
Average AG4835		11.3	24.5
LSD (0.10)		0.1	2.4

Comments: Although we recommended that farmers choose the latest relative maturity that will mature before a killing frost in double-crop systems, many farmers have found that earlier maturing varieties have performed well. This experiment was conducted to determine yield differences between the relative maturity normally chosen and one that is 0.7 relative maturity units (~7 days) earlier. Although genetic differences may have affected this test, the earlier variety yielded 2.5 bushels or 9% less than the one normally grown in this area.

Sulfur Deficiency in Soybeans?

Each one of you has become keenly aware that sulfur fertilization needs to be a part of the fertilizer program in corn and small grain production, especially on sandy soils. This is due primarily to the fact that “free” sulfur from emissions is almost totally gone.

What about sulfur fertilization of soybeans? According to the International Plant Nutrition Institute (IPNI), a 55 bushel per acre soybean crop takes up 18 pounds of sulfur, similar to a 120 bushel per acre corn crop. This suggests that sulfur fertilization of soybeans probably deserves some attention.

Although some labs offer a sulfur soil test, the test is not very good in predicting sulfur fertilizer needs, partly because of the mobility of sulfate in soils. Tissue samples are very good at detecting sulfur deficiencies. In tissue sample work funded by the Virginia Soybean Board, a few results indicated sulfur deficiency from samples pulled in mid-August 2016 in the upper coastal plain of Virginia. While the sulfur levels were at the low end of the sufficient range or just below that level, the nitrogen sulfur ratios were well above the recommendation of 15:1 or lower. Results from one field were as follows: 5.46% nitrogen tissue test level (normal range 3.25%-5.00%) and .24% sulfur tissue test level (normal range .25%-.60%) for a nitrogen sulfur ratio of 22.8. Furthermore, sampled areas from this field were pale, which also indicates sulfur deficiency.

As soybean producers continue to try to increase yields and profitability, there might be a need to address sulfur fertility, especially on sandy soils. This might be even more critical on full-season soybeans than double-crop since the small grain in the double crop system has most likely received sufficient sulfur fertilizer applications. The residual sulfur might be enough to supply the sulfur needs for the double-crop soybeans.