

MISSOURI

SOYBEAN SEED GUIDE



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Missouri Soybean Merchandising Council

Mission

We are committed to promoting and advancing innovative research, production and marketing solutions to maximize Missouri soybean farmer profitability.

Vision

Empowering Missouri soybean farmers through innovation.



The Missouri Soybean Merchandising Council (MSMC) is a farmer run organization dedicated to improving the profitability of the Missouri soybean farmer through a combination of marketing, research and commercialization programs. Thirteen farmer-directors are elected in statewide elections to serve his or her geographic region and oversee the investment of 50 percent of Missouri's checkoff dollars. MSMC activities are coordinated through a fulltime staff in Jefferson City, Missouri. This publication highlighting Missouri's soybean varieties and traits developed through soybean checkoff-supported research comes as a direct result of those efforts.

Leadership Recognition

Seed Advisory Committee

Taking soybean lines from the research program through the commercialization process is a team effort, bringing together Missouri farmers, and staff from the University of Missouri and the Missouri Soybean Merchandising Council on the Seed Advisory Committee.

For more information on the Seed Advisory Committee, contact **Sam Bish**, Senior Technology Transfer Manager for the University of Missouri, at **bishs@missouri.edu** or **(573) 882-5016**.

MSMC Board Members



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In Memory of Dr. Pengyin Chen

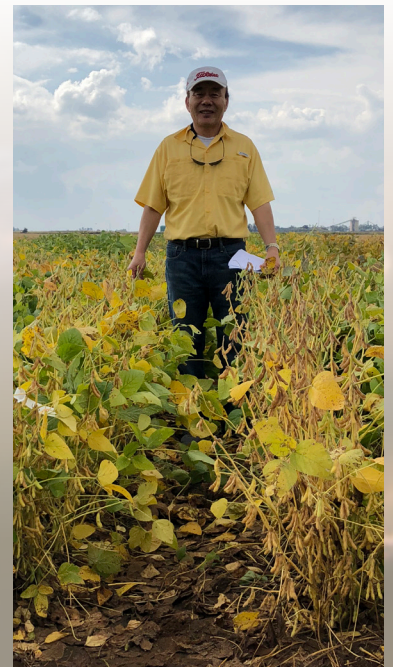
Dr. Chen passed on August 1, 2022. Dr. Chen was a world-renowned, respected soybean breeder and has served Missouri's soybean farmers for more than a decade. During his career as a soybean breeder, he developed nearly 60 soybean cultivars and received over \$20.8 million in funding over his career. Dr. Chen's work in academia resulted in 291 papers and 16 book chapters created. Near and dear to him was the training of future soybean breeders. Dr. Chen trained 18 Ph.D. and 30 Master's of Science students. He also educated 12 postdoctoral scientists and 20 visiting scholars. All of which is evidence of his commitment to the checkoff's major platform of education, which provided a family of soybean breeders across the country and globe all with the same "heredity" – educated, mentored and guided by Dr. Chen.



Since 2007, I had the privilege of being trained and mentored by Dr. Chen and he truly gave all to his career, students, family, and breeding. There was not a stranger in a room when you were with Dr. Chen. He made all feel comfortable learning about breeding, a complicated topic. We were blessed by having him breeding soybeans for the past six seasons for Missouri farmers, and we are blessed to know that for many years to come we will still see his insight, mind and creative varieties being released to plant across the state and nation. The 2023 Missouri Soybean Guide is dedicated to Dr. Pengyin Chen, a husband, father, brother, mentor and educator, who changed the way soybean varieties are used and pushed for further value in the crop through his selections of protein, oil and food grade quality traits.

Bryan Stobaugh

Bryan Stobaugh
Director of Licensing and Commercialization at Missouri Soybeans



SA17-2742 HOLL



Agronomic Traits and Disease Ratings

Growth Habit	Indeterminate	Phytophthora Rot	Field Tolerant
Relative Maturity	2.7	SCN	PI88788 (Race 3, 14 resistance)
Flower Color	Purple	SDS.....	Moderately Susceptible
Pubescence Color.....	Grey	Stem Canker.....	Moderately Susceptible
Pod Wall Color	Tan	Frogeye.....	Moderately Susceptible
Hila Color.....	Buff	Root Knot.....	Not Tested
Height (Inches).....	28	Protein %	36.8
Lodging	1.2	Oil %.....	19.3
Seed per lb.....	2850	Chloride.....	Not Tested
Seed Luster	Shiny	Herbicide	Conventional
Oleic Acid.....	79.5	Linolenic Acid.....	0.8

**PERFORMANCE OF SA17-2742 ACROSS TWO YEARS AND 9 ENVIRONMENTS IN MISSOURI DURING 2018 AND 2019.
MATURITY IS PRESENTED AS SEPTEMBER 1 = 1 AND YIELD IS PRESENTED AS BUSHELS PER ACRE.**

Name Year (Locations)	Yield 2019 (3)	Maturity 2019 (3)	Yield 2018 (6)	Maturity 2018 (6)	Oleic Acid 2018 (3)	Linolenic Acid 2018 (3)	Oleic Acid 2019 (7)	Linolenic Acid 2019 (7)
SA17-13168-1	65.0	28	62.3	12	79.3	3.4	79.2	3.9
SA17-2742	62.5	28	67.2	11	78.7	0.9	79.5	0.8
LD11-2170	79.4	30	65.2	18				
AG3956	78.7	37	65.2	24				
AG3555	76.7	31	57.2	17				
P38A10	84.4	39	73.9	27				
P39A82S	80.7	37	69.0	25				
TEST MEAN	71.3	30	60.8	17				
CV	6.3	5.3	12.5	16.8				
LSD_(0.05)	4.2	1.5	9.5	3.5				

Notes:

SA18-268PR HOLL



Agronomic Traits and Disease Ratings

Growth Habit	Indeterminate	Phytophthora Rot	Field Tolerant
Relative Maturity	3.9	SCN	PI88788 (Race 3, 14 resistance)
Flower Color	White	SDS.....	Moderately Susceptible
Pubescence Color.....	Light Tawny	Stem Canker.....	Resistant
Pod Wall Color	Tan	Frogeye.....	Moderately Susceptible
Hila Color.....	Brown	Root Knot.....	Not Tested
Height (Inches).....	28	Protein %	38.6
Lodging	1.3	Oil %.....	21.0
Seed per lb.....	3200	Chloride.....	Not Tested
Seed Luster	Shiny	Herbicide	Conventional
Oleic Acid.....	83.7	Linolenic Acid.....	2.2

**PERFORMANCE OF SA18-268PR ACROSS TWO YEARS AND 4 ENVIRONMENTS IN MISSOURI DURING 2019 AND 2020.
MATURITY IS PRESENTED AS SEPTEMBER 1 = 1 AND YIELD IS PRESENTED AS BUSHELS PER ACRE.**

Name Year (Locations)	Yield 2019 (1)	Maturity 2019 (1)	Yield 2020 (3)	Maturity 2020 (3)	Oleic Acid 2020 (1)	Linolenic Acid 2020 (1)
SA18-268PR	64.5	29	68.0	34	83.9	2.2
LD11-2170	57.7	22	80.9	26		
P38A10	60.9	32	84.3	36		
P39A82S	46.0	29	73.1	34		
GRAND MEAN	55.6	30	67.8	30		
LSD_(0.05)	17.60	2.4	6.9	2.8		

Notes:

SA18-350PR HOLL



Agronomic Traits and Disease Ratings

Growth Habit	Indeterminate	Phytophthora Rot	Field Tolerant
Relative Maturity	3.9	SCN	PI88788 (Race 3, 14 resistance)
Flower Color	Purple	SDS.....	Moderately Susceptible
Pubescence Color.....	Gray	Stem Canker.....	Resistant
Pod Wall Color	Brown	Frogeye.....	Moderately Susceptible
Hila Color.....	Imperfect Black	Root Knot.....	Not Tested
Height (Inches).....	33	Protein %	39.0
Lodging	1.3	Oil %.....	20.8
Seed per lb.....	3000	Chloride.....	Not Tested
Seed Luster	Shiny	Herbicide	Conventional
Oleic Acid	84.5	Linolenic Acid.....	2.1

**PERFORMANCE OF SA18-350PR ACROSS TWO YEARS AND 4 ENVIRONMENTS IN MISSOURI DURING 2019 AND 2020.
MATURITY IS PRESENTED AS SEPTEMBER 1 = 1 AND YIELD IS PRESENTED AS BUSHELS PER ACRE.**

Name Year (Locations)	Yield 2019 (1)	Maturity 2019 (1)	Yield 2020 (3)	Maturity 2020 (3)	Oleic Acid 2020 (1)	Linolenic Acid 2020 (1)
SA18-350PR	66.4	31	69.4	35	84.4	2.1
LD11-2170	61.5	22	80.9	26		
P38A10	62.4	32	84.3	36		
P39A82S	50.4	29	73.1	34		
GRAND MEAN	56.6	30	67.8	30		
LSD_(0.05)	11.2	2.4	6.9	2.8		

Notes:

SA13-1310

Agronomic Traits and Disease Ratings

Growth Habit	Indeterminate	Phytophthora Rot	Field Tolerant
Relative Maturity	3.9	SCN	PI88788 (Race 3, 14 resistance)
Flower Color	Purple	SDS.....	Moderately Susceptible
Pubescence Color.....	Gray	Stem Canker.....	Moderately Susceptible
Pod Wall Color	Brown	Frogeye.....	Moderately Susceptible
Hila Color.....	Imperfect Black	Root Knot.....	Not Tested
Height (Inches).....	35	Protein %	35.0
Lodging	1.4	Oil %.....	18.5
Seed per lb.....	2700	Chloride.....	Not Tested
Seed Luster	Shiny	Herbicide	Conventional

PERFORMANCE OF SA13-1310 ACROSS THREE YEARS AND 18 ENVIRONMENTS IN MISSOURI DURING 2015, 2016, AND 2017

Name Year (Locations)	Yield 2017 (6 MO)	Maturity 2017 (6 MO)	Yield 2016 (7 MO)	Maturity 2016 (7 MO)	Yield 2015 (5 MO)	Maturity 2015 (5 MO)	Yield 2015-17 (18 MO)	Maturity 2015-17 (18 MO)
AG43X7	77.0	32						
AG40X6	75.8	27						
SA13-1310	71.7	26	77.3	30	70.6	31	73.6	29
P39T28X	73.4	26						
AG3956	70.9	25						
94Y21	66.0	27						
AG4034			74.7	30	68.1	32		
NKS39-U2			73.5	29	69.4	32		
93Y92			73.1	30	68.9	31		
AG4232			71.7	34	67.9	36		
TEST MEAN	65.9	27	70.6	31	66.9	32		
CV	9.3	5.7	8.2	7.1	5.8	3.9		
LSD_(0.05)	4.0	1.0	3.5	1.0	2.8	1.0		

PERFORMANCE OF SA13-1310 ACROSS THREE YEARS AND 18 ENVIRONMENTS IN MISSOURI DURING 2015, 2016, AND 2017

Name	Yield	% Test Mean	Maturity	Lodging	Height	Seed Weight	Protein	Oil
LD11-2170	70.2	106	9/25	1.2	32	16.4	34.1	19.7
IA3048	66.5	100	0.2	1.7	34	15.9	34.2	18.5
LD07-3395bf	68.4	103	5.2	1.5	32	16.5	31.8	20.3
U11-920017	63.0	95	-4.5	1.5	32	17.2	31.8	19.8
SA13-1310	70.5	106	6.5	1.4	35	16.7	35.0	18.5
TEST MEAN	66.3		28.1		33.8	16.0		
LSD _(0.05)	2.8		0.7		1.1	0.6		

SA17-8882 HOLL



Agronomic Traits and Disease Ratings

Growth Habit	Indeterminate	Phytophthora Rot	Field Tolerant
Relative Maturity	4.1	SCN	PI88788 (Race 3, 14 resistance)
Flower Color	Purple	SDS.....	Moderately Susceptible
Pubescence Color.....	Tawny	Stem Canker.....	Moderately Susceptible
Pod Wall Color	Brown	Frogeye.....	Moderately Susceptible
Hila Color.....	Black	Root Knot.....	Not Tested
Height (Inches).....	31	Protein %	37.3
Lodging	1.6	Oil %.....	19.1
Seed per lb.....	2920	Chloride.....	Not Tested
Seed Luster	Shiny	Herbicide	Conventional
Oleic Acid.....	79.9	Linolenic Acid.....	2.3

PERFORMANCE OF SA17-8882 ACROSS TWO YEARS AND 9 ENVIRONMENTS IN MISSOURI DURING 2018 AND 2019. MATURITY IS PRESENTED AS SEPTEMBER 1 = 1 AND YIELD IS PRESENTED AS BUSHELS PER ACRE.

Name Year (Locations)	Yield 2019 (3)	Maturity 2019 (3)	Yield 2018 (6)	Maturity 2018 (6)	Oleic Acid 2018 (3)	Linolenic Acid 2018 (3)	Oleic Acid 2019 (8)	Linolenic Acid 2019 (8)
SA17-8882	63.9	29	62.7	28	75.7	2.8	79.9	2.3
AG3956	62.9	27	62.8	25				
P94Y21	64.7	30	57.3	29				
LD06-7620	63.9	32	60.1	24				
LD07-3395BF	66.1	28	58.8	21				
TEST MEAN	61.4	29	52.2	23				
CV	6.6	1.3	12.9	14.7				
LSD_(0.05)	3.4	1.3	10.9	5.6				

Notes:

S13-10592C/ShowMeSoy 4501C

Agronomic Traits and Disease Ratings

Growth Habit	Indeterminate	Oil %.....	20.0
Relative Maturity	4.5	Phytophthora Rot	Susceptible
Flower Color	White	SDS.....	Susceptible
Pubescence Color.....	Tawny	Stem Canker.....	Resistant
Pod Wall Color	Tan	Frogeye.....	Susceptible
Hila Color.....	Black	Charcoal.....	Resistant
Height (Inches).....	36	Chloride.....	Excluder
Lodging	2.1	Metribuzin.....	Tolerant
Seed per lb.....	3100	SCN	Susceptible
Seed Luster	Intermediate	Root Knot.....	Susceptible
Protein %	35.3	Reniform.....	Susceptible

FIVE YEAR MEANS FOR YIELD (BU/AC) BY SOIL TYPE, MATURITY, HEIGHT, AND LODGING SOUTHEAST MO, 2014-2018

Variety	Loam	Clay	Sand	5-Year Mean	Maturity	Height	Lodging
S13-10592C	66.6	59.9	28.9	60.5	19-Sep	27.0	2.8
AG 43X7*	70.9	62.7	25.2	64.5	14-Sep	34.0	2.2
AG 4632	72.6	64.7	30.7	63.8	20-Sep	30.0	2.4
Locations	10	9	3	22	22	22	22

PERFORMANCE OF S13-10592C IN THE USDA UNIFORM TEST SOUTHERN STATES (2016 - 2018)

Variety	2016	2017	2018	Average	Height	Maturity	Lodging
S13-10592C	71.2	63.7	61.6	65.5	36.0	17-Sep	2.1
AG 4135	72.0	64.6	64.5	67.0	35.0	13-Sep	1.9
AG 4232	68.2	59.5	66.9	64.9	35.0	17-Sep	2.2
Locations	7	8	8	23	23	23	23

Notes:

Summary of Recently Released Lin

Line	Year	Type	RM	GH	FC	PC	PW	HC	SCN	RKN
SA17-2742 HOLL	2020	Conv/HOLL	2.8	I	P	G	TAN	BUFF	R: 3,14	S
SA18-268PR HOLL	2021	Conv/HOLL	3.9	I	W	LT	TAN	BLACK	R: 3,14	S
SA18-350PR HOLL	2021	Conv/HOLL	3.9	I	P	G	BROWN	IMP. BLACK	R: 3,14	S
SA17-8882	2020	Conv/HOLL	4	I	P	T	BROWN	BLACK	R: 3,14	S
S15-17812 HOL	2019	Conv/HOL	4.8	I	W	G	TAN	BUFF	R: 2	R
SA14-9653	2019	CONV	3.7	I	P	T	BROWN	BLACK	R: 3,14	S
SA13-2699	2020	CONV	3.9	I	P	G	TAN	IMP. BLACK	R: 3,14	S
SA13-1385	2019	CONV	3.9	I	P	T	TAN	BLACK	R: 3,14	S
SA14-1310	2019	CONV	3.9	I	P	G	BROWN	IMP. BLACK	R: 3,14	S
S13-2743C	2018	CONV	4.1	I	W	G	BROWN	BUFF	R: 3,14	S
S13-10590C	2019	CONV	4.3	I	W	T	TAN	BLACK	MR: 1,2	R
S13-3851C	2018	CONV	4.4	I	P	LT	TAN	BLACK	S	S
S17-2243C	2021	CONV	4.5	SD	P	T	BL	I BL	R: 2; MR: 3,5	S
S13-10592C	2019	CONV	4.5	I	W	T	TAN	BLACK	S	S
S16-14730C	2020	CONV	4.7	I	P	T	TAN	BLACK	R: 3; MR: 2,5	MR
S16-11644C	2020	CONV	4.9	SD	W	T	TAN	IMP. BLACK	R: 2; MR: 3,5	R
S16-7922C	2020	CONV	4.9	SD	W	T	TAN	IMP. BLACK	MR: 2,3,5	R
S16-14801C	2021	CONV	5.0	D	P	G	T	I BL	R: 1,2,3,5	R
S11-20242C	2017	CONV	5.1	SD	W	T	TAN	BLACK	R: 1,2,3,5,14	R
S11-17025C	2015	CONV	5.2	D	W	T	TAN	BLACK	R: 1,2,3,5,14	R
S16-11651C	2020	CONV	5.3	SD	W	T	TAN	BLACK	R: 5; MR: 2,3	R
S16-15170C	2020	CONV	5.3	I	W	G	TAN	BUFF	R: 5; MR: 2	S
S11-16653C	2016	CONV	5.3	D	W	G	TAN	BUFF	R: 1,2,3,5; MR: 14	R
S12-4718C	2016	CONV	5.3	D	W	LT	TAN	BLACK	R: 1,2,3,5,14	R
S13-1955C	2019	CONV	5.5	D	W	T	TAN	BLACK	R: 2,3,5,14	R
S15-10434C	2019	CONV	5.5	D	P	T	TAN	BLACK	R: 1,2,3,5,14	R
S16-5540GT	2020	RR1	4.6	SD	W	T	TAN	BLACK	R: 2,3,5	R
S14-15146GT	2017	RR1/STS	4.6	I	W	T	TAN	BLACK	S	S
S16-5503GT	2021	RR1	4.8	SD	W	T	T	BL	R: 2; MR: 3,5	R
S14-15138GT	2018	RR1/STS	4.8	I	W	T	TAN	BLACK	MR: 3,14	S
S11-20337GT	2015	RR1	4.9	SD	P	T	TAN	BLACK	R: 1,2,3,5,14	R
S11-20356GT	2014	RR1	4.9	SD	P	T	TAN	BLACK	R: 1,2,3,5,14	R
S14-9017GT	2017	RR1	5.3	SD	W	LT	TAN	BLACK	R: 1,2,3,5	MS
S11-20195GT	2015	RR1	5.3	I	P	T	TAN	BLACK	R: 1,2,3,5,14	R
S16-16641GT HO	2019	GT/HO	4.8	D	W	T	TAN	BLACK	R: 1,2,3,5	R
S10-2635RR2	2015	RR2	4.1	I	P	G	TAN	IMP. BLACK	MR: 3,14	S
S11-9618RR2	2015	RR2	4.4	I	P	G	BROWN	IMP. BLACK	R: 1,2,3,5,14	R
S16-3747RR2	2020	RR2	5.0	D	W	LT	TAN	IMP. BLACK	R: 5; MR: 2,3	R

Conv = Conventional; HO = High Oleic, HOLL = High Oleic low linolenic, HOL = High Oleic with one low-linolenic gene, RM: Relative Maturity; GH: Growth Habit, D = Determinate, SD = Semi-determinate; RKN: Southern root-knot nematode; RN: Reniform nematode, SC: Stem Canker; PRR: Phytophthora root rot; FLS: Frogeye leaf spot; SDS: Sudden death syndrome; CRT: Charcoal rot; Tolerant, S = Susceptible, Salt: Inc = Includer; Exc = Excluder

Lines from the University of Missouri

RN	SC	PRR	FLS	SDS	CRT	PHO	MET	STS	Salt	Seed Available
.	R	T	S	.	.	.	T	S	INC	FOUNDATION-20
.	R	T	S	.	.	.	T	S	INC	FOUNDATION-21
.	R	T	S	.	.	.	T	S	INC	FOUNDATION-21
.	R	T	S	.	.	.	T	S	INC	FOUNDATION-20
MR	R	R	R	R	S	S	T	S	-	FOUNDATION-20
.	R	R	S	.	.	.	T	S	INC	FOUNDATION-20
.	R	T	S	.	.	.	T	S	INC	FOUNDATION-22
.	R	T	S	.	.	.	T	S	INC	FOUNDATION-19
.	R	T	S	.	.	.	T	S	INC	FOUNDATION-21
S	R	R	R	R	S	S	T	S	INC	FOUNDATION-19
S	MS	T	R	R	R	S	T	S	EXC	FOUNDATION-20
S	R	R	S	R	S	S	T	S	INC	FOUNDATION-20
S	R	T	MS	R	R	-	T	-	EXC	PRE-FOUNDATION-21
S	R	T	S	R	R	S	T	S	EXC	FOUNDATION-20
S	R	T	R	R	R	S	T	S	INC	FOUNDATION-20
MS	S	R	R	R	R	S	T	S	EXC	BREEDER-20
MR	R	T	R	R	R	S	T	S	EXC	BREEDER-20
MR	R	T	S	R	R	-	T	-	EXC	PRE-FOUNDATION-21
R	MS	T	R	R	-	-	T	S	EXC	
R	MS	T	R	R	-	-	T	S	EXC	FOUNDATION-19
MR	R	R	R	R	R	S	T	S	EXC	BREEDER-20
S	R	T	R	R	S	S	T	S	EXC	BREEDER-20
R	R	T	S	MR	-	-	T	S	EXC	
R	R	T	R	R	-	-	T	S	EXC	FOUNDATION-19
R	MS	T	R	R	R	R	T	S	INC	FOUNDATION-20
R	MS	T	-	R	R	R	T	S	EXC	FOUNDATION-19
R	S	T	R	R	R	S	T	S	EXC	FOUNDATION-20
S	R	T	R	MR	R	S	T	T	INC	FOUNDATION-20
R	S	T	R	R	R	-	T	-	EXC	PRE-FOUNDATION-21
S	R	T	R	R	MS	R	T	T	INC	FOUNDATION-20
R	MS	T	S	MR	-	-	T	S	EXC	
R	R	T	R	R	-	-	T	-	EXC	FOUNDATION-19
R	R	R	R	R	MR	S	T	S	INC	FOUNDATION-19
R	MS	T	R	MR	-	-	T	S	EXC	
R	R	R	S	R	S	R	T	S	EXC	FOUNDATION-19
S	R	T	R	MR	-	-	T	S	EXC	
S	-	T	R	MR	-	-	T	S	EXC	
MS	R	T	S	R	R	S	T	S	EXC	BREEDER-20

Indeterminate, I = Indeterminate, FC: Flower color, W = White, P = Purple, PC: Pubescence Color, G = Gray, T = Tawny, LT = Light tawny; PW: Podwall color; HC: Hilum color, SCN: Soybean cyst
PHO: Phomopsis longicolla, R = Resistant, MR = Moderately resistant, MS = Moderately susceptible, S = Susceptible, T = Tolerant, MET: Metribuzin; STS: Sulfonyl-Urea tolerant soybean, T =

S16-5540GT

Agronomic Traits and Disease Ratings

Growth Habit	Semi-determinate	Oil %.....	17.9
Relative Maturity	4.6	Phytophthora Rot	Tolerant
Flower Color	White	SDS.....	Resistant
Pubescence Color.....	Tawny	Stem Canker.....	Susceptible
Pod Wall Color	Tan	Frogeye.....	Resistant
Hila Color.....	Black	Charcoal.....	Resistant
Height (Inches).....	31	Chloride.....	Excluder
Lodging	1.9	Metribuzin.....	Tolerant
Seed per lb.....	3260	SCN	Resistant to Races 2,3 & 5
Seed Luster	Intermediate	Root Knot.....	Resistant
Protein %	36.5	Reniform	Resistant

2-YEAR MEAN FOR YIELD (BU/AC), MATURITY, HEIGHT, AND LODGING IN SOUTHEAST MO (2017-2018) AND 2-YEAR PERFORMANCE IN 13 LOCATIONS ACROSS 8 SOUTHERN STATES

Variety	2017-PYT	2018-AYT	2-Year Mean ³	2018-COOP ⁴	2020-COOP ⁴	Maturity	Height	Lodging
S16-5540GT	70.4	67.0	68.5	70.5	60.9	10/6	28	2.8
AG 4632 ¹	70.9	57.6	64.3	73.2	53.06	10/4	36	3.4
AG 43X7 ²	74.0	62.3	68.1	62.8	62.6	10/1	37	3.0
Locations	4	5	9	6⁴	7⁴	9	9	9

¹Check was AG 4135 instead of AG 4632 in 2020. ²AG 48X7 instead of AG 43X7 in 2017. ³Locations in southeast MO were severely affected by off-target Dicamba drift. ⁴Locations across AR, LA, MO, MS, TN, VA in 2018 and AR, IL, LA, MO, MS, and TN in 2020.

PERFORMANCE OF S16-5540GT IN THE USDA UNIFORM TEST SOUTHERN STATES (2019-2021)

Variety	2019-UT	2020-UT	2021-UT	Maturity	Height	Lodging
S16-5540GT	65.8	60.9	64.6	9/27	31	1.9
AG 39X7 ¹	52.7	68.5	58.7	9/16	30	1.6
AG 4135 ¹	56.8	68.5	58.7	9/18	30	1.5
Locations	8 ²	8 ²	9 ²	8	8	8

¹Check was AG 43X7 in 2020 and AG38X8 in 2021. ²Total of 8 (2019 and 2020) and 9 (2021) locations across AL, AR, MO, TN, and MS.

Notes:

S14-15146GT

Agronomic Traits and Disease Ratings

Growth Habit	Indeterminate	Phytophthora Rot	Field Tolerant
Relative Maturity	4.6	SCN	Moderately Susceptible
Flower Color	White	SDS.....	Moderately Resistant
Pubescence Color.....	Tawny	Stem Canker.....	Resistant
Pod Wall Color	Tan	Frogeye.....	Resistant
Hila Color.....	Black	Root Knot.....	Moderately Susceptible
Height (Inches).....	34	Protein %	34.1
Lodging	3.0	Oil %.....	20.3
Seed per lb.....	3300	Chloride.....	Includer
Seed Luster	Intermediate	Herbicide	RR1

THREE YEAR MEANS OF S14-15146GT VERSUS TWO ASGROW CHECKS FOR YIELD (BU/A) BY SOIL TYPE, MATURITY, HEIGHT, & LODGING, SOUTHEAST MO, 2015-2017

Variety	Loam	Clay**	Sand**	3 Year Mean YLD	Maturity	Height (In.)	Lodging Score	
S14-15146GT	76.0	70.7	34.6	71.1	10/4	39	3.0	2.8
AG4632	73.2	73.0	27.6	68.6	10/4	42	2.8	3.4
AG4232	71.1	68.0	20.7	64.9	9/29	37	2.6	3.0
# Locations	6	3	1	10	7	7	7	9

*Check In 2017 was AG43X7 dicamba variety instead of AG4232.

**All 2017 locations affected by Dicamba. Yield on Clay and Sand sites were severely affected and 2017 data was not included in 3 year means.

PERFORMANCE OF S14-15146GT VERSUS TWO CHECKS IN THE REGIONAL UNIFORM TRIAL IV-LATE TEST-SOUTHERN STATES (2017) OVER 13 SITES

Variety	Yld Bu/A	Maturity	Height (In.)	Lodging Score
S14-15146GT	58.0	9/24	31	1.7
Asgrow AG4632	63.5	9/24	36	2.1
Asgrow AG4835	60.8	9/27	36	1.7

Notes:

S16-14730C

Agronomic Traits and Disease Ratings

Growth Habit	Indeterminate	Oil %.....	18.2
Relative Maturity	4.7	Phytophthora Rot	Tolerant
Flower Color	Purple	SDS.....	Resistant
Pubescence Color.....	Tawny	Stem Canker.....	Resistant
Pod Wall Color	Tan	Frogeye.....	Resistant
Hila Color.....	Black	Charcoal.....	Resistant
Height (Inches).....	32	Chloride.....	Includer
Lodging	1.6	Metribuzin.....	Tolerant
Seed per lb.....	3210	SCN	R: 3; MR: 2 & 5
Seed Luster	Intermediate	Root Knot.....	Moderately Susceptible
Protein %	34.4	Reniform.....	Susceptible

2-YEAR MEAN FOR YIELD (BU/AC), MATURITY, HEIGHT, AND LODGING IN SOUTHEAST MO (2017-2018) AND 2-YEAR PERFORMANCE IN 13 LOCATIONS ACROSS 6 SOUTHERN STATES

Variety	2017-PYT	2018-AYT	2-Year Mean ³	2018-COOP ⁴	2020-COOP ⁴	Maturity	Height	Lodging
S16-14730C	69.0	61.8	65.0	64.2	63.7	10/5	33	2.8
AG 4632 ¹	60.9	57.6	59.3	62.8	70.3	10/4	36	3.4
AG 46X7 ²	78.0	66.4	72.2	73.2	68.3	10/2	38	2.8
Locations	4	5	9	8⁴	5⁴	9	9	9

¹Check was AG 4835 in 2020. ²Check was AG 48X7 in 2017 and AG46X6 in 2020. ³ Locations in southeast MO were severely affected by off-target Dicamba drift. ⁴Total of 8 (2018) and 5 (2020) locations across AL, AR, LA, MO, MS, and TN.

PERFORMANCE OF S13-10592C IN THE USDA UNIFORM TEST SOUTHERN STATES (2016 - 2018)

Variety	2018-UP	2019-UT	Average	Maturity	Height	Lodging
S16-14730C	65.0	59.5	62.3	9/27	32	1.6
AG 39X7 ¹	71.2	52.7	61.9	9/16	30	1.6
AG 4135 ¹	62.7	56.8	59.7	9/18	30	1.5
Locations ²	7	8	15	15	15	15

¹Check was AG 43X7 instead of AG 39X7, AG 4232 instead of AG 4135 in 2018.

² Total of 7 (2018) and 8 (2019) locations across AL, AR, MO, and TN.

Notes:

S15-17812 HOLL



Agronomic Traits and Disease Ratings

Growth Habit	Indeterminate	Oil %.....	19.0
Relative Maturity	4.8	Phytophthora Rot	Susceptible
Flower Color	White	SDS.....	Resistant
Pubescence Color.....	Gray	Stem Canker.....	Resistant
Pod Wall Color	Tan	Frogeye.....	Resistant
Hila Color.....	Buff	Charcoal.....	Susceptible
Height (Inches).....	30	Chloride.....	Unknown
Lodging	1.8	Metribuzin.....	Unknown
Seed per lb.....	3700	SCN	Resistant: 2
Seed Luster	Intermediate	Root Knot.....	Resistant
Protein %	36.5	Reniform.....	Moderately Resistant

WEIGHTED YIELD AVERAGE (BU/AC) IN 54 LOCATIONS ACROSS 8 SOUTHERN STATES IN FIVE YEARS (2016-2020)

Variety	2016-PYT	2017-AYT	2018-AYT	2020-AYT	2017-UP	2018-UT	2019 UT	Mean
S15-17812C	60.8	55.3	50.9	60.8	59.1	58.2	59.7	58.3
AG 4835 ¹	64.1	-	49.5	60.9	59.1	-	-	58.4
AG 53X6 ¹	-	-	49.3	72.7	-	57.6	55.9	58.2
Ellis	-	-	-	-	60.4	55.9	59.2	58.1
Locations	3	4	4	5	10	16	12	54

¹Check was AG 55X7 instead of AG 53X6 in 2018-UT; AG 5335 instead of AG 4835 in 2017-UP.

4-YEARS (2016-2019) MEANS OF S15-17812C OLEIC (18:1) AND LINOLENIC (18:3) ACID CONCENTRATIONS

Soybean Oil	2016	2017	2018	2019	Average	Maturity
Oleic acid (18:1)	83.3	83.9	85.0	84.4	84.2	13-Sep
Linolenic acid (18:3)	4.1	2.9	1.3	3.4	2.9	17-Sep

Notes:

S14-15138GT

Agronomic Traits and Disease Ratings

Growth Habit	Indeterminate	Oil %	19.2
Relative Maturity	4.8	Phytophthora Rot	Field Tolerant
Flower Color	White	SDS	Resistant
Pubescence Color	Tawny	Stem Canker	Resistant
Pod Wall Color	Tan	Frogeye	Resistant
Hila Color	Black	Charcoal	Moderately Susceptible
Height (Inches)	35	Chloride	Includer
Lodging	2.2	Metribuzin	Tolerant
Seed per lb	3000	SCN	MR to Race 3 & 14
Seed Luster	Intermediate	Root Knot	Susceptible
Protein %	35.8	Reniform	Susceptible

FOUR YEAR MEANS FOR YIELD (BU/AC) BY SOIL TYPE, MATURITY, HEIGHT, AND LODGING SOUTHEAST MO, 2015-2018

Variety	Loam	Clay**	Sand**	4 Year Mean YLD	Maturity	Height (In.)	Lodging Score
S14-15138GT	69.1	65.7	28.9	65.6	29-Sep	35.0	2.6
AG 4835	69.4	64.2	25.2	65.7	30-Sep	40.0	2.6
AG 46X7*	70.9	68.9	30.7	68.4	27-Sep	39.0	2.6
Locations	8	7	1	16	16	16	9

*Check was AG 4632 instead of AG 46X7 in 2015-2016

PERFORMANCE OF S14-15138GT IN THE USDA UNIFORM TEST SOUTHERN STATES (2017)

Variety	2017	Height	Maturity	Lodging
S14-15138GT	61.4	33.0	27-Sep	1.8
AG 4632	63.5	36.0	24-Sep	2.1
AG 4835	60.8	36.0	27-Sep	1.7
Locations	13	13	13	13

Notes:

S16-7922C

Agronomic Traits and Disease Ratings

Growth Habit	Semi-Determinate	Oil %.....	19.3
Relative Maturity	4.9	Phytophthora Rot	Resistant
Flower Color	White	SDS.....	Resistant
Pubescence Color.....	Tawny	Stem Canker.....	Resistant
Pod Wall Color	Tan	Frogeye.....	Resistant
Hila Color.....	Imperfect Black	Charcoal.....	Resistant
Height (Inches).....	30	Chloride.....	Excluder
Lodging	1.9	Metribuzin.....	Tolerant
Seed per lb.....	3510	SCN	Moderately Resistant: 2, 3, & 5
Seed Luster	Intermediate	Root Knot.....	Resistant
Protein %	35.2	Reniform.....	Moderately Resistant

2-YEAR MEAN FOR YIELD (BU/AC), MATURITY, HEIGHT, AND LODGING IN SOUTHEAST MO (2017-2018) AND 2-YEAR PERFORMANCE IN 14 LOCATIONS ACROSS 6 SOUTHERN STATES

Variety	2017-PYT	2018-AYT	2-Year Mean ³	2018-COOP ⁴	2020-COOP ⁴	Maturity	Height	Lodging
S16-7922C	74.2	63.4	68.2	70.4	64.7	10/8	28	2.4
AG 49X6 ¹	67.8	64.3	66.1	59.0	71.2	10/4	38	2.6
AG 4835 ²	71.9	62.4	67.2	68.0	68.1	10/6	35	2.8
Locations	4	5	9	7⁴	7⁴	5	5	5

¹Check was AG49X9 in 2020. ²Check was AG 5335 in 2017. ³Locations in southeast MO were severely affected by off-target Dicamba drift. ⁴Locations across AR, LA, MO, MS, TN, VA.

PERFORMANCE OF S16-7922C IN THE USDA UNIFORM TEST SOUTHERN STATES (2018-2020)

Variety	2018-UP	2019-UT	2020-UT	Average	Maturity	Height	Lodging
S16-7922C	63.1	61.7	60.2	62.4	10/1	30	1.9
AG 49X6 ¹	60.6	63.8	47.2	62.2	9/29	34	1.5
Ellis	61.2	57.2	53.4	59.2	10/1	25	1.3
Locations²	9	1²	1³	2¹	1²	1²	1²

¹Check was AG 53X7 instead of AG 49X6 in 2018. ²Total of 9 (2018), 12 (2019) 13 (2020) locations across AL, AR, KS, LA, MO, TN, and VA.

Notes:

S16-11651C/ShowMeSoy 5301C

Agronomic Traits and Disease Ratings

Growth Habit	Indeterminate	Oil %.....	20.0
Relative Maturity	4.5	Phytophthora Rot	Susceptible
Flower Color	White	SDS.....	Susceptible
Pubescence Color.....	Tawny	Stem Canker.....	Resistant
Pod Wall Color	Tan	Frogeye.....	Susceptible
Hila Color.....	Black	Charcoal.....	Resistant
Height (Inches).....	36	Chloride.....	Excluder
Lodging	2.1	Metribuzin.....	Tolerant
Seed per lb.....	3100	SCN	Susceptible
Seed Luster	Intermediate	Root Knot.....	Susceptible
Protein %	35.3	Reniform	Susceptible

2-YEAR MEAN FOR YIELD (BU/AC), MATURITY, HEIGHT, AND LODGING IN SOUTHEAST MO (2017-2018) AND 2-YEAR PERFORMANCE IN 10 LOCATIONS ACROSS 6 SOUTHERN STATES

Variety	2017-PYT	2018-AYT	2-Year Mean ²	2018-COOP ³	2020-COOP ³	Maturity	Height	Lodging
S16-11651C	73.1	66.2	69.2	70.0	68.3	10/11	29	2.6
AG 5335	71.7	65.6	68.7	72.6	65.4	10/11	40	2.8
AG 51X8 ¹	65.1	52.8	58.9	66.3	64.3	10/10	42	2.8
Locations	4	5	9	6	4	5	5	5

¹Check was AG 53X6 instead of AG 51X8 in 2017 and AG 49X9 in 2020. ²Locations in southeast MO were severely affected by off-target Dicamba drift. ³Total of 6 (2018) and 4 (2020) locations AR, LA, MO, MS, TN, VA.

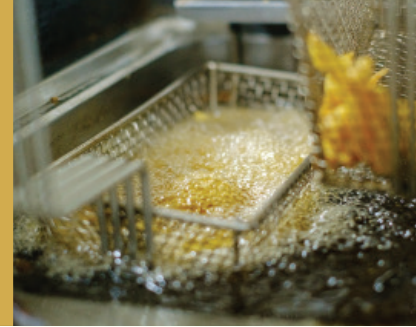
PERFORMANCE OF S16-11651C IN THE USDA UNIFORM TEST SOUTHERN STATES (2018-2019)

Variety	2018-UP	2019-UT	Average	Maturity	Height	Lodging
S16-11651C	66.9	62.1	64.3	10/5	31	1.8
AG 53X6	60.6	55.9	58.3	10/4	28	1.5
Ellis	61.2	59.2	60.2	10/6	26	1.4
Locations¹	9	13	22	13	13	13

¹Total of 9 (2018) and 13 (2019) locations across AL, AR, MO, and TN.

Notes:

SOYLEIC[®] NON-GMO HIGH OLEIC SOYBEANS



WHAT IS A HIGH OLEIC SOYBEAN?

U.S. high oleic soybean has oil that typically contains 75 percent or greater oleic acid and less than 3 percent linolenic acid. Typically, soybean oil has a 23 percent oleic and 8 percent linolenic acid content. The improved fatty acid profile provides an oil with superior heat and oxidative stability for improved fry life and shelf life of prepared foods. High oleic soybeans have comparable oil and protein content to commodity soybeans, which produces a soybean meal with the same composition of protein and amino acids as commodity soybean, while providing competitive yields.

BENEFITS OF HIGH OLEIC SOYBEAN OIL



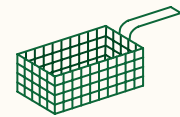
HEALTH

- Lower saturated fat and three times the amount of beneficial monounsaturated fatty acids compared to conventional vegetable oils, which may contribute to lower blood pressure and improved cardiovascular health



SUSTAINABILITY

- High oleic soybean oil has an extended fry-life and self life, lowering cost and waste, and less packaging required for use
- Soybeans are a renewable energy source, and a nitrogen-fixing legume



FUNCTIONALITY

- 2–3 times longer fry life and shelf life¹, when compared to commodity soybean oil
- Less oil absorption, leading to cleaner, lighter flavor

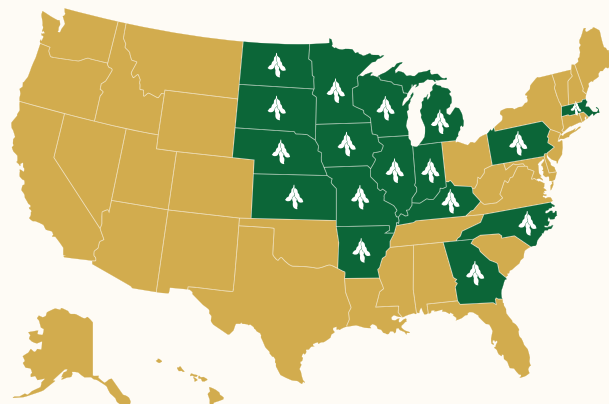
Soybeans account for 90% of the U.S. oilseed production. Over 90 million acres of soybean were planted in the US in 2017, and for the first time since 1983, 2018 acres surpassed corn acres planted in the US.²

LEADING THE WAY

SOYLEIC[®], a true non-GMO high oleic soybean trait, was developed through partnerships between the University of Missouri, the U.S. Department of Agriculture, Missouri Soybean Merchandising Council, and the United Soybean Board.

SOYBEAN MATURITY ZONES

The relative maturity range of commercially available SOYLEIC[®] varieties allows for contract production across maturity groups 1-7 in the U.S. soybean-growing region.



CURRENT SOYLEIC[®] SOYBEAN ACRES FOR 2022

Upcoming commercial varieties with University of IL, University of MN and University of MO in 2023

2023-2024 Missouri Found

Line	Year	Type	RM	GH	FC	PC	PW	HC	SCN	RKN
SA19-311 HOLL	2023	Conv/HOLL	3.4	I	P	G	Tan	Imp. Black	R: 3,14	S
SA19-24408 HOLL	2023	Conv/HOLL	4.0	I	P	G	Tan	Imp. Black	R: 3,14	S
SA19-24265 HOLL	2023	Conv/HOLL	4.0	I	W	T	Tan	Black	R: 3,14	S
S19-19741 HOLL GT	2023	HOLL/RR1	4.7	I	W	G	Tan	Buff	R:1,3,5	R
S17-2193C	2023	Conv	4.7	I	P	T	Black	Buff	S	S
S17-17168 HP	2023	Conv/High Prot	4.8	SD	W	G	Brown	Buff	R:3	R
S16-8290 HP	2023	Conv/High Prot	5.0	SD	W	LT	Tan	Buff	R:1,3,5	R
S16-7840C	2023	Conv	5.0	D	W	T	Tan	Brown	R: 2,3,5	R
S16-9090C	2023	Conv	5.2	SD	W	G	Tan	Black	R: 3	R
S19-18135 LL55	2023	Glufosinate	5.2	SD	W	T	Tan	Imp. Black	MR: 2	S
S09-13185 HP	2023	Conv/High Prot	5.5	D	W	T	Brown	Black	R:1,3	MR

Conv = Conventional; HO = High Oleic, HOLL = High Oleic low linolenic, HOL = High Oleic with one low-linolenic gene, RM: Relative Maturity; GH: Growth Habit, D = Determinate, SD = Semi-determinate; RKN: Southern root-knot nematode; RN: Reniform nematode, SC: Stem Canker; PRR: Phytophthora root rot; FLS: Frogeye leaf spot; SDS: Sudden death syndrome; CRT: Charcoal rot; T = Tolerant, S = Susceptible, Salt: Inc = Includer; Exc = Excluder



ation Seed Variety Pipeline

<i>RN</i>	<i>SC</i>	<i>PRR</i>	<i>FLS</i>	<i>SDS</i>	<i>CRT</i>	<i>PHO</i>	<i>MET</i>	<i>STS</i>	<i>Salt</i>	<i>Seed Available</i>
S	R	T	S	.	.	.	T	S	INC	2024 Season
S	R	T	S	.	.	.	T	S	INC	2024 Season
S	R	T	S	.	.	.	T	S	INC	2024 Season
S	R	T	S	S	S	S	.	.	Exc	2024 Season
R	R	T	S	R	R	S	.	S	Exc	2024 Season
.	R	.	.	.	.	.	.	.	Inc	2024 Season
S	R	.	.	.	.	.	R	.	Inc	2024 Season
R	R	R	S	.	R	S	.	S	Exc	2024 Season
R	S	T	S	.	R	R	.	S	Exc	2024 Season
S	R	R	S	S	R	R	.	.	Exc	2024 Season
.	R	R	R	.	.	.	.	.	Exc	2024 Season

inate, I = Indeterminate, FC: Flower color, W = White, P = Purple, PC: Pubescence Color, G = Gray, T = Tawny, LT = Light tawny; PW: Podwall color; HC: Hilum color, SCN: Soybean cyst
 PHO: Phomopsis longicolla, R = Resistant, MR = Moderately resistant, MS = Moderately susceptible, S = Susceptible, T = Tolerant, MET: Metribuzin; STS: Sulfonyl-Urea tolerant soybean,





MOSOY.ORG
573.635.3819



734 S. Country Club Drive
Jefferson City, MO 65109

