

**Table A-18-a. Mean<sup>†</sup> yield and agronomic traits of 30 Maturity Group IV Late (4.5 - 4.9) soybean varieties evaluated in small plot replicated trials with irrigation at the East Tennessee AgResearch and Education Center in Knoxville, Tennessee during 2023.**

Variety	Herbicide Pkg <sup>‡</sup>	Avg. Yield <sup>§</sup> (bu/ac)			Moisture at Harvest (%)			Plant Height (in.)			Lodging <sup>  </sup> (1-5)			Maturity (DAP)		
		1 yr	2 yr	3 yr	1 yr	2 yr	3 yr	1 yr	2 yr	3 yr	1 yr	2 yr	3 yr	1 yr	2 yr	3 yr
USG 7474XFS	XFS	84 A			14 E-G			41 A-F			2.0 C-H			147 B-H		
Asgrow AG48XF3	XF	83 AB			14 B-G			43 A-D			2.7 A-F			147 A-G		
Revere 4727XF	XF	83 A-C	75 A		13 GH	12 FG		39 B-G	42 D-F		1.3 GH	1.4 E		142 IJ	143 C-E	
Dyna-Gro S47XF23S	XFS	83 A-C	73 AB		14 B-G	13 C-E		42 A-E	43 B-E		1.7 E-H	1.6 DE		147 A-G	143 B-D	
Revere 4795XS****	R2XS	78 A-D	73 AB	78 A	14 D-G	13 E-G	13 B	39 B-G	41 D-F	38 B	2.2 B-H	1.8 B-E	1.7 B	148 A-E	143 B-D	143 BC
USG 7496XTS**	R2XS	77 A-E	73 AB	77 A	14 B-F	14 A	14 A	45 A	47 A	43 A	2.2 B-H	2.2 A-E	1.9 AB	148 A-F	147 A	146 A
Progeny 4604XFS**	XFS	75 A-F	73 AB	74 A	14 E-G	13 D-F	13 AB	43 A-C	46 AB	43 A	3.2 A-C	2.5 A-C	2.3 A	146 C-H	142 D-F	141 C
USG 7461XFS**	XFS	75 A-F	70 A-D	75 A	14 D-G	13 D-F	13 B	37 F-H	42 D-F	39 B	2.2 B-H	1.9 A-E	1.8 B	144 F-J	143 C-E	141 BC
Xitavo 4894E	E3	75 A-F			14 B-G			42 A-E			1.8 D-H			146 C-H		
Revere 4826XF*	XF	74 A-G	72 A-C		14 B-G	13 DE		37 F-H	42 D-F		1.8 D-H	1.7 DE		147 B-G	142 D-F	
Dyna-Gro S48EN73	E3	73 B-H	67 B-E		14 B-G	13 DE		38 C-H	39 F		3.2 A-C	2.6 AB		151 A	146 AB	
USG 7494ETS	E3S	72 C-H			14 A-F			42 A-E			1.7 E-H			144 F-J		
Revere 4731XF	XF	71 D-H			15 A-C			38 C-H			2.8 A-E			141 J		
Dyna-Gro S49XF43S	XFS	69 D-I	67 B-E		14 A-F	13 B-D		38 E-H	39 F		3.5 A	2.7 A		149 A-D	146 A-C	
Asgrow AG49XF3	XF	68 D-I			14 B-G			43 A-D			1.7 E-H			150 AB		
Xitavo 4653E	E3	68 D-I			14 B-G			40 B-G			1.4 GH			141 J		
Revere 4934XF	XF	68 D-I			14 A-E			38 D-H			3.3 AB			145 D-I		
Asgrow AG47XF2	XF	68 D-I	67 B-E		15 A	14 AB		41 A-F	42 D-F		1.2 H	1.7 DE		141 J	139 G	
Progeny 4691XFS*	XFS	68 D-I	67 B-E		15 A-D	14 AB		43 AB	46 A		2.2 B-H	1.8 B-E		142 IJ	139 FG	
Progeny 4798XF	XF	66 E-J	67 B-E		13 H	12 G		36 G-I	40 EF		2.0 C-H	1.8 B-E		148 A-F	143 B-D	
Progeny 4775E3S	E3S	66 F-J	64 C-E		15 AB	14 A-C		41 A-F	46 A-C		3.0 A-D	2.3 A-D		145 E-I	142 D-F	
Progeny 4806XFS	XFS	66 F-J	62 E	68 B	14 A-F	13 C-E	13 B	39 B-H	40 EF	38 B	2.2 B-H	1.7 DE	1.6 B	147 B-H	144 B-D	144 AB
USG 7463XF	XF	64 F-K	64 C-E		14 A-F	13 B-D		43 A-D	44 A-D		1.5 F-H	1.8 C-E		142 IJ	139 E-G	
Innvictis A4862XF	XF	63 G-K	63 DE		14 E-G	13 DE		41 A-F	43 C-E		1.5 F-H	1.7 DE		148 A-F	143 B-D	
Don Mario DM48F53	XF	62 H-K			14 B-G			38 C-H			2.2 B-H			143 H-J		
MO S18-17644	Conv	59 I-K			14 A-F			28 J			2.0 C-H			149 A-C		
Innvictis B4603E	E3	56 JK			14 C-G			34 HI			2.5 A-G			144 G-J		
Innvictis B4903E	E3	55 JK			14 B-G			39 B-G			2.3 A-G			149 A-E		
Perdue Agribusiness P48MO21	Conv	54 K			14 B-G			32 IJ			3.0 A-D			150 AB		
TN Exp TN18-4110b	Conv.	36 L			14 F-H			22 K			1.2 H			151 A		
Average		69	69	74	14.1	13.0	13.2	39	43	40	2.2	1.9	1.9	146	143	143
Standard Error		4	4	5	0.3	1.0	0.6	2	3	4	0.4	0.3	0.3	2	3	2
L.S.D. <sub>.05</sub>		11	8	6	0.7	0.5	0.6	5	3	3	1.2	0.8	0.4	4	3	3
C.V.		10	10	8	3	3	5	8	7	7	-	-	-	2	2	2

† Varieties that have any MS letter in common are not significantly different at the 5% level of probability. Values highlighted in light orange are above average for a given trait, MS letters highlighted in dark orange are in the "A group", indicating no statistical difference from the top-performing variety, for a given trait.

C.V. is only reported for variables evaluated on a ratio scale.

L.S.D. values are given for ANOVA that were significant at P<0.05. Variables in which minimal variation was observed were not subjected to ANOVA and are reported as N.E.

‡ For a full description of abbreviated biotech traits, see table 29.

\* Asterisks after a name indicate the number of preceding consecutive years in the top-performing "A" group.

§ All yields are adjusted to 13% moisture.

|| Lodging was evaluated on a scale of 1 (no lodging) to 5 (complete lodging).

T Indicate data that were log transformed to meet assumptions of normality, raw means are reported and mean separation letters are given. L.S.D values are not reported as these would be relative to transformed mean values.

**Table A-18-b. Mean<sup>†</sup> yield and quality of 30 Maturity Group IV Late (4.5 - 4.9) soybean varieties evaluated in small plot replicated trials with irrigation at the East Tennessee AgResearch and Education Center in Knoxville, Tennessee during 2023.**

Variety	Herbicide Pkg <sup>†</sup>	Avg. Yield <sup>§</sup> (bu/ac)			Protein <sup>¶</sup> (%)			Oil <sup>¶</sup> (%)		
		1 yr	2 yr	3 yr	1 yr	2 yr	3 yr	1 yr	2 yr	3 yr
USG 7474XFS	XFS	84 A			34.2 A-G			24.0 B-H		
Asgrow AG48XF3	XF	83 AB			33.6 D-I			24.7 A-C		
Revere 4727XF	XF	83 A-C	75 A		33.7 C-H	33.5 DE		24.1 B-G	23.9 BC	
Dyna-Gro S47XF23S	XFS	83 A-C	73 AB		32.8 H-J	32.8 F		24.2 A-E	23.9 BC	
Revere 4795XS****	R2XS	78 A-D	73 AB	78 A	34.6 A-E	34.2 BC	34.2 B	23.6 D-J	23.5 D-F	23.6 AB
USG 7496XTS**	R2XS	77 A-E	73 AB	77 A	34.2 A-G	34.8 AB	35.1 A	23.5 E-J	23.0 G	23.1 C
Progeny 4604XFS**	XFS	75 A-F	73 AB	74 A	32.6 I-K	33.0 EF	33.1 CD	23.8 C-J	23.6 C-E	23.7 AB
USG 7461XFS**	XFS	75 A-F	70 A-D	75 A	33.6 C-I	33.5 DE	33.6 BC	23.7 D-J	23.6 C-F	23.5 B
Xitavo 4894E	E3	75 A-F			35.1 A			23.6 D-J		
Revere 4826XF*	XF	74 A-G	72 A-C		33.5 E-I	33.7 CD		23.8 D-J	23.7 CD	
Dyna-Gro S48EN73	E3	73 B-H	67 B-E		34.8 A-C	34.7 AB		23.3 F-J	23.2 E-G	
USG 7494ETS	E3S	72 C-H			34.3 A-G			23.8 D-J		
Revere 4731XF	XF	71 D-H			34.3 A-G			23.5 E-J		
Dyna-Gro S49XF43S	XFS	69 D-I	67 B-E		34.5 A-E	33.9 CD		24.4 A-D	24.5 A	
Asgrow AG49XF3	XF	68 D-I			33.8 C-H			23.2 IJ		
Xitavo 4653E	E3	68 D-I			33.8 C-H			23.8 D-J		
Revere 4934XF	XF	68 D-I			32.1 JK			24.8 AB		
Asgrow AG47XF2	XF	68 D-I	67 B-E		33.9 B-H	33.8 CD		23.9 B-I	23.9 BC	
Progeny 4691XFS*	XFS	68 D-I	67 B-E		34.5 A-F	34.3 BC		23.4 F-J	23.2 E-G	
Progeny 4798XF	XF	66 E-J	67 B-E		32.6 I-K	32.5 F		24.0 B-I	23.9 BC	
Progeny 4775E3S	E3S	66 F-J	64 C-E		35.1 A	35.2 A		23.2 H-J	22.9 G	
Progeny 4806XFS	XFS	66 F-J	62 E	68 B	32.0 JK	32.5 F	33.0 D	24.7 A-C	24.2 AB	24.0 A
USG 7463XF	XF	64 F-K	64 C-E		35.0 AB	34.7 AB		23.2 G-J	23.2 FG	
Innvictis A4862XF	XF	63 G-K	63 DE		33.4 F-I	33.9 CD		24.1 B-F	23.8 CD	
Don Mario DM48F53	XF	62 H-K			31.5 K			25.0 A		
MO S18-17644	Conv	59 I-K			33.1 G-J			23.2 F-J		
Innvictis B4603E	E3	56 JK			34.6 A-D			23.7 D-J		
Innvictis B4903E	E3	55 JK			35.2 A			23.0 J		
Perdue Agribusiness P48MO21	Conv	54 K			35.0 AB			21.1 K		
TN Exp TN18-4110b	Conv.	36 L			34.0 B-G			20.2 K		
Average		69	69	74	33.9	33.8	33.8	23.6	23.6	23.6
Standard Error		4	4	5	0.4	0.2	0.3	0.3	0.2	0.2
L.S.D. <sub>.05</sub>		11	8	6	1.1	0.7	0.6	0.8	0.4	0.4
C.V.		10	10	8	2	2	2	2	2	2

† Varieties that have any MS letter in common are not significantly different at the 5% level of probability. Values highlighted in light orange are above average for a given trait, MS letters highlighted in dark orange are in the "A group", indicating no statistical difference from the top-performing variety, for a given trait.

C.V. is only reported for variables evaluated on a ratio scale.

L.S.D. values are given for ANOVA that were significant at P<0.05. Variables in which minimal variation was observed were not subjected to ANOVA and are reported as N.E.

\* Asterisks after a name indicate the number of preceding consecutive years in the top-performing "A" group.

‡ For a full description of abbreviated biotech traits, see table 29.

§ All yields are adjusted to 13% moisture.

¶ Protein and oil were measured post-harvest using NIRS and are reported on a dry weight basis.

**Table A-18-c. Mean<sup>†</sup> yield and quality of 30 Maturity Group IV Late (4.5 - 4.9) soybean varieties evaluated in small plot replicated trials with irrigation at the East Tennessee AgResearch and Education Center in Knoxville, Tennessee during 2023.**

Variety	Herbicide Pkg <sup>†</sup>	Avg. Yield <sup>§</sup>	SDS DI <sup>††</sup>	SDS DS <sup>††</sup>	SDS DX <sup>††, †</sup>	Frogeye <sup>‡‡</sup>	Seed Quality <sup>§§, †</sup>	Purple Stain <sup>¶¶</sup>	Leaf Holding <sup>  </sup>
		(bu/ac)	(%)	(1-9)	(DI x DS/9)	(%)	(1-5)	(1-5)	(1-5)
		1 yr	1 yr	1 yr	1 yr	1 yr	1 yr	1 yr	1 yr
USG 7474XFS	XFS	84 A	2 E	1.0 D	0.2 CD	2.7 B-F	1.3 C-E	1.2 BC	2.0 B-E
Asgrow AG48XF3	XF	83 AB	3 DE	2.0 A-D	0.9 A-D	4.0 A-C	1.2 DE	1.3 AB	1.7 C-F
Revere 4727XF	XF	83 A-C	13 C-E	1.7 B-D	3.0 A-C	3.7 A-D	1.5 CD	1.5 A	1.0 F
Dyna-Gro S47XF23S	XFS	83 A-C	0 E	1.0 D	0.0 D	3.0 A-F	1.0 E	1.2 BC	1.2 EF
Revere 4795XS****	R2XS	78 A-D	7 DE	2.3 A-C	2.6 A-C	3.3 A-E	1.3 C-E	1.0 C	1.5 D-F
USG 7496XTS**	R2XS	77 A-E	8 C-E	2.7 AB	3.1 A-C	2.7 B-F	1.3 C-E	1.5 A	2.3 A-D
Progeny 4604XFS**	XFS	75 A-F	8 C-E	1.7 B-D	1.9 A-D	2.3 B-F	1.3 C-E	1.0 C	1.8 B-F
USG 7461XFS**	XFS	75 A-F	7 DE	2.0 A-D	2.0 A-C	1.7 D-F	1.3 C-E	1.5 A	1.8 B-F
Xitavo 4894E	E3	75 A-F	0 E	1.0 D	0.0 D	3.0 A-F	1.7 BC	1.2 BC	1.3 EF
Revere 4826XF*	XF	74 A-G	0 E	1.0 D	0.0 D	2.0 C-F	1.3 C-E	1.2 BC	1.3 EF
Dyna-Gro S48EN73	E3	73 B-H	2 E	1.0 D	0.2 CD	4.3 AB	1.7 BC	1.3 AB	1.5 D-F
USG 7494ETS	E3S	72 C-H	2 E	1.3 CD	0.4 B-D	3.7 A-D	1.7 BC	1.3 AB	1.0 F
Revere 4731XF	XF	71 D-H	23 A-C	2.7 AB	9.3 A	1.3 EF	1.3 C-E	1.0 C	1.2 EF
Dyna-Gro S49XF43S	XFS	69 D-I	33 AB	2.7 AB	10.2 A	2.3 B-F	1.3 C-E	1.5 A	1.7 C-F
Asgrow AG49XF3	XF	68 D-I	0 E	1.0 D	0.0 D	4.3 AB	1.3 C-E	1.3 AB	1.2 EF
Xitavo 4653E	E3	68 D-I	5 DE	1.3 CD	0.7 A-D	2.3 B-F	1.5 CD	1.0 C	1.3 EF
Revere 4934XF	XF	68 D-I	10 C-E	2.7 AB	3.0 A	1.0 F	1.2 DE	1.0 C	2.0 B-E
Asgrow AG47XF2	XF	68 D-I	5 DE	3.0 A	1.7 AB	2.7 B-F	1.0 E	1.0 C	1.3 EF
Progeny 4691XFS*	XFS	68 D-I	35 A	2.7 AB	13.0 A	2.7 B-F	1.2 DE	1.5 A	1.8 B-F
Progeny 4798XF	XF	66 E-J	3 DE	1.7 B-D	0.7 A-D	3.3 A-E	1.0 E	1.0 C	1.3 EF
Progeny 4775E3S	E3S	66 F-J	5 DE	1.3 CD	0.7 A-D	3.3 A-E	1.5 CD	1.3 AB	1.3 EF
Progeny 4806XFS	XFS	66 F-J	15 C-E	3.0 A	4.8 A	3.3 A-E	1.5 CD	1.2 BC	1.2 EF
USG 7463XF	XF	64 F-K	5 DE	2.0 A-D	1.1 A-C	3.7 A-D	1.2 DE	1.0 C	1.3 EF
Innvictis A4862XF	XF	63 G-K	8 C-E	3.0 A	2.8 A	1.3 EF	1.2 DE	1.5 A	1.5 D-F
Don Mario DM48F53	XF	62 H-K	13 C-E	2.7 AB	4.8 A	1.3 EF	1.0 E	1.2 BC	1.2 EF
MO S18-17644	Conv	59 I-K	2 E	1.0 D	0.2 CD	1.7 D-F	1.0 E	1.0 C	2.7 AB
Innvictis B4603E	E3	56 JK	3 DE	1.3 CD	0.6 A-D	1.3 EF	2.2 AB	1.5 A	2.0 B-E
Innvictis B4903E	E3	55 JK	18 B-D	2.3 A-C	6.1 A-C	5.0 A	2.3 A	1.3 AB	1.7 C-F
Perdue Agribusiness P48MO21	Conv	54 K	3 DE	1.0 D	0.4 A-D	1.3 EF	1.0 E	1.2 BC	3.0 A
TN Exp TN18-4110b	Conv.	36 L	0 E	1.0 D	0.0 D	1.3 EF	1.0 E	1.0 C	2.5 A-C
<b>Average</b>		69	8	1.8	2	2.7	1.3	1.2	1.6
<b>Standard Error</b>		4	6	0.5	2	0.8	0.2	0.1	0.3
<b>L.S.D.<sub>.05</sub></b>		11	16	1.3	Sig.	2.0	Sig.	0.3	0.9
<b>C.V.</b>		10	-	-	-	-	-	-	-

† Varieties that have any MS letter in common are not significantly different at the 5% level of probability. Values highlighted in light orange are above average for a given trait, MS letters highlighted in dark orange are in the "A group", indicating no statistical difference from the top-performing variety, for a given trait.

C.V. is only reported for variables evaluated on a ratio scale.

L.S.D. values are given for ANOVA that were significant at P<0.05. Variables in which minimal variation was observed were not subjected to ANOVA and are reported as N.E.

\* Asterisks after a name indicate the number of preceding consecutive years in the top-performing "A" group.

‡ For a full description of abbreviated biotech traits, see table 29.

§ All yields are adjusted to 13% moisture.

† Indicate data that were log transformed to meet assumptions of normality, raw means are reported and mean separation letters are given. L.S.D values are not reported as these would be relative to transformed mean values.

†† SDS was evaluated as disease incidence (percentage), disease severity (1 to 9, with 1 indicating no disease), and disease index (DI x DS/9). Evaluated in mid-September.

‡‡ Frogeye was evaluated using a 1 to 9 scale, with 1 indicating no disease. Evaluated in mid-September.

|| Leaf holding was evaluated visually at harvest using a 1 to 5 scale, with 1 indicating no leaves at maturity.

§§ Seed quality was evaluated visually post-harvest using a 1 to 5 scale, with 1 indicating no shriveled or damaged seed.

¶¶ Purple stain was evaluated visually post-harvest using a 1 to 5 scale, with 1 indicating no purple stain.