

Table A-10-a. Mean[†] yield and agronomic traits of 20 Maturity Group IV Early (4.0 - 4.4) 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 [†]	Avg. Yield [§] (bu/ac)			Moisture at Harvest (%)			Plant Height (in.)			Lodging (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
NK 42-A6E3S	E3	105 A			16 B-E			37 B-E			1.5 D			142 A-E		
NK 44-Q5E3S	E3	81 B	76 A		15 F	14 C		32 F	36 D		1.5 D	2.0 AB		144 A-C	140 AB	
Innvictis B5013E	E3	80 BC			15 C-F			40 AB			1.7 CD			144 AB		
Asgrow AG45XF3	XF	78 B-D			16 B-E			40 AB			1.5 D			141 D-H		
Xitavo 4364E	E3	77 B-D			16 AB			37 B-E			2.5 AB			137 I		
Revere 4526XFS	XFS	77 B-E	73 A		16 A-C	15 A		43 A	47 A		2.3 BC	2.0 AB		142 B-F	139 BC	
Revere 4299XS	R2XS	77 B-E	76 A	79 A	16 A-C	15 AB	15 A	39 A-C	44 B	41 A	1.3 D	1.3 B	1.4 A	139 E-I	137 C	138 A
Xitavo 4084E	E3	74 B-E			16 B-E			34 EF			1.7 CD			137 I		
Revere 4237XFS	XFS	74 B-E			16 C-F			37 B-E			1.3 D			137 I		
Innvictis A4503XF	XF	73 B-F			15 D-F			36 C-E			1.3 D			138 HI		
Dyna-Gro S45XF02	XF	71 B-F	73 A		16 A-D	15 AB		38 B-D	42 BC		2.3 BC	2.3 A		145 A	142 A	
Dyna-Gro S41EN72	E3	69 B-G	72 A	72 A	15 D-F	14 BC	14 B	36 C-E	40 C	38 B	1.8 B-D	2.3 A	2.0 A	142 B-F	137 C	137 A
Perdue Agribusiness P411L022	Conv	68 C-G			15 EF			36 C-F			1.3 D			139 G-I		
Innvictis A4411XF	XF	67 C-G			16 B-E			35 D-F			1.8 B-D			138 I		
Don Mario DM45F23	XF	66 D-H			16 A			35 D-F			1.5 D			139 F-I		
Asgrow AG43XF2	XF	64 E-H	67 A		16 B-E	15 AB		37 B-E	41 C		1.2 D	1.3 B		143 A-D	140 AB	
Xitavo 4522E	E3	61 F-H			15 EF			32 F			1.3 D			145 A		
Perdue Agribusiness P41MO21	Conv	56 GH			15 D-F			36 C-F			3.2 A			137 I		
MO S19-10701	Conv	53 HI			15 D-F			36 B-E			2.3 BC			141 C-G		
Perdue Agribusiness P45XP421	Conv	42 I			16 A			32 F			1.8 B-D			144 A-C		
Average		71	73	76	15.6	14.4	14.5	36	42	39	1.8	1.8	1.7	141	139	138
Standard Error		5	4	4	0.2	1.2	0.8	1	4	4	0.3	0.3	0.2	1	3	2
L.S.D. _{.05}		13	N.S.	N.S.	0.7	0.6	0.4	4	2	2	0.8	0.8	N.S.	3	2	N.S.
C.V.		11	11	14	3	3	3	6	5	5	-	-	-	1	1	1

[†] 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-10-b. Mean[†] yield and quality of 20 Maturity Group IV Early (4.0 - 4.4) 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 [‡]	Avg. Yield [§] (bu/ac)			Protein [¶] (%)			Oil [¶] (%)		
		1 yr	2 yr	3 yr	1 yr	2 yr	3 yr	1 yr	2 yr	3 yr
NK 42-A6E3S	E3	105 A			33 G-J			25 CD		
NK 44-Q5E3S	E3	81 B	76 A		35 C	35 A		23 H	23 E	
Innvictis B5013E	E3	80 BC			35 C			24 E		
Asgrow AG45XF3	XF	78 B-D			34 E-H			24 EF		
Xitavo 4364E	E3	77 B-D			33 H-J			25 C		
Revere 4526XFS	XFS	77 B-E	73 A		33 J	33 D		25 D	24 B	
Revere 4299XS	R2XS	77 B-E	76 A	79 A	34 DE	35 B	35 A	24 EF	24 C	23 B
Xitavo 4084E	E3	74 B-E			32 K			26 A		
Revere 4237XFS	XFS	74 B-E			34 EF			25 D		
Innvictis A4503XF	XF	73 B-F			33 IJ			25 B		
Dyna-Gro S45XF02	XF	71 B-F	73 A		35 CD	35 A		23 G	23 D	
Dyna-Gro S41EN72	E3	69 B-G	72 A	72 A	33 J	33 D	33 B	25 BC	25 A	25 A
Perdue Agribusiness P411L022	Conv	68 C-G			34 E-G			22 J		
Innvictis A4411XF	XF	67 C-G			34 EF			24 E		
Don Mario DM45F23	XF	66 D-H			34 EF			24 FG		
Asgrow AG43XF2	XF	64 E-H	67 A		33 F-I	34 C		25 CD	25 A	
Xitavo 4522E	E3	61 F-H			35 C			24 EF		
Perdue Agribusiness P41MO21	Conv	56 GH			35 CD			21 J		
MO S19-10701	Conv	53 HI			37 B			22 I		
Perdue Agribusiness P45XP421	Conv	42 I			38 A			23 HI		
Average		71	73	76	34.2	34.0	33.9	23.8	23.8	24.1
Standard Error		5	4	4	0.3	0.2	0.3	0.1	0.3	0.2
L.S.D. _{.05}		13	N.S.	N.S.	0.7	0.4	0.6	0.4	0.2	0.4
C.V.		11	11	14	1	1	2	1	1	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-10-c. Mean[†] yield and quality of 20 Maturity Group IV Early (4.0 - 4.4) 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 [†]	Avg. Yield [§]	SDS DI ^{††}	SDS DS ^{††}	SDS DX ^{††}	Frogeye ^{‡‡}	Seed Quality ^{§§, T}	Purple Stain ^{¶¶}	Leaf Holding
		(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
NK 42-A6E3S	E3	105 A	2 G	1.3 FG	0 E	1.7 EF	2.2 A	1.5 A	1.2 A
NK 44-Q5E3S	E3	81 B	3 FG	1.7 E-G	1 E	2.7 D-F	1.7 A-C	1.2 AB	1.0 A
Innvictis B5013E	E3	80 BC	5 FG	2.3 C-G	1 E	3.0 C-F	1.5 A-C	1.2 AB	1.0 A
Asgrow AG45XF3	XF	78 B-D	13 E-G	3.0 B-E	4 DE	5.3 B	1.0 D	1.0 B	1.2 A
Xitavo 4364E	E3	77 B-D	2 G	2.3 C-G	1 E	7.3 A	1.7 A-C	1.2 AB	1.3 A
Revere 4526XFS	XFS	77 B-E	20 C-F	3.3 B-D	8 DE	4.3 B-D	1.3 B-D	1.2 AB	1.0 A
Revere 4299XS	R2XS	77 B-E	23 C-E	3.0 B-E	9 DE	2.7 D-F	1.7 A-C	1.5 A	1.3 A
Xitavo 4084E	E3	74 B-E	7 E-G	2.0 D-G	1 E	1.7 EF	1.7 A-C	1.5 A	1.0 A
Revere 4237XFS	XFS	74 B-E	37 BC	3.7 BC	15 B-D	7.3 A	1.5 A-C	1.5 A	1.3 A
Innvictis A4503XF	XF	73 B-F	43 AB	4.3 AB	23 BC	4.7 BC	1.0 D	1.5 A	1.2 A
Dyna-Gro S45XF02	XF	71 B-F	5 FG	2.7 C-F	1 E	3.7 B-D	1.7 A-D	1.2 AB	1.2 A
Dyna-Gro S41EN72	E3	69 B-G	8 E-G	1.0 G	1 E	2.7 D-F	1.3 B-D	1.0 B	1.0 A
Perdue Agribusiness P41IL022	Conv	68 C-G	7 E-G	2.0 D-G	1 E	3.0 C-F	1.2 CD	1.5 A	1.2 A
Innvictis A4411XF	XF	67 C-G	58 A	3.7 BC	24 AB	4.3 B-D	1.3 B-D	1.3 AB	1.5 A
Don Mario DM45F23	XF	66 D-H	20 C-F	4.3 AB	10 DE	1.3 F	1.0 D	1.2 AB	1.2 A
Asgrow AG43XF2	XF	64 E-H	13 E-G	3.0 B-E	5 DE	7.3 A	1.7 A-C	1.3 AB	1.0 A
Xitavo 4522E	E3	61 F-H	2 G	1.3 FG	0 E	4.0 B-D	2.0 AB	1.2 AB	1.0 A
Perdue Agribusiness P41MO21	Conv	56 GH	33 B-D	3.0 B-E	11 C-E	3.3 C-E	1.2 CD	1.3 AB	1.0 A
MO S19-10701	Conv	53 HI	17 D-G	4.3 AB	8 DE	2.7 D-F	1.0 D	1.0 B	1.5 A
Perdue Agribusiness P45XP421	Conv	42 I	58 A	5.3 A	35 A	1.7 EF	1.7 A-C	1.0 B	1.8 A
Average		71	19	2.9	8	3.7	1.5	1.3	1.2
Standard Error		5	6	0.6	4	0.7	0.2	0.1	0.2
L.S.D. _{.05}		13	18	1.6	12	2.0	Sig.	0.3	N.S.
C.V.		11	-	-	-	-	-	-	-

† 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.

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

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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.

†† 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.