Table 22-a. Mean† yield, agronomic traits, and quality of 12 Maturity Group V (5.0 - 5.9) soybean varieties evaluated in small plot replicated trials at nine REC locations in Tennessee during 2023. Analysis included variety performance over a 1 yr, 2 yr, and 3 yr period.

Variety	Herbicide Pkg†	Avg. Yield§ (bu/ac)		Moisture at Harvest (%)		Plant Height (in.)		Lodging‖ (1-5)	
		1 yr	2 yr	1 yr	2 yr	1 yr	2 yr	1 yr	2 yr
NK 52-D6E3*	E3	80 A	71 A	12.2 D	12.0 C	43 B	40 B	1.4 D-F	1.6 B
Revere 5029XF	XF	74 B	67 B	12.6 A-C	12.6 A	45 A	43 A	1.6 C-E	1.5 B
Progeny 5056XFS	XFS	72 BC	67 B	12.7 A	12.7 A	46 A	43 A	1.6 CD	1.5 B
USG 7503XF	XF	72 B-D		12.4 B-D		43 B		1.5 C-F	
Innvictis A5503XF	XF	71 B-E		12.2 D		43 B		1.2 EF	
Innvictis A5003XF	XF	67 C-F		12.2 D		40 C		1.8 BC	
Asgrow AG53XF2	XF	66 D-F	60 C	12.3 B-D	12.3 B	43 B	41 B	1.2 F	1.2 C
MO S18-6013	Conv	66 EF		12.6 AB		36 D		1.6 B-D	
USG 7534GT	GT	63 FG		12.4 B-D		46 A		2.0 B	
USG 7543XF	XF	62 F-H		12.3 CD		46 A		2.0 B	
MO S18-6328	Conv	59 GH	57 C	12.3 B-D	12.2 BC	36 D	35 C	2.6 A	2.2 A
Innvictis A5813XF	XF	57 H		12.4 B-D		40 C		1.4 D-F	
Average		**67**	**64**	**12.4**	**12.4**	**42**	**40**	**1.7**	**1.6**
Standard Error		**5**	**6**	**0.8**	**0.4**	**1**	**2**	**0.2**	**0.2**
L.S.D.$_{.05}$		**5**	**3**	**0.3**	**0.3**	**2**	**1**	**0.3**	**0.2**
C.V.		**14**	**13**	**4**	**6**	**8**	**8**	**-**	**-**
Site-Years		**8**	**16**	**8**	**16**	**8**	**16**	**8**	**16**

† 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 signficant 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 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 22-b. Mean† yield, agronomic traits, and quality of 12 Maturity Group V (5.0 - 5.9) soybean varieties evaluated in small plot replicated trials at nine REC locations in Tennessee during 2023. Analysis included variety performance over a 1 yr, 2 yr, and 3 yr period.

Variety	Herbicide Pkg†	Avg. Yield§ (bu/ac)		Maturity (DAP)		Protein¶ (%)		Oil¶ (%)	
		1 yr	2 yr	1 yr	2 yr	1 yr	2 yr	1 yr	2 yr
NK 52-D6E3*	E3	80 A	71 A	149 EF	147 B	33.5 E	33.6 C	24.4 BC	23.8 AB
Revere 5029XF	XF	74 B	67 B	151 C	148 A	33.8 DE	34.2 BC	24.5 BC	24.0 AB
Progeny 5056XFS	XFS	72 BC	67 B	151 CD	148 A	33.7 E	34.4 B	24.2 C	23.7 B
USG 7503XF	XF	72 B-D		149 F		32.0 G		24.5 BC	
Innvictis A5503XF	XF	71 B-E		151 C-E		31.6 G		24.7 B	
Innvictis A5003XF	XF	67 C-F		150 D-F		32.7 F		25.7 A	
Asgrow AG53XF2	XF	66 D-F	60 C	150 C-E	147 B	31.6 G	32.3 D	24.9 B	24.2 A
MO S18-6013	Conv	66 EF		155 A		34.2 DE		24.2 C	
USG 7534GT	GT	63 FG		150 C-F		36.7 A		22.2 E	
USG 7543XF	XF	62 F-H		153 B		34.4 CD		23.4 D	
MO S18-6328	Conv	59 GH	57 C	153 B	149 A	35.0 C	35.2 A	23.2 D	22.8 C
Innvictis A5813XF	XF	57 H		155 A		35.9 B		22.0 E	
Average		**67**	**64**	**151**	**148**	**33.8**	**33.9**	**24.0**	**23.7**
Standard Error		**5**	**6**	**2**	**3**	**0.2**	**0.5**	**0.2**	**0.6**
L.S.D.$_{.05}$		**5**	**3**	**1**	**1**	**0.6**	**0.7**	**0.4**	**0.5**
C.V.		**14**	**13**	**2**	**1**	**1**	**2**	**1**	**2**
Site-Years		**8**	**16**	**8**	**16**	**1**	**2**	**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 signficant 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 22-c. Mean† yield, agronomic traits, and quality of 12 Maturity Group V (5.0 - 5.9) soybean varieties evaluated in small plot replicated trials at nine REC locations in Tennessee during 2023. Sudden death syndrome (SDS) and frogeye disease ratings were taken in mid-September. Leaf holding was taken at harvest. Seed quality and purple stain raitings were taken post-harvest.

Variety	Herbicide Pkg†	Avg. Yield§ (bu/ac)	SDS DI††, T (%)	SDS DS††, T (1-9)	SDS DX††, T (DI x DS/9)	Frogeye‡‡, T (1-9)	Seed Quality§§ (1-5)	Purple Stain¶¶ (1-5)	Leaf Holding (1-5)
		1 yr	1 yr	1 yr	1 yr	1 yr	1 yr	1 yr	1 yr
NK 52-D6E3*	E3	80 A	2 E	1.1 F	0 E	1.1 E	1.8 A	1.0 A	1.7 CD
Revere 5029XF	XF	74 B	6 CD	1.5 DE	2 CD	1.8 BC	1.0 C	1.5 A	2.2 A
Progeny 5056XFS	XFS	72 BC	3 DE	1.2 EF	1 DE	1.9 B	1.2 BC	1.2 A	1.8 B-D
USG 7503XF	XF	72 B-D	14 A	2.2 AB	5 A	1.4 C-E	1.3 B	1.0 A	1.8 A-D
Innvictis A5503XF	XF	71 B-E	15 AB	1.9 B-D	4 AB	1.5 C-E	1.0 C	1.2 A	1.6 CD
Innvictis A5003XF	XF	67 C-F	21 AB	2.0 A-C	7 AB	1.3 DE	1.0 C	1.3 A	1.5 D
Asgrow AG53XF2	XF	66 D-F	12 BC	2.0 A-D	4 BC	1.3 DE	1.0 C	1.2 A	1.6 CD
MO S18-6013	Conv	66 EF	4 DE	1.2 EF	1 DE	1.1 DE	1.0 C	1.0 A	1.8 B-D
USG 7534GT	GT	63 FG	18 AB	1.8 B-D	5 AB	1.2 DE	1.2 BC	1.3 A	2.1 AB
USG 7543XF	XF	62 F-H	20 AB	2.4 A	7 AB	1.2 DE	1.0 C	1.0 A	2.0 A-C
MO S18-6328	Conv	59 GH	2 E	1.2 EF	0 E	1.5 B-D	1.0 C	1.0 A	2.2 A
Innvictis A5813XF	XF	57 H	10 A-C	1.7 CD	3 A-C	3.2 A	1.0 C	1.2 A	1.8 B-D
Average		**67**	**10**	**1.7**	**3**	**1.5**	**1.1**	**1.2**	**1.8**
Standard Error		**5**	**4**	**0.3**	**2**	**0.2**	**0.1**	**0.1**	**0.3**
L.S.D.$_{.05}$		**5**	**Sig.**	**Sig.**	**Sig.**	**Sig.**	**0.3**	**N.S.**	**0.4**
Site-Years		**8**	**8**	**8**	**8**	**8**	**1**	**1**	**6**

† 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 signficant 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.
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 at all locations.
‡‡ Frogeye was evaluated using a 1 to 9 scale, with 1 indicating no disease. Evaluated in mid-September at all locations.
|| Leaf holding was evaluated visually at harvest using a 1 to 5 scale, with 1 indicating no leaves at maturity. Evaluated at all locations except Milan Irr and Milan Non-Irr.
§§ Seed quality was evaluated visually post-harvest using a 1 to 5 scale, with 1 indicating no shriveled or damaged seed. Evaluated at Knoxville location only.