

2018 Soybean Official Variety Trial Phytotoxicity Evaluations

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One of the questions over the past few seasons has to do with the presence of phytotoxicity and how varieties may differ in sensitivity following a fungicide application. One entire set of the Official Variety Trial (OVT) was planted in Stoneville, MS (MG IV and V: Conventional, early, late, LibertyLink) as single rows of each variety and replicated four times. Plots measured 12 feet in length and received an application of 4 fl oz of Stratego YLD at R4. Stratego YLD was selected since the product had previously been observed to produce a moderate level of phytotoxicity on some varieties. A single evaluation was made 18 days post-application for the purposes of observing the incidence (0-100%; percentage of the plot exhibiting phytotoxicity) and severity (0-9; severity of the leaf tissue exhibiting phytotoxicity) for each variety. The tables below should provide information as to the potential response of each of the varieties included in the OVT and the level of phytotoxicity that may occur as a result of a fungicide that is likely to produce a moderate level of phytotoxicity.



Phytotoxicity following the application of a fungicide known to produce injury.

Numerous fungicide products can produce a phytotoxic response post-application. In general, products that contain a demethylation inhibitor (DMI; triazole) are most commonly associated with phytotoxicity. However, to date, a yield reduction as a result of phytotoxicity has not been documented in any of the trials conducted in Stoneville, MS as a result of applying a commercially labeled product for soybean over the last 5+ years.

Table 1. Maturity Group IV Conventional

	Incidence (0-100%)	Severity (0-9)
J77-339	2.5	1.3
Univ. of Missouri S14-6391C	6.8	2.7
GDM Seeds 2987331 (GDM_2)	10.7	2.0
GDM Seeds 2987416 (GDM_1)	20.0	3.0
Go Soy 43C17S	12.7	1.5
Go Soy E4510S	5.0	1.5
Go Soy Ireane	4.5	1.5
Univ. of Missouri S13-10590C	1.7	1.0
Univ. of Missouri S13-10592C	1.8	0.8
Univ. of Missouri S13-2743C	14.3	2.3
Univ. of Missouri S13-3851C	10.5	1.3
CV	23.6	28.2
<i>p</i> -value	<0.0001	0.0003
LSD	4.1	0.9

Table 2. Maturity Group IV Early

	Incidence (0-100%)	Severity (0-9)
Armor ARX4607	20.0	1.8
Dyna-Gro SX17846XS	31.3	2.8
AgriGold G4440RX	30.8	3.0
AgriGold G4579RX	8.5	1.5
AgriGold G4605RX	28.8	2.5
AGS GS 46X17	42.5	4.0
Armor 42-D27 (ARX4207)	23.8	4.0
Armor X45D50	17.3	2.5
Armor X46D63	9.8	1.8
Asgrow AG42X9	17.3	2.3
Asgrow AG43X7	26.3	2.5
Asgrow AG43X8	32.8	2.5
Asgrow AG45X8	21.3	2.5
Asgrow AG46X6	13.8	2.0
Croplan RX 4217 S	38.8	3.3
Croplan RX4687S	30.0	4.0
Croplan RX 4500 S	30.8	3.5
Delta Grow DG 4670 RR2	23.3	1.8
Delta Grow DG 46X25RR2 Xtend	10.0	2.0
Dyna-Gro S41XS98	27.5	3.0
Dyna-Gro S45XS37	40.0	3.3
Dyna-Gro S45XS66	31.7	3.3
Dyna-Gro SX18845XT	3.3	1.3
Great Heart GT-4628X	15.3	1.5
Great Heart GT-4685XS	5.8	1.3
Local Seed Co. LS4487XS	18.0	1.8
Local Seed Co. LS4565XS	46.3	5.0
Local Seed Co. LS4583X	12.0	2.3
Local Seed Co. LS4677X	62.5	5.8
Local Seed Co. LS4689X	9.7	2.3
Mission Seed Solutions A4447NS	12.3	3.3
Mission Seed Solutions A4637NS	43.8	4.0
Mission Seed Solutions MEX4608	13.3	2.8
Mission Seed Solutions MEX4618	9.8	1.8
MorSoy MS 4426 RXT	51.7	5.0
MorSoy MS 4616 RXT	37.5	4.7
NK Seeds S43-V3X	35.0	2.3
NK Seeds S45-J3X	20.3	2.5
NK Seeds S45-K5X	19.5	2.3
Pioneer P42A96X	30.0	3.5
Pioneer P46A16R	4.3	1.3
Pioneer P46A57BX	16.3	1.5
Progeny P4255RX	28.3	3.0
Progeny P4318RX	24.5	3.3
Progeny P4444RXS	9.5	1.5
Progeny P4570RXS	4.5	1.0

Table 2 (cont.). Maturity Group IV Early

Progeny P4620RXS	32.5	3.3
Terral REV 4679X	31.3	3.5
Univ. of Missouri R14-15146R	7.5	1.5
USG 7447XTS	32.5	3.0
CV	30.7	36.5
<i>p</i> -value	<0.0001	<0.0001
LSD	16.8	1.4

Table 3. Maturity Group IV Late

	Incidence (0-100%)	Severity (0-9)
AgriGold G4990RX	12.3	2.8
Dyna-Gro S49XS88	14.8	2.0
AgriGold G4995RX	22.8	3.0
AGS GS 48X18	63.3	4.7
Armor X47D22	37.5	4.3
Armor X48D02	15.8	2.5
Armor X49D31	15.0	2.5
Armor 47-D17	30.0	3.3
Armor 48-D24	25.0	3.5
Asgrow AG47X9	34.3	2.3
Asgrow AG48X9	25.0	2.7
Asgrow AG49X9	57.5	4.3
Croplan RX4825	17.3	2.3
Croplan RX4927	20.5	2.8
Delta Grow DG 4790 RR2	45.0	4.0
Delta Grow DG 48X45RR2 Xtend	9.5	1.8
Dyna-Gro S48XT56	27.0	2.5
Dyna-Gro S49XT39	9.8	2.0
Go Soy 49G16	4.0	1.0
Great Heart GT-4721X	18.8	2.5
Great Heart GT-4809X	63.3	5.3
Great Heart GT-4833XS	17.3	3.0
Great Heart GT-4979X	12.8	2.5
Local Seed Co. AV47W2X	18.8	2.8
Local Seed Co. AV49W3X	21.3	2.8
Local Seed Co. LS4889XS	25.0	2.0
Local Seed Co. LS4966X	15.0	2.5
Local Seed Co. LS4968XS	14.3	2.8
Local Seed Co. LS4988X	19.5	2.8
Mission Seed Solutions MEX4808	25.0	3.3
Mission Seed Solutions MEX4908	25.8	3.5
MorSoy MS 4846 RXT	22.0	3.0
NK Seeds S48-R2X	19.0	3.5
Petrus Seed 479 GTS	32.5	3.3
Petrus Seed 4916 GT	5.0	2.8
Pioneer 48A32X	18.0	1.8
Pioneer P48A60X	9.0	1.5
Progeny P4757RY	42.5	3.5
Progeny P4799RXS	23.0	2.3
Progeny P4816RX	13.3	2.8
Progeny P4851RX	33.8	3.0
Progeny P4955RX	8.7	1.3
Progeny P4994RX	60.0	4.7
Terral REV 47A98	12.8	1.8
Terral REV 4857X	9.5	1.8
Terral REV 48A26	6.7	2.3

Table 3 (cont.). Maturity Group IV Late

Terral REV 4927X	26.7	3.3
Univ. of Missouri S14-15138R	4.3	1.7
Univ. of Missouri S14-9051R	14.8	1.8
USG 7489XTS	13.3	2.3
USG 7496XTS	13.8	2.5
CV	28.4	41.2
<i>p</i> -value	<0.0001	<0.0001
LSD	15.9	1.1

Table 4. Maturity Group IV LibertyLink

	Incidence (0-100%)	Severity (0-9)
Dyna-Gro 4567LL	30.0	3.5
Delta Grow DG4781 LL	37.7	2.3
Credenz CZ 3601 LL	35.0	2.8
Credenz CZ 3841 LL	16.7	2.3
Credenz CZ 4105 LL	32.5	3.5
Credenz CZ 4222 LL	50.0	4.3
Credenz CZ 4308 LL	25.7	2.5
Credenz CZ 4540 LL	35.0	3.3
Credenz CZ 4548 LL	13.3	1.8
Credenz CZ 4649 LL	1.3	0.5
Credenz CZ 4748 LL	45.0	4.7
Credenz CZ 4820 LL	42.5	3.3
Credenz CZ 4918 LL	18.8	2.3
Credenz CZ 4938 LL	33.8	3.3
Delta Grow DG 4587 LL/STS	11.5	1.8
Delta Grow DG 4977 LL/STS	46.3	3.3
Dyna-Gro S45LL97	58.8	4.5
Dyna-Gro S49LL34	12.3	1.7
Go Soy 49L17	21.3	2.8
Pioneer P44A08L	26.3	2.0
Pioneer P47A76L	37.5	3.5
Terral REV 46L99	25.8	3.3
Terral REV 47L38	26.3	3.7
Terral REV 49L88	26.7	2.5
CV	19.5	44.2
<i>p</i> -value	<0.0001	<0.0001
LSD	14.9	1.4

Table 5. Maturity Group V Conventional

	Incidence (0-100%)	Severity (0-9)
J77-339	1.3	1.3
Univ. of Missouri S11-17025	15.8	2.0
Go Soy 51C17	30.0	3.5
Go Soy 53C16	10.3	2.7
Go Soy 56C16	4.5	1.3
Univ. of Missouri M05201D CONV	1.8	0.5
Univ. of Missouri S11-20242C	1.0	0.8
Univ. of Missouri S13-1955C	0.5	0.3
Univ. of Missouri S15-10434C	7.0	2.0
CV	23.6	31.9
<i>p</i> -value	<0.0001	<0.0001
LSD	8.6	1.1

Table 6. Maturity Group V Early

	Incidence (0-100%)	Severity (0-9)
Great Heart Seed GT-5022XS	1.7	1.0
Armor ARX5107	7.5	1.5
Asgrow AG51X8	12.3	2.0
AgriGold G5000RX	6.5	2.0
AgriGold G5288RX	8.3	2.3
AGS GS 51X18S	16.8	2.3
Armor X50D13	26.3	2.5
Armor X51D77	10.0	2.3
Armor X52D71	16.5	2.5
Armor X55D57	7.8	2.0
Armor 53-D04	34.5	3.0
Asgrow AG52X9	13.8	3.0
Asgrow AG53X9	3.0	1.5
Asgrow AG54X9	23.0	3.0
Asgrow AG55X7	18.3	2.5
Croplan(Mid-south) RX 5016 S	15.5	2.5
Delta Grow DG 5170 RR2/STS	10.8	1.5
Delta Grow DG 52X15 Xtend	27.5	2.8
Dyna-Gro S52XT08	25.5	3.0
Dyna-Gro S56XT99	20.0	2.5
Dyna-Gro SX18652XS	14.5	2.5
Dyna-Gro SX18854XT	5.0	1.5
Go Soy 50G17	5.5	0.8
Go Soy 54G16	8.5	1.8
Great Heart GT-5324X	18.0	2.0
Local Seed Co. LS5087X	30.0	2.8
NK SeedsS52Y7X	9.8	2.0
NK SeedsS56B7X	0.5	0.3
NK Seeds S50-G9XS	35.0	4.3
Pioneer 54A54X	1.5	0.8
Pioneer 55A49X	1.3	1.0
Pioneer P54A75X	11.0	1.8
Progeny P5016RXS	13.3	2.3
Progeny P5018RX	24.0	2.5
Progeny P5226RYS	17.5	2.0
Progeny P5252RX	16.8	2.3
Progeny P5279RXS	0.3	0.3
Progeny P5554RX	7.8	2.0
Progeny P5688RX	13.5	2.0
Terral REV 51A56	20.3	2.8
Terral REV 52A98	5.5	1.8
Terral REV 55A67	11.0	1.8
Terral REV 56A58	3.3	1.0
Univ. of Arkansas R14-14797 RI	3.8	1.0
Univ. of Missouri S14-9017R	0.3	0.3
CV	39.6	40.9
<i>p</i> -value	<0.0001	<0.0001
LSD	14.9	1.1

Table 7. Maturity Group V Late

	Incidence (0-100%)	Severity (0-9)
Dyna-Gro S57RY26	6.0	1.0
Progeny P5752RY	3.8	1.3
Univ. of Arkansas UA 5715GT	2.0	1.0
USG 75B75R	6.3	1.8
CV	30.4	34.4
<i>p</i> -value	0.1025	0.0753
LSD	3.6	0.7

Table 8. Maturity Group V Liberty Link

	Incidence (0-100%)	Severity (0-9)
Credenz CZ 5147 LL	21.3	3.3
Credenz CZ 5150 LL	25.0	3.0
Credenz CZ 5225 LL	15.5	1.8
Credenz CZ 5242 LL	14.5	2.8
Credenz CZ 5328 LL	3.5	0.8
Credenz CZ 5445 LL	11.3	2.3
Dyna-Gro 4567LL	19.5	2.5
Dyna-Gro S52LL66	27.5	2.5
Dyna-Gro S55LS75	1.0	0.5
Go Soy 5115LL	28.8	3.5
CV	31.7	39.4
<i>p</i> -value	<0.0001	0.0003
LSD	14.5	1.3