

## Metribuzin Tolerance Testing of Soybean Varieties - 2018

Metribuzin (Sencor, Canopy, etc.) is a PSII inhibitor (Group 5) herbicide that provides residual control of an assortment of annual grasses and broadleaf weeds in soybean, including Palmer amaranth. With the extensive use of PPO inhibitors (Group 14) and chloroacetamide (Group 15) herbicides in soybean and rotational crops such as corn and cotton, use of an additional mode of action (MOA) is a sound strategy to reduce the risk of resistance to these other herbicide MOAs.

The handicap to metribuzin use is the sensitivity of soybean varieties to this herbicide. Other environmental factors, including: soil texture, organic matter, rainfall, soil pH, and product use rate, may also play a part in sensitivity. The University of Arkansas System Division of Agriculture conducted a greenhouse screening of soybean varieties, testing their tolerance to metribuzin at a rate of 0.5 lb ai/ac or 10.67 oz/ac of a 75DF metribuzin product. The following tables break down into an injury scale:

**Slight (Table 1)** – Some symptoms observed in the greenhouse but unlikely to injure soybean plants in the field at a 1X rate if applied to the correct soil texture at the appropriate soil pH. It is recommended that these soybean varieties be planted if metribuzin is intended to be applied.

**Moderate (Table 2)** – Likely to observe some injury in the field, even when applying a premix product that contains a lower rate of metribuzin.

**Severe (Table 3)** – Use of any metribuzin-containing product would likely cause considerable injury to these soybean varieties.

Please note that most varieties show an acceptable tolerance to metribuzin. Choose a variety with a high level of tolerance. Please read and follow all labels.

Table 1. 2018 Soybean Varieties that tested Slight injury to metribuzin at 0.5 lb ai/A.											
Variety Name	Herbicide Technology	MG	Rating	Variety Name	Herbicide Technology	MG	Rating	Variety Name	Herbicide Technology	MG	Rating
16UARK-52	RR1	5.7	Slight	Credenz CZ 3601 LL	LL	3.6	Slight	Delta Grow DG45X35	RR2X	4.3	Slight
AgriGold G5288RX	RR2X	5.2	Slight	Credenz CZ 3738 LL	LL	3.7	Slight	Delta Grow DG4670RR2	RR2	4.6	Slight
AGS GS51X18	RR2X/STS	5.1	Slight	Credenz CZ 4540 LL	LL	4.5	Slight	Delta Grow DG4880RR	RR1	4.8	Slight
Armor 39-D39	RR2X	3.9	Slight	Credenz CZ 4649 LL	LL	4.6	Slight	Delta Grow DG4970RR	RR1	4.8	Slight
Armor 42-D27	RR2X	4.2	Slight	Credenz CZ 4748 LL	LL	4.7	Slight	Delta Grow DG4977LL/STS	LL/STS	4.9	Slight
Armor 45-D43	RR2X	4.3	Slight	Credenz CZ 4938 LL	LL	4.9	Slight	Delta Grow DG5170RR2	RR2	5.1	Slight
Armor 45-D50	RR2X	4.5	Slight	Credenz CZ 5147 LL	LL	5.1	Slight	Delta Grow DG5580RR2	RR2	5.5	Slight
Armor 49-D31	RR2X	4.9	Slight	Credenz CZ 5150 LL	LL	5.1	Slight	Delta Grow DG5585RR2	RR2	5.5	Slight
Armor 55-D57	RR2X	5.5	Slight	Credenz CZ 5225 LL	LL	5.2	Slight	Dyna-Gro S41XS98	RR2X/STS	4.1	Slight
Armor X40D	RR2X	4.0	Slight	Credenz CZ 5328 LL	LL	5.3	Slight	Dyna-Gro S43XS27	RR2X/STS	4.3	Slight
Armor X44D36	RR2X	4.4	Slight	Credenz CZ 5445 LL	LL	5.4	Slight	Dyna-Gro S45XS37	RR2X/STS	4.5	Slight
Asgrow AG 43X8	RR2X	4.3	Slight	Croplan RX4928	RR2X	4.9	Slight	Dyna-Gro S45XS66	RR2X/STS	4.5	Slight
Asgrow AG 48X9	RR2X/SR	4.8	Slight	Delta Grow DG44X25	RR2X	4.4	Slight	Dyna-Gro S49LL34	LL	4.9	Slight
Asgrow AG 55X7	RR2X	5.5	Slight	Delta Grow DG44X50	RR2X	4.4	Slight	Dyna-Gro S56XT99	RR2X	5.6	Slight

**Table 1 (Continued). 2018 Soybean Varieties that tested Slight injury to metribuzin at 0.5 lb ai/A.**

Variety Name	Herbicide Technology	MG	Rating	Variety Name	Herbicide Technology	MG	Rating	Variety Name	Herbicide Technology	MG	Rating
Dyna-Gro SX18652XS	RR2X/STS	5.2	Slight	Mission MEX4608	RR2X	4.6	Slight	R13-818	Conv	5.3	Slight
Dyna-Gro SX18845XT	RR2X	4.5	Slight	Mission MEX4619X	RR2X	4.6	Slight	R14-10150	Conv	5.3	Slight
Eagle Seed ES4060RYX	RR2X	4.0	Slight	Mission MEX4808	RR2X	4.8	Slight	R14-1422	Conv	5.4	Slight
Eagle Seed ES4460RYX	RR2X	4.4	Slight	Mission MEX4908	RR2X	4.9	Slight	R14-14648	Conv	6.2	Slight
Eagle Seed ES4680RYX	RR2X	4.6	Slight	NK S39-R9X	RR2X	3.9	Slight	R14-14797RR	RR1	5.2	Slight
Eagle Seed ES4777RR	RR1	4.7	Slight	NK S43-V3X	RR2X	4.3	Slight	R14-15079	Conv	5.3	Slight
Eagle Seed ES4840RYX	RR2X	4.8	Slight	NK S45-J3X	RR2X	4.5	Slight	R14-356	Conv	5.2	Slight
Eagle Seed ES4870RYX	RR2X	4.8	Slight	NK S50-G9X	RR2X	5.0	Slight	R14-898	Conv	5.3	Slight
Eagle Seed ES5220RYX	RR2X	5.2	Slight	NSGA DrewSoy 5.0	Conv	5.0	Slight	R15-1150	Conv	4.7	Slight
Eagle Seed ES5420RYX	RR2X	5.4	Slight	Petrus Seed 479 GTS	RR1/STS	4.7	Slight	R15-1194	Conv	5.2	Slight
Eagle Seed ES5519RR	RR1	5.5	Slight	Petrus Seed 4916 GTS	RR1	4.9	Slight	R15-1587	Conv	5.1	Slight
Eagle Seed ES5930RYX	RR2X	5.9	Slight	Pioneer P44A08L	LL	4.4	Slight	R15-1687	Conv	5.3	Slight
EXP3X18	RR2X	4.9	Slight	Pioneer P45A19X	RR2X	4.5	Slight	R15-2422	Conv	4.7	Slight
EXP4X18	RR2X	5.2	Slight	Pioneer P46A16R	RR1	4.6	Slight	R15-2465RR	RR1	5.1	Slight
Go Soy 43C17S	Conv/STS	4.3	Slight	Pioneer P46A57BX	RR2X	4.6	Slight	R15-489	Conv	5.4	Slight
Go Soy 49G16	RR1	4.9	Slight	Pioneer P48A60X	RR2X	4.8	Slight	R15-5695	Conv	5.5	Slight
Go Soy 50G17	RR1	5.0	Slight	Pioneer P50A78L	LL	5.0	Slight	R15-818	Conv	4.6	Slight
Go Soy 51C17	Conv	5.1	Slight	Progeny P4247LL	LL	4.2	Slight	REV 46L99	LL	4.6	Slight
Go Soy 56C16	Conv	5.6	Slight	Progeny P4255RX	RR2X	4.2	Slight	REV 47L38	LL	4.7	Slight
Go Soy E4510S	Conv/STS	4.5	Slight	Progeny P4444RXS	RR2X/STS	4.4	Slight	REV 4857X	RR2X	4.8	Slight
Go Soy Ireane	Conv	4.9	Slight	Progeny P4570RXS	RR2X/STS	4.5	Slight	REV 4927X	RR2X	4.9	Slight
Go Soy Leland	Conv	5.0	Slight	Progeny P4799RXS	RR2X/STS	4.7	Slight	REV 49L88	LL	4.9	Slight
Hefty H43x8	Xtend	4.3	Slight	Progeny P4851RX	RR2X	4.8	Slight	REV 54L18	LL	5.4	Slight
Hefty H45x8s	RR2X/STS	4.5	Slight	Progeny P4955RX	RR2X	4.9	Slight	S13-10590C	Conv	4.3	Slight
Hefty H46x6	RR2X/STS	4.6	Slight	Progeny P4994RX	RR2X	4.9	Slight	S14-9051R	RR1	4.7	Slight
Local Seed AV44U4LL	LL	4.4	Slight	Progeny P5252RX	RR2X	5.2	Slight	TN16-520R1	RR1	4.9	Slight
Local Seed AV49W3X	RR2X	4.9	Slight	Progeny P5279RXS	RR2X/STS	5.2	Slight	USG 7489XTS	RR2X/STS	4.8	Slight
Local Seed AV51W1LL	LL	5.1	Slight	Progeny P5414LLS	LL/STS	5.4	Slight	USG 7568XT	RR2X	5.6	Slight
Local Seed LS4388XS	RR2X	4.3	Slight	Progeny P5554RX	RR2X	5.4	Slight	USG 75B75R	RR2	5.7	Slight
Local Seed LS4889XS	RR2X/STS	4.8	Slight	Progeny P5688RX	RR2X	5.6	Slight	VIRTUE EX203	Conv	4.7	Slight
Local Seed LS4968XS	RR2X/STS	4.9	Slight	R12-6751RR	RR1	5.2	Slight	VIRTUE EX206	Conv	4.5	Slight
Local Seed LS4988X	RR2X	4.9	Slight	R13-13997	RR	5.0	Slight	VIRTUE V46C202	Conv	4.6	Slight

Table 2. 2018 Soybean Varieties that tested Moderate injury to metribuzin at 0.5 lb ai/A.											
Variety Name	Herbicide Technology	MG	Rating	Variety Name	Herbicide Technology	MG	Rating	Variety Name	Herbicide Technology	MG	Rating
AgriGold G4440RX	RR2X	4.4	Moderate	Croplan RX4927	RR2X	4.9	Moderate	Local Seed AV47W2X	RR2X	4.7	Moderate
AgriGold G4579RX	RR2X	4.5	Moderate	Delta Grow DG4587LL/STS	LL/STS	4.5	Moderate	Local Seed AV47W3LL	LL	4.7	Moderate
AgriGold G4605RX	RR2X	4.6	Moderate	Delta Grow DG46X25	RR2X	4.6	Moderate	Local Seed LS4583X	RR2X	4.5	Moderate
AgriGold G4995RX	RR2X	4.9	Moderate	Delta Grow DG4790RR2	RR2	4.7	Moderate	Local Seed LS4677X	GT/LL	4.6	Moderate
AgriGold G5000RX	RR2X	5.0	Moderate	Delta Grow DG48X45	RR2X	4.8	Moderate	Local Seed LS4689X	RR2X	4.6	Moderate
AGS GS46X17	RR2X	4.6	Moderate	Delta Grow DG4967LL	LL	4.9	Moderate	Local Seed LS4966X	RR2X	4.9	Moderate
AGS GS48X18	RR2X	4.8	Moderate	Delta Grow DG52X15	RR2X	5.0	Moderate	Local Seed LS5087X	RR2X	5.0	Moderate
Armor 47-D22	RR2X	4.7	Moderate	Dyna-Gro S48XS78	RR2X/STS	4.8	Moderate	Mission A4447NSXR2	RR2X	4.4	Moderate
Armor 49-D13	RR2X	5.0	Moderate	Dyna-Gro S48XT56	RR2X	4.8	Moderate	Mission A4637NSXR2	RR2X	4.6	Moderate
Armor X46D63	RR2X	4.6	Moderate	Dyna-Gro S49XS76	RR2X/STS	4.9	Moderate	NK S45-K5X	RR2X	4.5	Moderate
Armor X48D02	RR2X	4.8	Moderate	Dyna-Gro S49XT39	RR2X	4.9	Moderate	Progeny P4318RX	RR2X	4.3	Moderate
Armor X51D77	RR2X	5.1	Moderate	Dyna-Gro SX18854XT	RR2X	5.4	Moderate	Progeny P4620RXS	RR2X/STS	4.6	Moderate
Asgrow AG 42X9	RR2X	4.2	Moderate	Eagle Seed ES4211RYX	RR2X	4.2	Moderate	Progeny P4816RX	RR2X	4.9	Moderate
Asgrow AG 45X8	RR2X	4.5	Moderate	Eagle Seed ES4998RR	RR1	4.9	Moderate	Progeny P4930LL	LL	4.9	Moderate
Asgrow AG 46X6	RR2X	4.6	Moderate	EXP1X18	RR2X	4.1	Moderate	Progeny P5016RXS	RR2X/STS	5.0	Moderate
Asgrow AG 47X9	RR2X	4.7	Moderate	EXP2X18	RR2X	4.8	Moderate	Progeny P5018RX	RR2X	5.0	Moderate
Asgrow AG 52X9	RR2X/SR	5.2	Moderate	Hefty H48x7	RR2X	4.8	Moderate	REV 4679X	RR2X	4.6	Moderate
Credenz CZ 3841 LL	LL	3.8	Moderate	Hefty H49x7s	RR2X/STS	4.9	Moderate	S13-2743C	Conv	4.1	Moderate
Credenz CZ 4222 LL	LL	4.2	Moderate	LG C4710RX	RR2X	4.7	Moderate	S15-10434C	Conv	5.5	Moderate
Credenz CZ 4308 LL	LL	4.3	Moderate	LG LGS4597RX	RR2X	4.5	Moderate	USG 7487XTS	RR2X/STS	4.8	Moderate
Credenz CZ 4820 LL	LL	4.8	Moderate	LG LGS4624RX	RR2X	4.6	Moderate	USG 7496XTS	RR2X/STS	4.9	Moderate
Credenz CZ 4918 LL	LL	4.9	Moderate	LG LGS4989RX	RR2X	4.9	Moderate				

Table 3. 2018 Soybean Varieties that tested Severe injury to metribuzin at 0.5 lb ai/A.											
Variety Name	Herbicide Technology	MG	Rating	Variety Name	Herbicide Technology	MG	Rating	Variety Name	Herbicide Technology	MG	Rating
Armor 52-D71	RR2X	5.2	Severe	Credenz CZ 4044 LL	LL	4.0	Severe	LG C4845RX	RR2X	4.8	Severe
Armor X41D	RR2X	4.1	Severe	Credenz CZ 4548 LL	LL	4.5	Severe	Local Seed LS4565XS	RR2X/STS	4.5	Severe
Asgrow AG 49X9	RR2X/SR	4.9	Severe	Croplan RX4825	RR2X	4.8	Severe	NK S45-Z5XS	RR2X/STS	4.5	Severe
Asgrow AG 53X9	RR2X	5.3	Severe	Dyna-Gro S52XT08	RR2X	5.2	Severe				
Asgrow AG 54X9	RR2X	5.4	Severe	Eagle Seed ES5660RYX	RR2X	5.6	Severe				

**JEREMY ROSS**, Associate Professor/Extension Agronomist – Soybean, University of Arkansas System Division of Agriculture

**JASON NORSWORTHY**, Professor/Extension Weed Scientist, University of Arkansas System Division of Agriculture

**TOM BARBER**, Professor/Extension Weed Scientist, University of Arkansas System Division of Agriculture