

Metribuzin Tolerance Testing of Soybean Varieties - 2020

Metribuzin (Tricor, 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) – Do not spray any formulation or rate of metribuzin if these varieties are planted as severe injury and yield loss would be expected.

Please note 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. 2020 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
AgriGold G4620RX	RR2X	4.6	Slight	Asgrow AG 53X9	RR2X	5.3	Slight	Delta Grow DG52E22	Enlist E3	5.2	Slight
AgriGold G4820RX	RR2X	4.8	Slight	Credenz CZ 3930GTLL	LLGT27	3.9	Slight	Delta Grow DG54X25	RR2X	5.4	Slight
AgriGold G4995RX	RR2X	4.9	Slight	Credenz CZ 4410GTLL	LLGT27	4.4	Slight	DM 51X61	RR2X	5.1	Slight
Armor 44-D49	RR2X	4.4	Slight	Credenz CZ 4730X	RR2X	4.7	Slight	Dyna-Gro S43EN61	Enlist E3	4.3	Slight
Armor 44-D92	RR2X	4.4	Slight	Credenz CZ 5000X	RR2X	5.0	Slight	Dyna-Gro S43XS70	RR2X	4.3	Slight
Armor 44-E44	Enlist E3	4.4	Slight	Credenz CZ 5251X	RR2X	5.3	Slight	Dyna-Gro S47XT20	RR2X	4.7	Slight
Armor 46-E50	Enlist E3	4.6	Slight	Credenz CZ 5299X	RR2X	5.2	Slight	Dyna-Gro S48XT90	RR2X	4.8	Slight
Armor 48-E81	Enlist E3	4.8	Slight	Credenz CZ 6020X	RR2X	6.0	Slight	Dyna-Gro S49EN79	Enlist E3	4.9	Slight
Armor 49-D14	RR2X	4.9	Slight	Delta Grow DG4880	RR2	4.8	Slight	Eagle Seed ES4640RYX	RR2X	4.6	Slight
Armor 51-E53	Enlist E3	5.1	Slight	Delta Grow DG48E10	Enlist E3	4.8	Slight	Eagle Seed ES4772R2Y	RR2	4.7	Slight
Asgrow AG 45X8	RR2X	4.5	Slight	Delta Grow DG48X05	RR2X	4.8	Slight	Eagle Seed ES4880RYX	RR2X	4.8	Slight
Asgrow AG 48X9	RR2X	4.8	Slight	Delta Grow DG49X25	RR2X	4.9	Slight	Go Soy 481E19	Enlist E3	4.8	Slight
Asgrow AG 49X0	RR2X	4.9	Slight	Delta Grow DG50E10XP	Enlist E3	5.0	Slight	Go Soy 491E19S	Enlist E3	4.9	Slight

Table 1 (Continued). 2020 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
Go Soy 512E21	Enlist E3	5.1	Slight	Mission A4950X	RR2X	4.9	Slight	R13-14635RR:0013	RR1	4.8	Slight
GT Ireane	RR1	4.9	Slight	Petrus Seed 4619 GTS	RR1	4.6	Slight	R14-1422	Conv	5.4	Slight
Integra 54606NS	RR2X	4.6	Slight	Petrus Seed 4916 GT	RR1	4.9	Slight	R15-1587	Conv	5.1	Slight
Integra 54660NS	RR2X	4.6	Slight	Petrus Seed 5319 GT	RR1	5.3	Slight	R16-247	Conv	4.9	Slight
Integra 54816N	RR2X	4.8	Slight	Pioneer P46A86X	RR2X	4.6	Slight	R16-259	Conv	4.6	Slight
Integra 54891NS	RR2X	4.8	Slight	Pioneer P47A76L	LL	4.7	Slight	R17-2000	Conv	4.7	Slight
Integra 54920NS	RR2X	4.9	Slight	Pioneer P48A60X	RR2X	4.8	Slight	R17-2069	Conv	4.8	Slight
LGS4464RX	RR2X	4.4	Slight	Pioneer P49A41L	LL	4.9	Slight	R17C-1182	Conv	4.7	Slight
LGS4899RX	RR2X	4.8	Slight	Pioneer P49T62E	Enlist E3	4.9	Slight	R17C-1266	Conv	4.9	Slight
Local LS3976X	RR2X	3.9	Slight	Progeny 4265RXS	RR2X	4.2	Slight	S16-11651C	Conv	5.3	Slight
Local LS4299XS	RR2X	4.2	Slight	Progeny 4444RXS	RR2X	4.6	Slight	S16-3747RY	RR2	5.0	Slight
Local LS4795XS	RR2X	4.7	Slight	Progeny 4505RXS	RR2X	4.5	Slight	S16-5504R	RR1	4.6	Slight
Local LS5009XS	RR2X	5.0	Slight	Progeny 4700RXS	RR2X	4.7	Slight	Taylor T4880XS	RR2X	4.8	Slight
Local LS5087X	RR2X	5.0	Slight	Progeny 4807E3S	Enlist E3	4.8	Slight	Taylor T4990XS	RR2X	4.9	Slight
Local LSX3911GL	LLGT27	3.9	Slight	Progeny 4902E3	Enlist E3	4.9	Slight	USG 7461XT	RR2X	4.6	Slight
Local LSX4711GL	LLGT27	4.7	Slight	Progeny 4908E3S	Enlist E3	4.9	Slight	USG 7471ETS	Enlist E3	4.7	Slight
Local LSX4812XS	RR2X	4.8	Slight	Progeny 4970RX	RR2X	4.9	Slight	USG 7480XT	RR2X	4.8	Slight
Local ZS4694E3S	Enlist E3	4.6	Slight	Progeny 5016RXS	RR2X	5.0	Slight	USG 7491ETS	Enlist E3	4.9	Slight
Local ZS5098E3	Enlist E3	5.0	Slight	Progeny 5554RX	RR2X	5.5	Slight	USG 7496XTS	RR2X	4.9	Slight
Mission A4448X	RR2X	4.4	Slight	R13-13997	Conv	5.5	Slight				
Mission A4828X R	RR2X	4.8	Slight	R13-14635RR:0010	RR1	4.8	Slight				

Table 2. 2020 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
Armor 46-D09	RR2X	4.6	Moderate	Delta Grow DG48E49/STS	Enlist E3	4.8	Moderate	Progeny 4241E3	Enlist E3	4.2	Moderate
Armor 47-E02	Enlist E3	4.7	Moderate	Delta Grow DG48X45	RR2X	4.8	Moderate	Progeny 4602LR	LLGT27	4.6	Moderate
Armor 48-D25	RR2X	4.8	Moderate	Delta Grow DG49E00/STS	Enlist E3	4.7	Moderate	Progeny 4620RXS	RR2X	4.6	Moderate
Asgrow AG 43X0	RR2X	4.3	Moderate	Delta Grow DG49X15	RR2X	4.9	Moderate	Progeny 4682E3	Enlist E3	4.6	Moderate
Asgrow AG 46X0	RR2X	4.6	Moderate	Delta Grow DG51E60	Enlist E3	5.1	Moderate	Progeny 4775E3S	Enlist E3	4.7	Moderate
Asgrow AG 46X6	RR2X	4.6	Moderate	Delta Grow DG52X05/STS	RR2X	5.2	Moderate	Progeny 4816RXS	RR2X	4.8	Moderate
Asgrow AG 52X9	RR2X	5.2	Moderate	DM 45X61	RR2X	4.5	Moderate	Progeny 4821RX	RR2X	4.8	Moderate
Asgrow AG 53X0	RR2X	5.3	Moderate	DM 47X39	RR2X	4.7	Moderate	Progeny 4851RX	RR2X	4.8	Moderate
Credenz CZ 4280X	RR2X	4.2	Moderate	DM 49X13	RR2X	4.9	Moderate	Progeny 5211E3	Enlist E3	5.2	Moderate
Credenz CZ 4341X	RR2X	4.3	Moderate	Dyna-Gro S45ES10	Enlist E3	4.5	Moderate	Progeny 5252RX	RR2X	5.2	Moderate
Credenz CZ 4570X	RR2X	4.5	Moderate	Dyna-Gro S46ES91	Enlist E3	4.6	Moderate	R13-14635RR	RR1	5.4	Moderate
Credenz CZ 4600X	RR2X	4.6	Moderate	Dyna-Gro S46XS60	RR2X	4.6	Moderate	R13-14635RR:0009	RR1	4.8	Moderate
Credenz CZ 4770X	RR2X	4.7	Moderate	Dyna-Gro S48XT40	RR2X	4.8	Moderate	R15-2422	Conv	4.7	Moderate
Credenz CZ 4810X	RR2X	4.8	Moderate	Dyna-Gro S49XT70	RR2X	4.9	Moderate	R16-1445	Conv	5.4	Moderate
Credenz CZ 4869X	RR2X	4.8	Moderate	Go Soy 463E20S	Enlist E3	4.6	Moderate	R16-253	Conv	4.6	Moderate
Delta Grow DG45E10	Enlist E3	4.5	Moderate	LGS4632RX	RR2X	4.6	Moderate	R17-7443RR	RR1	5.2	Moderate
Delta Grow DG45E28XP	Enlist E3	4.5	Moderate	Local LS4407X	RR2X	4.4	Moderate	R17C-1056	Conv	4.7	Moderate
Delta Grow DG46X05/STS	RR2X	4.6	Moderate	Local LS4565XS	RR2X	4.5	Moderate	R17C-1308	Conv	4.7	Moderate
Delta Grow DG47E20/STS	Enlist E3	4.7	Moderate	Local LS4999X	RR2X	4.9	Moderate	USG 7447XTS	RR2X	4.4	Moderate
Delta Grow DG47E80/STS	Enlist E3	4.7	Moderate	Local LSX4612XS	RR2X	4.6	Moderate	USG 7489XT	RR2X	4.8	Moderate
Delta Grow DG47X95/STS	RR2X	4.7	Moderate	Mission A4618X	RR2X	4.6	Moderate				

Table 3. 2020 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
Credenz CZ 4941X	RR2X	4.9	Severe	Delta Grow DG46X65/STS	RR2X	4.6	Severe	Dyna-Gro S52XS39	RR2X	5.2	Severe
Credenz CZ 4979X	RR2X	4.9	Severe	Delta Grow DG52E15/STS	Enlist E3	5.2	Severe	Local LS5386X	RR2X	5.3	Severe
Credenz CZ 5700X	RR2X	5.7	Severe	DM 44X31	RR2X	4.2	Severe	Progeny 5170RX	RR2X	5.1	Severe

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

JASON NORSWORTHY, Distinguished Professor and Elms Farming Chair of Weed Science, University of Arkansas System Division of Agriculture

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

TOMMY BUTTS, Assistant Professor/Extension Weed Scientist, University of Arkansas System Division of Agriculture

