Tolerance Of Eight MG IV and V Soybean Varieties To Metribuzin

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ALEXANDRIA, LA. ST. JOE, LA.

Metribuzin is a soil residual herbicide that provides excellent control of a number of problem annual grasses and broadleaf weeds in soybean. Metribuzin containing herbicides, such as Authority MTZ and Boundary, offer the benefit of increased spectrum of weeds controlled over that observed with metribuzin (Sencor) applied alone. Selecting a rate to provide acceptable weed control can be influenced by soil type. LSU AgCenter recommendations suggests applying metribuzin alone at 0.25 to 0.38 lb/A on light soils where organic matter is 2 percent or greater, 0.3 to 0.67 lb/A on medium soils, and 0.67 to 1.0 lb/A on heavy soils. Although labels for herbicides containing metribuzin typically list soybean varieties that are sensitive to the herbicide, they do not always list varieties that are commonly used in cides that contain metribuzin plus another herbicides (i.e. Authority MTZ, Boundary), the labeled rate of the product typically contains 4 oz per acre of metribuzin or less; therefore, utilizing the 6 oz rate allowed for accurate screening of tolerance. Below are tables that provide soybean phytotoxicity ratings (0 = no soybean injury; 100 = complete soybean death) 8 and 15 days after application (DAA), treated and nontreated soybean yield, percent yield reduction, and ranking of soybean variety tolerance. The ranking of soybean variety tolerance is primarily based upon yield reduction.

Varietal response to metribuzin was observed only at Alexandria. The primary difference between experimental locations was amount of rainfall received after herbicide application. In the 15 d interval between planting and the 15 DAA rating, 5-inches of rainfall was recorded at Alexandria compared to only 1-inch at the St. Joseph location. This difference may have

Table 1. MG IV soybean varietal response to 6 oz/A of Metribuzin 75 DF applied preemergence in Alexandria, LA.

VARIETY	INJURY		Yield		Yield reduction	Expected level of tolerance
	8 DAA	15 DAA	6 oz/A	Nontreated		
	----------%----------		---------- Bushels/Acre ----------		%	
Delta King 4968	0	0	40	38	0	Excellent
NK S49-H7	0	5	46	47	2	Excellent
Pioneer 94Y70	0	11	44	45	2	Excellent
Terrell 49R19	1	0	47	47	0	Excellent
Asgrow 4730	1	4	40	42	5	Good-Fair
Croplan 4998	1	15	46	48	4	Good-Fair
Delta Grow 4975	3	8	39	43	9	Poor
Terrell 49R11	0	4	28	34	18	Poor
LSD (0.05)	NS	13	3	3		

Table 2. MG IV soybean varietal response to 6 oz/A of Metribuzin 75 DF applied preemergence in St. Joseph, LA.

VARIETY	INJURY		Yield		Yield reduction	Expected level of tolerance
	8 DAA	15 DAA	6 oz/A	Nontreated		
	----------%	----------	---------- Bushels/Acre ----------		%	
Asgrow 4730	0	0	53	50	0	Excellent
Croplan 4998	0	0	62	54	0	Excellent
Delta Grow 4975	0	0	50	49	0	Excellent
Delta King 4968	0	0	45	43	0	Excellent
NK S49-H7	0	0	56	54	0	Excellent
Pioneer 94Y70	0	0	54	51	0	Excellent
Terrell 49R11	0	0	47	45	0	Excellent
Terrell 49R19	0	0	49	49	0	Excellent
LSD (0.05)	NS	NS	6	5		

Table 3. MG V soybean varietal response to 6 oz/A of Metribuzin 75 DF applied preemergence in Alexandria, LA.

VARIETY	INJURY		Yield		Yield reduction	Expected level of tolerance
	8 DAA	15 DAA	6 oz/A	Nontreated		
	----------%	----------	---------- Bushels/Acre ----------		%	
Asgrow 5606	1	3	54	49	0	Excellent
Delta King GP 533	0	19	47	49	0	Excellent
NK 57-K3	0	6	50	49	0	Excellent
Delta Grow 5280	0	6	40	42	5	Good-Fair
Pioneer 95Y20	1	25	43	45	4	Good-Fair
Croplan 5663	0	4	49	53	8	Poor
HBK 5525	0	20	48	52	8	Poor
Terrell 55R15	0	5	48	52	8	Poor
LSD (0.05)	NS	8	4	4		

Table 4. MG V soybean varietal response to 6 oz/A of Metribuzin 75 DF applied preemergence in St. Joseph, LA.

VARIETY	INJURY		Yield		Yield reduction	Expected level of tolerance
	8 DAA	15 DAA	6 oz/A	Nontreated		
	----------%	----------	---------- Bushels/Acre ----------		%	
Asgrow 5606	0	0	59	59	0	Excellent
Croplan 5663	0	0	56	57	2	Excellent
Delta Grow 5280	0	0	52	49	0	Excellent
Delta King GP 533	0	0	55	51	0	Excellent
HBK 5525	0	0	47	48	2	Excellent
Pioneer 95Y20	0	0	51	48	0	Excellent
Terrell 55R15	0	0	56	53	0	Excellent
NK 57-K3	0	0	54	57	5	Good-Fair
LSD (0.05)	NS	NS	NS	5		

Louisiana.

Although realizing the benefits from a weed control standpoint, past experience with metribuzin injury potential to soybean has caused producers to be hesitant in consideration of the herbicide in at planting weed management programs. Therefore, research was conducted in 2010 at the Dean Lee Research and Extension Center in Alexandria and the Northeast Research Station in St. Joseph to screen eight soybean maturity (MG) IV and V varieties for tolerance to metribuzin. Varieties were selected in consultation with LSU AgCenter Extension Soybean Specialist and upon review of the "Louisiana Selects" soybean variety list published in 2009. Each variety was seeded at 130,000 seeds/acre on May 25, 2010 at both locations.

Metribuzin 75 DF was applied preemergence at 6 oz per acre, which corresponds to 0.28 pounds active ingredient per acre. For herbiplayed a major role in greater response observed at Alexandria. Additionally, it should be noted that greater injury was noted for some varieties, but little to no yield reduction was observed. If a soybean variety found to have excellent or good-fair tolerance to metribuzin is planted and metribuzin is applied, then early-season soybean injury may be observed. However, the opposite is also true. In that situation, it may be best to either avoid the use of metribuzin or plant a variety found to be tolerant to metribuzin. Although only representing one year of data, information can be utilized on decisions concerning potential variety problems with metribuzin, especially considering that many soybean varieties share a common lineage. Δ

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