

Preemergence Weed Control Programs in Sorghum with Integrity and Sharpen.

Robert Wilson

A field study was initiated near Scottsbluff, Nebraska to compare the efficacy of Integrity and Sharpen for weed control in sorghum. The experimental design was a randomized complete block with four replications. Plots were 11 feet wide by 50 feet long and were located on a loamy sand soil with an organic matter content of 0.8% and a pH of 7.9. Sorghum 'Garst 9135B3C3' was planted on May 27. Herbicides were applied preemergence on May 27. Environmental conditions at the time of planting were as follows: air temperature 78 F, humidity 42%, wind speed and direction 2 NE, and herbicides were applied between 3 and 4 PM. Herbicides were applied with a tractor-mounted sprayer calibrated to deliver 20 gallons of water per acre at 32-psi pressure with Spraying Systems 11002 VS nozzles.

Sorghum visual injury was evaluated on June 23 and July 10 (Table 1). On June 23 crop injury to a limited extent was observed with all herbicide treatments. Integrity caused moderate sorghum injury and there was a trend for injury to increase as the rate of Integrity increased. Sharpen SC in combination with G-Max Lite or Atrazine also resulted in sorghum injury. By July 10 sorghum injury from Integrity at 0.435 lb/acre and Sharpen SC plus Atrazine had declined and the crop was actively growing. Sorghum injury was still apparent in areas treated with Lumax, Sharpen SC plus G-Max Lite, and Integrity at 0.566 lb/acre. The dominant weed in the plot area was common lambsquarters with an average density of 1 plant/sq ft. Integrity at 0.435 lb/acre provided 85% common lambsquarters control but increasing the rate to 0.566 lb/acre improved control to 94%. The results of this study suggest that on high pH low organic matter soils Sharpen and Integrity may have sorghum safety concerns.

Table 1. Preemergence Weed Control Programs in Sorghum with Integrity and Sharpen.

Treatment ¹	Rate (lb/acre)	Sorghum		Common lambsquarters control 7/2
		Visual injury ²		
		6/23	7/10	
		----- (%) -----		
		-		
Nontreated	--	0	0	0
Lumax	2.5	20	14	98
Bicep Lite II Magnum	1.1	13	8	96
Integrity	0.435	14	4	85
Sharpen SC + G-Max Lite	0.045 + 1.23	15	10	97
Atrazine	1.5	15	6	97
Sharpen SC + Atrazine	0.045 + 1.0	13	4	94
Integrity	0.566	19	13	94
LSD at 0.05	--	7	10	4

¹Herbicide treatments applied after planting on May 27.

²Sorghum injury evaluated on a scale from 0 to 100 with 0 equal to no injury and 100 equal to death of the plant.