

Volunteer Glyphosate-Resistant Corn Control in Dry Beans.

Robert Wilson

A field study was initiated near Scottsbluff, NE to compare the effectiveness of various herbicides applied postemergence for volunteer glyphosate-resistant corn control. The experimental design was a randomized complete block with four replications. Plots were 11 feet wide by 30 feet long and were located on a sandy loam soil with a pH of 8 and organic matter of 0.8%. Dry beans 'Marquis' were planted in rows spaced 22 inches apart on May 31. Glyphosate-resistant DeKalb corn was planted within two days of bean planting. Two to 5 kernels of corn seed were planted in the dry bean row every five feet in each of the 6 rows. Corn stands averaged 16 plants per row and approximately two plants per clump in the nontreated plot on August 1. Herbicides were applied postemergence on July 11 when dry beans were 12 to 14 inches tall and volunteer corn was 18 to 36 inches tall. Herbicides were applied to the plot with a tractor-mounted sprayer calibrated to deliver 20 gallons of spray solution per acre at 36-psi pressure using Spraying Systems 11002 VS nozzles. Air temperature was 66 F with a relative humidity of 63%, wind was from the northwest at 7 mph, and treatments were applied from 9:00 to 11:00 a.m.

Herbicides applied postemergence did not cause injury or stand reduction to dry beans (Table 1). All the herbicides injured corn and control increased as the rates of Select and Poast were increased. The most effective volunteer corn control was achieved with Targa at 0.034 to 0.062 lb/acre and Select at 0.095 to 0.109 lb/acre. Volunteer corn in the nontreated plot reduced dry bean seed yield 45% compared to plots treated with Select at 0.095 lb/acre. The results of this experiment demonstrate the competitiveness of volunteer corn with the dry bean plant and also the effectiveness of Targa and Select for controlling volunteer corn.

Table 1. Volunteer Glyphosate-Resistant Corn Control in Dry Beans.

Herbicide treatment	Rate (oz/acre) (lb/acre)		Surfactant	Dry bean			Volunteer corn		
				Injury 7/24	Stand	Seed yield	Control 7/24	Stand 8/1	Control 8/1
				(%)	(plants/acre)	(bu/acre)	(%)	(plants/acre)	(%)
Nontreated	—	—	—	0	72630	26	0	10860	0
Targa	5	0.034	COC @ 1%	0	69240	42	91	0	97
Targa	9	0.062	COC @ 1%	0	68560	40	93	0	99
Select	4	0.062	COC @ 1%	0	73990	43	50	2715	75
Select	6	0.095	COC @ 1%	0	68560	47	86	679	96
Select	7	0.109	COC @ 1%	0	69240	44	73	679	94
Select Max	6	0.045	COC @ 1%	0	71950	37	65	2715	75
Poast	15	0.18	COC @ 1%	0	67880	37	64	3394	69
Poast	24	0.28	COC @ 1%	0	69240	43	76	2036	81
LSD at 5%	—	—	—	NS	NS	9	19	1690	19