

Crop Response and Weed Control with Preplant Valor in Pinto Bean, Carrington, 2009

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The field experiment was conducted in cooperation with Valent at the NDSU Carrington Research Extension Center to examine pinto bean tolerance and weed control with preplant (PP) Valor. The experimental design was a randomized complete block with three replicates. Herbicide treatments were applied with a CO₂-pressurized hand-boom plot sprayer delivering 20 gal/A at 35 psi through 8002 flat-fan nozzles to the center 6.7 ft of 10 by 30 ft plots. Early PP treatments were applied on May 5 with 56° F and 69% RH to 2- to 3-leaf volunteer barley, 6-inch tall quackgrass, 1- to 5-inch tall sheperdspurse, and 0.5-inch wide kochia. The second PP treatments were applied on May 16 with 55° F and 28% RH to 0.5- to 1.5-inch wide kochia. 'Lariat' was direct-planted into barley stubble on May 22 in 30-inch rows and replanted on June 12 due to a variable and low-density initial stand. The trial was over-sprayed with Rezult at 3.2 pt/A plus Reflex at 12 fl oz/A plus MSO at 20 fl oz/A on July 2, except the untreated check.

Weed control generally was excellent (88-99%) among herbicide treatments 24 d after application (Table). Kochia control generally was similar among herbicide treatments and ranged from 69 to 76% when evaluated on June 30. A visual evaluation of the initially-established dry beans on May 12 (data not shown) indicated no distortion of leaf foliage. Also, shoot lesions or discoloration was similar among treatments when visually evaluated on June 15. An evaluation was made on June 30 of the replanted stand with no distortion of leaf foliage noted (data not shown). Leaf malformation was noted during evaluations in July and August, but appeared to be caused by the POST herbicide tank mixture applied on July 2.

Herbicide	Product/A	Weed control ¹						Crop response ²		
		5/29			6/30			6/15	7/21	8/24
Treatment ³		Voba	Qugr	Shpu	KOCZ	Colq	KOCZ	Shoot lesions	Leaf malformation	
		%						%		0-9
untreated check	x	0	0	0	0	0	0	7	0	0
May 5:										
Valor SX + Roundup PowerMax	2 oz + 22 fl oz	89	93	99	94	98	69	27	80	1
Valor SX + Roundup PowerMax	3 oz + 22 fl oz	88	97	98	97	99	75	7	80	1
May 16:										
Valor SX + Roundup PowerMax	2 oz + 22 fl oz	98	97	98	95	99	74	20	70	2
Valor SX + Roundup PowerMax	3 oz + 22 fl oz	98	95	96	93	99	76	20	70	1
Prowl H2O + Roundup PowerMax	40 + 22 fl oz	95	98	95	91	99	72	13	77	2
C.V. (%)		5.3	1.6	3.4	3.0	1.2	6.2	132.1	21.5	42.4
LSD (0.05)		7	2	5	4	2	7	NS	25	1
¹ Voba = volunteer barley; Qugr = quackgrass; Shpu = sheperdspurse; KOCZ = kochia; Colq = common lambsquarters.										
² Shoot lesions = incidence among five plants/plot; Leaf malformation: % = incidence among 10 plants/plot and 0-9 = visual evaluation of plot (0 = no injury and 9 = all plants with injury).										
³ All treatments include AMS (Cornbelt Amstik) at 64 fl oz/A.										