

Postemergence Weed Control Programs in Corn at Scottsbluff, Nebraska during the 2009 Growing Season.

Robert Wilson

A field study was initiated near Scottsbluff, Nebraska to compare the efficacy of postemergence weed control programs in corn. 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 0.7% and a pH of 8.1. Corn 'Pioneer 38H72' was planted on May 11. Herbicides were applied preemergence on May 12 and postemergence on June 5. 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. The environmental conditions at the time of spraying are given in Table 1.

Corn injury was evaluated on June 10 and 17 (Table 2). Moderate corn injury was observed from all the herbicide treatments. Corn injury of 14% or greater was observed in areas treated with Resolve plus Experimental 1 plus Callisto and Rimsulfuron plus Thifensulfuran plus Experimental 1 plus Callisto. Corn stand was not influenced by herbicide treatments. Weed density was severe and consisted of redroot pigweed, common lambsquarters, hairy nightshade, and common purslane at densities of 20, 34, 21, and 74 plants per 137 sq ft, respectively. Weed control was excellent with all the herbicide treatments. A series of three treatments were included to examine Atrazine rates in a three-way combination with Impact plus Roundup Power Max at 0.011 plus 0.75 lb/acre. Atrazine was combined at three rates 0.5, 0.25, and 0.125 lb/acre. Weed control was similar with 0.5 and 0.25 lb/acre of Atrazine but declined when the Atrazine rate was reduced to 0.125 lb/acre.

Table 1. Environmental Conditions at the Time of Herbicide Application.

Date	Air temperature (F)	Humidity (%)	Wind speed & direction (mph)	Time of day	Corn growth stage	Weed heights (inches)			
						Rrpw	Colq	Hans	Copu
May 12	66	44	25 W	8:30 AM	-----No growth-----				
June 5	72	54	1 NE	10:30 AM	V4	3	10	2	1.5

Table 2. Postemergence Weed Control Programs in Corn at Scottsbluff, Nebraska during the 2009 Growing Season.

Ttreatment ¹	Rate	Time of application ²	Corn			Percent weed control 6/27 ⁴				
			Visual Injury ³		Stand 6/27	Rrpw	Colq	Hans	Copu	Average
			6/10	6/17						
Nontreated	--	--	0	0	33380	0	0	0	0	0
Resolve + Experimental 1 + Callisto + COC + AMS	0.018 + 0.009 + 0.078	V4	0	14	34330	95	99	97	98	97
Cinch ATZ	1.37	PRE								
Resolve + Experimental 1 + Callisto + COC + AMS	0.018 + 0.009 + 0.078	V4	7	19	35170	99	99	99	99	99
Resolve + Experimental 1 + Callisto + Roundup Power Max + AMS	0.018 + 0.009 + 0.078 + 0.75	V4	0	15	33500	99	99	99	99	99
Resolve + Experimental 1 + Callisto + Ignite + AMS	0.018 + 0.009 + 0.078 + 0.402	V4	0	12	34810	99	99	86	99	96
Resolve + Experimental 1 + Callisto + Atrazine + COC + AMS	0.018 + 0.009 + 0.078 + 0.5	V4	0	10	34690	99	99	87	99	96
Rimsulfuron + Thifensulfuron + Experimental 1 + Callisto + COC + AMS	0.0156 + 0.0031 + 0.009 + 0.078	V4	0	19	35050	99	99	99	99	99
Accent + Callisto + COC + AMS	0.031 + 0.078	V4	0	12	34690	99	98	99	86	95
Steadfast + Experimental 1 + Callisto + COC + AMS	0.035 + 0.009 + 0.078	V4	0	10	35640	99	99	99	97	99
Dual II Magnum	0.98	PRE								
Impact + Atrazine + MSO + AMS	0.016 + 0.5	V4	0	9	34570	97	99	91	99	96
Impact + Atrazine + Roundup Power Max + MSO + AMS	0.011 + 0.5 + 0.75	V4	0	7	34450	99	98	92	98	97
Impact + Atrazine + Roundup Power Max + MSO + AMS	0.011 + 0.25 + 0.75	V4	0	17	33980	95	96	91	97	95
Impact + Atrazine + Roundup Power Max + MSO + AMS	0.011 + 0.125 + 0.75	V4	0	5	35640	89	99	73	96	89
LSD at 0.05	--	--	1	7	1628	8	3	25	7	8

¹Spray additives were combined with the spray solution at the following rate: crop oil concentrate (COC) at 1% v/v, ammonium sulfate (AMS) at 2 lb/acre, and methylated seed oil (MSO) at 1% v/v.

²Time of herbicide application: preemergence (PRE) and postemergence at the V4 corn growth stage.

³Visual corn injury evaluated on a scale from 0 to 100 with 0 equal to no injury and 100 equal to death of the plant

⁴Percent weed control calculated from weed counts taken in a 137 sq ft area in the center of each plot.