

## **Weed Control Programs for Irrigated Corn in Western Nebraska during the 2007 Growing Season.**

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A field study was initiated near Scottsbluff, Nebraska to compare various herbicide treatments for selective weed control in Roundup Ready 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 sandy loam soil with 1.3% organic matter and a pH of 8. Corn, 'Pioneer 36K69', was planted on May 3. Herbicides were applied preemergence on May 8, early postemergence on May 31, and postemergence on June 11 (Table 1). 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. Environmental conditions at the time of spraying are given in Table 1.

Corn stand was not influenced by herbicide treatments (Table 2). Visual corn injury was observed in late May in plots treated preemergence with Balance Pro and followed postemergence with Laudis plus Atrazine. This weed control program provided excellent weed control but there was a trend for corn grain yields to be lower which may have been the result of early season corn injury.

Weed density in the study area was moderate and consisted of common lambsquarters, hairy nightshade, redroot pigweed, common sunflower, and kochia at average plant densities of 91, 182, 2, 24, and 7 plants per 92 sq ft, respectively. Average weed control was 99% from all herbicide treatments except plots treated postemergence with Laudis plus Accent, Laudis plus Roundup WeatherMax, or preemergence with Dual Magnum.

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

Date	Air temperature (F)	Humidity (%)	Wind speed & direction (mph)	Time of day	Corn height	Weed height				
						Colq	Kocz	Rrpw	Hans	Cosf
						----- (inches) -----				
May 8	52	56	7 NW	9:00 am		----- no growth -----				
May 31	54	70	1 SW	10:00 am	5	3	4	3	4	5
June 11	71	62	3 SE	9:00 am	12	6	7	5	6	6

Rainfall and irrigation following Herbicide application

Date	Amount	Date	Amount	Date	Amount
	- (inches) -		- (inches) -		- (inches) -
May 3	0.26	May 18	0.50	June 5	0.75
May 5	0.29	May 21	0.23	June 12	0.75
May 8	0.50	May 29	0.23	June 18	0.75

Table 2. Weed Control Programs for Irrigated Corn in Western Nebraska during the 2007 Growing Season.

Treatment <sup>1</sup>	Rate	Time of application <sup>2</sup>	Corn					Percent weed control calculated from weed counts 6/18 <sup>4</sup>					
			Visual injury <sup>3</sup>			Stand 6/18	Yield at 15.5% moisture 10/26	Colq	Hans	Rrpw	Cosf	Kocz	Avg
			5/22	5/31	6/11								
Nontreated	—	—	0	0	0	30500	94.7	0	0	0	0	0	0
Balance Pro	0.031	PRE											
Laudis + Atrazine + COC + UAN	0.123 + 0.50	POST	3	23	33	30700	186.9	99	99	99	99	99	99
Laudis + Atrazine + COC + UAN	0.123 + 0.50	E. POST	0	0	0	32600	219.1	99	99	99	99	99	99
Laudis + Atrazine + UAN + Scoil	0.123 + 0.50	E. POST	0	0	0	33500	241.0	99	99	99	99	99	99
Laudis + Accent + Scoil + UAN	0.123 + 0.016	E. POST	0	0	4	32200	222.5	94	96	87	97	99	95
Laudis + Scoil + UAN	0.123	E. POST	0	0	0	32000	229.2	99	99	99	99	99	99
Laudis + Roundup WeatherMax + COC + AMS	0.123 + 0.75	E. POST	0	0	0	30100	204.4	80	99	99	99	89	93
Impact + Atrazine + Scoil + UAN	0.016 + 0.5	E. POST	0	0	0	31000	233.3	99	99	99	99	99	99
Impact + Roundup WeatherMax + Scoil + AMS	0.016 + 0.75	E. POST	0	0	0	32700	242.0	99	99	99	99	99	99
Callisto + Roundup WeatherMax + COC + UAN	0.094 + 0.75	E. POST	0	0	1	31800	219.7	99	99	99	99	99	99
Dual II Magnum	0.48	PRE											
Laudis + Atrazine + COC + UAN	0.123 + 0.5	E. POST	0	0	0	32300	223.3	99	99	99	99	99	99
Dual II Magnum	0.48	PRE											
Callisto + Atrazine + COC + UAN	0.094 + 0.5	E. POST	0	0	0	31100	220.6	99	99	99	99	99	99
Dual II Magnum	0.48	PRE											
Impact + Atrazine + Scoil + UAN	0.016 + 0.5	E. POST	0	0	0	31800	232.2	99	99	99	99	99	99
Dual II Magnum	0.48	PRE	0	0	0	30500	150.3	43	67	74	25	39	50
Impact + Atrazine + Roundup WeatherMax + Scoil + AMS	0.016 + 0.25 + 0.75	E. POST	0	0	0	31400	225.5	99	99	99	99	99	99
Laudis + Atrazine + Roundup WeatherMax + Scoil + AMS	0.123 + 0.25 + 0.75	E. POST	0	0	0	32100	231.3	99	99	99	99	99	99
Callisto + Atrazine + Roundup WeatherMax + Scoil + AMS	0.094 + 0.25 + 0.75	E. POST	0	0	0	31200	224.5	99	99	99	99	99	99
LSD at 5%	—	—	1	1	2	NS	37	7	15	19	13	16	3

<sup>1</sup> Spray additives were applied at the following concentrations : crop oil concentrate (COC) at 1% v/v, liquid nitrogen 33-0-0 (UAN) at 1.5 qt/acre, methylated seed oil (Scoil) at 1% v/v and ammonium sulfate (AMS) at 17 lb/100 gal of spray solution.

<sup>2</sup> Time of application: preemergence (PRE) on May 8, early postemergence (E. POST) on May 31, and postemergence (POST) on June 11.

<sup>3</sup> Visual corn injury was evaluated on a scale from 0 to 100 with 0 equal to no injury and 100 equal to death of the plant.

<sup>4</sup> Percent weed control calculated from weed counts taken on June 18. Weed abbreviations: common lambsquarters (Colq), hairy nightshade (Hans), redroot pigweed (Rrpw), common sunflower (Cosf), and kochia (Kocz).