

Herbicide performance in corn at Waseca, MN common cocklebur site in 2002. Hoverstad, Thomas R. and Jeffrey L. Gunsolus. The objective of this trial was to evaluate weed management systems available to corn producers in southern Minnesota on a site that was heavily infested with common cocklebur. The research site was a Webster clay loam soil containing 5% organic matter, pH = 6.6 and soil test P and K levels of 36 and 210 ppm, respectively. The previous crop was corn that had been chisel plowed in the fall. The area was field cultivated once prior to application of 150 lb N/A as urea. The site was then field cultivated once again to a depth of 3 inches to prior to planting to prepare a seedbed. Novartis 'NK 42B7' (imidazolinone and glufosinate tolerant) corn seed was planted on May 10, 2002 in 30-inch rows. All treatments were applied with a tractor-mounted sprayer delivering 20 gpa at 40 psi using 8002 flat-fan nozzle tips. Visual estimates of weed control were taken on September 10, 2002. Application dates, environmental conditions, crop and weed stages are listed below.

Date	May 10	June 5	June 10
Treatment	Pre	3-collar	4-collar
air temp °F	63	74	82
soil temp (4-inch) °F	60	68	73
Relative humidity (%)	35	30	40
Wind	W 11	S 5	S 12
Soil moisture	Dry	Wet	moist
Corn			
stage	--	V3	V4
height (inch)	--	4	6
Common cocklebur			
Leaf no.	--	2-3	3-4
height (inch)	--	4-6	6-8
Rainfall after application (inch)			
Week 1	0.41	1.15	1.15
Week 2	0.00	0.36	2.19
Week 3	0.74	3.15	1.15

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2002 Corn Herbicide Evaluation - Waseca
Common Cocklebur

Herbicide	Rate	Common			Weed Control	
		Cocklebur (% control)	H2O (%)	Yield (bu/A)	Cost (\$/A)	Returns (\$/A)
<u>Preemergence</u>						
Surpass + Hornet WDG	2.75 + 4 oz	83	23.5	145	41.31	187
Balance Pro+Define+Atrazine	2.25 oz +10 oz +1.1 lb	90	24.6	158		
<u>Pre / Postemergence (3-4 inch weeds)</u>						
Surpass / Hornet WDG + atrazine + COC + AMS	2.75 / 3 oz + 0.83 lb + 1% + 2.5 lb	99	23.2	174	46.66	228
Surpass / Hornet WDG + Clarity + NIS + AMS	2.75 / 3 oz + 4 oz + 0.25% + 2.5 lb	99	24.1	170	47.60	217
Outlook / Hornet WDG + Aim + NIS + AMS	20 oz / 3 oz + 0.5 oz + 0.25% + 2.5 lb	97	24.1	162	45.65	207
Outlook / Aim + atrazine + COC	20 oz / 0.5 oz 1.1 lb + 1%	81	24.7	139	37.51	177
Outlook / Distinct + NIS + AMS	20 oz / 4 oz + 0.25% + 2.5 lb	91	23.5	163	42.69	214
Axiom / Option + MSO + 28%N	15 oz / 1.5 oz + 1.5 + 3	94	23.5	143	44.40	180
Dual II Magnum / Callisto + atrazine + COC + 28%N	2 / 3 oz + 0.28 lb + 1% + 2.5%	93	23.4	154	51.62	192
Dual II Magnum / Northstar + COC + 28%N	2 / 5 oz + 1% + 2.5%	98	23.6	167	48.98	213
Dual II Magnum /	1 /					
Callisto + Steadfast + atrazine + COC + 28%N	3 oz + 0.5 oz + 0.28 lb + 1% + 2.5%	88	24.1	148	45.78	185
Dual II Magnum / Callisto + Liberty + AMS	1 / 3 oz + 14 oz + 3 lb	90	24.4	163	46.17	206
Define / Option + Distinct + MSO + 28%N	1 / 4 oz + 0.55 lb + 1% + 2.5%	94	23.9	164	49.23	207
Dual II Magnum /	0.75 /					
Accent Gold WDG + atrazine + COC + 28%N	3.5 oz + 0.83 lb + 1% + 4	99	23.9	174	51.13	221
Define / Liberty + atrazine + AMS	10 oz / 24 oz + 0.55 lb + 3 lb	46	23.8	159	42.23	206
Harness / Yukon + NIS	2.5 / 4 oz + 0.25%	89	24.1	148	44.60	186
<u>Postemergence (3 collar corn)</u>						
Lightning + Marksman + NIS + AMS	1.28 oz + 2 oz + 0.25% + 2.5 lb	97	23.5	164	24.51	233
<u>Postemergence (4 collar corn)</u>						
Steadfast + Callisto + atrazine + COC + AMS	0.75 oz + 2 oz + 0.28 lb + 1% + 2 lb	97	23.5	164	30.10	228
Steadfast + Hornet WDG + atrazine + COC + AMS	0.75 oz + 3 oz + 0.55 lb + 1% + 2 lb	91	24.2	163	32.82	220
Steadfast + Aim + atrazine + COC	0.75 oz + 0.5 oz + 0.55 lb + 1% + 2 lb	84	24.9	159	25.56	219
Accent Gold WDG + Clarity + atrazine + COC + AMS	3.5 oz + 4 oz + 0.55 lb + 1% + 2 lb	98	25.1	156	37.42	201
Accent Gold WDG + Callisto + atrazine + COC + AMS	3.5 oz + 1 oz + 0.28 lb + 1% + 2 lb	93	25.0	152	37.99	194
<u>Checks</u>						
Weedy Check	-	0	26.6	42	0.00	63
Weed-Free	-	100	24.4	172	0.00	

LSD(0.10)

17 1.3 19 32

Corn Price = \$1.82

Drying Cost \$0.025/pt to 15.5%

Shrink = 1.35%/ pt to 15.5 %