

Herbicide performance in corn at Waseca, MN tall waterhemp 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 tall waterhemp. The research site was a Webster clay loam soil containing 8% organic matter, pH = 7.4 and soil test P and K levels of 75 and 248 ppm, respectively. The previous crop was soybean that had been chisel plowed in the fall. The area was fertilized in the spring with 150 lb N/A as anhydrous ammonia and field cultivated once 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 9, 2002. Application dates, environmental conditions, crop and weed stages are listed below.

Date	May 10	June 5	June 13
Treatment	Pre	3-collar	4-collar
air temp °F	63	74	81
soil temp (4-inch) °F	60	68	69
Relative humidity (%)	35	30	40
Wind	W 11	S 5	S 15
Soil moisture	Dry	Wet	moist
Corn			
stage	--	V3	V4
height (inch)	--	4	7
Tall Waterhemp			
Leaf no.	--	2-3	3-4
height (inch)	--	1-3	4-5
Rainfall after application (inch)			
Week 1	0.41	1.15	0.36
Week 2	0.00	0.36	2.85
Week 3	0.74	3.15	0.00

(University of Minnesota, Southern Research and Outreach Center, Waseca, MN and Dept of Agronomy and Plant Genetics, University of Minnesota, St Paul).

2002 Corn Herbicide Evaluation - Waseca
Tall Waterhemp

Herbicide	Rate	Tall			Weed Control	
		Waterhemp (% control)	H2O (%)	Yield (bu/A)	Cost (\$/A)	Returns (\$/A)
<u>Preemergence</u>						
	(pt/A)					
Surpass + Hornet WDG	2.75 + 4 oz	83	14.7	194	41.31	311
Balance Pro+Define+Atrazine	2.25 oz +10 oz +1.1 lb	58	15.5	186		
<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	15.0	218	46.66	348
Surpass / Hornet WDG + Clarity + NIS + AMS	2.75 / 3 oz + 4 oz + 0.25% + 2.5 lb	99	14.9	180	47.60	278
Outlook / Hornet WDG + Aim + NIS + AMS	20 oz / 3 oz + 0.5 oz + 0.25% + 2.5 lb	70	15.3	181	45.65	280
Outlook / Aim + atrazine + COC	20 oz / 0.5 oz 1.1 lb + 1%	90	15.1	203	37.51	329
Outlook / Distinct + NIS + AMS	20 oz / 4 oz + 0.25% + 2.5 lb	89	15.2	163	42.69	251
Axiom / Option + MSO + 28%N	15 oz / 1.5 oz + 1.5 + 3	6	15.8	122	44.40	173
Dual II Magnum / Callisto + atrazine + COC + 28%N	2 / 3 oz + 0.28 lb + 1% + 2.5%	100	15.4	197	51.62	302
Dual II Magnum / Northstar + COC + 28%N	2 / 5 oz + 1% + 2.5%	66	15.1	168	48.98	255
Dual II Magnum /	1 /					
Callisto + Steadfast + atrazine + COC + 28%N	3 oz + 0.5 oz + 0.28 lb + 1% + 2.5%	99	15.0	179	45.78	278
Dual II Magnum / Callisto + Liberty + AMS	1 / 3 oz + 14 oz + 3 lb	97	15.0	163	46.17	249
Define / Option + Distinct + MSO + 28%N	1 / 4 oz + 0.55 lb + 1% + 2.5%	80	15.1	156	49.23	232
Dual II Magnum /	0.75 /					
Accent Gold WDG + atrazine + COC + 28%N	3.5 oz + 0.83 lb + 1% + 4	81	15.9	176	51.13	263
Define / Liberty + atrazine + AMS	10 oz / 24 oz + 0.55 lb + 3 lb	98	15.1	173	42.23	270
Harness / Yukon + NIS	2.5 / 4 oz + 0.25%	99	15.2	186	44.60	290
<u>Postemergence (3 collar corn)</u>						
Lightning + Marksman + NIS + AMS	1.28 oz + 2 oz + 0.25% + 2.5 lb	84	14.7	163	24.51	271
<u>Postemergence (4 collar corn)</u>						
Steadfast + Callisto + atrazine + COC + AMS	0.75 oz + 2 oz + 0.28 lb + 1% + 2 lb	96	15.4	181	30.10	296
Steadfast + Hornet WDG + atrazine + COC + AMS	0.75 oz + 3 oz + 0.55 lb + 1% + 2 lb	51	15.6	173	32.82	277
Steadfast + Aim + atrazine + COC	0.75 oz + 0.5 oz + 0.55 lb + 1% + 2 lb	76	15.2	184	25.56	306
Accent Gold WDG + Clarity + atrazine + COC + AMS	3.5 oz + 4 oz + 0.55 lb + 1% + 2 lb	63	15.3	197	37.42	317
Accent Gold WDG + Callisto + atrazine + COC + AMS	3.5 oz + 1 oz + 0.28 lb + 1% + 2 lb	93	15.0	200	37.99	324
<u>Checks</u>						
Weedy Check	-	0	17.9	76	0.00	132
Weed-Free	-	100	15.5	204	0.00	
	LSD(0.10)	14	0.9	31		57
Corn Price = \$1.82		Drying Cost \$0.025/pt to 15.5%				
		Shrink = 1.35%/ pt to 15.5 %				