Acetochlor plus EPTC in corn. Zollinger, Richard K. and Jerry L. Ries. An experiment was conducted near Prosper, ND, to evaluate weed control at two application timings. PPI treatments were applied on May 17, 2006 at 8:50 am with 60 F air, 55 F soil at a four inch depth, 40% relative humidity, 0% cloud cover, 8 to 12 mph N wind, moist subsoil, and dry soil surface. Soil characteristics were 27.4% sand, 44.7% silt, 27.9% clay, clay loam texture, 4.3% OM and 6.5 pH. PPI treatments were double incorporated with a field cultivator at a 2 to 2.5 inch depth followed by the planting of DeKalb 'DKC35-51' corn. POST applications were made on June 13 at 10:15 am, 72 F air, 78 soil surface, 38% relative humidity, 0% clouds, 5 to 7 mph NW wind, dry soil surface and moist subsoil, good crop vigor, and no dew present to V2 (8 to 12 inch) corn. Weed species present were: 1 to 5 inch (5 to 30/ft^2) yellow foxtail; 1 to 2 inch (1 to 2/yd^2) redroot pigweed; 1 to 2 inch (1 to 3/yd^2) redroot pigweed; 1 to 4 inch (1 to 2/yd^2) redroot pigweed; 1 to 2 inch (1 to 3/yd^2) hairy nightshade; 1 to 3 inch (1 to 3/yd^2) common ragweed; and 1 to 2 inch (1 to 3/yd^2) common cocklebur. Treatments were applied to the center 6.7 feet of the 10 by 40 foot plots with a backpack-type plot sprayer delivering 17 gpa at 40 psi through 11002 Turbo TeeJet flat-fan nozzles for PPI treatments and 8.5 gpa at 40 psi through 11001 Turbo TeeJet flat-fan nozzles for POST treatments. The experiment had randomized complete block design with three replicates per treatment.

The experiment was conducted in an area that had high weed pressure. Imperium is a premix of acetochlor + EPTC similar to Eradicane. The evaluation of PPI treatments on June 12 was one day before POST glyphosate treatments were made. At June 12, Imperium at 5 or 6 pt/A controlled most weeds and provided greater control of kochia, hairy nightshade, common ragweed, and common cocklebur than acetochlor alone (Surpass). Even Imperium at reduced rates of 3.5 and 4.5 pt/A provided good to excellent control of most weed. Control of most weeds decreased slightly at 28 DAT but control was greater than 80%, except for common ragweed and common cocklebur. All treatments of glyphosate provided complete weed control through 28 DAT. (Dept. of Plant Sciences, North Dakota State University, Fargo).

Table. Acetochlor plus EPTC in corn (Zollinger and Ries).

		PPI treatments - June 12						
Treatment[1]	Rate	Yeft	Rrpw	Colq	Kochia	Hans	Corw	Cocb
	(product/A)	% control						
PPI								
Imperium	5 pt	91	99	93	88	92	85	77
Imperium	6 pt	92	99	94	92	95	83	82
Surpass	2.75 pt	96	99	89	70	83	76	53
PPI/POST								
Imperium/RU Original Max	3.5pt/22fl oz	79	99	84	82	83	63	53
Imperium/RU Original Max+ AMS	4.5pt/22fl oz+ 8.5lb/100gal	89	99	88	84	90	73	60
Surpass/RU Original Max+ AMS	1.63pt/22fl oz+ 8.5lb/100gal	91	82	70	50	50	40	30
Untreated		0	0	0	0	0	0	0
LSD (0.05)		4	3	4	5	5	5	6

[1]RU Original Max = Roundup Original Max; AMS = ammonium sulfate.

Table cont. Acetochlor plus EPTC in corn (Zollinger and Ries).

Treatment[1]	Rate	14 DAT POST - June 27						
		Yeft	Rrpw	Colq	Kochia	Hans	Corw	Cocb
	(product/A)	% control						
PPI								
Imperium	5 pt	89	99	90	83	87	81	72
Imperium	6 pt	90	99	92	90	92	82	78
Surpass	2.75 pt	94	99	86	70	80	70	50
PPI/POST								
Imperium/RU Original Max	3.5pt/22fl oz	99	99	99	99	99	99	99
Imperium/RU Original Max+ AMS	4.5pt/22fl oz+ 8.5lb/100gal	99	99	99	99	99	99	99
Surpass/RU Original Max+ AMS	1.63pt/22fl oz+ 8.5lb/100gal	99	99	99	99	99	99	99
Untreated		0	0	0	0	0	0	0
LSD (0.05)		1	1	2	2	3	2	3

[1]RU Original Max = Roundup Original Max; AMS = ammonium sulfate.

Table cont. Acetochlor plus EPTC in corn (Zollinger and Ries).

Treatment[1]	Rate	28 DAT POST - July 11						
		Yeft	Rrpw	Colq	Kochia	Hans	Corw	Cocb
	(product/A)	% control						
PPI								
Imperium	5 pt	86	99	88	80	83	77	67
Imperium	6 pt	88	99	88	90	90	78	70
Surpass	2.75 pt	91	99	83	67	77	67	47
PPI/POST								
Imperium/RU Original Max	3.5pt/22fl oz	99	99	99	99	99	99	99
Imperium/RU Original Max+ AMS	4.5pt/22fl oz+ 8.5lb/100gal	99	99	99	99	99	99	99
Surpass/RU Original Max+ AMS	1.63pt/22fl oz+ 8.5lb/100gal	99	99	99	99	99	99	99
Untreated		0	0	0	0	0	0	0
LSD (0.05)		3	1	3	4	5	5	5

[1]RU Original Max = Roundup Original Max; AMS = ammonium sulfate.

Acetochlor plus atrazine premix comparisons. Zollinger, Richard K. and Jerry L. Ries. An experiment was conducted near Prosper, ND, to evaluate weed efficacy from PRE treatments in corn. DeKalb 'DKC35-51' corn was planted on May 17, 2006. PRE treatments were applied on May 18 at 9:15 with 55 F air, 53 F soil at a inch depth, 49% relative humidity, 100% cloud cover, 2 to 4 mph N wind, moist subsoil, and dry soil surface. Soil characteristics were 27.4% sand, 44.7% silt, 27.9% clay, clay loam texture, 4.3% OM, and pH 6.5. Treatments were applied to the center 6.7 feet of the 10 by 30 foot plots with a backpack-type plot sprayer delivering 17 gpa at 40 psi through 11002 Turbo TeeJet flat-fan nozzles. The experiment had randomized complete block design with four replicates per treatment.

All treatments contain acetochlor + safener. Degree Extra is an encapsulated acetochlor formulation, whereas, the others are not encapsulated. The product/A rates contain similar active ingredient rates of acetochlor. The encapsulated formulations gave less weed control. The premix containing acetochlor &EPTC gave the greatest wed control. (Dept. of Plant Sciences, North Dakota State University, Fargo).

Table. Acetochlor plus atrazine premix comparisons (Zollinger and Ries).

		25 DAT							39 DAT						
Treatment	Rate	Yeft	Rrpw	Colq	Wibw	Hans	Corw	Cocb	Yeft	Rrpw	Colq	Wibw	Hans	Corw	Cocb
	(product/A)	% control							% control						
Acetochlor&EPTC	3.4qt	93	99	99	96	96	90	85	86	99	99	94	95	91	82
Acetochlor&EPTC+Atrazine	3.4qt+0.56lb	92	99	99	97	95	93	86	86	99	99	94	89	90	81
Degree Extra	3.7qt	70	87	99	60	62	61	59	68	83	92	86	60	59	54
Degree Extra+Atrazine	3.33qt+0.63lb	82	99	99	98	83	81	71	73	96	97	98	78	80	70
Keystone	3qt	88	99	99	97	89	85	74	86	96	99	97	84	83	71
Harness Xtra	2.9qt	89	99	99	94	94	84	75	86	99	99	93	90	86	76
Untreated		0	0	0	0	0	0	0	0	0	0	0	0	0	0
LSD (0.05)		4	5	0	5	4	4	6	3	3	2	4	4	3	3

Comparisons of soil-applied herbicides in corn. Zollinger, Richard K. and Jerry L. Ries. Experiments were conducted near Prosper and Valley City, ND, to evaluate weed efficacy from soil-applied corn herbicides on various textured soils. At Prosper, a heavy soil, DeKalb 'DKC35-51' corn was planted on May 17, 2006. PRE treatments were applied on May 18 at 8:55 with 54 F air, 53F soil at a four inch depth, 40% relative humidity, 100% cloud cover, 3 to 5 mph N wind, dry soil surface, and moist subsoil. Soil characteristics were 30.3% sand, 41% silt, 28.8% clay, clay loam texture, 4.3% OM, and pH 6.5.

At Valley City, two studies were established in a medium and light soils. Pioneer '39D80' was planted on May 4. Medium textured soil PRE treatments were applied on May 9, 2006 at 2:30 pm with 75 F air, 69 F soil at a four inch depth, 20% relative humidity, 0% cloud cover, 5 to 10 mph NW wind, dry soil surface, moist subsoil, and no dew present. Soil characteristics were 52.1% sand, 30.2% silt, 17.7% clay, sandy loam texture, 4.6% OM,and pH 6.0. Light textured soil PRE applications were applied on May 9, 2006 at 3:00 pm with 75 F air, 69 F soil at a four inch depth, 20% relative humidity, 0% cloud cover, 5 to 10 mph NW wind, dry soil surface, moist subsoil, and no dew present. Soil characteristics were 76.2% sand, 13.2% silt, 10.7% clay, sandy loam texture, 2.1% OM, and pH 5.4.

Treatments at all locations were applied to the center 6.7 feet of the 10 by 40 foot plots with a backpack-type plot sprayer delivering 17 gpa at 40 psi through 11002 Turbo TeeJet flat-fan nozzles. The experiment had randomized complete block design with three replicates per treatment.

This experiment was conducted to evaluate weed control from registered soil-applied herbicides registered in corn and to observe weed control from the soil activity of Resolve (rimsulfuron). The same herbicide rates were used at each location to evaluate the affect soil-type has on weed control. Rates are equivalent to 0.5X and 1X of a medium to fine textured soil and Surpass and Harness rates are equivalent to 1 and 2 lb ai/A. Lack of rainfall and dry conditions existed after herbicide were soil-applied. No corn injury occurred from any treatment.

At Prosper (heavy soil-type), corn was V3 to V4 and 16 to 20 inches tall, escaped grass and broadleaf weeds were 1 to 4 inches tall, and weed pressure was high; at the Valley City (medium soil-type) site, corn was V4-V5 and 18-24 inches tall, escaped grass and broadleaf weeds were 1 to 6 inches tall, and weed pressure was medium; at the Valley City (light soil-type) site, corn was V4-V5 and 18-20 inches tall, escaped grass and broadleaf weeds were 1 to 4 inches tall, and weed pressure was light to medium. Acetochlor consistently controlled more weeds than other herbicides even in dry conditions. The average relative order of activity for herbicides at all three locations is: acetochlor>Radius>=Outlook>Dual II Magnum>=Basis>=Resolve. Generally, adding Resolve to Surpass, Dual II Magnum, or Outlook did not increase weed control.

Table 1. Comparisons of soil-applied herbicides in corn, **heavy soil**, Prosper (Zollinger and Ries).

		28 DAT				
Treatment	Rate	Yeft	Colq	Wibw	Hans	Corw
	(product/A)	% control				
Surpass	1.25pt	85	76	62	81	60
Surpass	2.5pt	92	89	63	85	63
Harness	1.15pt	83	71	52	70	53
Harness	2.3pt	94	85	64	73	58
Dual II Magnum	0.9pt	58	52	22	38	20
Dual II Magnum	1.8pt	69	68	20	53	27
Outlook	9.6fl oz	59	61	23	66	23
Outlook	19.2fl oz	72	72	32	68	20
Radius	8fl oz	57	66	32	32	33
Radius	14fl oz	75	81	45	47	40
Resolve	1oz	47	40	27	28	22
Basis	0.5oz	58	50	33	35	23
Resolve+Surpass	0.75oz+1.25pt	80	81	62	74	53
Resolve+Surpass	1oz+1.25pt	79	78	63	72	59
Resolve+Dual II Magnum	1oz+0.9pt	67	70	40	53	35
Resolve+Outlook	1oz+9.6fl oz	69	77	40	49	33
LSD (0.05)		7	6	5	8	6

Table 1. Comparisons of soil-applied herbicides in corn, **medium soil**, Valley City (Zollinger and Ries).

Treatment	Rate	37 DAT			
		Fxtl[1]	Pigweed[2]	Colq	Ebns
	(product/A)	% control			
Surpass	1.25pt	91	99	99	99
Surpass	2.5pt	98	99	99	99
Harness	1.15pt	89	99	92	99
Harness	2.3pt	97	99	99	99
Dual II Magnum	0.9pt	78	81	81	83
Dual II Magnum	1.8pt	88	91	96	89
Outlook	9.6fl oz	91	99	99	94
Outlook	19.2fl oz	95	99	99	96
Radius	8fl oz	88	96	96	86
Radius	14fl oz	93	99	99	94
Resolve	1oz	43	53	53	27
Basis	0.5oz	38	72	65	31
Resolve+Surpass	0.75oz+1.25pt	73	94	96	99
Resolve+Surpass	1oz+1.25pt	92	93	91	92
Resolve+Dual II Magnum	1oz+0.9pt	71	84	84	76
Resolve+Outlook	1oz+9.6fl oz	75	93	90	88
LSD (0.05)		9	9	7	7

[1]Fxtl = yellow and green foxtail.
[2]Pigweed = redroot pigweed and prostrate pigweed.

Table 1. Comparisons of soil-applied herbicides in corn, **light soil**, Valley City (Zollinger and Ries).

Treatment	Rate	37 DAT			
		Fxtl[1]	Prpw	Colq	Wibw
	(product/A)	% control			
Surpass	1.25pt	84	73	78	28
Surpass	2.5pt	93	92	94	50
Harness	1.15pt	82	79	83	35
Harness	2.3pt	83	91	94	50
Dual II Magnum	0.9pt	33	40	50	13
Dual II Magnum	1.8pt	74	48	58	7
Outlook	9.6fl oz	81	50	52	7
Outlook	19.2fl oz	84	79	85	13
Radius	8fl oz	81	94	94	48
Radius	14fl oz	92	96	93	57
Resolve	1oz	45	70	79	22
Basis	0.5oz	47	58	63	20
Resolve+Surpass	0.75oz+1.25pt	67	69	78	32
Resolve+Surpass	1oz+1.25pt	68	70	79	40
Resolve+Dual II Magnum	1oz+0.9pt	45	48	60	20
Resolve+Outlook	1oz+9.6fl oz	78	74	84	22
LSD (0.05)		10	9	8	17

[1]Fxtl = yellow and green foxtail.

Herbicide programs in corn. Zollinger, Richard K. and Jerry L. Ries. An experiment was conducted near Dwight, ND, to evaluate weed control in corn. DeKalb 'DKC-35-51' corn was planted on May 7, 2006. PRE treatments were applied on May 9 at 11:00 am with 72 F air, 61 F soil at a four inch depth, 29% relative humidity, 0% cloud cover, 3 to 5 mph NW wind, dry soil surface, and moist subsoil. Soil characteristics were 63.1% sand, 23.7% silt, 13.2% clay, sandy loam texture, 2.8% OM, pH 6.4. POST treatments were applied on June 9 at 7:30 am with 63 F air, 69 F soil surface, 64% relative humidity, 100% cloud cover, 8 to 11 mph NE wind, dry soil surface, moist subsoil, excellent crop vigor, and no dew present to V5 (12 to 15 inch) corn. Weed species present in plots with PRE applications were: 2 to 4 inch (1 to 2/ft^2) redroot pigweed; and 2 to 4 inch (5 to 10/ft^2) common lambsquarters. Weed species present in plots with POST only applications were: 2 to 7 inch (2 to 10/ft^2) redroot pigweed; and 2 to 7 inch (10 to 20/ft^2) common lambsquarters. Treatments were applied to the center 6.7 feet of the 10 by 40 foot plots with a backpack-type plot sprayer delivering 17 gpa at 40 psi through 11002 Turbo TeeJet flat-fan nozzles for PRE treatments and 8.5 gpa at 40 psi through 11001 Turbo TeeJet flat-fan nozzles for POST treatments. The experiment had randomized complete block design with three replicates per treatment.

At the POST application on June 9, conditions were cool and moist, some drizzle rain had occurred that morning. Some treatments containing herbicides with DF formulations did not dissolve which may partially explain inadequate weed control. Very little rain occurred after application of PRE herbicides which may also explain lower weed control ratings of some treatments. Weeds at POST application were large which may explain poor weed control in some treatments. On June 16 (7 DAT), no injury from herbicide treatments was observed but there was significant stunting and yellowing from moderate to severe foxtail competition. (Dept of Plant Sciences, North Dakota State University, Fargo).

Table. Herbicide programs in corn (Zollinger and Ries).

Treatment[1]	Rate	28 DAT - PRE		14 DAT		28 DAT		56 DAT	
		Rrpw	Colq	Rrpw	Colq	Rrpw	Colq	Rrpw	Colq
	(product/A)	-- % control --		- % control -		- % control -		- % control -	
PRE									
KIH-485	3.5 oz	90	83	91	83	91	83	91	83
KIH-485+Atrazine	3.5oz+0.56lb	99	99	90	91	90	91	90	91
PRE/POST									
Resolve/RUWM+AMS	1oz/22fl oz+2lb	70	50	99	91	99	91	99	91
Resolve+Atrazine/RUWM+AMS	1oz+0.42lb/22fl oz+2lb	88	80	99	95	99	95	99	95
Outlook/Distinct+R-11+ 28% N	12fl oz/4oz+0.25% v/v+ 1.25% v/v	87	70	83	80	83	80	83	80
Outlook/Status(BAS799)+ R-11+28% N	12fl oz/5oz+ 0.25% v/v+1.25% v/v	80	67	70	70	70	70	70	70
KIH-485/RUOM	1.76oz/22fl oz	80	67	99	93	99	93	99	93
Lumax/TD Total+AMS	3pt/24fl oz+2lb	99	99	99	99	99	99	99	99
Dual II Magnum/Callisto+ PO+28% N	1.5pt/3fl oz+ 1% v/v+2.5% v/v	68	60	99	99	99	99	99	99
Dual II Magnum/Callisto+ Atrazine+ PO+28% N	1.5pt/3fl oz+0.42lb 1% v/v+2.5% v/v	65	53	99	99	99	99	99	99
Dual II Magnum/Impact+ MSO+28% N	1.5pt/0.75oz+ 1.5pt+2.5% v/v	67	60	99	99	99	99	99	99
Dual II Magnum/Impact+Atrazine MSO+28% N	1.5pt/0.75oz+0.42lb+ 1.5pt+2.5% v/v	60	47	99	99	99	99	99	99
POST									
RUWM+AMS	22fl oz+2lb			98	74	98	74	98	74
TD Total	24fl oz+2lb			93	68	93	68	93	68
RUWM+Resolve+AMS	22fl oz+1oz+2lb			93	88	83	88	93	88
RUWM+Resolve+Atrazine+AMS	22fl oz+1oz+0.42lb+2lb			80	73	80	73	80	73
Lumax+TD Total+AMS	3pt+24fl oz+2lb			98	98	98	98	98	98
Impact+Atrazine+Renegade	0.75fl oz+0.42lb+1.75pt			70	80	70	80	70	80
Impact+Atrazine+ Renegade+In-Place	0.75fl oz+0.42lb+ 1.75pt+0.75fl oz			80	80	80	80	80	80
Impact+Atrazine+Quad 7	0.75fl oz+0.42lb+1% v/v			79	89	79	89	79	89
Steadfast+Callisto+Atrazine+ PO+28% N	0.75oz+3fl oz+0.28lb+ 1% v/v+2.5% v/v			98	98	98	98	98	98
Option+Distinct+MSO+28% N	1.5oz+3oz+1.5pt+1qt			70	70	70	70	70	70
LSD (0.05)		7	11	7	7	7	7	7	7

[1]RUWM = Roundup WeatherMax; AMS = ammonium sulfate; R-11 = nonionic surfactant; 28% N = 28-0-0; RUOM = Roundup Original Max; MSO = methylated seed oil = Scoil; TD Total = Touchdown Total; Renegade = MSO basic pH blend; In-Place = deposition + drift retardants; Quad 7 = basic pH blend; PO = petroleum oil concentrate = Herbimax.

Resolve in corn. Zollinger, Richard K. and Jerry L. Ries. An experiment was conducted near Prosper, ND, to evaluate weed efficacy in corn programs. DeKalb 'DKC35-51' corn was planted on May 17, 2006. PRE treatments were applied on May 18 at 9:30 with 55 F air, 53F soil at a four inch depth, 40% relative humidity, 100% cloud cover, 2 to 4 mph N wind, dry soil surface, and moist subsoil. Soil characteristics were 27.4% sand, 44.7% silt, 27.9% clay, clay loam texture, 4.3% OM, and pH 6.5. POST treatments were applied on June 6 at 10:10 am with 63 F air, 63 F soil surface, 38% relative humidity, 0% cloud cover, 3 to 5 mph NW wind, dry soil surface, moist subsoil, excellent crop vigor, and no dew present to 6 to 10 inch, (V3) corn. Weed species present were: 1 to 4 inch (25 to 100/ft^2) yellow foxtail; 1 to 3 inch (1 to 5/yd^2) wild buckwheat; 1 to 3 inch (1 to 3/yd^2) common lambsquarters; 1 to 4 inch (1 to 3/yd^2) redroot pigweed; 1 to 5 inch (1/yd^2) common cocklebur; and 1 to 2 inch (1 to 2/yd^2) hairy nightshade. LPOST treatments were applied on June 13 at 8:30 pm with 68 F air, 64 F soil surface, 70% relative humidity, 0% cloud cover, 2 to 5 mph NE wind, dry soil surface, moist subsoil, and no dew present to 10 to 14 inch (V4 to V5) corn. No weeds were present at the LPOST application. Treatments were applied to the center 6.7 feet of the 10 by 40 foot plots with a backpack-type plot sprayer delivering 17 gpa at 40 psi through 11002 Turbo TeeJet flat-fan nozzles for PRE treatments and 8.5 gpa at 40 psi through 11001 Turbo TeeJet flat-fan nozzles for POST and LPOST treatments. The experiment had randomized complete block design with three replicates per treatment.

At 14, 28, and 56 DAT, common cocklebur was completely controlled. All treatments provided over-kill even though weed pressure was high and size of some weeds were large. Rates of individual herbicides were too high for treatment separation. (Dept of Plant Sciences, North Dakota State University, Fargo).

Table. Resolve in corn (Zollinger and Ries).

		14 DAT					28 DAT					56 DAT				
Treatment[1]	Rate	Yeft	Rrpw	Colq	Hans	Wibw	Yeft	Rrpw	Colq	Hans	Wibw	Yeft	Rrpw	Colq	Hans	Wibw
	(product/A)	% control					% control					% control				
PRE/POST																
Resolve/RUOM+Resolve+Clairty+AMS	1oz/22fl oz+1oz+2 fl oz+2lb	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
Resolve/RUOM+Harmony GT+Clarity+AMS	1oz/22 fl oz+0.045oz+2floz+2lb	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
Resolve/RUOM+Harmony GT+Starane+AMS	1oz/22 fl oz+0.045oz+1floz+2lb	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
Resolve/RUOM+Harmony GT+WideMatch+AMS	1oz/22 fl oz+0.045oz+0.66pt+2lb	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
Bicep II Magnum/Accent+Harmony GT+Callisto+ Atrazine+Dyne-Amic+AMS	1.05qt/0.45oz+0.05oz+2fl oz+ 0.56lb+0.5% v/v+2lb	99	99	99	99	99	90	99	99	99	99	90	99	99	99	99
Bicep II Magnum/Accent+Harmony GT+Clarity+ Dyne-Amic+AMS	1.05qt/0.45oz+0.05oz+4fl oz+ 0.5% v/v+2lb	83	99	99	99	93	84	99	99	99	94	84	99	99	99	94
POST																
RUOM+Resolve+Clarity+AMS	22fl oz+1oz+2fl oz+2lb	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
Steadfast+Clarity+Dyne-Amic+AMS	0.75oz+4fl oz+0.5% v/v+2lb	86	94	94	94	94	86	94	94	94	94	86	94	94	94	94
RUOM	22fl oz	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
RUOM+Clarity	22fl oz+4fl oz	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
RUOM+Resolve+Callisto+AMS	22fl oz+1oz+1.5fl oz+2lb	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
RUOM+Resolve+Callisto+Atrazine+ AMS	22fl oz+1oz+1.5fl oz+0.28lb+ 2lb	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
Steafast+Callisto+Atrazine+ Dyne-Amic+AMS	0.75oz+1.5fl oz+0.56lb+ 0.5% v/v+2lb	87	99	99	99	99	79	99	99	99	99	79	99	99	99	99
POST/LPOST																
RUOM/RUOM	22fl oz/22fl oz	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
LSD (0.05)		1	1	1	1	1	3	1	1	1	1	3	1	1	1	1

[1]RUOM = Roundup Original Max; AMS = ammonium sulfate; Dyne-Amic = MSO + organosilicone surfactant.

Laudis (AE 0172747) in corn. Zollinger, Richard K. and Jerry L. Ries. An experiment was conducted near Prosper, ND, to evaluate crop response and weed efficacy from corn herbicides. Pioneer '39D85' Liberty Link/Roundup Ready corn was planted on May 17, 2006. PRE treatments were applied on May 18 at 10:05 am with 59 F air, 54 F soil at a four inch depth, 42% relative humidity, 100% cloud cover, 3 mph N wind, moist subsoil, and dry soil surface. Soil characteristics were 29.7% sand, 44.7% silt, 25.6% clay, loam texture, 3.9% OM, and pH 5.4. POST treatments were applied on June 13 at 12:40 pm with 73 F air, 86 F soil surface, 44% relative humidity, 0% cloud cover, 5 to 10 mph NE wind, dry soil surface, moist subsoil, excellent crop vigor, and no dew present to V3 to V4 (10 to 12 inch) corn. Species at time of application were: 2 to 5 inch (10 to 75/ft^2) yellow foxtail; 1 to 4 inch (2 to 25/yd^2) hairy nightshade; 1 to 3 inch (3 to 5/yd^2) common lambsquarters; 2 to 8 inch (1 to 5/yd^2) wild mustard; 2 to 4 inch (1 to 3/yd^2) common ragweed; 2 to 4 inch (3 to 5/yd^2) redroot pigweed; and 2 to 5 inch (1 to 5/yd^2) common cocklebur. Treatments were applied to the center 6.7 feet of the 10 by 40 foot plots with a backpack-type plot sprayer delivering 17 gpa at 40 psi through 11002 Turbo TeeJet flat-fan nozzles for PRE treatments and 8.5 gpa at 40 psi through 11001 Turbo TeeJet flat-fan nozzles for POST treatments. The experiment had randomized complete block design with three replicates per treatment.

No corn injury was observed. On June 27 (14 DAT) and July 11 (28 DAT), all treatments controlled yellow foxtail, wild mustard, redroot pigweed, common lambsquarters, hairy nightshade, common ragweed, and common cocklebur. All treatments provided over-kill even though weed pressure was high and size was large. Rates of individual herbicides were too high for treatment separation. (Dept of Plant Sciences, North Dakota State University, Fargo).

Table. Laudis (AE 0172747) in corn (Zollinger and Ries).

Treatment[1]	Rate	8, 14, and 28 DAT						
		Corn	Yeft	Wimu	Rrpw	Hans	Corw	Cocb
	(product/A)	% injury	% control					
PRE/POST								
Radius/Laudis+Atrazine+ MSO+28% N	10fl oz/3fl oz+0.42lb+ 1.2pt+1.5qt	0	99	99	99	99	99	99
POST								
Laudis+Atrazine+MSO+28% N	3fl oz+0.42lb+1.2pt+1.5qt	0	99	99	99	99	99	99
Laudis+Atrazine+Liberty+AMS	3fl oz+0.42lb+32fl oz+3lb	0	99	99	99	99	99	99
Liberty+Atrazine+AMS	32fl oz+0.42lb+3lb	0	99	99	99	99	99	99
Laudis+Atrazine+RUOM+AMS	3fl oz+0.42lb+22fl oz+8.5lb/100gal	0	99	99	99	99	99	99
RUOM+Atrazine+AMS	22fl oz+0.42lb+17lb/100gal	0	99	99	99	99	99	99
Option+Define+Distinct+ MSO+28% N	1.5oz+10fl oz+2oz+ 1.5pt+1.5qt	0	99	99	99	99	99	99
LSD (0.05)		NS	NS	NS	NS	NS	NS	NS

[1]MSO = methylated seed oil = Scoil; 28% N = 28-0-0; AMS = ammonium sulfate; RUOM = Roundup Original Max.

Status (BAS 799) in corn. Zollinger, Richard K. and Jerry L. Ries. An experiment was conducted near Prosper, ND, to evaluate weed efficacy from a new corn herbicide. DeKalb 'DKC35-51' corn was planted on May 17, 2006. PRE treatments were applied on May 18 at 9:45 am with 61 F air, 56 F soil at a four inch depth, 43% relative humidity, 100% cloud cover, 1 to 3 mph N wind, moist subsoil, and dry soil surface. Soil characteristics were 27.4% sand, 44.7% clay, 27.9% clay, clay loam texture, 4.3% OM, and pH 6.5. EPOST treatments were applied on June 6 at 9:00 am with 62 F air, 61 F soil surface, 42% relative humidity, 0% cloud cover, 3 to 5 mph NE wind, moist subsoil, dry soil surface, excellent crop vigor, and no dew present to V2 to V3 (5 to 8 inch) corn. Weed species present were: 1 to 3 inch (20 to 75/ft^2) yellow foxtail; 1 to 3 inch (5 to 25/yd^2) wild buckwheat; 1 to 2 inch (5 to 10/yd^2) common lambsquarters; 1 to 3 inch (1 to 5/yd^2) redroot pigweed; 1 to 3 inch (1 to 5/yd^2) common ragweed; and 1 to 4 inch (1 to 5/yd^2) common cocklebur. POST treatments were applied on June 13 at 9:00 pm with 68 F air, 61 F soil surface, 72% relative humidity, 10% cloud cover, 2 to 4 mph NE wind, moist subsoil, dry soil surface, excellent crop vigor, and no dew present to V4 to V5 (10 to 14 inch) corn. Weed species present were: 1 to 4 inch (20 to 75/ft^2) yellow foxtail; 1 to 4 inch (5 to 25/yd^2) wild buckwheat; 1 to 3 inch (5 to 10/yd^2) common lambsquarters; 1 to 4 inch (1 to 5yd^2) redroot pigweed; 1 to 3 inch (1 to 5/yd^2) common ragweed; and 1 to 5 inch (1 to 5/yd^2) common cocklebur. Treatments were applied to the center 6.7 feet of the 10 by 40 foot plots with a backpack-type plot sprayer delivering 17 gpa at 40 psi through 11002 Turbo TeeJet flat-fan nozzles for PRE treatments and 8.5 gpa at 40 psi through 11001 Turbo TeeJet flat-fan nozzles for EPOST and POST treatments. The experiment had randomized complete block design with three replicates per treatment.

All treatments provided over-kill even though weed pressure was high and size was large. Rates were of individual herbicides were too high for treatment separation. (Dept of Plant Sciences, North Dakota State University, Fargo).

Table. Status (BAS 799) in corn (Zollinger and Ries).

		14, 28, and 56 DAT						Yield
Treatment[1]	Rate	Yeft	Rrpw	Colq	Wibw	Hans	Cocb	Corn
	(product/A)	- - - - - - - - - - - - - - - % control - - - - - - - - - - - - - - -						bu/A
PRE/EPOST								
Outlook/Durango+AMS	12fl oz/24fl oz+3lb	99	99	99	99	99	99	141
Outlook/Durango+Status (BAS 799+ AMS	12fl oz/24fl oz+2.5oz+ 3lb	99	99	99	99	99	99	144
EPOST								
Roundup Weather Max+AMS	22fl oz+3lb	99	99	99	99	99	99	170
Durango+Status (BAS 799)+AMS	24fl oz+2.5oz+3lb	99	99	99	99	99	99	173
Durango+Prowl H_2O+AMS	24fl oz+2.5pt+3lb	99	99	99	99	99	99	156
Durango+Outlook+Clarity+AMS	24fl oz+12fl oz+8fl oz+3lb	99	99	99	99	99	99	152
POST								
Roundup Weather Max+AMS	22fl oz+3lb	99	99	99	99	99	99	153
Untreated		0	0	0	0	0	0	99
LSD (0.05)		0	0	0	0	0	0	19

[1]AMS = ammonium sulfate.

Weed control in Roundup Ready corn. Zollinger, Richard K. and Jerry L. Ries. An experiment was conducted near Prosper, ND, to evaluate weed efficacy. DeKalb 'DKC35-51' corn was planted on May 17, 2006. PRE treatments were applied on May 18 at 10:10 am with 59 F air, 54 F soil at a four inch depth, 41% relative humidity, 100% cloud cover, 5 mph SE wind, moist subsoil, and dry soil surface. Soil characteristics were 30.3% sand, 41% silt, 28.8% clay, clay loam texture, 3.9% OM, pH 6.7. EPOST treatments were applied on June 13 at 10:10 pm with 75 F air, 84 F soil surface, 32% relative humidity, 0% cloud cover, 3 to 6 mph NE wind, moist subsoil, dry soil surface, excellent crop vigor, and no dew present to V4 to V5 (10 to 14 inch) corn. Weed species present were: 1 to 4 inch (15 to 50/ft^2) yellow foxtail; 1 to 3 inch (1 to 3/yd^2) hairy nightshade; 1 to 3 inch (1 to 5/yd^2) common lambsquarters; 1 to 3 inch (3 to 5/yd^2) redroot pigweed; 1 to 3 inch (1 to 5/yd^2) common cocklebur; and 1 to 3 inch (5to 30/yd^2) common ragweed. POST treatments were applied on June 20 at 9:50 am with 65 F air, 69 F soil surface, 90% relative humidity, 100% cloud cover, 1 to 3 mph S wind, moist subsoil, dry soil surface, excellent crop vigor, and no dew present to V5 (18 to 24 inch) corn. Weed species present were: 2 to 7 inch (5 to 50/ft^2) yellow foxtail; 2 to 4 inch (1 to 3/yd^2) hairy nightshade; 2 to 4 inch (1 to 5/yd^2) common lambsquarters; 1 to 5 inch (1 to 5/yd^2) common cocklebur; 3 to 6 inch (3 to 5yd^2) redroot pigweed; and 2 to 5 inch (5 to 30/yd^2) common ragweed. Treatments were applied to the center 6.7 feet of the 10 by 40 foot plots with a backpack-type plot sprayer delivering 17 gpa at 40 psi through 11002 Turbo TeeJet flat-fan nozzles for PRE treatments and 8.5 gpa at 40 psi through 11001 Turbo TeeJet flat-fan nozzles for EPOST and POST treatments. The experiment had randomized complete block design with three replicates per treatment.

All EPOST or EPOST/POST treatments gave complete 14 and 28 DAT, and season-long grass and broadleaf weed control. (Dept. of Plant Sciences, North Dakota State University, Fargo).

Table. Weed control in Roundup Ready corn (Zollinger and Ries).

		28 DAT - PRE Treatments					
Treatment[1]	Rate	Yeft	Rrpw	Colq	Hans	Corw	Cocb
	(product/A)	% control					
PRE/POST							
Epic/Buccaneer Plus+Array	5oz/1qt+9lb/100gal	73	93	71	79	60	51
Epic+Atrazine/Buccaneer Plus+Array	5oz+0.5lb/1qt+9lb/100gal	80	99	94	94	74	60
Epic+Atrazine/Buccaneer Plus+Array	6oz+0.5lb/1qt+9lb/100gal	85	99	99	95	75	70
Epic+Atrazine/Buccaneer Plus+Array	7oz+0.5lb/1qt+9lb/100gal	83	99	99	97	73	68
Epic+Atrazine/Buccaneer Plus+Array	8oz+0.5lb/1qt+9lb/100gal	86	99	99	98	83	70
Volley/Buccaneer Plus+Array	1.5pt/1qt+9lb/100gal	92	99	99	91	64	53
Propel/Buccaneer Plus+Array	8oz/1qt+9lb/100gal	72	71	71	69	40	32
Volley ATZ Lite/Buccaneer Plus+Array	1.3qt/1qt+9lb/100gal	85	88	89	87	58	55
LSD (0.05)		4	3	3	2	4	4

[1]Array = AMS + deposition + retention + defoamer.

Table cont. Weed control in Roundup Ready corn (Zollinger and Ries).

		14 and 28 DAT					
Treatment[1]	Rate	Yeft	Rrpw	Colq	Hans	Corw	Cocb
	(product/A)	% control					
EPOST							
Volley+Buccaneer Plus+Array	1.5pt+1qt+9lb/100gal	99	99	99	99	99	99
Propel+Buccaneer Plus+Array	8oz+1qt+9lb/100gal	99	99	99	99	99	99
Volley ATZ Lite+Buccaneer Plus+Array	1.3qt+1qt+9lb/100gal	99	99	99	99	99	99
EPOST/POST							
Buccaneer Plus+Array/ Buccaneer Plus+Array	1qt+9lb/100gal/ 1qt+9lb/100gal	99	99	99	99	99	99
LSD (0.05)		4	3	3	2	4	4

[1]Array = AMS + deposition + retention + defoamer.

AE F039866 in corn. Zollinger, Richard K. and Jerry L. Ries. An experiment was conducted near Prosper, ND, to evaluate crop response and weed efficacy to an experimental corn herbicide. Pioneer '39D85' Liberty Link/Roundup Ready corn was planted on May 17, 2006. POST treatments were applied on June 13 at 1:00 pm with 74 F air, 88 F soil surface, 42% relative humidity, 0% cloud cover, 5 to 10 mph NE wind, dry soil surface, moist subsoil, excellent crop vigor, and no dew present to V2 to V3 (10 to 12 inch) corn. Species at time of application were: 2 to 5 inch (10 to 75/ft^2) yellow foxtail; 1 to 4 inch (2 to 25/yd^2) hairy nightshade; 1 to 3 inch (3 to 5/yd^2) common lambsquarters; 2 to 4 inch (1 to 3/yd^2) common ragweed; 2 to 8 inch (1 to 5/yd^2) wild mustard; 2 to 4 inch (3 to 5/yd^2) redroot pigweed; and 2 to 5 inch (1 to 5/yd^2) common cocklebur. Treatments were applied to the center 6.7 feet of the 10 by 40 foot plots with a backpack-type plot sprayer delivering 8.5 gpa at 40 psi through 11001 Turbo TeeJet flat-fan nozzles. The experiment had randomized complete block design with three replicates per treatment.

No corn injury was observed. On June 27 (14 DAT) and July 11 (28 DAT), all treatments controlled yellow foxtail, wild mustard, redroot pigweed, common lambsquarters, hairy nightshade, common ragweed, and common cocklebur. All treatments provided over-kill even though weed pressure was high and size was large. Rates were of individual herbicides were too high for treatment separation. (Dept of Plant Sciences, North Dakota State University, Fargo).

Table. AE F039866 in corn (Zollinger and Ries).

		8 and 14 DAT	14 and 28 DAT						
Treatment[1]	Rate	corn	Yeft	Wimu	Rrpw	Colq	Hans	Corw	Cocb
	(product/A)	---- % inury ----	---------- % control ----------						
Liberty+AMS	32fl oz+3lb	0	99	99	99	99	99	99	99
Liberty+AMS	64fl oz+3lb	0	99	99	99	99	99	99	99
AE F039866+AMS	22fl oz+3lb	0	99	99	99	99	99	99	99
AE F039866+AMS	44fl oz+3lb	0	99	99	99	99	99	99	99
Liberty+Atrazine+AMS	32fl oz+0.56lb+3lb	0	99	99	99	99	99	99	99
AE F039866+Atrazine+AMS	22fl oz+0.56lb+3lb	0	99	99	99	99	99	99	99
Untreated		0	0	0	0	0	0	0	0
LSD (0.05)		NS	NS	NS	NS	NS	NS	NS	NS

[1]AMS = ammonium sulfate.

HPPD inhibitors in corn. Zollinger, Richard K. and Jerry L. Ries. An experiment was conducted near Prosper, ND, to evaluate weed control from HPPD inhibitor type herbicides. DeKalb 'DKC35-51' corn was planted on May 17, 2006. POST treatments were applied on June 13 at 7:45 pm with 74 F air, 68 F soil surface, 46% relative humidity, 10% cloud cover, 5 to 9 mph NE wind, dry soil surface, moist subsoil, excellent crop vigor, and no dew present to V4 (8 to 12 inch) corn. Weed species present were: 1 to 5 inch (5 to 30/ft^2) yellow foxtail; 1 to 4 inch (10 to 30/yd^2) wild mustard; 1 to 2 inch (1 to 3/yd^2) common lambsquarters; 1 to 2 inch (1 to 2/yd^2) redroot pigweed; 1 to 2 inch (1 to 3/yd^2) hairy nightshade; 1 to 4 inch (1 to 20/yd^2) kochia; 1 to 3 inch (5 to 25/yd^2) common ragweed; and 1 to 4 inch (1 to 20/yd^2) wild buckwheat; 1 to 3 inch (5 to 25/yd^2) common cocklebur. Treatments were applied to the center 6.7 feet of the 10 by 40 foot plots with a backpack-type plot sprayer delivering 8.5 gpa at 40 psi through 11001 Turbo TeeJet flat-fan nozzles. The experiment had randomized complete block design with three replicates per treatment.

Callisto (mesotrione), Laudis (AE 0172747, tembotrione), and Impact (topramezone) are HPPD inhibitor mode of action herbicides and are enhanced by oil adjuvants. The solubility of, at least, Impact and Callisto, increase as water solution pH increases, making enhancement from basic pH blend (Quad 7) adjuvants possible. A nitrogen source is included in the Quad 7 and Renegade formulations. All treatments completely controlled redroot pigweed, common lambsquarters, wild mustard, kochia, hairy nightshade, and common cocklebur. Rates were 0.75X and 1X of labeled or anticipated rates. 1X rates gave greater weed control than 0.75X rates. MSO enhanced weed control more than Quad 7 (basic pH blend) or Renegade (MSO + basic pH blend). It is not know why Renegade did not enhance weed control greater than MSO + 28%. Control of yellow foxtail and common ragweed was greater with Laudis and Impact compared to Callisto. Wild buckwheat control was not greater than 40% for any treatment. (Dept. of Plant Sciences, North Dakota State University, Fargo).

Table. HPPD inhibitors in corn. (Zollinger and Ries).

		14 DAT			28 DAT		
Treatment[1]	Rate	Yeft	Wibw	Corw	Yeft	Wibw	Corw
	(product/A)	---------- % ----------			---------- % ----------		
Callisto +	2 fl oz						
Quad 7	1% v/v	60	33	47	63	30	47
MSO+28% N	1.5 pt+2.5% v/v	79	40	50	67	40	50
Renegade	1.5 pt	70	30	53	57	30	50
Callisto +	3 fl oz						
Quad 7	1% v/v	73	40	50	67	40	50
MSO+28% N	1.5 pt+2.5% v/v	90	40	63	73	40	53
Renegade	1.5 pt	78	40	50	72	40	50
Laudis (AE 0172747) +	2 fl oz						
Quad 7	1% v/v	88	40	57	77	40	90
MSO+28% N	1.5 pt+2.5% v/v	93	37	67	83	37	93
Renegade	1.5 pt	89	37	53	79	37	90
Laudis (AE 0172747) +	3 fl oz						
Quad 7	1% v/v	82	40	53	83	40	90
MSO+28% N	1.5 pt+2.5% v/v	94	40	77	94	40	95
Renegade	1.5 pt	94	40	82	86	40	90
Impact	0.5 fl oz						
Quad 7	1% v/v	91	40	70	90	30	97
MSO+28% N	1.5 pt+2.5% v/v	96	40	83	96	30	97
Renegade	1.5 pt	91	40	78	87	30	93
Impact	0.75 fl oz						
Quad 7	1% v/v	90	40	75	90	40	95
MSO+28% N	1.5 pt+2.5% v/v	94	40	82	94	40	97
Renegade	1.5 pt	94	40	80	90	40	93
LSD (0.05)		4	4	7	4	3	5

[1]Quad 7 = basic pH blend; MSO = methylated seed oil = Scoil; 28% N = 28-0-0 nitrogen; Renegade = MSO basic pH blend.

HPPD inhibitor tank-mixes in corn. Zollinger, Richard K. and Jerry L. Ries. An experiment was conducted near Prosper, ND, to evaluate weed control from HPPD inhibitor tank-mixes. DeKalb 'DKC35-51' corn was planted on May 17, 2006. POST treatments were applied on June 13 at 8:10 pm with 73 F air, 66 F soil surface, 46% relative humidity, 10% cloud cover, 4 to 8 mph NE wind, dry soil surface, moist subsoil, excellent crop vigor, and no dew present to V4 to V5 (10 to 14 inch) corn. Weed species present were: 1 to 5 inch (3 to 75/ft^2) yellow foxtail; 1 to 2 inch (1 to 2/yd^2) wild mustard; 1 to 4 inch (1 to 3/yd^2) kochia; 1 to 2 inch (5 to 10/yd^2) common lambsquarters; 1 to 4 inch (5 to 50/yd^2) redroot pigweed; 1 to 2 inch (1 to 3/yd^2) hairy nightshade; 1 to 3 inch (5 to 25/yd^2) common ragweed, 1 to 4 inch (1 to 20/yd^2) wild buckwheat; and 1 to 3 inch (5 to 25/yd^2) common cocklebur. Treatments were applied to the center 6.7 feet of the 10 by 40 foot plots with a backpack-type plot sprayer delivering 8.5 gpa at 40 psi through 11001 Turbo TeeJet flat-fan nozzles. The experiment had randomized complete block design with three replicates per treatment.

All treatments completely controlled redroot pigweed, common lambsquarters, wild mustard, kochia, hairy nightshade, wild buckwheat, and common cocklebur. The weed density was much higher in planter wheel tracks. Rates were 1X of labeled rates. Callisto (mesotrione), Laudis (AE 0172747, tembotrione), and Impact (topramezone) are all HPPD inhibitor mode of action herbicides and are enhanced by oil adjuvants. Laudis and Impact treatments gave greater weed control than Callisto treatments. Earlier observations with Callisto have found that a low rate of atrazine enhances weed control from HPPD herbicides. Atrazine applied with HPPD herbicides provides complete control of wild buckwheat compared to no atrazine (data from HPPD herbicides applied alone not included). In-Place is a deposition + drift retardant type adjuvant and may increase weed control by depositing more herbicide to plants. Generally, In-Place adjuvant enhanced weed control more compared to adding Option herbicide. (Dept. of Plant Sciences, North Dakota State University, Fargo).

Table. HPPD inhibitor tank-mixes in corn (Zollinger and Ries).

		14 DAT		28 DAT	
Treatment[1]	Rate	Yeft	Corw	Yeft	Corw
	(product/A)	---------- % ----------		---------- % ----------	
Callisto+Renegade	3fl oz + 1.5pt	70	60	57	57
Callisto+Atrazine+Renegade	3fl oz+0.42lb+1.5pt	77	96	81	95
Callisto+Atrazine+Renegade+ In-Place	3fl oz+0.42lb+1.5pt+ 0.75fl oz	86	99	90	99
Option+Callisto+Atrazine+ Renegade	1.5oz+3fl oz+0.42lb+ 1.5pt	79	99	77	99
Impact+Renegade	0.75fl oz+1.5pt	85	70	89	94
Impact+Atrazine+Renegade	0.75fl oz+0.42lb+1.5pt	88	90	92	95
Impact+Atrazine+Renegade+ In-Place	0.75fl oz+0.42lb+1.5pt+ 0.75fl oz	87	95	97	95
Option+Impact+Atrazine+ Renegade	1.5oz+0.75fl oz+0.42lb+ 1.5pt	91	95	90	95
Laudis (AE 0172747)+Renegade	3fl oz+1.5pt	87	85	89	95
Laudis (AE 0172747)+Atrazine+ Renegade	3fl oz+0.42lb+ 1.5pt	92	95	92	96
Laudis (AE0172747)+Atrazine+ Renegade+In-Place	3fl oz+0.42lb+1.5pt+ 0.75fl oz	97	98	97	98
Option+Laudis (AE0172747)+Atrazine+ Renegade	1.5oz+3fl oz+0.42lb+ 1.5pt	90	99	94	99
LSD (0.05)		5	2	5	3

[1]Renegade = MSO (methylated seed oil) basic pH blend; In-Place = deposition + drift retardants.

Stout tank-mixes in corn. Zollinger, Richard K. and Jerry L. Ries. An experiment was conducted near Leonard, ND, to evaluate grass control in corn. Golden Harvest '6757' corn was planted on April 27, 2006. POST treatments were applied on June 9 at 9:30 am with 59 F air, 58 F soil surface, 92% relative humidity, 100% cloud cover, 4 to 7 mph NE wind, moist soil surface, moist subsoil, excellent crop vigor, and dew present to V5 to V6 (8 to 14 inch) corn. Weed species present were: 2 to 6 inch (1 to 8/ft^2) yellow foxtail. Treatments were applied to the center 6.7 feet of the 10 by 40 foot plots with a backpack-type plot sprayer delivering 8.5 gpa at 40 psi through 11001 Turbo TeeJet flat-fan nozzles. The experiment had randomized complete block design with three replicates per treatment.

Accent + Harmony GT is formulated as the commercial product Stout. There was no corn injury from any treatment. At June 16, corn was V4-V5 and 18-24 inches tall. Escaped grass weeds were 1 to 6 inches tall. All treatments controlled common lambsquarters. Herbicides that enhanced Accent and Steadfast were Callisto + atrazine and Impact + atrazine. (Dept. of Plant Sciences, North Dakota State University, Fargo).

Table. Stout tank-mixes in corn (Zollinger and Ries).

Treatment[1]	Rate	14 DAT	28 DAT	56 DAT
		Yeft	Yeft	Yeft
	(product/A)	- % control -	- % control -	- % control -
Accent+Harmony GT+PO+AMS	0.45oz+0.05oz+1% v/v+2lb	57	53	50
Accent+Harmony GT+PO+AMS	0.67oz+0.075oz+1% v/v+2lb	63	68	69
Accent+Harmony GT+Callisto+ PO+AMS	0.45oz+0.05oz+1.5fl oz+ 1% v/v+2lb	40	43	40
Accent+Harmony GT+Callisto+ PO+AMS	0.67oz+0.075oz+1.5fl oz+ 1% v/v+2lb	47	43	45
Accent+Harmony GT+Callisto+Atrazine+ PO+AMS	0.45oz+0.05oz+1.5fl oz+0.56lb 1% v/v+2lb	58	63	67
Accent+Harmony GT+Callisto+Atrazine+ PO+AMS	0.67oz+0.075oz+1.5fl oz+0.56lb 1% v/v+2lb	78	74	77
Accent+Harmony GT+Atrazine+ PO+AMS	0.45oz+0.05oz+0.56lb 1% v/v+2lb	55	50	48
Accent+Harmony GT+Atrazine+ PO+AMS	0.67oz+0.075oz+0.56lb 1% v/v+2lb	63	67	68
Accent+Harmony GT+Impact+ PO+AMS	0.45oz+0.05oz+0.75fl oz+ 1% v/v+2lb	47	42	49
Accent+Harmony GT+Impact+ PO+AMS	0.67oz+0.075oz+0.75fl oz+ 1% v/v+2lb	50	47	58
Accent+Harmony GT+Impact+Atrzazine PO+AMS	0.45oz+0.05oz+0.75fl oz+0.56lb 1% v/v+2lb	69	74	79
Accent+Harmony GT+Impact+Atrzazine PO+AMS	0.67oz+0.075oz+0.75fl oz+0.56lb 1% v/v+2lb	68	74	88
Steadfast+Callisto+Atrazine+ PO+AMS	0.75oz+1.5fl oz+0.56lb+ 1% v/v+2lb	78	83	81
Accent+Harmony GT+Clarity+ PO+AMS	0.45oz+0.05oz+4fl oz+ 1% v/v+2lb	52	62	60
Accent+Harmony GT+Clarity+ PO+AMS	0.67oz+0.075oz+4fl oz+ 1% v/v+2lb	59	55	58
Accent+Harmony GT+Lumax+ PO+AMS	0.45oz+0.05oz+2pt+ 1% v/v+2lb	57	63	68
Accent+Harmony GT+Lumax+ PO+AMS	0.67oz+0.075oz+2pt+ 1% v/v+2lb	68	72	79
Accent+Harmony GT+Lexar+ PO+AMS	0.45oz+0.05oz+2.3pt+ 1% v/v+2lb	63	75	77
Accent+Harmony GT+Lexar+ PO+AMS	0.67oz+0.075oz+2.3pt+ 1% v/v+2lb	63	72	75
Accent+Harmony GT+Distinct+ PO+AMS	0.45oz+0.05oz+2oz+ 1% v/v+2lb	50	60	65
Accent+Harmony GT+Distinct+ PO+AMS	0.67oz+0.075oz+2oz+ 1% v/v+2lb	63	75	77
LSD (0.05)		7	12	12

[1]PO = petroleum oil concentrate = Herbimax; AMS = ammonium sulfate.

Yellow foxtail control in corn. Zollinger, Richard K. and Jerry L. Ries. An experiment was conducted near Leonard, ND, to evaluate weed control from POST applications in corn. Golden Harvest '6757' corn was planted on April 27, 2006. POST treatments were applied on June 9 at 9:45 am with 59 F air, 57 F soil surface, 94% relative humidity, 100% cloud cover, 4 to 7 mph NE wind, moist soil surface, moist subsoil, excellent crop vigor, and dew present to V5 to V6 (8 to 14 inch) corn. Weed species present were: 2 to 6 inch (1 to 8/ft^2) yellow foxtail. Treatments were applied to the center 6.7 feet of the 10 by 40 foot plots with a backpack-type plot sprayer delivering 8.5 gpa at 40 psi through 11001 Turbo TeeJet flat-fan nozzles. The experiment had randomized complete block design with three replicates per treatment.

In 2005, we observed thifensulfuron (Harmony GT) and halosulfuron (Permit) enhance yellow foxtail control from Accent and Steadfast. This study was conducted to test these observations. Yellow foxtail pressure was very high. On June 16, (7 DAT), there was no corn injury from herbicide treatments (data not shown) but there was significant stunting and yellowing from severe foxtail competition. Thifensulfuron enhanced Accent (nicosulfuron) and Resolve (rimsulfuron) but not Steadfast (nicosulfuron + rimsulfuron), perhaps because Steadfast without thifensulfuron gave greater yellow foxtail control than Accent alone. Thifensulfuron antagonized Option (formasulfuron). Permit (Halosulfuron) did not influence yellow foxtail control from Accent, Steadfast, or Resolve but antagonized control from Option. (Dept. of Plant Sciences, North Dakota State University, Fargo).

Table. Yellow foxtail control in corn (Zollinger and Ries).

Treatment[1]	Rate	14 DAT	28 DAT	56 DAT
		Yeft	Yeft	Yeft
	(product/A)	--- % ---	--- % ---	--- % ---
Accent+MSO+28% N	0.5oz+1.5pt+1.5qt	64	67	65
Accent+Harmony GT+ MSO+28% N	0.5oz+0.05oz+ 1.5pt+1.5qt	69	92	90
Accent+Permit+ MSO+28% N	0.5oz+0.67oz+ 1.5pt+1.5qt	65	70	68
Steadfast+MSO+28% N	0.75oz+1.5pt+1.5qt	77	82	81
Steadfast+Harmony GT+ MSO+28% N	0.75oz+0.05oz+ 1.5pt+1.5qt	77	86	82
Steadfast+Permit+ MSO+28% N	0.75oz+0.67oz+ 1.5pt+1.5qt	80	90	91
Option+MSO+28% N	1.5oz+1.5pt+1.5qt	67	86	82
Option+Harmony GT+ MSO+28% N	1.5oz+0.05oz+ 1.5pt+1.5qt	65	72	71
Option+Permit+ MSO+28% N	1.5oz+0.67oz+ 1.5pt+1.5qt	62	70	71
Resolve+MSO+28% N	1oz+ 1.5pt+1.5qt	74	68	65
Resolve+Harmony GT+ MSO+28% N	1oz+0.05oz+ 1.5pt+1.5qt	74	87	84
Resolve+Permit+ MSO+28% N	1oz+0.67oz+ 1.5pt+1.5qt	68	71	70
LSD (0.05)		5	9	8

[1]MSO = methylated seed oil = Scoil; 28% N = 28-0-0.

KIH-485 carryover to rotational crops. Zollinger, Richard K. and Jerry L. Ries. Experiments were conducted near Alice, ND, to evaluate crop response in 2006 to KIH-485 applied PRE in 2005. At Alice, KIH-485 PRE treatments were applied on May 6, 2005 at 12:00 with 68 F air, 51 F soil at a four inch depth, 7% relative humidity, 0% cloud cover, 3 to 8 mph SW wind, dry soil surface and moist subsoil. Soil characteristics were 31.3% sand, 55.8% silt, 12.9% clay, silt loam texture, 5.8% OM, and 7.3 pH.

Treatments were applied to the entire area of the 20 by 50 foot plots with a bicycle-type plot sprayer with an attached 6 nozzle, ten foot boom, delivering 17 gpa at 40 psi through 8002 TeeJet flat-fan nozzles. The experiment had randomized complete block design with three replicates per treatment.

The study was maintained in 2005 by several mowings and tilled with a field cultivator parallel with the plot lengths to minimize soil contamination into adjacent plots in the fall. Before planting of species in May of 2006, the field was lightly tilled with a field cultivator parallel with the plot lengths to prepare the seedbed for planting. On May 30, 2006, 'Briggs' wheat, 'Drummond' barley, 'Maverick' pinto dry bean, 'Ensign' navy dry bean, 'Carter' flax, Crystal 'R431' sugarbeet, 'Rider' canola, and Pioneer '63M80' sunflower were planted perpendicular to each plot length.

On June 12, emergence was excellent for all crops including sugarbeet and canola. There was no injury but crops were small at this evaluation. In the second rep a very slight reduction in growth was observed with all treatments compared to the untreated check. Wheat was 2-leaf, barley was 2-leaf, flax was cotyledon, sugarbeet was cotyledon, sunflower was 2-leaf, dry bean (Pinto and Navy) was unifoliate, and canola was cotyledon.

On July 7, no injury was observed.

On August 9, there was no injury. All crops were in reproductive stage of flowering or setting seed. There was no stunting or delay in physiological maturity. (Dept. of Plant Sciences, North Dakota State University, Fargo).

Table. KIH-485 carryover to rotational crops, Alice (Zollinger and Ries).

		13, 14, and 15 MAT							
Treatment	Rate	Wheat	Barley	Sgbt[1]	Flax	Pinto	Navy	Snfl[3]	Canola
	(product/A)	% injury							
KIH-485	2.5oz	0	0	0	0	0	0	0	0
KIH-485	4.97oz	0	0	0	0	0	0	0	0
KIH-485	9.9oz	0	0	0	0	0	0	0	0
Dual II Magnum	1.67pt	0	0	0	0	0	0	0	0
Harness	2.27pt	0	0	0	0	0	0	0	0
Untreated		0	0	0	0	0	0	0	0
LSD (0.05)		NS	NS	NS	NS	NS	NS	NS	NS

[1]MAT = months after treatment. [2]Sgbt = sugarbeet. [3]Snfl = sunflower.

Glyphosate plus T101. Zollinger, Richard K. and Jerry L. Ries. An experiment was conducted near Prosper, ND, to evaluate weed efficacy. Post treatments were applied on June 20, 2006 at 9:15 am with 65 F air, 72 F soil surface, 89 % relative humidity, 100% cloud cover, 2 to 5 mph S wind, dry soil surface, moist subsoil, and no dew present to non-cropland. Weed species present were: 4 to 8 inch (1 to 10/ft^2) wild mustard; 2 to 6 inch (5 to 30/ft^2) yellow foxtail; 3 to 10 inch (5 to 25/yd^2) redroot pigweed; 1 to 4 inch (1 to 5/yd^2) hairy nightshade; 1 to 4 inch (1 to 5/yd^2) kochia, 1 to 4 inch (1 to 5/yd^2) common ragweed; and 1 to 4 inch (1 to 5/yd^2) common lambsquarters. Treatments were applied to the center 6.7 feet of the 10 by 40 foot plots with a backpack-type plot sprayer delivering 8.5 gpa at 40 psi through 11001 Turbo TeeJet flat-fan nozzles. The experiment had randomized complete block design with three replicates per treatment.

All treatments containing glyphosate resulted in complete weed control. Butyrac or T-101 did not provide any control. (Dept. of Plant Sciences, North Dakota State University, Fargo).

Table. Glyphosate plus T101 (Zollinger and Ries).

		14 DAT							28 DAT						
Treatment	Rate	Yeft	Wimu	Rrpw	Colq	Hans	Koch	Corw	Yeft	Wimu	Rrpw	Colq	Hans	Koch	Corw
	(product/A)	% control							% control						
Roundup Original Max	11 fl oz	99	99	99	99	99	99	99	99	99	87	95	79	99	85
Butyrac	1.44floz	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T101	0.48oz	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Roundup Original Max+T101	11 fl oz+1.44oz	99	99	99	99	99	99	99	99	99	96	99	83	99	96
Roundup Original Max+T101	11 fl oz+0.48oz	99	99	99	99	99	99	99	99	99	89	99	90	99	99
Butyrac	2.16fl oz	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T101	0.72oz	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Roundup Original Max+T101	11 fl oz+2.16oz	99	99	99	99	99	99	99	99	99	91	96	95	99	93
Roundup Original Max+T101	11 fl oz+0.72oz	99	99	99	99	99	99	99	99	99	97	99	90	99	97
LSD (0.05)		0	0	0	0	0	0	0	0	0	2	1	2	0	6

Glyphosate plus Pursuit formulations. Zollinger, Richard K. and Jerry L. Ries. An experiment was conducted near Casselton, ND, to evaluate species efficacy when applied PRE and POST. Pioneer '39F27' corn, 'Steele' wheat, 'Carter' flax, Pioneer '63M80' sunflower, 'Quinoa' (*Chenopodium quinoa*), and 'Plainsman' amaranth were planted perpendicular to each plot length on July 3, 2006 for PRE treatments and May 30 for POST treatments. PRE treatments were applied on July 3 at 10:30 am with 76 F air, 94 F soil surface, 27% relative humidity, 0% cloud cover, 4 to 6 mph N wind, dry soil surface, moist subsoil, and no dew present. Soil characteristics were 8.4% sand, 50.4% silt, 41.3% clay, silty clay texture, 6.1% OM, and pH 7.3. POST treatments were applied on June 28 at 11:30 am with 81 F air, 95 F soil surface, 35% relative humidity, 0% cloud cover, 2 to 5 mph E wind, dry soil surface, moist subsoil, excellent crop vigor, and no dew present. Species stages at time of application were: V3 to V5 (15/ft^2) corn; 6 to 12 inch (15 to 20/ft^2) wheat; 2 to 6 inch (20 to 30/ft^2) flax; V4 to V8 (5 to 10/ft^2) sunflower; 6 to 8 inch (10 to 25/ft^2) quinoa; and 2 to 6 inch (20 to 30/ft^2) amaranth. Treatments were applied to the center 6.7 feet of the 10 by 40 foot plots with a backpack-type plot sprayer delivering 17 gpa at 40 psi through 11002 Turbo TeeJet flat-fan nozzles for PRE treatments and 8.5 gpa at 40 psi through 11001 Turbo TeeJet flat-fan nozzles for POST treatments. The experiment had randomized complete block design with three replicates per treatment. (Dept. of Plant Sciences, North Dakota State University, Fargo).

Table. Glyphosate plus Pursuit formulations (Zollinger and Ries).

		14 DAE - PRE						28 DAE - PRE					
Treatment	Rate	Wheat	Flax	Amar[1]	Quinoa	Snfl[2]	Corn[3]	Wheat	Flax	Amar	Quinoa	Snfl	Corn
	(product/A)	% control						% control					
PRE													
Glyfos Xtra+Pursuit	1qt+2fl oz	30	40	63	78	17	3	53	47	57	73	30	23
Glyfos Xtra+Pursuit	1qt+3fl oz	43	65	57	70	67	7	65	67	53	77	67	22
Extreme	3pt	40	63	50	70	53	7	52	68	50	83	57	22
LSD (0.05)		8	13	19	21	15	27	10	6	9	11	15	9

[1]Amar = amaranth, [2]Snfl = sunflower, [3]Corn = conventional corn.

Table cont. Glyphosate plus Pursuit formulations (Zollinger and Ries).

		14 DAT- POST						28 DAT - POST					
Treatment	Rate	Wheat	Flax	Amar[1]	Quinoa	Snfl[2]	Corn[3]	Wheat	Flax	Amar	Quinoa	Snfl	Corn
	(product/A)	% control						% control					
POST													
Glyfos Xtra+Pursuit	1qt+2fl oz	99	94	99	99	96	95	99	99	99	99	98	92
Glyfos Xtra+Pursuit	1qt+3fl oz	99	94	98	99	95	93	99	99	99	99	97	93
Extreme	3pt	99	96	98	83	87	93	99	99	98	98	97	99
LSD (0.05)		0	7	2	3	7	7	0	0	3	4	6	5

[1]Amar = amaranth, [2]Snfl = sunflower, [3]Corn = conventional corn.

PRE/Post treatments in Roundup Ready soybean. Zollinger, Richard K. and Jerry L. Ries. An experiment was conducted near Prosper, ND, to evaluate weed efficacy in soybean. Asgrow 'AG0801' soybean was planted on May 23, 2006. PRE treatments were applied on May 25 at 5:30 pm with 56 F air, 61 F soil at a four inch depth, 96% relative humidity, 100% cloud cover, 7 to 10 mph N wind, moist subsoil, and dry soil surface. Soil characteristics were 31.8% sand, 44.2% silt, 24.1% clay, loam texture, 4.6% OM, pH 6.0. POST treatments were applied on June 20 at 9:30 pm with 65 F air, 69 F soil surface, 80% relative humidity, 100% cloud cover, 1 to 4 mph S wind, dry soil surface, moist subsoil, excellent crop vigor, and no dew present to V3 soybean. Weed species present at time of application for treatments with PRE's were: 1 to 5 inch (1 to 10/ft^2) yellow foxtail; 1 to 3 inch (to 30/yd^2) common lambsquarters; 1 to 2 inch (1 to 3/yd^2) hairy nightshade; 1 to 3 inch (1 to 3/yd^2) redroot pigweed; 1 to 3 inch (1/yd^2) common cocklebur; and 1 to 2 inch (1/yd^2) common ragweed. Weed species present at time of application for POST only treatments were: 1 to 7 inch (5 to 25/ft^2) yellow foxtail; 2 to 6 inch (5 to 20/ft^2) common lambsquarters; 1 to 3 inch (5 to 10/ft^2) hairy nightshade; 1 to 3 inch (1 to 5/ft^2) redroot pigweed; 4 to 10 inch (5 to 15/yd^2) common cocklebur; and 2 to 5 inch (5 to 20/yd^2) common ragweed. Treatments were applied to the center 6.7 feet of the 10 by 40 foot plots with a backpack-type plot sprayer delivering 17 gpa at 40 psi through 11002 Turbo TeeJet flat-fan nozzles for PRE treatments and 8.5 gpa at 40 psi through 11001 Turbo TeeJet flat-fan nozzles for POST treatments. The experiment had randomized complete block design with three replicates per treatment.

Dry conditions reduced weed control from soil applied herbicides. Treatments containing glyphosate controlled all weeds. (Dept. of Plant Sciences, North Dakota State University, Fargo).

Table. PRE/Post treatments in Roundup Ready soybean (Zollinger and Ries).

		27 DAT - PRE					14 DAT					28 DAT				
Treatment[1]	Rate	Fxtl	Rrpw	Colq	Hans	Cocb	Fxtl	Rrpw	Colq	Hans	Cocb	Fxtl	Rrpw	Colq	Hans	Cocb
	(product/A)	% control					% control					% control				
PRE																
Domain+Encompass	12oz+2oz	94	98	98	98	32	63	50	57	57	23	62	43	50	50	17
Acumen	1.5pt	78	22	22	22	0	83	0	7	0	0	83	0	0	0	0
Propel	18 fl oz	72	66	55	60	0	78	17	20	47	0	80	13	17	43	0
PRE/POST																
Domain/Buccaneer Plus+Array	10oz/1qt+9lb/100gal	68	63	62	53	20	99	99	99	99	99	99	99	99	99	99
Domain/Buccaneer Plus+Array	12oz/1qt+9lb/100gal	74	68	68	62	25	99	99	99	99	99	99	99	99	99	99
Domain/Buccaneer Plus+Array	14oz/1qt+9lb/100gal	71	71	64	62	23	99	99	99	99	99	99	99	99	99	99
Domain/Buccaneer Plus+Array	16oz/1qt+9lb/100gal	71	65	65	61	25	99	99	99	99	99	99	86	99	99	99
Encompass/Volunteer+PO+AMS	3oz/6fl oz+1qt+9lb/100gal	86	98	98	98	37	99	70	63	78	47	99	63	50	82	40
Domain+Encompass/ Buccaneer Plus+Array	12oz+2oz/ 1qt+9lb/100gal	85	98	98	98	37	99	99	99	99	99	99	99	99	99	99
Propel/Buccaneer Plus+Array	8fl oz/1qt+9lb/100gal	70	67	67	67	0	99	99	99	99	99	99	99	99	99	99
Domain+Acumen/ Buccaneer Plus+Array	12 oz+1qt/ 1qt+9lb/100gal	78	75	75	75	20	99	99	99	99	99	99	99	99	99	99
Encompass/Buccaneer Plus+Array	2oz/1qt+9lb/100gal	72	93	93	91	20	99	99	99	99	99	99	99	99	99	99
POST																
Buccaneer Plus+Array	1qt+9lb/100gal	-	-	-	-	-	99	99	99	99	99	99	99	99	99	99
Propel+Buccaneer Plus+Array	8fl oz+1qt+9lb/100gal	-	-	-	-	-	99	99	99	99	99	99	99	99	99	99
LSD (0.05)		5	5	5	4	5	4	5	7	6	7	2	10	3	3	3

[1]Array = AMS + deposition + retention + defoamer; PO = petroleum oil concentrate = Herbimax; AMS = ammonium sulfate.

Table 2. STS/RR soybean response to herbicides.

Herbicide[1]		Soybean	
Treatment	Rate	Physiological maturity	Seed yield
	product/A	Jday	lb/A
Untreated check	x	x	x
Harmont GT + glyt + AMS	0.5 oz + 24 fl oz	257	28
Glyphosate + AMS/glyt + AMS	24/24 fl oz	257	26
C.V. (%)		0	17.8
LSD (0.05)		NS	NS

[1]Treatments: Glyphosate=Buccaneer Plus, 3 lb ae/gal with full-load adjuvant from Tenkoz; AMS at 64 fl oz/A. Treatments applied June 12 and July 10.

Weed management in STS/RR soybean, Carrington, 2006. Gregory J. Endres. The trial had a randomized complete block design with four replicates. The trial was conducted under conventional-till with lupin as the previous crop on a loam soil with 6.8 pH and 3.1% organic matter at the NDSU Carrington Research Extension Center. 'Clearfield' canola seed was scattered throughout trial prior to soybean planting to add volunteer canola as a weed species in the trial. Peterson Farm Seeds '0605 STS/RR' was planted at 175,000 pls/A in 7-inch rows on May 17. Herbicide treatments were applied to 5 by 25 ft plots with a CO_2 pressurized hand-held plot sprayer at 10 gal/A and 35 psi through 8001 flat fan nozzles. Initial POST treatments were applied on June 12 with 71 F, 65% RH, 70% clear sky, and 5 mph wind to V1-stage soybean, 2- to 4-leaf volunteer 'Clearfield' canola, 0.5- to 6-inch tall common lambsquarters, 0.5-inch tall redroot and prostrate pigweed, 1- to 6-inch tall kochia, 1- to 2-inch tall hairy and Eastern black nightshade, and seedling- to bud-stage Canada thistle. The second POST timing (sequential glyphosate) was applied on July 10 with 62 F, 72% RH, 80% clear sky, and 6 mph wind to R2-stage soybean, 3- to 6-leaf volunteer 'Clearfield' canola, 1- to 6-inch tall common lambsquarters, 1- to 4-inch tall redroot and prostrate pigweed, 2- to 4-inch tall hairy and Eastern black nightshade, 2- to 10-inch diameter common purslane, and bud-stage Canada thistle. The trial was harvested with a plot combine on October 6.

Weed control was excellent with both treatments during the June 26 visual evaluation (Table 1). The July 27 evaluation indicated an advantage for control of kochia and nightshade species with sequential glyphosate, while Harmony GT + glyphosate provided improved control of common purslane. No crop injury was detected from herbicides (data not shown). Soybean development from planting to first flower and physiological maturity was similar between herbicide treatments (Table 2). Seed yield also was similar between herbicide treatments. The untreated check was not harvested due to very high weed density.

Table 1. Weed control in STS/RR soybean.

Herbicide[2]		Weed control[1]												
		6/26						7/27						
Treatment	Rate	voca	colq	kochia	nish	piwe	cath	voca	colq	kochia	nish	piwe	cath	copu
	product/A	%												
Untreated check	x	0	0	0	0	0	0	0	0	0	0	0	0	0
Harmont GT + glyt + AMS	0.5 oz + 24 fl oz	93	99	97	94	99	93	85	85	60	77	96	88	89
Glyphosate + AMS/glyt + AMS	24/24 fl oz	96	96	99	92	98	92	93	87	99	89	99	87	63
C.V. (%)		2.9	2.8	2.0	3.2	1.5	3.2	11.4	14.5	33.3	10.5	4.1	22.1	21.4
LSD (0.05)		3	3	2	3	2	4	12	14	32	10	5	25	19

[1]voca=volunteer 'Clearfield' canola; colq=common lambsquarters; nish=hairy and Eastern black nightshade; piwe=prostrate and redroot pigweed; cath=Canadian thistle; copu=common purslane.

[2]Treatments: Glyphosate=Buccaneer Plus, a 3 lb ae/gal with full-load adjuvant from Tenkoz; AMS at 64 fl oz/A. Treatments applied June 12 and July 10.