

NOT FOR PUBLICATION
SUMMARY OF 2012
WEED CONTROL EXPERIMENTS

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Fargo, North Dakota

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METHODS

EPP = Early preplant	MPOST = Mid postemergence
PPI = Preplant incorporated	LPOST = Late postemergence
PEI = Preemergence incorporated	LLPOST = Late-late postemergence
PRE, PE = Preemergence	P, PO, POST = Postemergence
EPOST = Early postemergence	POSTDIR = Postemergence Directed

FORMULATION

ACS = Aqueous capsule suspension	WBF = Water-based flowable
DF = Dry Flowable	WP = Wettable powder
E, EC = Emulsifiable concentrate	WG, WDG = Water dispersible granules
FL, F = Flowable	WSP, SP = Water Soluble powder
L = Liquid flowable	G = Granules or gallon/A
ME = Micro-encapsulated	S = Solution
	SG = Soluble granules

MISCELLANEOUS

F = Fall	AMS = ammonium sulfate
S = Spring	bee = butoxyethyl ester
Inc., I = Incorporation	dea = diethanolamine salt
Applic = Application	dga = diglycolamine
Cntl = Control	dma = dimethylamine salt
Inju = Injury	ioe = isooctyl ester
%ir, inju = Percent injury rating	MSO, MVO = methylated vegetable oil
%sr, %std, strd = Percent stand reduction	NIS = nonionic surfactant
HT = Plant height	PO, OC, POC = Petroleum oil concentrate (17% emulsifier)
SPK = Spike stage	SURF, S = Surfactant
Tswt, TW = Test weight	TMS = trimethylsulfonium salt
Yld = Yield	28N, UAN = 28% liquid nitrogen fertilizer
alk = alkanolamine salt	
AMN = ammonium nitrate	

KEY TO ABBREVIATIONS AND EVALUATIONS

Crop injury, crop stand and weed control ratings are based on a visual estimate using a scale of 0 = no effect to 100 = complete kill.

Alfa = Alfalfa	Nabe = Navy bean
Amar = Amaranth	Nfcf = Nightflowering catchfly
Barl, Bar = Barley	Oats = Tame oats
Bdlf = Broadleaf	Pagf = Pale goosefoot
Biww = Biennial wormwood	Pest = Perennial sowthistle
Bubu = Buffalobur	Pesw = Pennsylvania smartweed
Bygr = Barnyardgrass	Pibe = Pinto bean
Cath = Canada thistle	Pigw = Pigweed
Cano = Canola	Poam = Powell amaranth
Cocb = Common cocklebur	Pota = Potato
Colq = Common lambsquarters	Powe = Pondweed
Coma = Common mallow	Prle = Prickley lettuce
Copu = Common purslane	Prmi = Proso millet (tame)
Corw = Common ragweed	Prpw = Prostrate pigweed
Cram = Crambe	Prsp = Prostrate spurge
Cudo = Curly dock	Quin = Quinoa (chenopodium quinoa)
Dali = Dandelion	Qugr = Quackgrass
Dobr = Downy brome	Rrpw = Redroot pigweed
Drbe = Dry bean	Ruth = Russian thistle
Duru = Durum wheat	Safl, Saff = Safflower
Ebns = Eastern black nightshade	Shpu = Sheperdspurse
Fach = False chamomile	Smwe = Annual smartweed
Fibw = Field bindweed	Soyb, Sobe = Soybean
Fipc = Field pennycress	Spsp = Spotted spurge (prostrate spurge)
Fisb = Field sandbur	Sugb, Sglt = Sugarbeet
Flwe = Flixweed	Snfl, Sufl = Sunflower
Foba = Foxtail barley, Forage Barley	Swcl = Sweet clover
Fomi, Ftmi = Foxtail millet	Tabw = Tame buckwheat
Fota, Fxtl = Foxtail species	Tamu = Tansy mustard
Girw = Giant ragweed	Tumu = Tumble mustard
Grft = Green foxtail	Tymu = Tame yellow mustard
Gsft = Goosefoot	Vowh = Volunteer wheat
HNS, Hans = Hairy nightshade	Vele = Velvetleaf
Howe = Horseweed	Vema = Venice mallow
HRSW = Hard red spring wheat	Wahe=Waterhemp
KOCZ = Kochia	Wht = Volunteer wheat
Lath = Ladysthumb	Wibw = Wild buckwheat
Lent = Lentils	Wigr = witchgrass
Llsa = Lanceleaf sage	Wimu = Wild mustard
Mael = marshelder	Wioa = Wild oat
Mlfg = Mapleleaf goosefoot	Wipm = Wild-proso millet
Nabe = Navy bean goosefoot	Yeft = Yellow foxtail

Soil Test Results at Various Weed Experiment Locations						
	Soil Texture	Organic Matter	pH	lb/A N	PPM P K	
A. K. Eckre Grassland Preserve (ND)	Loamy sand	2.9	6.8	3	3	70
Absaraka, ND	Loam	2.0	7.2			
Bathgate, ND	Silty loam	6.5	7.9	242	38	550
Buffalo, ND (Zollinger, Soybean)	Loam	3.4-4.5	6.7-8.0			
Buffalo, ND (Zollinger, carryover)	Loam	3.9	7.9			
Casselton, ND	Silty clay	4.0	7.9	Fertilized by test		
Crookston	Clay	3.0	8.0	211	6	105
Dwight	Sandy Clay Loam	1.7	7.9	50	4	60
Eckelson, ND	Loam	8.0	7.3	20	5	515
Fargo, ND (campus)	Silty clay	6.8	7.2	Fertilized by test		
Fargo, ND (section 22)	Silty clay	4.5-6.0	7.5	Fertilized by test		
Geneseo, ND	Loam	6.0	4.0			
Glyndon, MN		4.6	8.1	Fertilized by test		
Hatton	Silt Loam	2.5	5.8	42	25	175
Hickson	Clay	7.2	7.5	103	55	975
Hillsboro, ND	Loam	4.1	7.7	132	7	210
Hillsboro, ND (Zollinger)	Silt Loam	4.9	6.2	131	18	205
Hawley, MN	Loam	2.2	8.5	3	4	105
Hettinger, ND	Silty loam	2.9	6.7	Fertilized by test		
Holloway, MN (Stachler)	Clay	6.0	7.8	139	14	175
Inkster, ND	Loamy sand	2.1	6.0			
Jamestown, ND (Pipestream Dam)	Loam	6.8	6.8	28	5	290
Lisbon	Silt	2.2	7.2	106	46	175
Mayville, ND (Stachler)	Sandy clay loam	2.2	6.3	135	25	165
Mayville, ND (Zollinger)	Silt loam	3.3	6.7	82	31	145
Minot, ND	Loam	2.7	7.0	Fertilized by test		
Moorhead, MN	Loam	4.9	7.9	186	104	495
Oakes, ND	Sandy loam	2.0	6.8			
Oriska, ND	Silty clay	4.1	7.4	Fertilized by test		
Oriska, ND (sunflower)	Sandy loam	5.9	3.2			
Prosper, ND	Clay loam	3.5	7.5	90	23	315
Prosper, ND (Stachler)	Clay	3.7	7.0	91	31	245
Prosper, ND (Zollinger)	Loam	4.0	7.0	72	41	285
Thompson, ND (Zollinger)	Silt clay loam	5.0	7.8	121	17	190
Valley City, ND	Fine loam	8.2	6.7	11	15	640
Valley City, ND (Zollinger)	Silt Loam	2.8	6.4	39	15	210
Walcott, ND	Loamy sand	2.6	6.7			
Williston, ND	Loam	2.3	6.8	Fertilized by test		
Wyndmere, ND	Loamy sand	1.9	5.7	Fertilized by test		

LIST OF HERBICIDES TESTED IN 2012

Common Name	Abbreviation	Company	Formulation	Trade Name
Acetochlor + Dichlormid	Acet + Dcmd	Dow	6.4 EC 3.2 ME	Surpass, Volley, TopNotch
Acetochlor + Clopyralid + Flumetsulam		Dow	4.25SE	Sure Start
Acetochlor + MON 4660	Acet + 4660	Monsanto	7 EC	Harness
Acetochlor		Monsanto	3.0 SE	Warrant
Acetochlor + atrazine		Monsanto	4.3+1.7 F	Harness Xtra/ Keystone LA
Acifluorfen	Acif	BASF	2 E, S	Ultra Blazer
Alachlor		Monsanto	4 EC	Intro
Ambicarbazone		Bayer	70 DF	
Aminocyclopyrachlor	DPX KJM44	Dupont	60 DF	
Aminopyralid + 2, 4-D	GF-1004 GF-750	Dow	0.33 + 2.67	Forefront
Aminopyralid	Amino	Dow	2SL	Milestone
Atrazine	Atra	Various	90 DF	Several
Atrazine+Pyroxasulfone+Fluthiacet		FMC	4.006+0.485+0.014 SC	Anthem ATZ
Bentazon	Bent, Bsgn	BASF	4 1 S	Basagran
Bentazon + Sethoxydim	Bent + Seth	BASF	5 SL 1 EC	Rezult
Bromoxynil	Brox	Bayer	2 EC	Buctril, Several
Bromoxynil & 2, 4-D	Brox + 2, 4-D	Wilbur Ellis	5 EC	Weco Max
Bromoxynil & MCPA	Brox + MCPA (5lb)	Bayer	5 EC	Bronate Advanced
Bromoxynil & fluroxypyr	Brox + Flox	Dow	2.9 EC	Starane NXT
Bromoxynil&fluroxypyr&MCPA	Brox&Flox&MCPA, AG08032	Winfiled Solutions	1.67+0.67+1.67 EC	Carnivore
Bromoxynil & Pyrasulfotole	Brox + Pyst	Bayer	2.8 EC	Huskie
Bromoxynil&pyrasulfotole& thiencarbazone	Brox&pyst&thcz	Bayer	1.46+0.26+0.042 EC	Huskie Complete
Carfentrazone	Carf	FMC	40 WG	Aim, Quick Silver
Carfentrazone & 2,4-D	Carf + 2,4-D	FMC	0.13 + 3.9	Rage D-Tech
Carfentrazone + Halosulfuron	Priority	Tenkoz	12.5 + 50 WDG	Priority
Carfentrazone + sulfentrazone		FMC	0.35 + 3.15 SE	Spartan Charge
Chlorimuron		DuPont	25 DF	Classic
Chlorsulfuron		DuPont	75 WG	Telar / Glean
Clethodim	Clet	Valent Valent Agasco Tenkoz	2 EC 1 EC 2 EC 2 EC	Select Select Max Clethodim Volunteer
Clodinafop	Clfp	Syngenta	2 EC	Discover
Clopyralid	Clpy	Dow	3 S	Stinger, ClopyrAg, Transline
Clopyralid + 2, 4-D	Clpy + 2,4-D	Dow	0.38 + 2 S	Curtail
Clopyralid & fluroxypyr	Clpy + Flox	Dow/UAP	0.75 + 0.75	Widematch/Colt

Clopyralid + Triclopyr	Clpy + Tric	Dow	0.75 + 2.25 EC	Redeem
Cloransulam	Clor, FrstRt	Dow	84 DF	Amplify, FirstRate
Cycloate	Cycl	Syngenta	6 EC	Ro-Neet
Desmedipham + Phenmedipham + Ethofumesate	De & Ph & Et, DPE	Various	0.6 + 0.6 + 0.6 E	Several
Desmedipham	Desm	Various	1.3 EC	Several
Desmedipham + Phenmedipham	Desm + Phen	Various	0.65 + 0.65 E	Several
Dicamba	Dica	Various	4 S	Banvel, Clarity, Enginia, Several
Dicamba + diflufenzopyr + isoxadifin safener	BAS799	BASF	40 + 16 WDG	Status
Dichlobenil		Uniroyal	4 G	Casoron 4G
Diflufenzopyr + Dicamba	Difl + Dica	BASF	50+ 20 WDG	Distinct, Overdrive
Diflufenzopyr	Difl	BASF	70 WG	None
Dimethenamid-P	Dime	BASF, Rosens	6 EC	Outlook / Propel
Diquat	Diqu	Syngenta	2 S	Diquat
EPTC		Gowen	7 EC	Eptam
Ethalfuralin	Etha	Dow	3 EC, 10 G	Sonalan
Ethofumesate	Etho	Various	4 F	Several
Fenoxaprop-P	Fenx	Winfield Solutions	1 EC	Tacoma
Fluazifop-P	Flfp-P	Syngenta	2 EC	Fusilade DX
Flucarbazone-NA	Flcz	Arysta, Syngenta	70 WDG, 3.5 SC	Everest / Pre-Pare, Sierra
Flumiclorac		Valent	0.86SL	Resource
Flumetsulam + Clopyralid	Flms + Clpy	Dow	18.5 + 50 WDG	Hornet WDG
Flumetsulam	Flms	Dow	80 WG	Python
Flumioxazin	Flum	Valent, Tenkoz	50 WP	Valor / Encompass
Flumioxazin + pyroxasulfone		Valent	33.5 + 42.5 WDG	Fierce
Fluroxypyr	Flox	Dow	1.5 EC, 2.8 EC	Starane, Starane Ultra
Fluroxypyr + 2, 4-Dioe	Flox + 2,4D	Dow	0.75 + 3 lb/gal EC	Starane + Salvo
Fluroxypyr + MCPAioe	Flox + MCPA	Dow	0.71 + 2.84 EC	Starane + Sword
Fluroxypyr + 2, 4-Ddma	Flox + 2,4Da	Dow	0.5 + 2 EC	Starane + Saber
Fluroxypyr + 2, 4-De		Dow	3.75 EC	Starane + Esteron
Fluroxypyr + MCPAe		Dow	3.55 EC	Starane + MCPA
Fluroxypyr+MCPAe+Clopyralid	Flox+MCPA+clpy	Winfield solutions	0.64+1.75+0.50 EC	Weld
Florasulam	Flas	Syngenta		not commercial
Florasulam + MCPA	Flas + MCPA	Syngenta	2.373L	Orion
Fluthiacet-methyl		FMC	0.91 EC	Cadet
Fluthiacet + pyroxasulfone		FMC	0.0632 + 2.09 SC	Anthem
Fomesafen		Syngenta	2 EC	Reflex
Fomesafen+Fluthiacet		Syngenta, FMC	2.88+0.12 SC	Marvel
Fomesafen + Adjuvant		Syngenta	1.88 EC	Flexstar

Fomesafen + glyphosate + adjuvants		Syngenta	0.66 + 2.63 SL	Flexstar GT
Fomesafen + glyphosate + adjuvants		Syngenta	0.56 + 2.26 SL	Flexstar GT 3.5
Foramsulfuron + Safener		Bayer	70 WDG	Option
Fosamine		DuPont	4 S	Krenite
Glufosinate	Gluf, Lbrty	Bayer	1.67 SL ,2.33 SL	Liberty/Ignite 280
Glyphosate-ipa	Glyt	Various	3 ae/gal S	Several
Glyphosate-K	Mon 78270 Touchdown KPMG	Monsanto, Syngenta	4.5 S 4.175	RU Weathermax, Touchdown Total
Glyphosate-(NH ₃) ₂	Glyt	Syngenta	3 ae/gal S	Touchdown
Halosulfuron	Halo, Prmt	Gowan	75 DF	Permit / Sandea
Imazamethabenz	Immb	BASF	2.5 EC	Assert
Imazamox	Imam, Immx	BASF	1 S	Raptor / Beyond
Imazapic		BASF	2 EC	Plateau
Imazapyr		BASF	2 L	Arsenal
Imazethapyr + Glyphosate		BASF	0.17 + 2SL	Extreme / Tackle
Imazethapyr + Pendimethalin	Imep + Pend	BASF	2.9 EC	Pursuit Plus
Imazethapyr	Imep, Prst	BASF	2 S	Pursuit
Imazethapyr+saflufenacil	Imep+saff	BASF	0.5+0.178 SC	OpTill
Indaziflam		Bayer	1.67 EC	Alion
Isoxadifen		DuPont	50 WG	Isoxadifen
Isoxaflutole		Bayer	4 SC, 2 SC	BalancePro / Balance Flexx
Isoxaflutole + thiencazone + Safener		Bayer	2.63 SC	Corus
Lactofen		Valent	2 EC	Cobra
Linuron		TKI	50 DF	Lorox
MCPA	MCPA	Various	4 EC, S	Several
Mesosulfuron + safener	Mess	Bayer	2 WG	Silverado
Mesosulfuron + Propoxycarbazone	Mess + Prcz	Bayer	8.14 + 2.03 WDG	Rimfire
Mesotrione	Mest	Syngenta	4 SC	Callisto
Mesotrione + s-metolachlor		Syngenta	0.33 + 3.3 SC	Zemax,
Mesotrione + s-metolachlor + Atrazine		Syngenta	0.27 + 2.68 + 1 SC	Lumax
S-metolachlor	Meto	Syngenta	7.62 EC	Dual Magnum, Cinch
S-metolachlor + Benoxacor (active isomer)		Syngenta	7.6 E	Dual/II/Magnum
S-metolachlor + Atrazine		Syngenta	2.4 + 3.1 L 3.23 + 2.67L	Bicep II Magnum Bicep Lite II Magnum, Cinch ATZ
S-metolachlor+fomesafen		Syngenta	4.34+0.95 EC	Prefix
S-meto + mesotrione + glyt		Syngenta	4.38 SC	Halex GT
S-metolachlor+metribuzin		Syngenta	5.25+1.25 EC	Boundary
S-Metolachlor + sulfentrazone		FMC	6.3 + 0.7 EC	BroadAxe
Metribuzin	Metr	Various	4 F, 75 DF	Several
Metribuzin+sulfentrazone	Metr+suen	FMC	0.27+0.187 WDG	Authority MTZ

Metsulfuron	Mets	DuPont	60 DF	Ally, Escort, Cimarron
Nicosulfuron	Nico	DuPont	75 DF	Accent
Nicosulfuron + Rimsulfuron	Nico + Rims	DuPont	50 + 25 DF	Steadfast
Oxyfluorfen	Oxyf	Dow	2 EC/4 WBF	Goal/Goal Tender
Paraquat	Para	Syngenta	2.5 S	Several
Pendimethalin	Pend	BASF Tenkoz	3.8 ACS 3.3 EC	Prowl / H ₂ O Acumen
Picloram		Dow	2 S	Tordon 22K
Pinoxaden	Pxdn	Syngenta	0.83 EC	Axial
Pinoxaden+fenoxaprop	Pxdn&fenx	Syngenta	0.42+0.42 EC	Foxfire
Propoxycarbazone	Prcz	Bayer	70 WDG	Olympus
Pyrasulfotole + bromoxynil +Safener + Fenoxaprop	Pyst + Brox + Renx	Bayer	1.32 EC	Wolverine
Pyroxasulfone	KIH - 485, Pxsf	Kumiai	85 WG	KIH – 485, Zidua
Pyraflufen	pyff	Gowan	0.21 EC	ET/Vida
Pyroxulam	Pxlm	Dow	7.5 WG	PowerFlex
Pyroxulam + Florasulam + Fluroxypyr	Pxlm + Flas + Flox	Dow	0.838L	Goldsky
Quinclorac		BASF	75 WP	Paramount
Quizalofop-P	Qufp-P	DuPont, Gowan	0.88 EC	Assure II, Targa
Rimsulfuron + mesotrione		DuPont	7.5+31.25 SG	Realm Q
Rimsulfuron + Thifensulfuron	Rims + Thif, Bsis	DuPont	75 DF	Basis
Rimsulfuron + Thifensulfuron		DuPont	18.4 + 4 SG	Resolve Q
Rimsulfuron	Rims	DuPont	25 DF	Matrix / Resolve
Saflufenacil	BAS 800 04, Saff	BASF	2.85 SC	Sharpen
Saflufenacil + dimethenamid	BAS 78102 H	BASF	5.57 EC	Verdict
Sethoxydim	Seth	BASF	1.5 EC	Poast
Simazine		Syngenta	4 L	Princep 4L
Sulfentrazone	Suen	DuPont/FMC	75 DF	Authority, Spartan, Payload
Sulfentrazone + Cloransulam		FMC	62.1+7.9 WDG	Authority First, Sonic
Sulfentrazone+imazethapyr	Suen+Imep	FMC	3.33+0.67L	Authority Assist
Sulfometuron	Sume	DuPont	75 DF	Oust
Sulfosulfuron	Sulf	Monsanto	75 WG	Maverick, Outrider
Tebuthiuron		Dow	20 WG	Spike
Tembotrione + isoxadifen safener	AE172747, Temb	Bayer	(2:1) 3.5 SL	Laudis
Tembotrione+thiencarbazone+isoxadifen	Temb+thcz	Bayer	2.88+0.57 SC	Capreno
Thifensulfuron + Tribenuron	Thif + Trib	DuPont	50 + 25 DF	Several
Thifensulfuron + Tribenuron		DuPont	25 + 25 SP	Affinity , Broad- Spec
Thifensulfuron + Tribenuron		DuPont	40 + 10 SP	Affinity Tankmix
Thifensulfuron+tribenuron+Fluroxypyr	Thif+Trib+Flox	Arysta	4.5+1.5+25 EG	Supremacy
Thifensulfuron	Thif, Pinn ,Pncl	DuPont	75 DF	Several
Topramezone		AmVac	2.8 SC	Impact

Tralkoxydim	Tral	Syngenta	40 DF	Achieve
Triallate	GWN 3040, Tria	Gowan	4EC	Far-Go
Tribenuron	Trib	DuPont	75 DF	Several
Triclopyr	Ttcp	Dow	4 EC	Garlon / Remedy
Trifluralin	Trif	Dow	4 EC, 10 G	Several
Triflurosulfuron	Tfsu	DuPont	50 DF	UpBeet
2,4-D	2,4-D	Various	Various EC, S, WSP	Several
2,4-DB	2,4-DB	Various		Several
2,4-D-dma + dicamba-dma salt		Winfield	2.87 + 1 SL	Brash
2,4-D + glyphosate		Dow	3.33 SL	Enlist Duo

^aAbbreviations in the tables may consist of only the first one, two, or three listed letters when space was limited. Abbreviations of numbered compounds vary with available space, but usually use the first letters and numbers.

Herbicide Spray Adjuvants

Fertilizer			
AMS (Dry)	Various	\$0.35 lb	4 to 8.5 lb/A
AMS (liquid)	Various	\$6.00 gal	2 to 4 qt/A
28% UAN	Various	\$10.00 gal	2 to 4 qt/A
28% UAN (bulk)	Various	\$3.00 gal	2 to 4 qt/A

Surfactant			
Activator 90	Loveland	\$28.00 gal	0.25 to 0.5% v/v
APSA-80	Amway	\$32.00 gal	0.25 to 0.5% v/v
ChemSurf 90	United Suppl.	\$27.00 gal	0.25 to 0.5% v/v
Crnblt Premier 90	West Central	\$25.00 gal	0.25 to 0.5% v/v
Induce	Helena	\$25.00 gal	0.25 to 0.5% v/v
Liberate LeciTech	Loveland	\$32.00 gal	0.25 to 0.5% v/v
Pen-A-trate II	Precision Labs	\$30.00 gal	0.25 to 0.5% v/v
Prefer 90	West Central	\$28.00 gal	0.25 to 0.5% v/v
Preference	Winfield	\$28.00 gal	0.25 to 0.5% v/v
Protyx	Precision Labs	\$96.00 gal	0.125% v/v
Purity 100	Rosens	\$21.00 gal	0.25 to 0.5% v/v
R-11	Wilbur-Ellis	\$27.00 gal	0.25 to 0.5% v/v
Translate	United Suppl.	\$30.00 gal	0.25 to 0.5% v/v
Wet-Sol 99	Schaeffers	\$30.00 gal	0.25 to 0.5% v/v

NIS Approved for use in Water

Surfactants approved for use in bodies of water are:

Activate Plus	Agridex	BroncPlusDryEDT
Class Act NG	Induce	Level 7
Liberate L-Tech	Preference	R-11
Top Surf	X-77	

Surfactant & Silicone			
Freeway	Loveland	\$95.00 gal	0.75 to 2 pt/100 gal
Kinetic	Helena	\$121.00 gal	0.75 to 2 pt/100 gal
Silkin	Winfield	\$96.00 gal	0.75 to 2 pt/100 gal
Speed	Precision Labs	\$96.00 gal	0.25 to 2 pt/100 gal
Sur-Plus	United Suppl.	\$87.00 gal	0.5 to 2 pt/100 gal
Sylgard 309	Wilbur-Ellis	\$120.00 gal	0.75 to 2 pt/100 gal

Surfactant & AMS			
Bronc PlusDryEDT	Wilbur-Ellis	\$1.85 lb	10 lb/100 gal
Class Act Flex			1.0-4.0% v/v
Class Act NG	Winfield	\$11.00 gal	2.5% v/v
Deliver	Precision Labs	\$10.00 gal	2.5% v/v
Impressive DB	Rosens	\$0.90 lb	2.25 lb/A
Powerhouse	Rosens	\$7.25 gal	5 to 10 qt/100 gal
Surfate	Loveland	\$14.50 gal	1% v/v
Ultra Surf AMS	United Suppl.	\$10.00 gal	2.5% v/v

AMS Replacement / Water Conditioning Agent (WCA)			
Citron	Farm Direct	\$3.25 lb	2.2 lb/100 gal
Cut-Rate	Wilbur-Ellis	\$1.25 lb	4 lb/100 gal
Quest/Request	Helena	\$20.00 gal	0.5% v/v
Speedway	United Suppl.	\$32.00 gal	0.5% v/v

AMS & WCA (AMS Replacement)			
Alliance	Winfield	\$14.00 gal	1.25% v/v
Bronc Max	Wilbur-Ellis	\$24.00 gal	0.5% v/v
Choice W-Master	Loveland	\$20.00 gal	0.5% v/v
Enact	Rosens	\$18.00 gal	0.5% v/v
Sequester	Hefty	\$24.00 gal	0.25 to 0.5% v/v

Surfactant & AMS Replacement (WCA)			
Fastrack	United Suppl.	\$25.00 gal	0.75% v/v
Flame	Loveland	\$40.00 gal	0.5% v/v
N-Tense	West Central	\$25.00 gal	0.25 to 0.75% v/v
Transport Ultra	Precision Labs	\$25.00 gal	0.25 to 0.75% v/v

Surfactant & AMS & AMS Replacement (WCA)			
Bronc Total	Wilbur-Ellis	\$30.00 gal	0.75 to 1% v/v
Transport	Precision Labs	\$34.00 gal	0.5 % v/v

Acidic AMS Replacement (WCA)			
AMADS - Monocarbamide dihydrogen sulfate or urea + sulfuric acid			
Brimstone	Wilbur-Ellis	\$34.00 gal	3 pt/100 gal
CT-301	Cheltec	\$ - gal	4-8 fl oz/100 gal
ET-4000	MK Ag Service	\$31.00 gal	4 pt/100 gal
Gun Smoke	Loveland	\$35.00 gal	3 to 4 pt/100 gal
Hel-Fire	Helena	\$35.00 gal	3 to 4 pt/100 gal
Import	Precision Labs	\$34.00 gal	3 to 4 pt/100 gal
N Go/N Tank	Adjuvants Plus	\$34.00 gal	3 to 4 pt/100 gal

Basic pH Blend			
Linkage	West Central	\$19.00 gal	1% v/v
Mycrimix Plus	J.R. Simplot	\$19.00 gal	1% v/v
Quad 7	Loveland	\$15.50 gal	1% v/v

Petroleum Oil Concentrate			
Agri-Dex	Helena	\$16.00 gal	2 to 4 pt/A
Crop Oil Concen.	Helena	\$ - gal	2 to 4 pt/A
Herbimax	Loveland	\$12.00 gal	2 to 4 pt/A
Ortech	Rosens	\$7.50 gal	2 to 4 pt/A
Premium Crop Oil	United Suppl.	\$10.00 gal	2 to 4 pt/A
Premium COC	West Central	\$10.00 gal	2 to 4 pt/A
Prime Oil	Winfield	\$10.00 gal	2 to 4 pt/A
Protyx Aerial	Precision Labs	\$22.00 gal	0.5 pt/A
ROC Crop Oil	Wilbur-Ellis	\$12.00 gal	2 to 4 pt/A

Methylated Seed Oil (MSO)			
Adigor	Syngenta	w/Axial	9.6 fl oz/A
MSO Leci-Tech	Loveland	\$18.00 gal	1 to 2 pt/A
MSO Ultra	Precision Labs	\$20.00 gal	1 to 2 pt/A
Persist Ultra	J.R. Simplot	\$20.00 gal	1 to 2 pt/A
Premium MSO	Helena	\$18.00 gal	1 to 2 pt/A
Soy-Stik	West Central	\$18.00 gal	1 to 2 pt/A
Succeed	United Suppl.	\$17.00 gal	1 to 2 pt/A
Sundance II	Rosens	\$16.00 gal	1 to 2 pt/A
Superspread MSO	Wilbur-Ellis	\$21.00 gal	1 to 2 pt/A
Upland MSO	West Central	\$20.00 gal	1 to 2 pt/A

High Surfactant Oil Concentrate			
Between (PO)	United Suppl.	\$15.00 gal	1 to 2 pt/A
Destiny HC (MSO)	Winfield	\$34.00 gal	1 to 2 pt/A
Diplomat (PO)	Rosens	\$11.50 gal	1 to 2 pt/A
Exchange (PO)	Precision Labs	\$22.00 gal	1 to 2 pt/A
Hi-Load (PO)	Simplot	\$ - gal	1 to 2 pt/A
High Load (PO)	Wilbur-Ellis	\$20.00 gal	1 to 2 pt/A
Kixyt (MSO)	Precision Labs	\$32.50 gal	1 to 2 pt/A
Savvy (MSO)	West Central	\$29.00 gal	1 to 2 pt/A
Stake (PO)	West Central	\$16.50 gal	1 to 2 pt/A
Superb HC (PO)	Winfield	\$20.00 gal	1 to 2 pt/A

Oil Based Surfactant			
Trophy Gold	West Central	\$32.00 gal	0.5 pt/A

Base Oil, Surfactant & WCA			
Simplyx	Precision Labs	\$ - gal	0.5 pt/A

MSO & Basic pH Blend

Base	West Central	\$26.00 gal	1 to 2 pt/A
Entro	Various	\$26.00 gal	1 to 2 pt/A
Renegade	Wilbur-Ellis	\$23.00 gal	1 to 2 pt/A

MSO & AMS Replacement (WCA)

SuperCharge	Syngenta	w/Achieve	0.5% v/v
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MSO & Organosilicone Surfactant

Air Force	United Suppl.	\$44.00 gal	4 to 6 fl oz/A
Dyne-Amic	Helena	\$51.50 gal	4 to 6 fl oz/A
Rivet	Winfield	\$44.00 gal	4 to 6 fl oz/A
Syl-tac	Wilbur-Ellis	\$59.00 gal	4 to 6 fl oz/A

AMS & Drift Retardant

AMS 20/10	United Suppl.	\$1.60 lb	10 lb/100 gal
Corral AMS Dry	Winfield	\$1.60 lb	10 to 17 lb/100 gal

AMS & Defoamer

Omnix LDF	Precision Labs	\$4.60 gal	2.5 to 5% v/v
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AMS & Deposition & Defoamer

AMS 2000	United Suppl.	\$1.25 lb	10 to 17 lb/100 gal
AmSol Plus	United Suppl.	\$6.00 gal	2.5 gal/100 gal
Arrow Four	Winfield	\$22.00 gal	2 to 4 qt/100 gal
Cornbelt Dri-Gard	West Central	\$1.50 lb	9 lb/100 gal
Cornbelt Guardian Pls	West Central	\$6.50 gal	2.5 gal/100 gal
Double Down	United Suppl.	\$8.00 gal	2.5 gal/100 gal

AMS & Deposition/Retention & Defoamer

Array	Rosens	\$1.60 lb	9 to 14 lbs/100 gal
Border Xtra DF	Precision Labs	\$1.60 lb	18 lb/100 gal
Border Xtra 4L	Precision Labs	\$5.00 gal	5% v/v
Border Xtra 8L	Precision Labs	\$8.00 gal	2.5% v/v
Vector	Rosens	\$5.20 lb	2 lb/100 gal

AMS & Surfactant & Deposition/Retention & Defoamer

One-Ap XL	West Central	\$1.85 lb	9 to 15 lb/100 gal
BroncPlus DryEDT	Wilbur-Ellis	\$1.8560 lb	10 lb/100 gal
Bronc Triple	Wilbur-Ellis	\$34.00 gal	2 qt/100 gal
Pay Off Plus	United Suppl.	\$2.00 lb	10 to 13 lb/100 gal
Zenith	Rosens	\$1.25 lb	1.5 to 2.25 lb/A

AMS & AMS Replacement (WCA) & Deposition

Bronc Max EDT	Wilbur-Ellis	\$36.00 gal	2 to 3 qt/100 gal
Cornbelt Guardian	West Central	\$22.00 gal	2 to 3 qt/100 gal
Transport Plus	Precision Labs	\$30.00 gal	2 to 4 qt/100 gal

AMS & AMS Replacement (WCA) & Surfactant & Deposition/Retention & Defoamer

Veracity	West Central	\$23.00 gal	3 qt/100 gal
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AMS Replacement (WCA) & Surfactant & Deposition/Retention & Defoamer

Weather-Gard	Loveland	\$50.00 gal	1 to 2 qt/100 gal
Complete Leci-Tec			

AMS Replacement (WCA) & Deposition/Retention & Defoamer

Formula 1	United Suppl.	\$30.00 gal	1 to 3 qt/100 gal
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Deposition/Retention - Drift Retardants

Affect GC	United Suppl.	\$40.00 qt	1 to 2 fl oz/100 gal
Border EG 250	Precision Labs	\$1.00 oz	10 oz/100 gal
Corral Poly	Winfield	\$25.00 qt	4 to 12 fl oz/100 gal
Coverage G-20	Wilbur-Ellis	\$32.00 gal	2 to 4 fl oz/A
Direct	Precision Labs	\$25.00 qt	1 to 4 oz/100 gal
Drift Down	Rosens	\$15.00 qt	4 to 8 fl oz/100 gal
In-Place	Wilbur-Ellis	\$36.00 gal	4 fl oz/pt-lb herbicide
InterLock	Winfield	\$45.00 gal	4 to 6 fl oz/A
Placement	Winfield	\$38.00 gal	4 fl oz/pt-lb herbicide
Shroud II	United Suppl.	\$15.00 qt	10 to 12 oz/100 gal

Deposition/Retention & Surfactant & Drift Retardant

Powerlock	Winfield	\$44.00 gal	5 to 8 oz/AI
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Drift Retardant & Defoamer

Compadre Leci-Tc	Loveland	\$55.00 gal	1 pt/100 gal
Sedate	West Central	\$35.00 gal	1 pt/100 gal

Acidifying Agents

Complete	Winfield	\$35.00 gal	1 to 3 pt/100 gal
Indicate 5	United Suppl.	\$48.00 gal	2 to 4 pt/100 gal
LI-700 Leci-Tech	Loveland	\$28.00 gal	2 to 4 pt/100 gal
New Balance	Precision Lab	\$32.00 gal	2 to 4 pt/100 gal
SuperSpread 7000	Wilbur-Ellis	\$32.00 gal	0.5 to 2 pt/100 gal
Tri-Fol	Wilbur-Ellis	\$30.00 gal	0.5 to 2 pt/100 gal

Compatibility Agents

CompatibilityAgent	West Central	\$30.00 gal	1 to 3 pt/100 gal
Complete	Winfield	\$35.00 gal	1 to 3 pt/100 gal
Convert	Precision Labs	\$35.00 gal	1 to 6 pt/100 gal
Embrace	Wilbur-Ellis	\$36.00 gal	1 to 4 pt/100 gal
EZ-Mix	Loveland	\$30.00 gal	1 to 4 pt/100 gal
Mix-All	Rosens	\$35.00 gal	1 to 4 pt/100 gal
Compatibility Plus	United Suppl.	\$41.50 gal	1 to 2 pt/100 gal

Spray Tank Cleaners

Tank Cleaner	Various	\$15-35 qt	1 to 2 qt/100 gal
Tank Cleaner	Various	\$5-7.00 lb	1 to 2 lb/100 gal