2021 Weed Control

Field Test Data

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South Dakota State University Extension

Department of **Agronomy, Horticulture & Plant Science**

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- South Dakota Soybean Research and Promotion Council
- South Dakota Wheat Commission
- Crop Protection Industries

Herbicide use information is available in the following SDSU Extension publications:

- Pest Management Guide: Corn
- Pest Management Guide: Soybean
- Pest Management Guide: Wheat (Small grains)
- Sorghum Weed Control
- Weed Control: Noxious Weeds
- Pest Management Guide: Alfalfa and Oilseeds
- Weed Control: Pulse Crops
- Weed Control: Pasture & Range

NOTE: Data reported in this publication are results from field tests that include labeled product uses, experimental products or experimental rates, combinations or other unlabeled uses for herbicide products. Users are responsible for applying herbicides according to label directions. Refer to the appropriate weed control fact sheet, available from extension regional centers, for herbicide recommendations.

S-0030-2021

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ABBREVIATIONS

Alfa	Alfalfa
Arko	ALS Resistant Kochia
Bare	Bareground
Bdlf	General broadleaf
Bikw	Biennial knapweed
Bisa	Biennial sage
Biww	Biennial wormwood
Blmu	Blue mustard
Blns	Black nightshade
Blvv	Blue vervain
Brgr	Brome grass
Bygr	Barnyardgrass
Cath	Canada thistle
Cocb	Common cocklebur
Colq	Common lambsquarters
Comu	Common mullein
Comw	Common milkweed
Corw	Common ragweed
Cosf	Common sunflower
Cowh	Common waterhemp
Crgr	Crabgrass
Cudo	Curly dock
Dali	Dandelion
Dobr	Downy brome
Fibw	Field bindweed
Fipc	Field pennycress
Fisb	Field sandbur
Ftba	Foxtail barley
Fxtl	General foxtail
Gift	Giant foxtail
Grft	Green foxtail
Guwe	Gumweed
Hocr	Hoary cress
Jabr	Japanese brome
Kocz	Kochia
Lesp	Leafy spurge
Llsa	Lanceleaf sage
Mael	Marshelder
Mata	Marestail
Muth	Musk thistle
Perw	Perennial ragweed
Pesw	Pennsylvania smartweed
Prle	Prickly lettuce
Prpw	Prostrate pigweed
Pumu	Purple mustard
Qugr	Quackgrass
Recl	Red clover
Rrpw	Redroot pigweed
Roft	Robust foxtail
Ruth	Russian thistle
Scru	Scouring rush
Shpu	Shepherdspurse
Stjw	St. Johnswort
Tamu	Tansymustard
Tawh	Tall waterhemp
Tosp	Toothed spurge
VCRR	Visual Crop Response Rating
Vele	Velvetleaf
Vema	Venice mallow
Voal	Volunteer alfalfa
Voca	Volunteer canola
Voco	Volunteer corn
Vomi	Volunteer millet
Vosg	Volunteer sorghum
Vosw	Volunteer Spring wheat
Voww	Volunteer Winter wheat
Wibw	Wild buckwheat
Wimu	Wild mustard
Wioa	Wild oat
Wisf	Wild sunflower
Whcl	White clover
Wocg	Woolly cupgrass
Wwsa	Wormwood sage
Yeft	Yellow foxtail
Yetf	Yellow toadflax

SURFACTANTS

COC	Crop oil concentrate	0.125%	1 pint/100 gallons
MSO	Methylated seed oil	0.25%	1 quart/100 gallons
NIS	Nonionic surfactant	0.5%	2 quart/100 gallons
		1%	1 gallon/100 gallons
AMS	Ammonium sulfate	2%	2 gallon/100 gallons
		4%	4 gallon/100 gallons

VCRR

Crop response ratings (VCRR) of 20% or less usually represents an acceptable level of stunting, discoloration or other effect. Ratings over 30% are considered excessive; 100% represents complete kill. Yields are harvested and reported for studies designed with replications.

PLOT APPLICATIONS

Herbicide treatments are applied with special plot sprayers. Unless otherwise noted, applications are made at 20 gpa and 35 psi using flat fan tips. Each treatment component is measured separately and mixed with water at application. Weed evaluations consist of visual ratings; averaged over replications or multiple ratings per plot. Ratings below 70-75% are considered less than commercially acceptable control; ratings greater than 90% represent a high level of effectiveness and generally reduce significant competition effects.

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2021 Corn Herbicide Demonstration
Northeast Research Farm

Treatment	Rate/A	6/7/21		6/22/21			9/21/21		9/27/21
		Wocg	Colq	Wocg	Colq	Wibw	Yeft	Rrpw	Yield bu/A
Check	—	0	0	0	0	0	0	0	44
Pre									
Balance Flexx + Harness Xtra 6L	4 oz + 2 qt	53	65	46	56	76	49	98	163
Pre & Post									
Surestart II + Atrazine & Resicore + Durango DMA + Amsol	2 pt + 1 pt & 1.5 qt + 1 qt + 2.5%	13	5	99	99	99	96	99	205
Acuron & Callisto Xtra + RU Powermax + AMS	1.75 qt & 24 oz + 32 oz + 1.7 lb	33	25	99	99	99	96	99	206
Acuron & Acuron + RU Powermax + AMS	1.25 qt & 1.25 qt + 32 oz + 1.7 lb	23	5	99	99	99	95	99	207
Lumax EZ & Acuron GT + Aatrex + NIS + AMS	1.5 qt & 3.75 pt + 0.5 pt + 0.25% + 1.7 lb	15	5	99	99	99	96	99	203
Verdict + Atrazine & Status + Atrazine + RU Powermax + Zidua SC + COC	10 oz + 16 oz & 4 oz + 16 oz + 32 oz + 2.5 oz + 1%	28	5	99	99	99	95	99	206
Resicore + Atrazine & Durango DMA + Incinerate + Amsol	2 qt + 1 pt & 1 qt + 3 oz + 2.5%	25	28	99	99	99	95	99	208
Harness & RU Powermax + Atrazine + AMS	1.75 pt & 32 oz + 1 pt + 2.5 lb	30	20	99	99	99	95	99	201
Dual II Mag & Sinate + Atrazine + MSO + AMS	1.33 pt & 24 oz + 16 oz + 1% + 3 lb	13	3	99	99	99	90	99	197
Dual II Mag & Impact Core + RU Powermax + Aatrex + NIS + AMS	1.33 pt & 24 oz + 32 oz + 1.5 pt + 0.25% + 2.5 lb	28	0	99	99	99	93	99	203
Dual II Mag & Shieldex + RU Powermax + MSO + AMS	1.2 pt & 1.35 oz + 32 oz + 0.5% + 2.5%	15	0	99	99	99	89	99	193
Harness Xtra 6L & Laudis + RU Powermax + NIS + Amsol	2 qt & 3 oz + 32 oz + 0.25% + 2.5%	33	20	99	99	99	91	99	198
Harness Max + Atrazine & Harness Max + RU Powermax + Amsol	40 oz + 1 pt & 40 oz + 32 oz + 2.5%	30	20	99	99	99	94	99	201
Fearless & Katagon + Atrazine + Destiny HC	1.25 pt & 3.2 oz + 1 pt + 1%	23	15	79	97	97	79	99	181
Epost									
Harness Max + Atrazine + RU Pmax + AMS	55 oz + 1 pt + 32 oz + 1.5 lb	94	99	77	97	97	78	99	198
Anthem Maxx + Callisto + Atrazine + RU Pmax	3 oz + 3 oz + 1 pt + 1 qt	96	99	87	97	97	80	99	192
Armezon Pro + Atrazine + RU Pmax + COC	20 oz + 16 oz + 32 oz + 1%	94	99	88	97	97	84	99	194
LSD (0.05)		19	15	10	11	2	8	0.5	21

RCB: 4 reps
Variety: DKC 37-49 RIB
Planting Date: 5/6/21
Epost: 6/2/21 Corn V2; Wocg 1-2.5 in; Colq 1-2 in; Wibw 2lf, 1 in.
Post: 6/8/21 Corn V2-3, 5-7 in; Wocg 1-6 in; Colq 1-4 in; Wibw 1-4 in.

Precipitation: (inches)
Pre: 1st week 0.12; 2nd week 0.31
Pre: 5/7/21

Soil: Clay Loam; 3.2% OM; 6.3 pH

Wocg=Woolly cupgrass
Colq=Common lambsquarters
Wibw=Wild buckwheat

Comments: Objective of the study was to look at program treatments for corn weed control. Heavy woolly cupgrass and common lambsquarter pressure. The year started very dry with just enough moisture for corn emergence but limited moisture to activate preemergence chemicals. Some moisture was received by the postemergence timing and late season moisture was good. Corn yields were normal. A couple of yield differences were noted besides the check.

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2021 Corn Herbicide Demonstration
Southeast Research Farm

Treatment	Rate/A	6/9/21		6/21/21			9/22/21		9/23/21
		Vele	Cowh	Grft	Vele	Cowh	Vele	Cowh	Yield bu/A
Check	—	0	0	0	0	0	0	0	60
Pre									
Balance Flexx + Harness Xtra 6L	4 oz + 2 qt	94	99	99	91	99	96	99	96
Pre & Post									
Surestart II + Atrazine & Resicore + Durango DMA + Amsol	2 pt + 1 pt & 1.5 qt + 1 qt + 2.5%	63	94	99	99	99	99	99	102
Acuron & Callisto Xtra + RU Powermax + AMS	1.75 qt & 24 oz + 32 oz + 1.7 lb	88	95	99	99	99	99	99	101
Acuron & Acuron + RU Powermax + AMS	1.25 qt & 1.25 qt + 32 oz + 1.7 lb	89	93	99	99	99	99	99	111
Lumax EZ & Acuron GT + Aatrex + NIS + AMS	1.5 qt & 3.75 pt + 0.5 pt + 0.25% + 1.7 lb	91	96	99	99	99	99	99	99
Verdict + Atrazine & Status + Atrazine + RU Powermax + Zidua SC + COC	10 oz + 16 oz & 4 oz + 16 oz + 32 oz + 2.5 oz + 1%	92	97	99	99	99	99	99	114
Resicore + Atrazine & Durango DMA + Incinerate + Amsol	2 qt + 1 pt & 1 qt + 3 oz + 2.5%	92	97	99	99	99	99	99	107
Harness & RU Powermax + Atrazine + AMS	1.75 pt & 32 oz + 1 pt + 2.5 lb	10	94	99	99	99	99	99	91
Dual II Mag & Sinate + Atrazine + MSO + AMS	1.33 pt & 24 oz + 16 oz + 1% + 3 lb	10	90	99	99	99	99	98	97
Dual II Mag & Impact Core + RU Powermax + Aatrex + NIS + AMS	1.33 pt & 24 oz + 32 oz + 1.5 pt + 0.25% + 2.5 lb	15	89	99	99	99	99	99	106
Dual II Mag & Shieldex + RU Powermax + MSO + AMS	1.2 pt & 1.35 oz + 32 oz + 0.5% + 2.5%	10	90	99	99	99	99	98	93
Harness Xtra 6L & Laudis + RU Powermax + NIS + Amsol	2 qt & 3 oz + 32 oz + 0.25% + 2.5%	38	95	99	99	99	99	99	102
Harness Max + Atrazine & Harness Max + RU Powermax + Amsol	40 oz + 1 pt & 40 oz + 32 oz + 2.5%	90	95	99	99	99	99	99	99
Fearless & Katagon + Atrazine + Destiny HC	1.25 pt & 3.2 oz + 1 pt + 1%	13	93	99	93	99	99	99	117
Epost									
Harness Max + Atrazine + RU Pmax + AMS	55 oz + 1 pt + 32 oz + 1.5 lb	98	99	99	95	99	98	99	101
Anthem Maxx + Callisto + Atrazine + RU Pmax	3 oz + 3 oz + 1 pt + 1 qt	98	99	98	98	99	99	99	98
Armezon Pro + Atrazine + RU Pmax + COC	20 oz + 16 oz + 32 oz + 1%	98	99	98	95	99	98	99	104
LSD (0.05)		7	2	0.5	1	–	1	1	27

RCB: 4 reps
Variety: DKC 51-38 RIB
Planting Date: 4/29/21
Epost: 6/1/21 Corn V3, 6-8 in; Vele 1-3 in; Cowh 0.5-2 in; Grft 1-3 in.
Post: 6/9/21 Corn V4-5, 12-18 in; Vele 1-3 in; Cowh 1-3 in; Grft 2-4 in.

Precipitation: (inches)
Pre: 1st week 0.00; 2nd week 0.45
Pre: 4/30/21

Soil: Silty Clay; 4.3% OM; 6.7 pH

Vele=Velvetleaf
Cowh=Common waterhemp
Grft=Green foxtail

Comments: Objective of the study was to look at program treatments for corn weed control. Heavy velvetleaf and common waterhemp pressure. The year started out with moisture to activate preemergence treatments and enough moisture until post treatments were sprayed and then severe drought set in. Corn yields were about half of normal and were variable due to variations in soils which caused uneven midseason moisture stress. No yield differences were noted besides the check.

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2021 Corn Herbicide Demonstration
Volga Research Farm

Treatment	Rate/A	6/4/21			6/24/21			9/22/21		10/12/21
		Gift	Cowh	Colq	Gift	Cowh	Colq	Gift	Cowh	Yield bu/A
Check	—	0	0	0	0	0	0	0	0	88
Pre										
Balance Flexx + Harness Xtra 6L	4 oz + 2 qt	96	98	97	98	97	97	98	95	161
Pre & Post										
Surestart II + Atrazine & Resicore + Durango DMA + Amsol	2 pt + 1 pt & 1.5 qt + 1 qt + 2.5%	89	95	86	99	99	98	99	99	171
Acuron & Callisto Xtra + RU Powermax + AMS	1.75 qt & 24 oz + 32 oz + 1.7 lb	85	86	88	99	99	99	99	99	161
Acuron & Acuron + RU Powermax + AMS	1.25 qt & 1.25 qt + 32 oz + 1.7 lb	74	73	69	99	99	99	99	99	168
Lumax EZ & Acuron GT + Aatrex + NIS + AMS	1.5 qt & 3.75 pt + 0.5 pt + 0.25% + 1.7 lb	87	71	74	99	99	99	99	99	176
Verdict + Atrazine & Status + Atrazine + RU Powermax + Zidua SC + COC	10 oz + 16 oz & 4 oz + 16 oz + 32 oz + 2.5 oz + 1%	82	92	87	99	99	99	99	99	158
Resicore + Atrazine & Durango DMA + Incinerate + Amsol	2 qt + 1 pt & 1 qt + 3 oz + 2.5%	92	95	91	99	99	99	99	99	163
Harness & RU Powermax + Atrazine + AMS	1.75 pt & 32 oz + 1 pt + 2.5 lb	93	95	60	99	96	98	99	97	169
Dual II Mag & Sinate + Atrazine + MSO + AMS	1.33 pt & 24 oz + 16 oz + 1% + 3 lb	68	63	50	99	98	99	98	98	157
Dual II Mag & Impact Core + RU Powermax + Aatrex + NIS + AMS	1.33 pt & 24 oz + 32 oz + 1.5 pt + 0.25% + 2.5 lb	68	63	50	99	99	99	99	98	158
Dual II Mag & Shieldex + RU Powermax + MSO + AMS	1.2 pt & 1.35 oz + 32 oz + 0.5% + 2.5%	60	53	43	99	99	99	99	98	164
Harness Xtra 6L & Laudis + RU Powermax + NIS + Amsol	2 qt & 3 oz + 32 oz + 0.25% + 2.5%	92	96	90	99	99	99	99	99	173
Harness Max + Atrazine & Harness Max + RU Powermax + Amsol	40 oz + 1 pt & 40 oz + 32 oz + 2.5%	89	94	87	99	99	99	99	99	180
Fearless & Katagon + Atrazine + Destiny HC	1.25 pt & 3.2 oz + 1 pt + 1%	91	92	72	96	99	98	99	99	178
Epost										
Harness Max + Atrazine + RU Pmax + AMS	55 oz + 1 pt + 32 oz + 1.5 lb	92	96	96	99	97	99	99	97	157
Anthem Maxx + Callisto + Atrazine + RU Pmax	3 oz + 3 oz + 1 pt + 1 qt	94	96	96	99	95	99	98	96	167
Armezon Pro + Atrazine + RU Pmax + COC	20 oz + 16 oz + 32 oz + 1%	89	95	95	97	97	99	97	94	180
LSD (0.05)		16	9	11	1	2	1	1	2	29

RCB: 4 reps
Variety: DKC 45-94 RIB
Planting Date: 4/28/21
Precipitation: (inches)
Pre: 1st week 0.05; 2nd week 0.32
Pre: 4/28/21
Epost: 6/1/21 Corn V2, 4-6 in; Gift 2-4 in; Cowh 0.5-3 in; Colq 1-4 in.
Post: 6/8/21 Corn V4, 10-14 in; Gift 3-6 in; Cowh 2-7 in; Colq 2-7 in.

Soil: Clay Loam; 5.4% OM; 6.3 pH

Gift=Giant foxtail
Cowh=Common waterhemp
Colq=Common lambsquarters

Comments: Objective of the study was to look at program treatments for corn weed control. Heavy giant foxtail, lambsquarter and waterhemp pressure. The year started out with moisture to activate preemergence treatments and enough moisture until post treatments were sprayed and then in mid-August moisture ran short and took top end off of yields. Corn yields were a little below normal and were variable due to variations in soils which caused uneven midseason moisture stress. No yield differences were noted besides the check.

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2021 Weed Control with Maverick in Corn
Southeast Research Farm

Treatment	Rate/A	5/18/21	5/25/21	6/9/21		6/29/21		9/23/21
		VCRR	Vele	Vele	Cowh	Vele	Cowh	Yield bu/A
Check	—	0	0	0	0	0	0	83
Epost								
Acuron + RU Powermax + Induce + AMS	3 pt + 1 qt + 0.25% + 3 lb	–	–	99	99	98	99	99
Halex GT + Induce + AMS	2 qt + 0.25% + 3 lb	–	–	99	99	97	99	116
Armezon Pro + RU Pmax + Induce + AMS	24 oz + 1 qt + 0.25% + 3 lb	–	–	99	99	97	99	102
Resicore + RU Pmax + Induce + AMS	44 oz + 1 qt + 0.25% + 3 lb	–	–	99	99	96	99	110
Maverick + RU Pmax + Induce + AMS	14 oz + 1 qt + 0.25% + 3 lb	–	–	99	99	96	99	118
Maverick + Aatrex + RU Powermax + Induce + AMS	14 oz + 1.5 pt + 1 qt + 0.25% + 3 lb	–	–	99	99	98	99	125
Pre & Post								
Acuron & Acuron + RU Powermax + Induce + AMS	1.5 qt & 1.5 qt + 1 qt + 0.25% + 3 lb	0	88	94	96	99	99	95
Maverick & Maverick + RU Pmax + Induce + AMS	18 oz & 14 oz + 1 qt + 0.25% + 3 lb	0	90	91	95	99	99	106
Maverick + Aatrex & Maverick + Aatrex + RU Powermax + Induce + AMS	18 oz + 1 pt & 14 oz + 1 pt + 1 qt + 0.25% + 3 lb	0	89	89	94	99	99	108
Maverick & RU Powermax + Induce + AMS	1 qt & 1 qt + 0.25% + 3 lb	0	90	94	97	99	99	126
Maverick + Aatrex & RU Powermax + Induce + AMS	1 qt + 1.5 pt & 1 qt + 0.25% + 3 lb	0	91	90	97	99	99	112
LSD (0.05)		–	2	2	2	1	–	33

RCB: 4 reps
Variety: DKC 51-38 RIB
Planting Date: 4/29/21
Epost: 6/1/21 Corn V3, 6-8 in; Vele 1-3 in; Cowh 0.5-2 in.
Post: 6/9/21 Corn V4-5, 12-18 in; Vele 1-3 in; Cowh 1-3 in.

Precipitation: (inches)
Pre: 1st week 0.00; 2nd week 0.45
Pre: 4/30/21

Soil: Silty Clay; 4.6% OM; 6.6 pH

Vele=Velvetleaf
Cowh=Common waterhemp
VCRR=Visual Crop Response Rating (0=no injury; 100=complete kill)

Comments: Objective of the study was to look at treatments for corn weed control. Heavy velvetleaf and common waterhemp pressure. The year started out with moisture to activate preemergence treatments and enough moisture until post treatments were sprayed and then severe drought set in. Corn yields were about half of normal and were variable due to variations in soils which caused uneven midseason moisture stress. Only two treatments were better than the check on yield.

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2021 Acuron GT in a Two Pass System
Volga Research Farm

Treatment	Rate/A	6/28/21			7/29/21			10/12/21
		Gift	Cowh	Colq	Gift	Cowh	Colq	Yield bu/A
Check	—	0	0	0	0	0	0	61
Pre & Post								
Bicep Lite II Mag & Acuron GT + NIS + Amsol	1 qt & 3.75 pt + 0.25% + 2.5 qt	98	96	98	98	97	99	187
Lumax EZ & Acuron GT + NIS + Amsol	1.5 qt & 3.75 pt + 0.25% + 2.5 qt	99	98	98	99	98	99	211
Surestart II & Acuron GT + NIS + Amsol	1.75 pt & 3.75 pt + 0.25% + 2.5 qt	98	98	98	99	98	99	182
Harness & Acuron GT + NIS + Amsol	1.5 pt & 3.75 pt + 0.25% + 2.5 qt	99	99	98	99	98	99	191
Verdict & Acuron GT + NIS + Amsol	14 oz & 3.75 pt + 0.25% + 2.5 qt	99	98	99	97	98	99	196
Surestart II & Resicore + RU Powermax + Amsol	1.75 pt & 1.25 qt + 26.6 oz + 2.5 qt	99	99	99	98	97	99	197
Harness & Laudis + RU Powermax + Superb HC + Amsol	1.5 pt & 3 oz + 26.6 oz + 0.5% + 2.5 qt	98	98	96	98	98	98	219
Verdict & Armezon Pro + RU Powermax + Amsol	10 oz & 18 oz + 26.6 oz + 2.5 qt	98	99	97	98	97	99	203
Pre								
Acuron Flexi XR	3 qt	84	87	90	76	80	91	192
Acuron XR	3 qt	90	88	92	80	85	92	197
Harness Max	75 oz	91	91	90	87	87	88	166
LSD (0.05)		2	2	3	3	4	5	36

RCB: 4 reps
Variety: DKC 45-94 RIB
Planting Date: 4/28/21
Post: 6/8/21 Corn V4, 10-14 in; Gift 3-6 in; Cowh 2-7 in; Colq 2-7 in.

Precipitation: (inches)
Pre: 1st week 0.05; 2nd week 0.32
Pre: 4/28/21

Soil: Clay Loam; 5.4% OM; 6.3 pH

Gift=Giant foxtail
Cowh=Common waterhemp
Colq=Common lambsquarters

Comments: Objective of the study was to look at treatments for corn weed control. Heavy giant foxtail, lambsquarter and waterhemp pressure. Year started out with moisture to activate preemergence treatments and enough moisture until post treatments were sprayed and then in mid-August moisture ran short and took top end off of yields. Corn yields were a little below normal and were variable due to variations in soils which caused uneven midseason moisture stress. Two treatments showed yield reduction over the top treatment and the check was significantly below all treatments.

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2021 Reviton Burndown in Corn
Southeast Research Farm

Treatment	Rate/A	5/18/21	5/25/21		6/2/21		6/9/21	
		Dali	Dali	Prle	Dali	Prle	Dali	Prle
Check	—	0	0	0	0	0	0	0
Pre								
Reviton + MSO	2 oz + 1%	94	92	95	60	85	40	67
Reviton + RU Powermax + AMS + MSO	1 oz + 32 oz + 1.7 lb + 1%	92	92	98	84	97	83	97
Sharpen + RU Powermax + AMS + MSO	1.5 oz + 32 oz + 1.7 lb + 1%	92	92	97	82	97	78	95
Reviton + RU Powermax + AMS + Fearless + Atrazine + MSO	1 oz + 32 oz + 1.7 lb + 2.1 pt + 1.5 qt + 1%	95	96	99	86	98	70	96
LSD (0.05)		4	4	2	5	–	14	13

RCB: 3 reps
Variety: DKC 53-56
Planting Date: 5/11/21

Soil: Clay; 3.0% OM; 7.8 pH

Precipitation: (inches)
Pre: 1st week 0.43; 2nd week 0.34
Pre: 5/11/21 Dali 2-8 in diameter

Dali=Dandelion
Prle=Prickly lettuce

Comments: Objective of the study was to look at treatments for corn weed control. Moderate dandelion and prickly lettuce pressure. Year started out with moisture for active weed growth. Good initial burndown of dandelion and prickly lettuce. Later in the season a couple treatments had reduced control.

South Dakota State University Extension

2021 Weed Control with Restraint in Corn
Southeast Research Farm

Treatment	Rate/A	5/18/21		6/21/21				7/15/21				9/23/21
		Vele	VCRR	Grft	Vele	Cowh	VCRR	Grft	Vele	Cowh	VCRR	Yield bu/A
Check	—	0	0	0	0	0	0	0	0	0	0	23
Pre & Post												
Restraint + Atrazine & Shieldex + Atrazine + COC	36 oz + 1 qt & 1 oz + 1 qt + 1%	88	0	96	98	99	0	95	99	99	0	100
Restraint + Atrazine & Restraint + Atrazine + COC	18 oz + 1 qt & 18 oz + 1 qt + 1%	83	0	97	99	99	0	95	99	99	0	98
Resicore + Atrazine & Restraint + Atrazine + COC	40 oz + 1 qt & 30 oz + 1 qt + 1%	91	0	98	99	99	0	96	99	99	0	100
Resicore + Atrazine & Resicore + Atrazine + COC	40 oz + 1 qt & 40 oz + 1 qt + 1%	93	0	94	99	99	0	91	99	99	0	91
LSD (0.05)		4	–	3	2	–	–	3	–	–	–	14

RCB: 4 reps
Variety: DKC 51-38 RIB
Planting Date: 4/29/21
Post: 6/9/21 Corn V4-5, 12-18 in; Vele 2-5 in; Cowh 1-4 in; Grft 3-6 in.

Precipitation: (inches)
Pre: 1st week 0.00; 2nd week 0.45
Pre: 4/30/21

Soil: Clay Loam; 4.4% OM; 6.8 pH

Vele=Velvetleaf
Cowh=Common waterhemp
Grft=Green foxtail

Comments: Objective of the study was to look at treatments for corn weed control. Heavy velvetleaf and common waterhemp pressure. Year started out with moisture to activate preemergence treatments and enough moisture until post treatments were sprayed and then severe drought set in. Corn yields were about half of normal and were variable due to variations in soils which caused uneven midseason moisture stress. All treatments were better than the check on yield.

South Dakota State University Extension

2021 BCS-720 Pre in Corn
Volga Research Farm

Treatment	Rate/A	5/19/21	5/24/21	6/4/21			6/24/21			10/12/21
		VCRR	VCRR	Gift	Cowh	Colq	Gift	Cowh	Colq	Yield bu/A
Check	—	0	0	0	0	0	0	0	0	107
Pre										
BCS-720 + Atrazine	15 oz + 1 qt	0	0	93	94	93	90	84	94	192
Corvus + Atrazine	4.5 oz + 1 qt	0	0	91	94	93	91	86	95	183
Acuron	2.25 qt	0	0	94	96	97	87	89	96	168
Resicore + Atrazine	2.25 qt + 1 qt	0	0	95	97	96	93	95	96	176
Harness Xtra 6L	1.8 qt	0	0	94	97	94	93	93	93	187
BCS-720 + Atrazine	18.75 oz + 1 qt	0	0	93	97	97	93	90	96	194
BCS-720 + Atrazine	20 oz + 1 qt	0	0	94	98	96	93	93	95	181
Corvus + Atrazine	5.6 oz + 1 qt	0	0	93	95	96	93	92	95	177
Acuron	3 qt	0	0	93	98	97	90	92	96	174
Resicore + Atrazine	3 qt + 1 qt	0	0	95	98	98	93	97	97	180
Harness Xtra 6L	2.3 qt	0	0	95	98	95	92	91	96	176
LSD (0.05)		–	–	3	2	3	2	3	1	36

RCB: 4 reps
Variety: DKC 45-94 RIB
Planting Date: 4/28/21

Soil: Clay Loam; 5.4% OM; 6.3 pH

Precipitation: (inches)
Pre: 1st week 0.05; 2nd week 0.32
Pre: 4/28/21

Gift=Giant foxtail
Cowh=Common waterhemp
Colq=Common lambsquarters
VCRR=Visual Crop Response Rating (0=no injury; 100=complete kill)

Comments: Objective of the study was to look at treatments for corn weed control. Heavy giant foxtail, lambsquarter and waterhemp pressure. Year started out with moisture to activate preemergence treatments and enough moisture until post treatments were sprayed and then in mid-August moisture ran short and took top end off of yields. Corn yields were a little below normal and were variable due to variations in soils which caused uneven midseason moisture stress. Some slight differences in weed control were noted. No yield differences were noted besides the check.

South Dakota State University Extension

2021 Shieldex and Other Postemergence Herbicides in Corn
Southeast Research Farm

Treatment	Rate/A	6/16/21			6/21/21			7/16/21			9/23/21
		Vele	Cowh	VCRR	Vele	Cowh	VCRR	Vele	Cowh	VCRR	Yield bu/A
Check	—	0	0	0	0	0	0	0	0	0	62
Pre											
Bicep II Mag	1.67 qt	33	97	0	35	90	0	23	91	0	74
Pre & Post											
Bicep II Mag & Shieldex + Aatrex + COC + Amsol	1.67 qt & 1 oz + 1 qt + 1% + 2.5%	95	99	0	95	98	0	99	99	0	88
Bicep II Mag & Impact + Aatrex + COC + Amsol	1.67 qt & 0.75 oz + 1 qt + 1% + 2.5%	96	99	0	96	98	0	99	99	0	98
Bicep II Mag & Laudis + Aatrex + COC + Amsol	1.67 qt & 3 oz + 1 qt + 1% + 2.5%	96	99	0	97	98	0	99	99	0	91
Bicep II Mag & Shieldex + Aatrex + RU Powermax + Amsol	1.67 qt & 1 oz + 1 qt + 30 oz + 2.5%	99	99	0	98	98	0	99	99	0	103
Bicep II Mag & Shieldex + Aatrex + Liberty + COC + Amsol	1.67 qt & 1 oz + 1 qt + 32 oz + 1% + 2.5%	98	99	0	98	98	0	99	99	0	99
Fearless & Katagon + Destiny HC	1.25 pt & 3.2 oz + 1%	87	99	0	83	93	0	98	99	0	97
Fearless & Katagon + Atrazine + Destiny HC	1.25 pt & 3.2 oz + 1 pt + 1%	92	99	0	93	98	0	99	99	0	95
LSD (0.05)		3	0.5	–	3	1	–	3	1	–	21

RCB: 4 reps
Variety: DKC 51-38 RIB
Planting Date: 4/29/21
Post: 6/9/21 Corn V4-5 12-18 in; Vele 2-5 in; Cowh 1-4 in.

Precipitation: (inches)
Pre: 1st week 0.00; 2nd week 0.45
Pre: 4/30/21

Soil: Silty Clay; 4.6% OM; 6.6 pH

Vele=Velvetleaf
Cowh=Common waterhemp
VCRR=Visual Crop Response Rating (0=no injury; 100=complete kill)

Comments: Objective of the study was to look at treatments for corn weed control. Heavy velvetleaf and common waterhemp pressure. Year started out with moisture to activate preemergence treatments and enough moisture until post treatments were sprayed and then severe drought set in. Corn yields were about half of normal and were variable due to variations in soils which caused uneven midseason moisture stress. All treatments except one were better yielding than the check. This treatment had very poor velvetleaf control.

South Dakota State University Extension

2021 Weed Control with Impact Core and Sinate
Southeast Research Farm

Treatment	Rate/A	6/16/21		6/21/21	7/6/21			8/2/21			9/23/21
		Vele	Cowh	VCRR	Grft	Vele	Cowh	Grft	Vele	Cowh	Yield bu/A
Check	—	0	0	0	0	0	0	0	0	0	46
Epost											
Impact Core + Aatrex + MSO + AMS	30 oz + 1.5 pt + 0.5% + 2.5 lb	97	98	0	92	99	99	82	97	99	107
Post											
Liberty + AMS	32 oz + 3 lb	98	98	0	99	99	99	99	99	96	89
Sinate + MSO + AMS	24 oz + 1% + 3 lb	96	98	0	99	99	99	93	99	97	95
Sinate + Aatrex + MSO + AMS	24 oz + 1 pt + 1% + 3 lb	98	98	0	99	99	99	96	99	99	100
Sinate + Dual II Mag + MSO + AMS	24 oz + 1.5 pt + 1% + 3 lb	97	98	0	99	99	99	98	99	98	94
Sinate + Dual II Mag + Aatrex + MSO + AMS	24 oz + 1.5 pt + 1 pt + 1% + 3 lb	98	98	0	99	99	99	96	99	99	106
Pre & Post											
Dual II Mag & Sinate + MSO + AMS	1.33 pt & 24 oz + 1% + 3 lb	98	98	0	99	99	99	98	99	98	101
Dual II Mag & SInate + Aatrex + MSO + AMS	1.33 pt & 24 oz + 1.5 pt + 1% + 3 lb	98	98	0	99	99	99	99	99	99	101
Dual II Mag & Sinate + MSO + AMS	1.33 pt & 28 oz + 1% + 3 lb	96	98	0	99	99	99	97	99	98	111
Dual II Mag & Sinate + Aatrex + MSO + AMS	1.33 pt & 28 oz + 1.5 pt + 1% + 3 lb	98	98	0	99	99	99	99	99	99	107
Dual II Mag & Impact Core + RU Powermax + Aatrex + NIS + AMS	1.33 pt & 24 oz + 32 oz + 1.5 pt + 0.25% + 2.5 lb	98	98	0	99	99	99	99	99	99	112
Dual II Mag & Impact + Aatrex + MSO + AMS	1.33 pt & 1 oz + 1.5 pt + 1% + 2.5 lb	92	97	0	99	99	99	97	99	99	108
Dual II Mag & Halex GT + Aatrex + NIS + AMS	1.33 pt & 3.6 pt + 1 pt + 0.25% + 2.5 lb	98	98	0	99	99	99	99	99	99	105
Pre & Lpost											
Dual II Mag & Impact + MSO + AMS	1.33 pt & 2 oz + 1% + 2.5 lb	30	86	0	99	86	98	89	99	99	106
LSD (0.05)		2	2	–	3	2	0.5	8	1	1	16

RCB: 4 reps
Variety: DKC 51-38 RIB
Planting Date: 4/29/21
Precipitation: (inches)
Pre: 1st week 0.00; 2nd week 0.45
Pre: 4/29/21
Epost: 6/1/21 Corn V3, 6-8 in; Vele 1-3 in; Cowh 0.5-2 in.
Post: 6/9/21 Corn V4-5, 12-18 in; Vele 2-5 in; Cowh 1-6 in.
Lpost: 6/15/21 Corn V5-6, 22-24 in; Vele 2-8 in; Cowh 3-6 in; Grft 6-12 in.

Soil: Clay Loam; 4.4% OM; 6.8 pH

Vele=Velvetleaf
Cowh=Common waterhemp
Grft=Green foxtail
VCRR=Visual Crop Response Rating (0=no injury; 100=complete kill)

Comments: Objective of the study was to look at treatments for corn weed control. Heavy velvetleaf and common waterhemp pressure. Year started out with moisture to activate preemergence treatments and enough moisture until post treatments were sprayed and then severe drought set in. Corn yields were about half of normal and were variable due to variations in soils which caused uneven midseason moisture stress. All treatments were better than the check. Also a couple of treatments were significantly lower in yield than the top yielding treatment.

South Dakota State University Extension

2021 Program Treatments for Weed Control in Corn
Southeast Research Farm

Treatment	Rate/A	5/25/21	6/2/21		6/16/21			6/29/21			7/16/21		9/23/21
		Vele	Vele	Cowh	Vele	Cowh	VCRR	Vele	Cowh	VCRR	Vele	Cowh	Yield bu/A
Pre & Epost													
Bicep II Mag & Halex GT + Aatrex + NIS + AMS	1.5 qt & 3.6 pt + 1 pt + 0.25% + 1.7 lb	23	30	97	98	99	0	96	99	0	95	99	109
Acuron & Callisto Xtra + RU Powermax + AMS	1.75 qt & 24 oz + 32 oz + 1.7 lb	90	90	98	98	99	0	97	99	0	95	99	97
Acuron & Acuron + RU Powermax + AMS	1.25 qt & 1.25 qt + 32 oz + 1.7 lb	89	90	97	98	99	0	97	99	0	96	99	110
Lexar EZ & Acuron GT + Aatrex + NIS + AMS	1.75 qt & 3.75 pt + 0.5 pt + 0.25% + 1.7 lb	90	90	98	98	99	0	97	99	0	95	99	120
Lumax EZ & Acuron GT + Aatrex + NIS + AMS	1.5 qt & 3.75 pt + 0.5 pt + 0.25% + 1.7 lb	87	90	98	97	99	0	97	99	0	95	99	110
Check	—	0	0	0	0	0	0	0	0	0	0	0	93
LSD (0.05)		3	1	1	1	0.5	–	1	–	–	1	–	19

RCB: 4 reps
Variety: DKC 51-38 RIB
Planting Date: 4/29/21
Epost: 6/1/21 Corn V3, 6-8 in; Vele 0.5-1.5 in; Cowh 0.5-1 in.

Precipitation: (inches)
Pre: 1st week 0.00; 2nd week 0.45
Pre: 4/30/21

Soil: Silty Clay; 4.6% OM; 6.6 pH

Vele=Velvetleaf
Cowh=Common waterhemp
VCRR=Visual Crop Response Rating (0=no injury; 100=complete kill)

Comments: Objective of the study was to look at treatments for corn weed control. Heavy velvetleaf and common waterhemp pressure. Year started out with moisture to activate preemergence treatments and enough moisture until post treatments were sprayed and then severe drought set in. Corn yields were about half of normal and were variable due to variations in soils which caused uneven midseason moisture stress. Only one treatment was better than the check on yield.

South Dakota State University Extension

2021 Status with Adjuvants
Volga Research Farm

Treatment	Rate/A	6/24/21		6/28/21		7/7/21	
		Cowh	Colq	Cowh	Colq	Cowh	Colq
Post							
Status + Preference + 28% N	6 oz + 0.25% + 1.25%	78	78	86	86	94	99
Status + Agrasyst 90 + 28% N	6 oz + 0.25% + 1.25%	80	80	87	87	95	99
Status + Premium Crop Oil + 28% N	6 oz + 1% + 1.25%	80	80	87	87	96	99
Status + Oleum Plus + 28% N	6 oz + 1% + 1.25%	80	80	88	88	96	99
Status + Destiny HC + 28% N	6 oz + 0.5% + 1.25%	78	78	85	85	94	99
Status + MaxSo + 28% N	6 oz + 0.5% + 1.25%	82	82	88	88	97	99
Status + Agrasyst 90 + Destiny HC + 28% N	6 oz + 0.25% + 0.5% + 1.25%	79	79	88	88	94	99
Status + Agrasyst + MaxSo + 28% N	6 oz + 0.25% + 0.5% + 1.25%	80	80	90	90	95	99
Check	—	0	0	0	0	0	0
LSD (0.05)		1	1	1	1	1	–

RCB: 4 reps
Variety: DKC 45-94 RIB
Planting Date: 4/28/21
Post: 6/15/21 Corn V5, 20-22 in; Cowh 7-17 in; Colq 7-19 in.

Soil: Clay Loam; 5.4% OM; 6.3 pH

Cowh=Common waterhemp
Colq=Common lambsquarters

Comments: Objective of the study was to look at different additive treatments for corn weed control. Heavy lambsquarter and waterhemp pressure. Year started out with moisture for active weed growth and then in mid-August moisture ran short. Some slight differences in additives were noted.

South Dakota State University Extension

2021 Roundup Ready Soybean Demonstration
Northeast Research Farm

Treatment	Rate/A	6/15/21		6/30/21			9/21/21		10/5/21
		Yeft	Rrpw	Yeft	Rrpw	Wimu	Yeft	Rrpw	Yield bu/A
Check	—	0	0	0	0	0	0	0	19
PPI & Post									
Treflan + Dimetric 3L & RU Powermax + Flexstar + Amsol	1.5 pt + 10.67 oz & 32 oz + 1 pt + 2 qt	65	65	99	99	99	93	98	60
Prowl H2O + Dimetric 3L & RU Powermax + Avalanche Ultra + Amsol	3 pt + 10.67 oz & 32 oz + 1.5 pt + 2 qt	66	64	99	99	99	93	98	60
Pre & Post									
Sonic & Flexstar + Select Max + COC	5 oz & 1 pt + 12 oz + 0.25%	0	50	86	97	97	41	60	43
Authority MTZ & Avalanche Ultra + Section Three + NIS	14 oz & 1.5 pt + 5.33 oz + 0.25%	0	58	81	98	96	20	70	33
Spartan Charge & Cobra + Select Max + NIS	8.5 oz & 12.8 oz + 12 oz + 0.25%	0	66	84	99	98	41	66	37
Sonic & EverpreX + Durango DMA + Amsol	4.5 oz & 1 pt + 1 qt + 2.5%	0	63	99	99	99	80	98	57
Broadaxe XC + Dimetric 3L & Flexstar GT + Dual Magnum + AMS + MSO	28 oz + 10 oz & 56 oz + 1 pt + 3.4 lb + 1%	0	58	99	99	99	91	98	58
Authority MTZ & Anthem Maxx + RU Powermax + COC + AMS	14 oz & 3 oz + 32 oz + 1 pt + 1.7 lb	0	56	99	99	99	77	97	55
Zidua SC + Verdict & RU Powermax + Outlook + AMSOL	4 oz + 5 oz & 32 oz + 10 oz + 2 qt	0	49	99	99	99	88	97	60
Fierce MTZ & Perpetuo + RU Powermax + Amsol	1 pt & 6 oz + 32 oz + 2 qt	0	69	99	99	99	87	98	59
Dimetric Charged & RU Powermax + Amsol	15 oz & 32 oz + 2 qt	0	66	99	99	99	83	98	61
Surveil + Dimetric 3L & Durango DMA + Amsol	3.25 oz + 8 oz & 1 qt + 2.5%	0	76	99	99	99	69	98	59
LSD (0.05)		1	11	1	1	2	10	5	5

RCB: 4 reps
Variety: AG09XFO
Planting Date: 5/14/21
Pre: 5/14/21
Post: 6/16/21 Soy 2-3 tri, 4-6 in; Yeft 2-8 in; Rrpw 2-5 in.

Precipitation: (inches)
Pre: 1st week 0.35; 2nd week 0.80
PPI: 5/14/21

Soil: Clay Loam; 4.1% OM; 5.8 pH

Yeft=Yellow foxtail
Rrpw=Redroot pigweed
Wimu=Wild mustard

Comments: Objective of the study was to look at program treatments for soybean weed control. Heavy yellow foxtail, redroot pigweed and moderate wild mustard pressure. The year started dry with enough moisture to start soybeans but limited moisture to activate preemergence chemicals. Some moisture was received by postemergence timing and late season precipitation was good. Soybean yields were normal. All non GMO herbicide treatment yields were significantly lower than the rest except the check.

South Dakota State University Extension

2021 Roundup Ready Soybean Demonstration
Southeast Research Farm

Treatment	Rate/A	6/16/21		6/29/21		9/22/21		10/6/21
		Vele	Cowh	Vele	Cowh	Vele	Cowh	Yield bu/A
Check	—	0	0	0	0	0	0	10
PPI & Post								
Treflan + Dimetric 3L & RU Powermax + Flexstar + Amsol	1.5 pt + 10.67 oz & 32 oz + 1 pt + 2 qt	76	86	99	90	93	88	21
Prowl H2O + Dimetric 3L & RU Powermax + Avalanche Ultra + Amsol	3 pt + 10.67 oz & 32 oz + 1.5 pt + 2 qt	74	88	99	87	94	86	21
Pre & Post								
Sonic & Flexstar + Select Max + COC	5 oz & 1 pt + 12 oz + 0.25%	86	86	94	94	91	92	23
Authority MTZ & Avalanche Ultra + Section Three + NIS	14 oz & 1.5 pt + 5.33 oz + 0.25%	81	81	78	84	68	90	16
Spartan Charge & Cobra + Select Max + NIS	8.5 oz & 12.8 oz + 12 oz + 0.25%	78	84	77	91	69	90	16
Sonic & EverpreX + Durango DMA + Amsol	4.5 oz & 1 pt + 1 qt + 2.5%	89	91	99	92	98	93	21
Broadaxe XC + Dimetric 3L & Flexstar GT + Dual Magnum + AMS + MSO	28 oz + 10 oz & 56 oz + 1 pt + 3.4 lb + 1%	78	93	99	97	93	96	22
Authority MTZ & Anthem Maxx + RU Powermax + COC + AMS	14 oz & 3 oz + 32 oz + 1 pt + 1.7 lb	71	89	99	93	99	88	20
Zidua SC + Verdict & RU Powermax + Outlook + AMSOL	4 oz + 5 oz & 32 oz + 10 oz + 2 qt	91	94	99	96	97	95	22
Fierce MTZ & Perpetuo + RU Powermax + Amsol	1 pt & 6 oz + 32 oz + 2 qt	55	88	95	88	93	88	20
Dimetric Charged & RU Powermax + Amsol	15 oz & 32 oz + 2 qt	78	87	99	89	97	89	22
Surveil + Dimetric 3L & Durango DMA + Amsol	3.25 oz + 8 oz & 1 qt + 2.5%	84	89	99	92	98	86	24
LSD (0.05)		18	11	11	9	11	7	6

RCB: 4 reps
Variety: S20-E3
Planting Date: 5/12/21
Pre: 5/12/21
Post: 6/18/21 Soy 3 tri, 7-9 in; Vele 1-7 in; Cowh 2-8 in.

Precipitation: (inches)
Pre: 1st week 0.44; 2nd week 0.35
PPI: 5/12/21

Soil: Clay; 4.8% OM; 7.0 pH

Vele=Velvetleaf
Cowh=Common waterhemp

Comments: Objective of the study was to look at program treatments for soybean weed control. Heavy velvetleaf and common waterhemp pressure. The year started out with moisture to activate preemergent treatments and enough moisture until post treatments were sprayed and then severe drought set in. Soybean yields were about half of normal and were variable due to variations in soils which caused uneven moisture stress. A couple of the non GMO herbicide treatments were significantly lower than the top treatment. All treatments were better than the check.

South Dakota State University Extension

2021 Roundup Ready Soybean Demonstration
Volga Research Farm

Treatment	Rate/A	6/14/21			6/28/21		9/21/21		9/27/21
		Gift	Cowh	Colq	Gift	Cowh	Gift	Cowh	Yield bu/A
Check	—	0	0	0	0	0	0	0	23
PPI & Post									
Treflan + Dimetric 3L & RU Powermax + Flexstar + Amsol	1.5 pt + 10.67 oz & 32 oz + 1 pt + 2 qt	76	87	92	99	99	99	96	41
Prowl H2O + Dimetric 3L & RU Powermax + Avalanche Ultra + Amsol	3 pt + 10.67 oz & 32 oz + 1.5 pt + 2 qt	81	85	87	99	99	99	98	44
Pre & Post									
Sonic & Flexstar + Select Max + COC	5 oz & 1 pt + 12 oz + 0.25%	73	84	89	97	97	99	93	42
Authority MTZ & Avalanche Ultra + Section Three + NIS	14 oz & 1.5 pt + 5.33 oz + 0.25%	69	85	86	94	97	99	94	39
Spartan Charge & Cobra + Select Max + NIS	8.5 oz & 12.8 oz + 12 oz + 0.25%	63	80	89	94	97	99	89	39
Sonic & EverpreX + Durango DMA + Amsol	4.5 oz & 1 pt + 1 qt + 2.5%	50	72	84	99	91	99	79	39
Broadaxe XC + Dimetric 3L & Flexstar GT + Dual Magnum + AMS + MSO	28 oz + 10 oz & 56 oz + 1 pt + 3.4 lb + 1%	68	93	90	99	99	99	98	41
Authority MTZ & Anthem Maxx + RU Powermax + COC + AMS	14 oz & 3 oz + 32 oz + 1 pt + 1.7 lb	40	89	83	99	97	99	92	39
Zidua SC + Verdict & RU Powermax + Outlook + AMSOL	4 oz + 5 oz & 32 oz + 10 oz + 2 qt	69	90	55	99	97	99	94	39
Fierce MTZ & Perpetuo + RU Pmax + Amsol	1 pt & 6 oz + 32 oz + 2 qt	63	92	76	99	98	99	96	38
Dimetric Charged & RU Powermax + Amsol	15 oz & 32 oz + 2 qt	70	95	91	99	98	99	97	41
Surveil + Dimetric 3L & Durango DMA + Amsol	3.25 oz + 8 oz & 1 qt + 2.5%	68	95	88	99	98	99	96	40
LSD (0.05)		15	9	9	2	2	–	5	4

RCB: 4 reps
Variety: AG12XF1
Planting Date: 5/10/21
Pre: 5/11/21
Post: 6/17/21 Soy 5 tri, 11 in; Gift 4-7 in; Cowh 2-11 in; Colq 2-7 in.

Precipitation: (inches)
Pre: 1st week 0.10; 2nd week 0.25
PPI: 5/10/21

Soil: Clay Loam; 5.2% OM; 6.0 pH

Gift=Giant foxtail
Cowh=Common waterhemp
Colq=Common lambsquarters

Comments: Objective of the study was to look at program treatments for soybean weed control. Moderate giant foxtail and heavy lambsquarter and waterhemp pressure. Year started out with limited moisture to activate preemergence treatments and enough moisture until post treatments were sprayed. In mid-August, moisture ran short and took top end off of yields. Soybean yields were a little below normal and were variable due to variations in soils which caused uneven moisture stress. A few differences in treatments were noted besides the check being significantly lower.

South Dakota State University Extension

2021 Dicamba Soybean Demonstration
Northeast Research Farm

Treatment	Rate/A	6/15/21		6/30/21			9/21/21		10/5/21
		Yeft	Colq	Yeft	Rrpw	Colq	Yeft	Rrpw	Yield bu/A
Check	—	0	0	0	0	0	0	0	13
Pre & Epost									
Authority First & Anthem Maxx + Xtendimax + Intact + Volt-Edge	4 oz & 3 oz + 22 oz + 0.5% + 26 oz	0	30	0	99	99	0	99	28
Broadaxe XC + Dimetric 3L & RU Powermax + Tavium + Volt-Edge + Class Act Ridion + OnTarget	28 oz + 10 oz & 27 oz + 56.5 oz + 26 oz + 0.5% + 0.5%	0	33	99	99	99	95	94	61
Prefix + Firstrate & Tavium + RU Powermax + Volt-Edge + Class Act Ridion + OnTarget	2 pt + 0.5 oz & 56.5 oz + 27 oz + 26 oz + 0.5% + 0.5%	0	25	99	99	99	93	93	61
Fierce EZ & RU Pmax + Xtendimax + Perpetuo + Select Max + Intact + Induce + Volt-Edge	6 oz & 32 oz + 22 oz + 6 oz + 9 oz + 0.5% + 0.25% + 26 oz	0	60	99	99	99	93	93	60
Fierce MTZ & RU Pmax + Xtendimax + Perpetuo + Select Max + Intact + Induce + Volt-Edge	1 pt & 32 oz + 22 oz + 6 oz + 9 oz + 0.5% + 0.25% + 26 oz	0	50	99	99	99	92	93	57
Warrant + Mauler & Liberty + Xtendimax + Volt-Edge + Intact + Class Act Ridion	48 oz + 8 oz & 32 oz + 22 oz + 26 oz + 0.5% + 1%	0	58	99	99	99	33	73	53
Warrrant + Mauler & RU Powermax + Xtendimax + Volt-Edge + Intact + Class Act Ridion	48 oz + 8 oz & 32 oz + 22 oz + 26 oz + 0.5% + 1%	0	68	99	99	99	65	79	58
LSD (0.05)		–	12	0.5	–	0.5	11	6	4

RCB: 4 reps
Variety: AG09XF0
Planting Date: 5/14/21
Post: 6/16/21 Soy 2-3 tri, 4-6 in; Yeft 2-8 in; Rrpw 2-5 in; Colq 3-5 in.

Precipitation: (inches)
Pre: 1st week 0.35; 2nd week 0.80
Pre: 5/14/21

Soil: Clay Loam; 4.1% OM; 5.8 pH

Yeft=Yellow foxtail
Rrpw=Redroot pigweed
Colq=Common lambsquarters

Comments: Objective of the study was to look at dicamba program treatments for soybean weed control. Heavy yellow foxtail, redroot pigweed and moderate lambsquarter pressure. The year started dry with enough moisture to start soybeans but limited moisture to activate preemergence chemicals. Some moisture was received by postemergence timing and late season precipitation was good. Soybean yields were normal. Three treatments were significantly lower than all the rest. The check was significantly less than all others.

South Dakota State University Extension

2021 Dicamba Soybean Demonstration
Southeast Research Farm

Treatment	Rate/A	6/16/21		6/29/21		9/22/21		10/6/21
		Vele	Cowh	Vele	Cowh	Vele	Cowh	Yield bu/A
Check	—	0	0	0	0	0	0	16
Pre & Epost								
Authority First & Anthem Maxx + Xtendimax + Intact + Volt-Edge	4 oz & 3 oz + 22 oz + 0.5% + 26 oz	85	80	87	80	91	96	27
Broadaxe XC + Dimetric 3L & RU Powermax + Tavium + Volt-Edge + Class Act Ridion + OnTarget	28 oz + 10 oz & 27 oz + 56.5 oz + 26 oz + 0.5% + 0.5%	72	90	83	92	95	98	31
Prefix + Firstrate & Tavium + RU Powermax + Volt-Edge + Class Act Ridion + OnTarget	2 pt + 0.5 oz & 56.5 oz + 27 oz + 26 oz + 0.5% + 0.5%	86	90	92	92	98	98	35
Fierce EZ & RU Pmax + Xtendimax + Perpetuo + Select Max + Intact + Induce + Volt-Edge	6 oz & 32 oz + 22 oz + 6 oz + 9 oz + 0.5% + 0.25% + 26 oz	72	83	89	82	95	98	35
Fierce MTZ & RU Pmax + Xtendimax + Perpetuo + Select Max + Intact + Induce + Volt-Edge	1 pt & 32 oz + 22 oz + 6 oz + 9 oz + 0.5% + 0.25% + 26 oz	73	83	86	84	95	97	36
Warrant + Mauler & Liberty + Xtendimax + Volt-Edge + Intact + Class Act Ridion	48 oz + 8 oz & 32 oz + 22 oz + 26 oz + 0.5% + 1%	76	90	71	91	63	97	44
Warrrant + Mauler & RU Powermax + Xtendimax + Volt-Edge + Intact + Class Act Ridion	48 oz + 8 oz & 32 oz + 22 oz + 26 oz + 0.5% + 1%	68	86	91	92	97	99	37
LSD (0.05)		10	5	8	3	9	2	7

RCB: 4 reps
Variety: AG21XF0
Planting Date: 5/12/21
Post: 6/18/21 Soy 3 tri, 7-9 in; Vele 1-7 in; Cowh 2-8 in.

Precipitation: (inches)
Pre: 1st week 0.44; 2nd week 0.35
Pre: 5/12/21

Soil: Clay; 4.8% OM; 7.0 pH

Vele=Velvetleaf
Cowh=Common waterhemp

Comments: Objective of the study was to look at dicamba program treatments for soybean weed control. Heavy velvetleaf and common waterhemp pressure. The year started out with moisture to activate preemergent treatments and enough moisture until post treatments were sprayed and then severe drought set in. Soybean yields were about half of normal and were variable due to variations in soils which caused uneven moisture stress. Six treatments were significantly lower than the top treatment. All treatments were better than the check.

South Dakota State University Extension

2021 Dicamba Soybean Demonstration
Volga Research Farm

Treatment	Rate/A	6/14/21			6/28/21		9/21/21		9/27/21
		Gift	Cowh	Colq	Gift	Cowh	Gift	Cowh	Yield bu/A
Check	—	0	0	0	0	0	0	0	20
Pre & Epost									
Authority First & Anthem Maxx + Xtendimax + Intact + Volt-Edge	4 oz & 3 oz + 22 oz + 0.5% + 26 oz	63	70	84	90	92	58	73	35
Broadaxe XC + Dimetric 3L & RU Powermax + Tavium + Volt-Edge + Class Act Ridion + OnTarget	28 oz + 10 oz & 27 oz + 56.5 oz + 26 oz + 0.5% + 0.5%	74	85	93	99	97	99	98	42
Prefix + Firstrate & Tavium + RU Powermax + Volt-Edge + Class Act Ridion + OnTarget	2 pt + 0.5 oz & 56.5 oz + 27 oz + 26 oz + 0.5% + 0.5%	75	93	92	98	97	99	98	42
Fierce EZ & RU Pmax + Xtendimax + Perpetuo + Select Max + Intact + Induce + Volt-Edge	6 oz & 32 oz + 22 oz + 6 oz + 9 oz + 0.5% + 0.25% + 26 oz	50	94	81	99	98	99	97	42
Fierce MTZ & RU Pmax + Xtendimax + Perpetuo + Select Max + Intact + Induce + Volt-Edge	1 pt & 32 oz + 22 oz + 6 oz + 9 oz + 0.5% + 0.25% + 26 oz	48	94	76	99	98	99	98	46
Warrant + Mauler & Liberty + Xtendimax + Volt-Edge + Intact + Class Act Ridion	48 oz + 8 oz & 32 oz + 22 oz + 26 oz + 0.5% + 1%	63	91	78	97	98	97	97	41
Warrrant + Mauler & RU Powermax + Xtendimax + Volt-Edge + Intact + Class Act Ridion	48 oz + 8 oz & 32 oz + 22 oz + 26 oz + 0.5% + 1%	83	93	88	99	99	99	99	42
LSD (0.05)		13	7	14	2	2	3	3	6

RCB: 4 reps
Variety: AG12XF1
Planting Date: 5/10/21
Post: 6/17/21 Soy 5 tri, 11 in; Gift 4-7 in; Cowh 2-11 in; Colq 2-7 in.

Precipitation: (inches)
Pre: 1st week 0.10; 2nd week 0.01
Pre: 5/10/21

Soil: Clay Loam; 5.2% OM; 6.0 pH

Gift=Giant foxtail
Cowh=Common waterhemp
Colq=Common lambsquarters

Comments: Objective of the study was to look at dicamba program treatments for soybean weed control. Moderate giant foxtail and heavy lambsquarter and waterhemp pressure. The year started out with limited moisture to activate preemergence treatments and enough moisture until post treatments were sprayed. In mid-August, moisture ran short and took top end off of yields. Soybean yields were a little below normal and were variable due to variations in soils. One treatment was significantly lower than the rest due to poor foxtail control, however the check was significantly lower than all.

South Dakota State University Extension

2021 Enlist Soybean Demonstration
Northeast Research Farm

Treatment	Rate/A	6/15/21		6/30/21			7/20/21			9/21/21		10/5/21
		Yeft	Wimu	Yeft	Rrpw	Wimu	Yeft	Rrpw	Wimu	Yeft	Rrpw	Yield bu/A
Pre & Post												
Sonic & Enlist One + Durango DMA + Amsol	5 oz & 32 oz + 32 oz + 2.5%	0	48	99	99	99	92	99	99	84	99	62
Sonic & Enlist One + Liberty + Amsol	5 oz & 2 pt + 2 pt + 2.5%	0	55	95	99	99	86	99	99	78	97	59
Sonic & Enlist One + EverpreX + Durango DMA + Amsol	5 oz & 2 pt + 1 pt + 2 pt + 2.5%	0	48	99	99	99	94	99	99	89	98	59
Kyber & Enlist One + Durango DMA + Amsol	1 pt & 32 oz + 32 oz + 2.5%	0	73	99	99	99	96	99	99	95	99	63
Kyber & Enlist One + Liberty + Amsol	1 pt & 2 pt + 2 pt + 2.5%	0	74	93	99	99	88	99	99	88	98	61
Kyber & Enlist One + EverpreX + Durango DMA + Amsol	1 pt & 2 pt + 1 pt + 2 pt + 2.5%	0	76	99	99	99	96	99	99	95	99	62
Kyber & Enlist One + EverpreX + Liberty + Amsol	1 pt & 2 pt + 1 pt + 2 pt + 2.5%	0	70	95	99	99	87	99	99	87	98	60
Verdict + Outlook & Liberty + Enlist One + Zidua SC + AMS	5 oz + 8 oz & 32 oz + 32 oz + 2.5 oz + 3 lb	0	38	96	99	99	87	99	99	88	98	59
Sonic & EverpreX + Enlist One + Liberty + Amsol	5 oz & 1 pt + 1 qt + 32 oz + 2.5%	0	48	96	99	99	86	99	99	80	95	57
Check	—	0	0	0	0	0	0	0	0	0	0	12
LSD (0.05)		–	13	2	–	–	2	0.5	–	6	2	4

RCB: 4 reps
Variety: NK S09-3E3
Planting Date: 5/14/21
Post: 6/14/21 Soy 1-2 tri, 5-7 in; Yeft 3-6 in; Wimu 3-6 in; Rrpw 2-4 in.

Precipitation: (inches)
Pre: 1st week 0.35; 2nd week 0.80
Pre: 5/14/21

Soil: Clay Loam; 4.1% OM; 5.8 pH

Yeft=Yellow foxtail
Wimu=Wild mustard
Rrpw=Redroot pigweed

Comments: Objective of the study was to look at enlist program treatments for soybean weed control. Heavy yellow foxtail, redroot pigweed and moderate wild mustard pressure. The year started dry with enough moisture to start soybeans but limited moisture to activate preemergence chemicals. Some moisture was received by postemergence timing and late season precipitation was good. Soybean yields were normal. One treatment was a little less than the rest, however the check was significantly lower than all treatments.

South Dakota State University Extension

2021 Enlist Soybean Demonstration
Southeast Research Farm

Treatment	Rate/A	6/16/21		6/29/21		7/15/21		9/22/21		10/6/21
		Vele	Cowh	Vele	Cowh	Vele	Cowh	Vele	Cowh	Yield bu/A
Pre & Post										
Sonic & Enlist One + Durango DMA + Amsol	5 oz & 32 oz + 32 oz + 2.5%	83	86	99	98	99	99	96	95	23
Sonic & Enlist One + Liberty + Amsol	5 oz & 2 pt + 2 pt + 2.5%	86	89	99	99	99	99	99	99	32
Sonic & Enlist One + EverpreX + Durango DMA + Amsol	5 oz & 2 pt + 1 pt + 2 pt + 2.5%	83	88	99	98	99	99	99	99	25
Kyber & Enlist One + Durango DMA + Amsol	1 pt & 32 oz + 32 oz + 2.5%	49	89	99	98	99	99	99	99	28
Kyber & Enlist One + Liberty + Amsol	1 pt & 2 pt + 2 pt + 2.5%	53	88	99	99	99	99	99	99	32
Kyber & Enlist One + EverpreX + Durango DMA + Amsol	1 pt & 2 pt + 1 pt + 2 pt + 2.5%	43	87	99	98	99	99	99	99	23
Kyber & Enlist One + EverpreX + Liberty + Amsol	1 pt & 2 pt + 1 pt + 2 pt + 2.5%	45	87	99	99	99	99	98	99	32
Verdict + Outlook & Liberty + Enlist One + Zidua SC + AMS	5 oz + 8 oz & 32 oz + 32 oz + 2.5 oz + 3 lb	93	96	99	99	99	99	99	99	33
Sonic & EverpreX + Enlist One + Liberty + Amsol	5 oz & 1 pt + 1 qt + 32 oz + 2.5%	86	90	99	99	99	99	99	99	32
Check	—	0	0	0	0	0	0	0	0	8
LSD (0.05)		9	5	–	1	0.5	–	3	3	5

RCB: 4 reps
Variety: NK S20-E3
Planting Date: 5/12/21
Post: 6/18/21 Soy 3 tri, 7-9 in; Vele 1-7 in; Cowh 2-8 in.

Precipitation: (inches)
Pre: 1st week 0.44; 2nd week 0.35
Pre: 5/12/21

Soil: Clay; 4.6% OM; 7.4 pH

Vele=Velvetleaf
Cowh=Common waterhemp

Comments: Objective of the study was to look at Enlist program treatments for soybean weed control. Heavy velvetleaf and common waterhemp pressure. The year started out with moisture to activate preemergent treatments and enough moisture until post treatments were sprayed and then severe drought set in. Soybean yields were about half of normal and were variable due to variations in soils which caused uneven moisture stress. Three of the treatments were significantly lower than the top treatment. All treatments were better than the check.

South Dakota State University Extension

2021 Enlist Soybean Demonstration
Volga Research Farm

Treatment	Rate/A	6/14/21		6/28/21		7/15/21			9/21/21	9/27/21	
		Cowh	Colq	Cowh	Colq	Gift	Cowh	Colq	Gift	Cowh	Yield bu/A
Pre & Post											
Sonic & Enlist One + Durango DMA + Amsol	5 oz & 32 oz + 32 oz + 2.5%	85	89	97	99	99	99	99	99	99	38
Sonic & Enlist One + Liberty + Amsol	5 oz & 2 pt + 2 pt + 2.5%	86	89	99	99	99	99	99	99	98	39
Sonic & Enlist One + EverpreX + Durango DMA + Amsol	5 oz & 2 pt + 1 pt + 2 pt + 2.5%	87	91	95	99	99	98	99	99	95	40
Kyber & Enlist One + Durango DMA + Amsol	1 pt & 32 oz + 32 oz + 2.5%	91	91	99	99	99	99	99	99	99	40
Kyber & Enlist One + Liberty + Amsol	1 pt & 2 pt + 2 pt + 2.5%	92	86	99	99	99	99	99	99	99	38
Kyber & Enlist One + EverpreX + Durango DMA + Amsol	1 pt & 2 pt + 1 pt + 2 pt + 2.5%	92	92	99	99	99	99	99	99	99	37
Kyber & Enlist One + EverpreX + Liberty + Amsol	1 pt & 2 pt + 1 pt + 2 pt + 2.5%	91	93	99	99	99	99	99	99	98	41
Verdict + Outlook & Liberty + Enlist One + Zidua SC + AMS	5 oz + 8 oz & 32 oz + 32 oz + 2.5 oz + 3 lb	88	93	99	99	99	99	99	99	99	40
Sonic & EverpreX + Enlist One + Liberty + Amsol	5 oz & 1 pt + 1 qt + 32 oz + 2.5%	88	92	99	99	99	99	99	99	99	38
Check	—	0	0	0	0	0	0	0	0	0	24
LSD (0.05)		6	6	1	1	0.5	1	–	–	2	4

RCB: 4 reps
Variety: S15-3E3
Planting Date: 5/10/21
Post: 6/17/21 Soy 5 tri, 11 in; Cowh 2-8 in; Colq 2-5 in.

Precipitation: (inches)
Pre: 1st week 0.10; 2nd week 0.25
Pre: 5/11/21

Soil: Clay Loam; 5.2% OM; 6.0 pH

Cowh=Common waterhemp
Colq=Common lambsquarters
Gift=Giant foxtail

Comments: Objective of the study was to look at Enlist program treatments for soybean weed control. Moderate giant foxtail and heavy lambsquarter and waterhemp pressure. The year started out with limited moisture to activate preemergence treatments and enough moisture until post treatments were sprayed. In mid-August, moisture ran short and took top end off of yields. Soybean yields were a little below normal and were variable due to variations in soils which caused uneven moisture stress. No treatment differences were noted besides the check being significantly lower.

South Dakota State University Extension

2021 Liberty Link Soybean Demonstration
Northeast Research Farm

Treatment	Rate/A	6/15/21		6/30/21		10/5/21
		Yeft	Wimu	Yeft	Rrpw	Yield bu/A
Check	—	0	0	0	0	12
Pre & Post						
Dimetric Charged & Total SL + AMS	15 oz & 32 oz + 1.5 lb	0	53	82	99	54
Authority MTZ & Cheetah + AMS	14 oz & 32 oz + 3 lb	0	56	86	99	56
Moccasin MTZ & Interline + AMS	3.56 pt & 32 oz + 3 lb	0	63	79	99	54
Fierce EZ & Scout + Perpetuo + AMS	6 oz & 32 oz + 6 oz + 3 lb	0	73	84	99	56
Fierce MTZ & Scout + Perpetuo + AMS	16 oz & 32 oz + 6 oz + 3 lb	0	55	79	99	54
Zidua Pro & Liberty + RU Powermax + Outlook + AMS	4.5 oz & 32 oz + 32 oz + 10 oz + 3 lb	0	40	99	99	66
LSD (0.05)		–	17	5	–	4

RCB: 4 reps
Variety: NK S09-3E3
Planting Date: 5/14/21
Post: 6/14/21 Soy 1-2 tri, 5-7 in; Yeft 3-6 in; Wimu 3-6 in; Rrpw 2-4 in.

Precipitation: (inches)
Pre: 1st week 0.35; 2nd week 0.80
Pre: 5/14/21

Soil: Clay Loam; 4.1% OM; 5.8 pH

Yeft=Yellow foxtail
Wimu=Wild mustard
Rrpw=Redroot pigweed

Comments: Objective of the study was to look at Liberty Link program treatments for soybean weed control. Heavy yellow foxtail, redroot pigweed and moderate wild mustard pressure. The year started dry with enough moisture to start soybeans but limited moisture to activate preemergence chemicals. Some moisture was received by postemergence timing and late season precipitation was good. Soybean yields were normal. One treatment was significantly better than all the rest. The check was significantly poorer than all others.

South Dakota State University Extension

2021 Liberty Link Soybean Demonstration
Southeast Research Farm

Treatment	Rate/A	6/16/21			6/29/21		9/22/21		10/6/21
		Grft	Vele	Cowh	Vele	Cowh	Vele	Cowh	Yield bu/A
Check	—	0	0	0	0	0	0	0	7
Pre & Post									
Authority MTZ & Cheetah + AMS	14 oz & 32 oz + 3 lb	55	61	84	94	97	90	88	27
Dimetric Charged & Total SL + AMS	15 oz & 32 oz + 1.5 lb	53	60	89	96	98	92	77	29
Moccasin MTZ & Interline + AMS	3.56 pt & 32 oz + 3 lb	75	70	90	96	97	93	84	29
Fierce EZ & Scout + Perpetuo + AMS	6 oz & 32 oz + 6 oz + 3 lb	60	55	85	98	99	94	76	29
Fierce MTZ & Scout + Perpetuo + AMS	16 oz & 32 oz + 6 oz + 3 lb	50	54	81	94	96	88	81	29
Zidua Pro & Liberty + RU Powermax + Outlook + AMS	4.5 oz & 32 oz + 32 oz + 10 oz + 3 lb	75	84	89	99	99	99	97	40
LSD (0.05)		6	9	7	2	3	2	5	7

RCB: 4 reps
Variety: NK S20-LLGT27
Planting Date: 5/12/21
Post: 6/15/21 Soy 2-3 tri, 6-8 in; Grft 4-7 in; Vele 2-7 in; Cowh 2-7 in.

Precipitation: (inches)
Pre: 1st week 0.44; 2nd week 0.35
Pre: 5/12/21

Soil: Clay; 4.6% OM; 7.4 pH

Grft=Green foxtail
Vele=Velvetleaf
Cowh=Common waterhemp

Comments: Objective of the study was to look at Liberty Link program treatments for soybean weed control. Heavy velvetleaf and common waterhemp pressure. The year started out with moisture to activate preemergent treatments and enough moisture until post treatments were sprayed and then severe drought set in. Soybean yields were about half of normal and were variable due to variations in soils which caused uneven moisture stress. One treatment was significantly better than all other treatments. All treatments were better than the check.

South Dakota State University Extension

2021 Liberty Link Soybean Demonstration
Volga Research Farm

Treatment	Rate/A	6/14/21		6/28/21		9/21/21			9/28/21
		Cowh	Colq	Cowh	Colq	Gift	Cowh	Colq	Yield bu/A
Check	—	0	0	0	0	0	0	0	17
Pre & Post									
Authority MTZ & Cheetah + AMS	14 oz & 32 oz + 3 lb	84	95	97	98	99	97	97	42
Dimetric Charged & Total SL + AMS	15 oz & 32 oz + 1.5 lb	91	94	99	98	99	98	97	42
Moccasin MTZ & Interline + AMS	3.56 pt & 32 oz + 3 lb	91	94	99	98	99	99	97	43
Fierce EZ & Scout + Perpetuo + Select Max + Induce + AMS	6 oz & 32 oz + 6 oz + 9 oz + 0.25% + 3 lb	88	70	98	94	99	97	87	43
Fierce MTZ & Scout + Perpetuo + Select Max + Induce + AMS	16 oz & 32 oz + 6 oz + 9 oz + 0.25% + 3 lb	89	76	99	96	99	98	92	44
Zidua Pro & Liberty + RU Powermax + Outlook + AMS	4.5 oz & 32 oz + 32 oz + 10 oz + 3 lb	70	88	99	99	99	98	99	44
LSD (0.05)		4	3	1	2	–	1	3	6

RCB: 4 reps
Variety: AG 12XF1
Planting Date: 5/10/21
Precipitation: (inches)
Pre: 1st week 0.10; 2nd week 0.25
Pre: 5/11/21
Post: 6/15/21 Soy 3-4 tri, 8-10 in; Cowh 2-9 in; Colq 3-7 in; Grft 3-6 in.

Soil: Clay Loam; 5.2% OM; 6.0 pH

Cowh=Common waterhemp
Colq=Common lambsquarters
Gift=Giant foxtail

Comments: Objective of the study was to look at Liberty Link program treatments for soybean weed control. Moderate giant foxtail and heavy lambsquarter and waterhemp pressure. The year started out with limited moisture to activate preemergent treatments and enough moisture until post treatments were sprayed. In mid-August, moisture ran short and took top end off of yields. Soybean yields were a little below normal and were variable due to variations in soils which caused uneven moisture stress. No treatment differences were noted besides the check being significantly lower.

South Dakota State University Extension

2021 LLGT27 Soybean Demonstration
Northeast Research Farm

Treatment	Rate/A	6/15/21		6/30/21			9/21/21		10/5/21
		Yeft	Wimu	Yeft	Rrpw	Wimu	Yeft	Rrpw	Yield bu/A
Check	—	0	0	0	0	0	0	0	13
Post									
RU Powermax + AMS	32 oz + 1.7 lb	–	–	99	99	99	50	92	57
Liberty + AMS	32 oz + 1.7 lb	–	–	89	99	99	43	60	51
Liberty + RU Powermax + AMS	32 oz + 32 oz + 1.7 lb	–	–	99	99	99	50	91	56
Pre & Post									
Alite 27 + Dimetric 3L & RU Powermax + AMS	3 oz + 10.67 oz & 32 oz + 1.7 lb	28	94	99	99	99	90	99	66
Alite 27 + Dimetric 3L & Liberty + AMS	3 oz + 10.67 oz & 32 oz + 1.7 lb	31	94	88	99	99	94	98	61
Alite 27 + Dimetric 3L & Liberty + Outlook + AMS	3 oz + 10.67 oz & 32 oz + 12 oz + 1.7 lb	33	95	93	99	99	93	98	67
Alite 27 + Outlook & Liberty + AMS	3 oz + 10 oz & 32 oz + 1.7 lb	29	94	89	99	99	94	97	60
Alite 27 + Zidua SC & Liberty + RU Powermax + Outlook + AMS	2 oz + 2.5 oz & 32 oz + 32 oz + 10 oz + 3 lb	23	89	99	99	99	94	99	68
LSD (0.05)		6	5	1	–	–	3	4	4

RCB: 4 reps
Variety: S12-LLGT27
Planting Date: 5/14/21
Post: 6/14/21 Soy 1-2 tri, 5-7 in; Yeft 3-6 in; Wimu 3-6 in; Rrpw 2-4 in.

Precipitation: (inches)
Pre: 1st week 0.35; 2nd week 0.80
Pre: 5/14/21

Soil: Clay Loam; 4.1% OM; 5.8 pH

Yeft=Yellow foxtail
Wimu=Wild mustard
Rrpw=Redroot pigweed

Comments: Objective of the study was to look at LLGT-27 program treatments for soybean weed control. Heavy yellow foxtail, redroot pigweed and moderate wild mustard pressure. The year started dry with enough moisture to start soybeans but limited moisture to activate preemergence chemicals. Some moisture was received by postemergence timing and late season precipitation was good. Soybean yields were normal. Three treatments were significantly better than all the rest. The check was significantly poorer than all others.

South Dakota State University Extension

2021 LLGT27 Soybean Demonstration
Southeast Research Farm

Treatment	Rate/A	6/16/21			6/29/21			9/22/21		10/6/21
		Grft	Vele	Cowh	Grft	Vele	Cowh	Vele	Cowh	Yield bu/A
Check	—	0	0	0	0	0	0	0	0	7
Post										
RU Powermax + AMS	32 oz + 1.7 lb	–	–	–	99	99	44	97	76	18
Liberty + AMS	32 oz + 1.7 lb	–	–	–	99	99	97	90	67	16
Liberty + RU Powermax + AMS	32 oz + 32 oz + 1.7 lb	–	–	–	99	99	97	94	77	13
Pre & Post										
Alite 27 + Dimetric 3L & RU Powermax + AMS	3 oz + 10.67 oz & 32 oz + 1.7 lb	94	95	92	99	99	94	99	94	22
Alite 27 + Dimetric 3L & Liberty + AMS	3 oz + 10.67 oz & 32 oz + 1.7 lb	95	95	94	99	99	97	98	98	25
Alite 27 + Dimetric 3L & Liberty + Outlook + AMS	3 oz + 10.67 oz & 32 oz + 12 oz + 1.7 lb	94	95	94	99	99	99	99	98	22
Alite 27 + Outlook & Liberty + AMS	3 oz + 10 oz & 32 oz + 1.7 lb	96	96	95	99	99	99	99	99	22
Alite 27 + Zidua SC & Liberty + RU Pmax + Outlook + AMS	2 oz + 2.5 oz & 32 oz + 32 oz + 10 oz + 3 lb	93	94	93	99	99	99	99	99	23
LSD (0.05)		2	1	2	–	1	3	2	3	4

RCB: 4 reps
Variety: S20-LLGT27
Planting Date: 5/12/21
Post: 6/15/21 Soy 2-3 tri, 6-8 in; Grft 4-7 in; Vele 1-7 in; Cowh 2-7 in.

Precipitation: (inches)
Pre: 1st week 0.44; 2nd week 0.35
Pre: 5/12/21

Soil: Clay; 4.6% OM; 7.4 pH

Grft=Green foxtail
Vele=Velvetleaf
Cowh=Common waterhemp

Comments: Objective of the study was to look at LLGT-27 program treatments for soybean weed control. Heavy velvetleaf and common waterhemp pressure. The year started out with moisture to activate preemergent treatments and enough moisture until post treatments were sprayed and then severe drought set in. Soybean yields were about half of normal and were variable due to variations in soils which caused uneven moisture stress. Only the post alone treatments were significantly lower than the top treatment. All treatments were better than the check.

South Dakota State University Extension

2021 LLGT27 Soybean Demonstration
Volga Research Farm

Treatment	Rate/A	6/14/21		6/28/21		9/28/21
		Cowh	Colq	Cowh	Colq	Yield bu/A
Check	—	0	0	0	0	22
Epost						
RU Powermax + AMS	32 oz + 1.7 lb	–	–	50	99	31
Liberty + AMS	32 oz + 1.7 lb	–	–	69	99	35
Liberty + RU Powermax + AMS	32 oz + 32 oz + 1.7 lb	–	–	87	99	42
Pre & Post						
Alite 27 + Dimetric 3L & RU Powermax + AMS	3 oz + 10.67 oz & 32 oz + 1.7 lb	96	99	98	99	45
Alite 27 + Dimetric 3L & Liberty + AMS	3 oz + 10.67 oz & 32 oz + 1.7 lb	98	99	99	99	46
Alite 27 + Dimetric 3L & Liberty + Outlook + AMS	3 oz + 10.67 oz & 32 oz + 12 oz + 1.7 lb	98	99	99	99	41
Alite 27 + Outlook & Liberty + AMS	3 oz + 10 oz & 32 oz + 1.7 lb	97	99	99	99	46
Alite 27 + Zidua SC & Liberty + RU Powermax + Outlook + AMS	2 oz + 2.5 oz & 32 oz + 32 oz + 10 oz + 3 lb	91	99	99	99	46
LSD (0.05)		2	0.5	3	–	5

RCB: 4 reps
Variety: S16-LLGT27
Planting Date: 5/10/21
Epost: 6/14/21 Soy 3 tri, 8-9 in; Cowh 2-8 in; Colq 2-7 in.
Post: 6/17/21 Soy 4-5 tri, 8-9 in; Cowh 2-5 in; Colq 2-4 in.

Precipitation: (inches)
Pre: 1st week 0.10; 2nd week 0.25
Pre: 5/11/21

Soil: Clay Loam; 5.2% OM; 6.0 pH

Cowh=Common waterhemp
Colq=Common lambsquarters

Comments: Objective of the study was to look at program LLGT27 treatments for soybean weed control. Heavy lambsquarter and waterhemp pressure. The year started out with moisture to activate preemergence treatments and enough moisture until post treatments were sprayed. In mid-August, moisture ran short and took top end off of yields. Soybean yields were a little below normal and were variable due to variations in soils which caused uneven moisture stress. The check was significantly lower than all others. The Roundup and Liberty treatments were also significantly poorer that the rest.

South Dakota State University Extension

2021 Xtendflex Soybean Herbicide Recommendations
Southeast Research Farm

Treatment	Rate/A	6/29/21			7/15/21		9/22/21		10/6/21
		Vele	Cowh	VCRR	Vele	Cowh	Vele	Cowh	Yield bu/A
Check	—	0	0	0	0	0	0	0	21
Pre & Epost									
Xtendimax + VRA + MON 301668 + Mauler & Xtendimax + VRA + RU Powermax 3 + MON 301668 + Class Act Ridion + Intact	22 oz + 20 oz + 30 oz + 8 oz & 22 oz + 20 oz + 30 oz + 30 oz + 1% + 0.5%	99	98	0	99	99	99	99	41
Xtendimax + VRA + MON 301668 + Mauler & RU Powermax 3 + MON 301668 + Amsol	22 oz + 20 oz + 30 oz + 8 oz & 32 oz + 30 oz + 30 oz + 2.5%	97	99	0	94	96	93	97	47
Xtendimax + VRA + MON 301668 + Mauler & Liberty + RU Powermax 3 + Amsol	22 oz + 20 oz + 30 oz + 8 oz & 32 oz + 30 oz + 2.5%	98	99	0	99	96	97	98	45
Xtendimax + VRA + MON 301668 + Mauler & Liberty + Select Max + Amsol	22 oz + 20 oz + 30 oz + 8 oz & 32 oz + 12 oz + 2.5%	98	99	0	96	97	95	97	45
Xtendimax + VRA + Fierce & Liberty + RU Powermax 3 + MON 301668 + Amsol	22 oz + 20 oz + 3 oz & 32 oz + 30 oz + 30 oz + 2.5%	98	99	0	98	99	97	99	40
Xtenimax + VRA + Fierce & Xtendimax + VRA + RU Powermax 3 + MON 301668 + Class Act Ridion + Intact	22 oz + 20 oz + 3 oz & 22 oz + 20 oz + 30 oz + 30 oz + 1% + 0.5%	99	97	0	99	99	99	99	44
MON 301668 + Mauler & Xtendimax + VRA + RU Powermax 3 + MON 301668 + Class Act Ridion + Intact	30 oz + 8 oz & 22 oz + 20 oz + 30 oz + 30 oz + 1% + 0.5%	99	98	0	99	99	99	99	42
MON 301668 + Mauler & Liberty + RU Powermax 3 + MON 301668 + Amsol	30 oz + 8 oz & 32 oz + 30 oz + 30 oz + 2.5%	98	98	0	93	96	94	94	46
MON 301668 + Mauler & RU Powermax 3 + Liberty + Amsol	30 oz + 8 oz & 30 oz + 32 oz + 2.5%	97	99	0	97	97	95	95	40
MON 301668 + Mauler & Liberty + Select Max + Amsol	30 oz + 8 oz & 32 oz + 12 oz + 2.5%	95	98	0	91	91	90	85	35
MON 301668 + Mauler & Liberty + MON 301668 + Xtendimax + VRA + Class Act Ridion + Intact	30 oz + 8 oz & 32 oz + 30 oz + 22 oz + 20 oz + 1% + 0.5%	93	99	0	91	96	93	99	41
MON 301668 + Mauler & Liberty + MON 301668 + Xtendimax + VRA + Class Act Ridion + RU Powermax 3 + Intact	30 oz + 8 oz & 32 oz + 30 oz + 22 oz + 20 oz + 1% + 30 oz + 0.5%	97	99	0	97	98	95	98	44
MON 301668 + Mauler & Warrant Ultra + Liberty + Amsol	30 oz + 8 oz & 48 oz + 32 oz + 2.5%	91	98	0	80	86	86	87	37
Xtendimax + VRA + Warrant Ultra + Class Act Ridion + Intact & Xtendimax + VRA + RU Powermax 3 + MON 301668 + Class Act Ridion + Intact	22 oz + 20 oz + 48 oz + 1% + 0.5% & 22 oz + 20 oz + 30 oz + 30 oz + 1% + 0.5%	98	99	0	99	99	99	99	45
Xtendimax + VRA + Warrant Ultra + Class Act Ridion + Intact & Liberty + RU Powermax 3 + MON 301668 + Amsol	22 oz + 20 oz + 48 oz + 1% + 0.5% & 32 oz + 30 oz + 30 oz + 2.5%	98	99	0	97	97	96	99	42
LSD (0.05)		2	1	–	5	5	3	5	7

RCB: 4 reps
Variety: AG21XF0
Planting Date: 5/12/21
Epost: 6/15/21 Soy 2-3 tri, 6-8 in; Vele 2-6 in; Cowh 1-6 in.

Precipitation: (inches)
Pre: 1st week 0.44; 2nd week 0.35
Pre: 5/12/21

Soil: Clay; 4.6% OM; 6.1 pH

Vele=Velvetleaf
Cowh=Common waterhemp
VCRR=Visual Crop Response Rating (0=no injury; 100=complete kill)

Comments: Objective of the study was to look at treatments for soybean weed control. Heavy velvetleaf and common waterhemp pressure. The year started out with moisture to activate preemergence treatments and enough moisture until post treatments were sprayed and then severe drought set in. Soybean yields were about half of normal and were variable due to variations in soils which caused uneven moisture stress. Three of the treatments were significantly lower than the top treatment. All treatments were better than the check.

South Dakota State University Extension

2021 Competitive Soybean System Comparisons
Volga Research Farm

Variety	Treatment	Rate/A	6/28/21			7/12/21		9/22/21			9/27/21
			Gift	Cowh	VCRR	Gift	Cowh	Gift	Cowh	VCRR	Yield bu/A
Xtendflex	**Pre & Post & Lpost**										
AG12XF1	Xtendimax + VRA + Mauler + MON 301668 + Intact & Xtendimax + VRA + RU Powermax 3 + MON 301668 + Class Act Ridion + Intact & Liberty + Amsol	22 oz + 20 oz + 8 oz + 30 oz + 0.5% & 22 oz + 20 oz + 30 oz + 30 oz + 1% + 0.5% & 32 oz + 2.5%	99	99	0	99	99	99	99	0	38
AG13XF0	Xtendimax + VRA + Mauler + MON 301668 + Intact & Xtendimax + VRA + RU Powermax 3 + MON 301668 + Class Act Ridion + Intact & Liberty + Amsol	22 oz + 20 oz + 8 oz + 30 oz + 0.5% & 22 oz + 20 oz + 30 oz + 30 oz + 1% + 0.5% & 32 oz + 2.5%	99	99	0	99	99	99	99	0	36
AG09XF0	Xtendimax + VRA + Mauler + MON 301668 + Intact & Xtendimax + VRA + RU Powermax 3 + MON 301668 + Class Act Ridion + Intact & Liberty + Amsol	22 oz + 20 oz + 8 oz + 30 oz + 0.5% & 22 oz + 20 oz + 30 oz + 30 oz + 1% + 0.5% & 32 oz + 2.5%	99	99	0	99	99	99	99	0	36
Enlist	**Pre & Post & Lpost**										
G1940E	Enlist One + Sonic & Enlist One + Durango DMA + Dual II Mag + Amsol & Liberty + Amsol	32 oz + 4 oz & 32 oz + 36 oz + 16 oz + 2.5% & 32 z + 2.5%	99	99	0	99	99	99	99	0	37
S13-E3	Enlist One + Sonic & Enlist One + Durango DMA + Dual II Mag + Amsol & Liberty + Amsol	32 oz + 4 oz & 32 oz + 36 oz + 16 oz + 2.5% & 32 z + 2.5%	99	99	0	99	99	99	99	0	32
S15-3E3	Enlist One + Sonic & Enlist One + Durango DMA + Dual II Mag + Amsol & Liberty + Amsol	32 oz + 4 oz & 32 oz + 36 oz + 16 oz + 2.5% & 32 z + 2.5%	99	99	0	99	99	99	99	0	38
S15-3E3	Enlist One + Mauler + MON 301668 & Enlist One + RU Powermax 3 + MON 301668 + Intact & Liberty + Amsol	32 oz + 8 oz + 30 oz & 32 oz + 30 oz + 30 oz + 0.5% & 32 oz + 2.5%	99	99	0	99	99	99	99	0	44

RCB: 1 rep
Planting Date: 5/10/21
Pre: 5/10/21
Lpost: 6/29/21 Soy 12-16 in.

Precipitation: (inches)
Pre: 1st week 0.10; 2nd week 0.01
Post: 6/14/21 Soy 2-3 tri, 7-9 in; Gift 3-7 in; Cowh 1-7 in.

Gift=Giant foxtail
Cowh=Common waterhemp

Comments: Objective of the study was to look at system treatments for soybean weed control. Moderate waterhemp pressure. The year started out with limited moisture to activate preemergence treatments and enough moisture until post treatments were sprayed. In mid-August moisture ran short and took top end off of yields. No yield comparisons can be made as this was a strip test.

South Dakota State University Extension

2021 Weed Control in Soybeans with Broadaxe XC and Tavium
Northeast Research Farm

Treatment	Rate/A	6/3/21		6/30/21			7/20/21			10/5/21
		Yeft	VCRR	Yeft	Rrpw	Colq	Yeft	Rrpw	Colq	Yield bu/A
Pre & Epost										
Broadaxe XC + Tricor DF & Tavium + RU Powermax + Class Act Ridion + Volt-Edge + OnTarget	28 oz + 5 oz & 56.5 oz + 27 oz + 0.5% + 26 oz + 0.5%	3	0	99	99	99	92	95	98	63
Tavium + Tricor DF + Volt-Edge + OnTarget & Flexstar GT + Dual Magnum + MSO + AMS	56.5 oz + 5 oz + 26 oz + 0.5% & 3.5 pt + 1 pt + 1% + 1.7 lb	19	0	99	99	99	93	94	98	64
Broadaxe XC + Tricor DF & RU Powermax + Tavium + Volt-Edge + Class Act Ridion + OnTarget	28 oz + 5 oz & 27 oz + 56.5 oz + 26 oz + 0.5% + 0.5%	3	0	99	99	99	93	93	98	66
Prefix + Firstrate & Tavium + RU Powermax + Volt-Edge + Class Act Ridion + OnTarget	2 pt + 0.5% & 56.5 oz + 27 oz + 26 oz + 0.5% + 0.5%	3	0	99	99	99	94	94	98	64
Boundary + Firstrate & Tavium + RU Powermax + Volt-Edge + Class Act Ridion + OnTarget	2 pt + 0.5 oz & 56.5 oz + 27 oz + 26 oz + 0.5% + 0.5%	3	0	99	99	99	92	94	97	64
Check	—	0	0	0	0	0	0	0	0	10
LSD (0.05)		6	–	–	–	–	2	2	1	3

RCB: 4 reps
Variety: AG09XFO
Planting Date: 5/14/21
Epost: 6/14/21 Soy 3 tri, 7-9 in; Yeft 3-6 in; Rrpw 2-4 in.

Precipitation: (inches)
Pre: 1st week 0.35; 2nd week 0.80
Pre: 5/14/21

Soil: Clay Loam; 4.1% OM; 5.8 pH

Yeft=Yellow foxtail
Rrpw=Redroot pigweed
Colq=Common lambsquarters
VCRR=Visual Crop Response Rating (0=no injury; 100=complete kill)

Comments: Objective of the study was to look at treatments for soybean weed control. Heavy yellow foxtail and redroot pigweed moderate lambsquarter pressure. The year started with enough moisture to start soybeans and activate preemergence treatments. Some moisture was received by the postemergence timing and late season moisture was good. Soybean yields were normal with no treatment differences except the check. Very little differences in treatments.

South Dakota State University Extension

2021 Zidua Pro Residual Weed Control Comparison
Southeast Research Farm

Treatment	Rate/A	6/9/21		6/21/21	
		Vele	Cowh	Vele	Cowh
Check	—	0	0	0	0
Pre					
Boundary	24 oz	86	90	43	80
Zidua Pro	6 oz	96	96	90	90
Zidua Pro	4.5 oz	95	96	89	86
Sonic	5 oz	93	93	84	73
Authority Supreme	6.5 oz	91	87	78	75
Fierce MTZ	16 oz	91	94	73	80
Authority Edge	9 oz	92	91	74	78
LSD (0.05)		4	3	4	5

RCB: 4 reps
Variety: AG21XFO
Planting Date: 5/12/21

Soil: Clay; 4.6% OM; 6.1 pH

Precipitation: (inches)
Pre: 1st week 0.44; 2nd week 0.35
Pre: 5/12/21

Vele=Velvetleaf
Cowh=Common waterhemp

Comments: Objective of the study was to look at treatments for soybean weed control. Heavy velvetleaf and common waterhemp pressure. The year started out with moisture to activate preemergence treatments and enough moisture early and then severe drought set in. Velvetleaf control varied among treatments.

South Dakota State University Extension

2021 Zone Defense Pre in Soybeans
Southeast Research Farm

Treatment	Rate/A	6/2/21		6/9/21			6/21/21		
		Vele	VCRR	Grft	Vele	Cowh	Grft	Vele	Cowh
Check	—	0	0	0	0	0	0	0	0
Pre									
Zone Defense	4 oz	83	0	81	76	94	55	43	88
Zone Defense + Helmet	4 oz + 2 pt	87	0	89	85	95	84	50	90
Zone Defense	5 oz	84	0	88	79	94	58	45	89
Zone Defense + Helmet	5 oz + 2 pt	89	0	89	88	94	84	60	90
Fierce	3 oz	89	0	84	86	94	63	72	88
Zone Maxx	8 oz	86	0	86	84	94	81	60	86
LSD (0.05)		2	–	5	8	3	8	8	4

RCB: 4 reps
Variety: AG21XFO
Planting Date: 5/18/21

Soil: Clay; 4.6% OM; 7.4 pH

Precipitation: (inches)
Pre: 1st week 0.34; 2nd week 0.64
Pre: 5/18/21

Vele=Velvetleaf
Cowh=Common waterhemp
Grft=Green foxtail
VCRR=Visual Crop Response Rating (0=no injury; 100=complete kill)

Comments: Objective of the study was to look at treatments for soybean weed control. Heavy velvetleaf and common waterhemp pressure. The year started out with moisture to activate preemergence treatments and enough moisture early and then severe drought set in. Velvetleaf control dropped off with no post treatments to clean up escapes.

South Dakota State University Extension

2021 Reviton in Soybean
Southeast Research Farm

Treatment	Rate/A	5/18/21		5/25/21		6/2/21		6/9/21		6/16/21	
		Dali	Prle	Dali	Prle	Dali	Prle	Dali	Prle	Dali	Prle
Check	—	0	0	0	0	0	0	0	0	0	0
EPP											
Reviton + Destiny HC	2 oz + 1%	86	74	50	50	22	70	0	33	0	67
Reviton + RU Powermax + AMS + Destiny HC	1 oz + 32 oz + 1.7 lb + 1%	91	88	98	99	97	99	99	97	92	90
Sharpen + RU Powermax + AMS + Destiny HC	1.5 oz + 32 oz + 1.7 lb + 1%	78	83	94	99	94	99	99	97	88	93
Reviton + RU Powermax + AMS + Zone Elite + Destiny HC	1 oz + 32 oz + 1.7 lb + 32 oz + 1%	93	91	95	99	94	99	99	97	90	97
LSD (0.05)		3	6	1	–	4	4	–	5	3	6

RCB: 3 reps
Variety: AG12XF1
Planting Date: 5/29/21

Soil: Clay; 3.1% OM; 7.1 pH

Precipitation: (inches)
EPP: 1st week 0.43; 2nd week 0.24
EPP: 5/11/21 Dali 2-10 in diam.

Dali=Dandelion
Prle=Prickly lettuce

Comments: Objective of the study was to look at treatments for soybean weed control. Heavy dandlelion and prickly lettuce pressure. The year started out with moisture to activate early preplant treatments and enough moisture early and then severe drought set in. Some variation in dandelion weed control but overall good burndown weed control.

South Dakota State University Extension

2021 MON 301668 Pre in Soybean
Southeast Research Farm

Treatment	Rate/A	6/2/21	6/9/21			6/16/21		6/21/21		
		VCRR	Grft	Vele	VCRR	Grft	Vele	Grft	Vele	Cowh
Check	—	0	0	0	0	0	0	0	0	0
Pre										
Warrant + Xtendimax + Volt-Edge	48 oz + 22 oz + 20 oz	0	93	93	0	91	92	87	86	97
MON 301668 + Xtendimax + Volt-Edge	30 oz + 22 oz + 20 oz	0	95	95	0	93	94	89	91	97
Zidua + Xtendimax + Volt-Edge	2 oz + 22 oz + 20 oz	0	92	95	0	90	93	85	90	97
Outlook + Xtendimax + Intact + Volt-Edge	14 oz + 22 oz + 0.5% + 20 oz	0	94	94	0	92	93	89	87	97
Dual II Mag + Xtendimax + Intact + Volt-Edge	1 pt + 22 oz + 0.5% + 20 oz	0	94	95	0	90	91	88	86	97
Warrant + Mauler	48 oz + 8 oz	0	92	91	0	87	84	76	78	97
MON 301668 + Mauler	30 oz + 8 oz	0	93	92	0	86	82	85	81	97
Zidua + Mauler	2 oz + 8 oz	0	91	90	0	89	83	79	79	97
Outlook + Mauler	14 oz + 8 oz	0	94	91	0	91	84	85	82	97
Dual II Mag + Mauler	1 pt + 8 oz	0	92	91	0	91	86	86	82	97
Warrant + Mauler + Xtendimax + Volt-Edge	48 oz + 8 oz + 22 oz + 20 oz	0	93	94	0	90	94	86	90	97
MON 301668 + Mauler + Xtendimax + Volt-Edge	30 oz + 8 oz + 22 oz + 20 oz	0	94	95	0	91	93	90	92	97
Zidua + Mauler + Xtendimax + Volt-Edge	2 oz + 8 oz + 22 oz + 20 oz	0	93	95	0	91	94	85	91	97
Outlook + Mauler + Xtendimax + Intact + Volt-Edge	14 oz + 8 oz + 22 oz + 0.5% + 20 oz	0	94	95	0	93	94	91	93	97
Dual II Mag + Mauler + Xtendimax + Intact + Volt-Edge	1 pt + 8 oz + 22 oz + 0.5% + 20 oz	0	93	96	0	91	92	90	90	97
LSD (0.05)		–	2	3	–	2	3	4	3	–

RCB: 4 reps
Variety: AG21XF0
Planting Date: 5/18/21

Soil: Silty Clay; 4.2% OM; 5.7 pH

Precipitation: (inches)
Pre: 1st week 0.34; 2nd week 0.64
Pre: 5/18/21

Grft=Green foxtail
Vele=Velvetleaf
Cowh=Common waterhemp
VCRR=Visual Crop Response Rating (0=no injury; 100=complete kill)

Comments: Objective of the study was to look at treatments for soybean weed control. Heavy velvetleaf and common waterhemp pressure. The year started out with moisture to activate preemergence treatments and enough moisture early and then severe drought set in. Some variation in weed control but fairly good control without a post treatment for cleanup.

South Dakota State University Extension

2021 Xtendimax Pre in Conventional-Till Soybean
Southeast Research Farm

Treatment	Rate/A	5/25/21	6/2/21		6/16/21	
		VCRR	Vele	Cowh	Vele	Cowh
Check	—	0	0	0	0	0
Pre						
MON 301668 + Mauler	30 oz + 8 oz	0	89	96	84	93
MON 301668	30 oz	0	81	93	77	91
Warrant Ultra	50 oz	0	90	94	80	93
Fierce EZ	6 oz	0	89	95	82	90
Valor EZ	2 oz	0	90	94	85	82
Authority MTZ	10 oz	0	88	91	85	79
MON 301668 + Mauler + Xtendimax + VRA	30 oz + 8 oz + 22 oz + 20 oz	0	95	98	94	96
MON 301668 + Xtendimax + VRA	30 oz + 22 oz + 20 oz	0	96	98	93	95
Warrant Ultra + Intact + Xtendimax + VRA	50 oz + 0.5% + 22 oz + 20 oz	0	94	98	91	94
Fierce EZ + Xtendimax + VRA + Intact	6 oz + 22 oz + 20 oz + 0.5%	0	96	98	95	93
Valor EZ + Xtendimax + VRA	2 oz + 22 oz + 20 oz	0	96	98	94	93
Authority MTZ + Xtendimax + VRA	10 oz + 22 oz + 20 oz	0	94	97	92	89
LSD (0.05)		–	3	3	4	3

RCB: 4 reps
Variety: AG21XF0
Planting Date: 5/12/21

Soil: Clay; 4.6% OM; 6.1 pH

Precipitation: (inches)
Pre: 1st week 0.44; 2nd week 0.35
Pre: 5/12/21

Vele=Velvetleaf
Cowh=Common waterhemp
VCRR=Visual Crop Response Rating (0=no injury; 100=complete kill)

Comments: Objective of the study was to look at treatments for soybean weed control. Heavy velvetleaf and common waterhemp pressure. The year started out with moisture to activate preemergence treatments and enough moisture early and then severe drought set in. Some variation in weed control but fairly good control without a post treatment for cleanup.

South Dakota State University Extension

2021 Xtendimax Pre in No-Till Soybean
Southeast Research Farm

Treatment	Rate/A	5/25/21			6/2/21	6/16/21	
		Fipc	Prle	VCRR	Fipc	Prle	Vele
Pre							
RU Powermax 3 + Class Act Ridion	30 oz + 1%	99	98	0	96	88	0
MON 301668 + Mauler + RU Powermax 3 + Class Act Ridion	30 oz + 8 oz + 30 oz + 1%	99	99	0	99	99	50
MON 301668 + RU Powermax 3 + Class Act Ridion	30 oz + 30 oz + 1%	99	99	0	99	97	30
Warrant Ultra + RU Powermax 3 + Class Act Ridion	50 oz + 30 oz + 1%	99	99	0	99	99	35
Fierce EZ + RU Powermax 3 + Class Act Ridion	6 oz + 30 oz + 1%	99	99	0	99	99	40
Valor EZ + RU Powermax 3 + Class Act Ridion	2 oz + 30 oz + 1%	99	99	0	99	99	43
Authority MTZ + RU Powermax 3 + Class Act Ridion	10 oz + 30 oz + 1%	99	99	0	99	99	66
MON 301668 + Mauler + Xtendimax + RU Powermax 3 + Class Act Ridion + Intact + VRA	30 oz + 8 oz + 22 oz + 30 oz + 1% + 0.5% + 20 oz	99	99	0	99	99	68
MON 301668 + RU Powermax 3 + Class act Ridion + Xtendimax + Intact + VRA	30 oz + 30 oz + 1% + 22 oz + 0.5% + 20 oz	99	99	0	99	99	55
Warrant Ultra + RU Powermax 3 + Class Act Ridion + Xtendimax + Intact + VRA	50 oz + 30 oz + 1% + 22 oz + 0.5% + 20 oz	99	99	0	99	99	68
Fierce EZ + RU Powermax 3 + Class Act Ridion + Xtendimax + Intact + VRA	6 oz + 30 oz + 1% + 22 oz + 0.5% + 20 oz	99	99	0	99	99	75
Valor EZ + RU Powermax 3 + Class Act Ridion + Xtendimax + Intact + VRA	2 oz + 30 oz + 1% + 22 oz + 0.5% + 20 oz	99	99	0	99	99	80
Authority MTZ + RU Powermax 3 + Class Act Ridion + Xtendimax + Intact + VRA	10 oz + 30 oz + 1% + 22 oz + 0.5% + 20 oz	99	99	0	99	99	88
Check	—	0	0	0	0	0	0
LSD (0.05)		0.5	1	–	1	4	16

RCB: 4 reps
Variety: AG14X0
Planting Date: 5/13/21

Soil: Silty Clay; 3.7% OM; 6.6 pH

Precipitation: (inches)
Pre: 1st week 0.43; 2nd week 0.34
Pre: 5/11/21

Fipc=Field pennycress
Prle=Prickly lettuce
Vele=Velvetleaf
VCRR=Visual Crop Response Rating (0=no injury; 100=complete kill)

Comments: Objective of the study was to look at treatments for soybean weed control. Moderate velvetleaf, field pennycress and prickly lettuce pressure. The year started out with moisture to activate preemergence treatments and enough moisture early and then severe drought set in. Velvetleaf came on late and was not controlled well with pre alone. The addition of Xtendimax preemergence improved velvetleaf control.

South Dakota State University Extension

2021 Xtendimax + Glufosinate Tank-Mix for Broadleaf Control in Soybeans-Bareground Southeast Research Farm

Treatment	Rate/A	6/29/21			7/6/21			7/15/21		
		Grft	Vele	Cowh	Grft	Vele	Cowh	Grft	Vele	Cowh
Check	—	0	0	0	0	0	0	0	0	0
Post										
Xtendimax + VRA + Intact + Class Act Ridion	22 oz + 20 oz + 0.5% + 1%	0	65	93	13	79	87	13	86	84
Liberty + Amsol	32 oz + 2.5%	99	99	99	99	98	93	94	96	85
RU Powermax 3 + Xtendimax + VRA + Intact + Class Act Ridion	30 oz + 22 oz + 20 oz + 0.5% + 1%	99	98	92	99	99	88	98	98	91
Xtendimax + VRA + Intact + Class Act Ridion + Liberty	22 oz + 20 oz + 0.5% + 1% + 32 oz	99	85	98	99	92	92	93	90	85
RU Powermax 3 + Xtendimax + VRA + Intact + Class Act Ridion + Liberty	30 oz + 22 oz + 20 oz + 0.5% + 1% + 32 oz	99	99	98	99	99	90	97	98	86
MON 301668 + Xtendimax + VRA + Intact + Class Act Ridion + Liberty	30 oz + 22 oz + 20 oz + 0.5% + 1% + 32 oz	98	89	98	98	91	95	93	88	93
Liberty + MON 301668 + Amsol	32 oz + 30 oz + 2.5%	98	99	99	99	98	96	91	94	91
RU Powermax 3 + Liberty + MON 301668 + Amsol	30 oz + 32 oz + 30 oz + 2.5%	99	99	99	99	99	99	98	98	94
Liberty + Warrant Ultra + Amsol	32 oz + 50 oz + 2.5%	98	98	99	99	95	93	86	91	86
RU Powermax 3 + Xtendimax + VRA + Intact + Class Act Ridion + Liberty + MON 301668	30 oz + 22 oz + 20 oz + 0.5% + 1% + 32 oz + 30 oz	99	99	99	99	99	99	98	98	96
Durango DMA + Enlist One + Amsol	36 oz + 32 oz + 2.5%	99	99	96	99	99	98	99	99	98
Liberty + Enlist One + Amsol	32 oz + 32 oz + 2.5%	99	99	99	98	99	99	96	99	98
Durango DMA + Liberty + Enlist One + Amsol	36 oz + 32 oz + 32 oz + 2.5%	99	99	99	99	99	99	99	99	99
Durango DMA + Outlook + Liberty + Enlist One + Amsol	36 oz + 14 oz + 32 oz + 32 oz + 2.5%	99	99	99	99	99	99	99	99	99
LSD (0.05)		1	3	1	2	2	3	3	2	4

RCB: 4 reps
Post: 6/17/21 Grft 3-8 in; Vele 2-6 in; Cowh 2-7 in.

Soil: Silty Clay; 4.2% OM; 5.7 pH

Grft=Green foxtail
Vele=Velvetleaf
Cowh=Common waterhemp

Comments: Objective of the study was to look at treatments for soybean weed control. Heavy velvetleaf and common waterhemp pressure. The year started out with enough moisture until post treatments were sprayed and then severe drought set in. Some variation in weed control but fairly good control without a second post treatment for cleanup.

South Dakota State University Extension

2021 Powermax Tank-Mix with Enlist for Grass Control in Soybeans-Bareground Northeast Research Farm

Treatment	Rate/A	6/30/21			7/7/21			7/12/21		
		Yeft	Rrpw	Wimu	Yeft	Rrpw	Wimu	Yeft	Rrpw	Wimu
Check	—	0	0	0	0	0	0	0	0	0
Post										
RU Powermax + Amsol	32 oz + 2.5%	99	99	99	99	99	99	98	99	99
RU Powermax 3 + Amsol	30 oz + 2.5%	99	99	99	99	99	99	97	99	99
Durango DMA + Amsol	36 oz + 2.5%	99	99	99	99	99	99	98	99	99
Xtendimax + Class Act Ridion + Intact + VRA + RU Powermax 3	22 oz + 1% + 0.5% + 20 oz + 30 oz	99	99	99	99	99	99	97	99	99
Enlist One + Amsol + RU Powermax 3	1.5 pt + 2.5% + 30 oz	99	99	99	99	99	99	98	99	99
Durango DMA + Amsol + Enlist One	36 oz + 2.5% + 1.5 pt	99	99	99	99	99	99	98	99	99
Enlist One + Amsol + RU Powermax 3	2 pt + 2.5% + 30 oz	99	99	99	99	99	99	98	99	99
Durango DMA + Amsol + Enlist One	36 oz + 2.5% + 2 pt	99	99	99	99	99	99	98	99	99
Enlist Duo + Amsol	3.5 pt + 2.5%	99	99	99	99	99	99	98	99	99
Liberty + Enlilst One + Amsol + RU Powermax 3	32 oz + 1.5 pt + 2.5% + 30 oz	99	99	99	99	99	99	98	99	99
Durango DMA + Liberty + Enlist One + Amsol	36 oz + 32 oz + 1.5 pt + 2.5%	99	99	99	99	99	99	97	99	99
RU Powermax 3 + Dicamba MEA Salt + Class Act Ridion + Intact + VRA	30 oz + 16 oz + 1% + 0.5% + 20 oz	99	99	99	99	99	99	97	99	99
LSD (0.05)		–	–	–	–	–	–	1	0.5	0.5

RCB: 4 reps
Post: 6/16/21 Rrpw 1-3 in; Wimu 4-7 in

Soil: Clay Loam; 4.1% OM; 5.8 pH

Yeft=Yellow foxtail
Rrpw=Redroot pigweed
Wimu=Wild mustard

Comments: Objective of the study was to look at treatments for soybean weed control. Heavy yellow foxtail, redroot pigweed and moderate wild mustard pressure. The year started dry with enough moisture to start weeds, and some moisture was received by the postemergence timing. Late season precipitation was good. No differences in treatments except the check.

South Dakota State University Extension

2021 Quizalofop with Adjuvants on RR Corn in RR Soybeans
Northeast Research Farm

Treatment	Rate/A	6/30/21			7/7/21			7/20/21		10/5/21
		Yeft	Voco	VCRR	Yeft	Voco	VCRR	Yeft	Voco	Yield bu/A
Post										
Assure II + Glyphosate K Salt	6.84 oz + 22.9 oz	86	75	0	98	91	0	96	91	48
Assure II + Glyphosate K Salt + HiActivate	6.84 oz + 22.9 oz + 0.5%	85	75	0	98	90	0	97	96	51
Assure II + Glyphosate K Salt + Class Act NG	6.84 oz + 22.9 oz + 1.25%	86	75	0	97	90	0	96	95	48
Assure II + Glyphosate K Salt + Class Act NG + Interlock	6.84 oz + 22.9 oz + 1.25% + 3.38 oz	86	77	0	98	90	0	97	94	48
Assure II + Glyphosate K Salt + Class Act NG	6.84 oz + 22.9 oz + 2.5%	85	75	0	96	90	0	96	95	48
Assure II + Glyphosate K Salt + Class Act NG + Interlock	6.84 oz + 22.9 oz + 2.5% + 3.38 oz	86	75	0	97	91	0	97	97	52
Assure II + Glyphosate K Salt + Destiny HC	6.84 oz + 22.9 oz + 0.5%	87	77	0	97	91	0	97	97	47
Assure II + Glyphosate K Salt + Masterlock	6.84 oz + 22.9 oz + 0.5%	87	75	0	97	91	0	97	97	49
Assure II + Glyphosate K Salt + Strikelock	6.84 oz + 22.9 oz + 0.5%	85	77	0	98	91	0	97	97	49
Check	—	0	0	0	0	0	0	0	0	15
LSD (0.05)		2	2	–	1	1	–	1	4	6

RCB: 3 reps
Variety: AG09XF0
Planting Date: 5/17/21
Post: 6/24/21 Soy 3-4 tri, 8-11 in; Voco 6-15 in; Yeft 2-10 in.

Soil: Clay Loam; 3.0% OM; 6.1 pH

Voco=Volunteer corn
Yeft=Yellow foxtail
VCRR=Visual Crop Response Rating (0=no injury; 100=complete kill)

Comments: Objective of the study was to look at additive treatments for soybean weed control. Heavy yellow foxtail and moderate volunteer corn pressure. The year started with enough moisture to start soybeans, and some moisture was received by postemergence timing. Late season precipitation was good. Soybean yields were normal with no treatment differences except the check. Very little differences in additives.

South Dakota State University Extension

2021 Volunteer RR Corn Control with Clethodim 2L and Glyphosate Plus Adjuvants
Northeast Research Farm

Treatment	Rate/A	6/30/21			7/7/21		7/20/21		10/5/21
		Yeft	Voco	VCRR	Yeft	Voco	Yeft	Voco	Yield bu/A
Check	—	0	0	0	0	0	0	0	15
Post									
Clethodim 2L + RU Transorb	2.6 oz + 22.9 oz	88	80	0	98	88	97	43	47
Clethodim 2L + RU Transorb + X Act	2.6 oz + 22.9 oz + 0.5%	87	80	0	98	92	97	89	49
Clethodim 2L + RU Transorb + Journey HSOC	2.6 oz + 22.9 oz + 0.5%	88	80	0	98	91	97	91	48
Clethodim 2L + RU Transorb + Strikelock	2.6 oz + 22.9 oz + 0.5%	87	80	0	98	92	97	92	47
Clethodim 2L + RU Transorb + Masterlock	2.6 oz + 22.9 oz + 0.5%	87	80	0	98	92	97	94	49
LSD (0.05)		1	–	–	–	1	1	6	4

RCB: 3 reps
Variety: AG09XF0
Planting Date: 5/17/21
Post: 6/24/21 Soy 3-4 tri, 8-11 in; Voco 6-15 in; Yeft 2-10 in.

Soil: Clay Loam; 3.0% OM; 6.1 pH

Voco=Volunteer corn
Yeft=Yellow foxtail
VCRR=Visual Crop Response Rating (0=no injury; 100=complete kill)

Comments: Objective of the study was to look at additive treatments for soybean weed control. Heavy yellow foxtail and moderate volunteer corn pressure. The year started with enough moisture to start soybeans, and some moisture was received by the postemergence timing. Late season precipitation was good. Soybean yields were normal with no treatment differences except the check. Very little differences in additives.

South Dakota State University Extension

2021 Volunteer RR Corn Control with Clethodim 3L and Glyphosate Plus Adjuvants
Northeast Research Farm

Treatment	Rate/A	6/30/21			7/7/21		7/20/21		10/5/21
		Yeft	Voco	VCRR	Yeft	Voco	Yeft	Voco	Yield bu/A
Check	—	0	0	0	0	0	0	0	17
Post									
Clethodim 3L + RU Transorb	2.6 oz + 22.9 oz	88	80	0	98	88	97	43	42
Clethodim 3L + RU Transorb + X Act	2.6 oz + 22.9 oz + 0.5%	87	80	0	98	92	97	89	47
Clethodim 3L + RU Transorb + Journey HSOC	2.6 oz + 22.9 oz + 0.5%	88	80	0	98	91	97	91	45
Clethodim 3L + RU Transorb + Strikelock	2.6 oz + 22.9 oz + 0.5%	87	80	0	98	92	97	92	49
Clethodim 3L + RU Transorb + Masterlock	2.6 oz + 22.9 oz + 0.5%	87	80	0	98	92	97	94	48
LSD (0.05)		1	–	–	–	1	1	6	4

RCB: 3 reps
Variety: AG09XF0
Planting Date: 5/17/21
Post: 6/24/21 Soy 3-4 tri, 8-11 in; Voco 6-15 in; Yeft 2-10 in.

Soil: Clay Loam; 3.0% OM; 6.1 pH

Voco=Volunteer corn
Yeft=Yellow foxtail
VCRR=Visual Crop Response Rating (0=no injury; 100=complete kill)

Comments: Objective of the study was to look at additive treatments for soybean weed control. Heavy yellow foxtail and moderate volunteer corn pressure. The year started with enough moisture to start soybeans, and some moisture was received by the postemergence timing. Late season precipitation was good. Soybean yields were normal with no treatment differences if any additives were added. Very little differences in additives.

South Dakota State University Extension

2021 Volunteer RR Corn Control with Clethodim 2L and Glyphosate K Salt Plus Adjuvants
Northeast Research Farm

Treatment	Rate/A	6/30/21			7/7/21		7/20/21		10/5/21
		Yeft	Voco	VCRR	Yeft	Voco	Yeft	Voco	Yield bu/A
Check	—	0	0	0	0	0	0	0	20
Post									
Clethodim 2L + Glyphosate K Salt	2.6 oz + 22.9 oz	88	75	0	98	90	96	57	43
Clethodim 2L + Glyphosate K Salt + X Act	2.6 oz + 22.9 oz + 0.5%	88	75	0	98	91	97	94	49
Clethodim 2L + Glyphosate K Salt + Journey HSOC	2.6 oz + 22.9 oz + 0.5%	89	80	0	98	93	96	92	44
Clethodim 2L + Glyphosate K Salt + Strikelock	2.6 oz + 22.9 oz + 0.5%	89	80	0	98	93	97	91	45
Clethodim 2L + Glyphosate K Salt + Masterlock	2.6 oz + 22.9 oz + 0.5%	89	80	0	98	93	97	92	47
LSD (0.05)		–	–	–	–	1	1	5	5

RCB: 3 reps
Variety: AG09XF0
Planting Date: 5/17/21
Post: 6/24/21 Soy 3-4 tri, 8-11 in; Voco 6-15 in; Yeft 2-10 in.

Soil: Clay Loam; 3.0% OM; 6.1 pH

Voco=Volunteer corn
Yeft=Yellow foxtail
VCRR=Visual Crop Response Rating (0=no injury; 100=complete kill)

Comments: Objective of the study was to look at additive treatments for soybean weed control. Heavy yellow foxtail and moderate volunteer corn pressure. The year started with enough moisture to start soybeans, and some moisture was received by the postemergence timing. Late season precipitation was good. Soybean yields were normal with no treatment differences except the check. Very little differences in additives.

South Dakota State University Extension

2021 Volunteer RR Corn Control with Clethodim 3L and Glyphosate K Salt Plus Adjuvants
Northeast Research Farm

Treatment	Rate/A	6/30/21			7/7/21		7/20/21		10/5/21
		Yeft	Voco	VCRR	Yeft	Voco	Yeft	Voco	Yield bu/A
Check	—	0	0	0	0	0	0	0	18
Post									
Clethodim 3L + Glyphosate K Salt	1.71 oz + 22.9 oz	89	78	0	98	90	97	60	44
Clethodim 3L + Glyphosate K Salt + Amigo	1.71 oz + 22.9 oz + 0.5%	89	80	0	98	90	97	90	46
Clethodim 3L + Glyphosate K Salt + Journey HSOC	1.71 oz + 22.9 oz + 0.5%	89	80	0	98	90	97	93	51
Clethodim 3L + Glyphosate K Salt + Strikelock	1.71 oz + 22.9 oz + 0.5%	89	75	0	98	90	97	95	52
Clethodim 3L + Glyphosate K Salt + Masterlock	1.71 oz + 22.9 oz + 0.5%	89	77	0	98	90	97	95	52
LSD (0.05)		–	2	–	–	1	–	4	5

RCB: 3 reps
Variety: AG09XF0
Planting Date: 5/17/21
Post: 6/24/21 Soy 3-4 tri, 8-11 in; Voco 6-15 in; Yeft 2-10 in.

Soil: Clay Loam; 3.0% OM; 6.1 pH

Voco=Volunteer corn
Yeft=Yellow foxtail
VCRR=Visual Crop Response Rating (0=no injury; 100=complete kill)

Comments: Objective of the study was to look at additive treatments for soybean weed control. Heavy yellow foxtail and moderate volunteer corn pressure. The year started with enough moisture to start soybeans, and some moisture was received by the postemergence timing. Late season precipitation was good. Soybean yields were normal with no treatment differences if any additives were added. Very little differences in additives.

South Dakota State University Extension

2021 Liberty with Adjuvants
Volga Research Farm

Treatment	Rate/A	6/28/21		7/7/21		9/28/21
		Gift	Cowh	Gift	Cowh	Yield bu/A
Post						
Liberty + AMS + Preference	25 oz + 3 lb + 0.25%	96	98	99	93	32
Liberty + AMS + Agrasyst 90	25 oz + 3 lb + 0.25%	96	98	98	94	33
Liberty + AMS + Full Load	25 oz + 1.5 lb + 0.25%	96	98	99	95	32
Liberty + AMS + Glyload	25 oz + 1.5 lb + 0.25%	96	98	99	95	32
Liberty + AMS + Glyload + Agrasyst 90	25 oz + 1.5 lb + 0.25% + 0.125%	96	98	99	94	31
Check	—	0	0	0	0	24
LSD (0.05)		1	1	2	1	3

RCB: 4 reps
Variety: AG12XF1
Planting Date: 5/10/21
Post: 6/22/21 Soy 4-5 tri, 10-12 in; Gift 6-10 in; Cowh 3-13 in.

Gift=Giant foxtail
Cowh=Common waterhemp

Comments: Objective of the study was to look at additive treatments for soybean weed control. Heavy lambsquarter and waterhemp pressure. The year started out with moisture to germinate soybeans and enough moisture until post treatments were sprayed. In mid-August, moisture ran short and took top end off of yields. Soybean yields were a little below normal. No differences in treatments were noted with the check being significantly lower in yield.

South Dakota State University Extension

2021 Xtendimax with Adjuvants
Volga Research Farm

Treatment	Rate/A	6/24/21	6/28/21	7/7/21		9/28/21
		Cowh	Cowh	Cowh	Colq	Yield bu/A
Post						
RU Powermax + Xtendimax + Full Load	18 oz + 22 oz + 0.375%	81	86	94	99	44
RU Powermax + Xtendimax + Full Load Complete	18 oz + 22 oz + 0.375%	79	85	94	99	45
RU Powermax + Xtendimax + OnTarget + Sentris	18 oz + 22 oz + 0.5% + 20 oz	81	85	94	99	38
RU Powermax +Xtendimax + OnTarget + Sentris + Full Load	18 oz + 22 oz + 0.5% + 20 oz + 0.375%	77	85	92	99	39
RU Powermax + Xtendimax + OnTarget + Sentris + Full Load Complete	18 oz + 22 oz + 0.5% + 20 oz + 0.375%	77	85	94	99	41
RU Powermax + Xtendimax + Full Load + Drift-Fiant	18 oz + 22 oz + 0.375% + 0.14%	77	85	93	99	43
Check	—	0	0	0	0	28
LSD (0.05)		3	1	1	–	11

RCB: 4 reps
Variety: AG12XF1
Planting Date: 5/10/21
Post: 6/17/21 Soy 5 tri, 11 in; Cowh 2-14 in; Colq 2-8 in.

Soil: Clay Loam; 5.2% OM; 6.0 pH

Cowh=Common waterhemp
Colq=Common lambsquarters

Comments: Objective of the study was to look at additive treatments for soybean weed control. Heavy lambsquarter and waterhemp pressure. The year started out with moisture to germinate soybeans and enough moisture until post were sprayed. In mid-August, moisture ran short and took top end off of yields. Soybean yields were a little below normal and were variable due to variations in soils which caused uneven moisture stress. No differences in treatments were noted with the check being lower in yield.

South Dakota State University Extension

2021 Dicamba Simulated Drift in Soybeans
Volga Research Farm

Treatment	Cobra timing	7/12/21	7/29/21	8/3/21	8/11/21	8/23/21	9/8/21	9/22/21	9/27/21
		VCRR	VCRR	VCRR	VCRR	VCRR	VCRR	VCRR	Yield bu/A
Check		0	0	0	0	0	0	0	33
Post: Xtendimax Rate	**Cobra 12.8 oz + COC 1 qt**								
—	Epost	3	0	0	0	0	0	0	35
—	Post	8	5	0	0	0	0	0	32
—	Lpost	20	10	10	6	8	0	0	31
0.0022 oz	—	24	28	23	23	14	16	16	31
0.0022 oz	Epost	18	10	10	4	1	0	0	34
0.0022 oz	Post	20	15	10	9	10	0	0	31
0.0022 oz	Lpost	28	18	13	14	13	10	0	30
0.22 oz	—	34	39	38	36	35	39	41	25
0.22 oz	Epost	49	39	38	31	33	36	38	31
0.22 oz	Post	54	43	43	38	38	36	41	26
0.22 oz	Lpost	54	45	43	40	38	41	43	23
0.44 oz	—	40	48	45	41	38	46	46	25
0.44 oz	Epost	54	46	45	39	36	35	41	27
0.44 oz	Post	59	55	53	46	48	49	55	19
0.44 oz	Lpost	60	54	51	45	48	50	53	22
2.2 oz	—	45	49	46	45	45	48	48	15
2.2 oz	Epost	75	65	64	59	66	68	68	15
2.2 oz	Post	80	78	78	73	75	81	80	8
2.2 oz	Lpost	79	76	78	71	73	80	80	10
LSD (0.05)		14	12	12	12	14	15	15	5

RCB: 4 reps
Variety: S12-LLGT27
Planting Date:
Epost: 6/15/21 Soy 3-4 tri, 7-9 in.
Post: 6/22/21 Soy 5-6 tri, 12-14 in.
Lpost: 6/29/21 Soy 12-14 in.

VCRR=Visual Crop Response Rating (0=no injury; 100=complete kill)

Comments: Objective of the study was to look at dicamba drift on non-dicamba soybeans. The year started out with moisture to germinate soybeans and enough moisture until post treatments were sprayed. In mid-August, moisture ran short and took off about half of yield. Yields were variable due to variations in soils which caused uneven moisture stress. Still differences in treatments were noted. The yield reductions follow the same trends as last year.

South Dakota State University Extension

2021 Roundup & Liberty Tankmixes in Soybeans
Northeast Research Farm

Treatment	Rate/A	6/30/21		7/8/21			10/5/21
		Yeft	Rrpw	Yeft	Rrpw	Colq	Yield bu/A
Check	—	0	0	0	0	0	26
Epost							
RU Powermax + AMS	22 oz + 2.5 lb	99	99	99	97	99	68
Liberty + AMS	29 oz + 2.5 lb	91	97	84	94	97	58
RU Powermax + Liberty + AMS	12 oz + 22 oz + 2.5 lb	98	99	97	98	99	65
RU Powermax + Liberty + AMS	12 oz + 29 oz + 2.5 lb	98	99	96	98	99	60
RU Powermax + Liberty + AMS	12 oz + 36 oz + 2.5 lb	98	99	97	98	99	63
RU Powermax + Liberty + AMS	22 oz + 22 oz + 2.5 lb	99	99	98	98	99	64
RU Powermax + Liberty + AMS	22 oz + 29 oz + 2.5 lb	99	99	98	98	99	64
RU Powermax + Liberty + AMS	22 oz + 36 oz + 2.5 lb	99	99	99	98	99	64
RU Powermax + Liberty + AMS	32 oz + 22 oz + 2.5 lb	99	99	99	99	99	64
RU Powermax + Liberty + AMS	32 oz + 29 oz + 2.5 lb	99	99	99	99	99	64
RU Powermax + Liberty + AMS	32 oz + 36 oz + 2.5 lb	99	99	99	99	99	65
RU Powermax + Liberty + AMS	44 oz + 22 oz + 2.5 lb	99	99	99	99	99	65
RU Powermax + Liberty + AMS	44 oz + 29 oz + 2.5 lb	99	99	98	99	99	63
RU Powermax + Liberty + AMS	44 oz + 36 oz + 2.5 lb	99	99	99	99	99	63
Epost & Post							
Liberty + AMS & RU Powermax + AMS	29 oz + 2.5 lb & 12 oz + 2.5 lb	98	99	99	97	99	62
Liberty + AMS & RU Powermax + AMS	29 oz + 2.5 lb & 22 oz + 2.5 lb	99	99	98	98	99	61
Liberty + AMS & RU Powermax + AMS	29 oz + 2.5 lb & 32 oz + 2.5 lb	99	99	99	99	99	65
Liberty + AMS & RU Powermax + AMS	29 oz + 2.5 lb & 44 oz + 2.5 lb	99	99	99	99	99	64
LSD (0.05)		1	2	1	3	2	5

RCB: 4 reps
Variety: AG09XFO
Planting Date: 5/14/21
Epost: 6/14/21 Soy 1-2 tri, 5-7 in; Colq 2-6 in.
Post: 6/24/21 Soy 3 tri, 7-9 in; Rrpw 1-2 in; Colq 1-2 in.

Soil: Clay Loam; 4.1% OM; 5.8 pH

Yeft=Yellow foxtail
Rrpw=Redroot pigweed
Colq=Common lambsquarters

Comments: Objective of the study was to look at Roundup and Liberty mixes for soybean weed control. Heavy yellow foxtail and redroot pigweed and moderate lambsquarter pressure. Year started with enough moisture to start soybeans, and some moisture was received by postemergence timing. Late season precipitation was good. Soybean yields were normal but had some variation within treatments due to early season stress. Some differences in foxtail control were noted with Liberty alone being the lowest.

South Dakota State University Extension

2021 Roundup & Liberty Tankmixes in Soybeans
Volga Research Farm

Treatment	Rate/A	6/28/21		7/7/21		7/12/21		9/22/21		9/28/21
		Gift	Cowh	Gift	Cowh	Gift	Cowh	Gift	Cowh	Yield bu/A
Check	---	0	0	0	0	0	0	0	0	10
Post										
RU Powermax + AMS	22 oz + 2.5 lb	99	48	99	59	99	50	99	59	28
Liberty + AMS	29 oz + 2.5 lb	98	98	99	92	93	87	99	65	33
RU Powermax + Liberty + AMS	12 oz + 22 oz + 2.5 lb	99	98	99	91	99	79	99	63	30
RU Powermax + Liberty + AMS	12 oz + 29 oz + 2.5 lb	99	98	99	94	99	88	98	81	37
RU Powermax + Liberty + AMS	12 oz + 36 oz + 2.5 lb	99	99	99	95	98	90	99	85	39
RU Powermax + Liberty + AMS	22 oz + 22 oz + 2.5 lb	99	97	99	94	99	87	99	66	30
RU Powermax + Liberty + AMS	22 oz + 29 oz + 2.5 lb	99	98	99	93	99	89	99	78	33
RU Powermax + Liberty + AMS	22 oz + 36 oz + 2.5 lb	99	99	99	96	99	93	97	85	36
RU Powermax + Liberty + AMS	32 oz + 22 oz + 2.5 lb	98	97	99	94	98	88	99	76	36
RU Powermax + Liberty + AMS	32 oz + 29 oz + 2.5 lb	98	99	99	96	99	94	99	79	36
RU Powermax + Liberty + AMS	32 oz + 36 oz + 2.5 lb	99	99	99	95	99	92	99	82	37
RU Powermax + Liberty + AMS	44 oz + 22 oz + 2.5 lb	99	97	99	91	99	84	99	71	32
RU Powermax + Liberty + AMS	44 oz + 29 oz + 2.5 lb	99	98	99	94	99	90	99	79	37
RU Powermax + Liberty + AMS	44 oz + 36 oz + 2.5 lb	99	99	99	97	99	95	99	81	37
Epost & Lpost										
Liberty + AMS & RU Powermax + AMS	29 oz + 2.5 lb & 12 oz + 2.5 lb	98	98	99	94	99	91	99	80	36
Liberty + AMS & RU Powermax + AMS	29 oz + 2.5 lb & 22 oz + 2.5 lb	99	98	99	93	99	89	99	78	36
Liberty + AMS & RU Powermax + AMS	29 oz + 2.5 lb & 32 oz + 2.5 lb	99	98	99	95	99	90	98	84	36
Liberty + AMS & RU Powermax + AMS	29 oz + 2.5 lb & 44 oz + 2.5 lb	99	99	99	95	99	93	99	81	39
LSD (0.05)		1	4	0.5	6	1	6	1	9	12

RCB: 4 reps
Variety: AG12XF1
Planting Date: 5/10/21
Epost: 6/14/21 Soy 2-3 tri, 7-9 in; Gift 4-8 in; Cowh 1-10 in.
Post: 6/15/21 Soy 3-4 tri, 8-9 in; Gift 4-8 in; Cowh 1-10 in.
Lpost: 6/22/21 Soy 5 tri, 12-14 in; Gift 4-8 in; Cowh 3-5 in.

Gift=Giant foxtail
Cowh=Common waterhemp

Comments: Objective of the study was to look at Roundup and Liberty mixes for soybean weed control. Moderate giant foxtail and waterhemp pressure. The year started out with moisture to germinate soybeans and enough moisture until post treatments were sprayed. The common waterhemp population had some glyphosate resistance as Roundup alone provided poor control. Waterhemp control increased with higher rates of Liberty. In mid-August, moisture ran short and took top end off of yields. Soybean yields were a little below normal and were variable due to variations in soils which caused uneven moisture stress. No differences in treatments yields were noted with only the check being significantly lower in yield.

South Dakota State University Extension

2021 Weed Control & Crop Response with Batalium II in Spring Wheat Northeast Research Farm

Treatment	Rate/A	6/7/21			6/15/21			6/22/21	6/30/21		8/3/21
		Wioa	Colq	VCRR	Wioa	Colq	VCRR	Wioa	Wioa	Colq	Yield bu/A
Check	—	0	0	0	0	0	0	0	0	0	56
Post											
Batalium II + NIS + AMS	13.7 oz + 0.25% + 1.7 lb	50	98	0	92	98	0	92	94	99	59
Batalium II + Audit 1:1 + NIS + AMS	13.7 oz + 0.4 oz + 0.25% + 1.7 lb	55	98	0	92	98	0	88	92	99	58
Batalium II + Parity + NIS + AMS	13.7 oz + 6.4 oz + 0.25% + 1.7 lb	50	98	0	85	98	0	84	89	99	61
Batalium II + Stinger + NIS + AMS	13.7 oz + 4 oz + 0.25% + 1.7 lb	60	98	0	85	98	0	83	88	99	57
Batalium II + Starane Ultra + NIS + AMS	13.7 oz + 5.75 oz + 0.25% + 1.7 lb	50	98	0	83	98	0	84	88	99	56
Batalium II + 2,4-D ester + NIS + AMS	13.7 oz + 8 oz + 0.25% + 1.7 lb	60	98	0	84	98	0	83	87	99	55
Batalium II + MCPA ester + NIS + AMS	13.7 oz + 8 oz + 0.25% + 1.7 lb	50	98	0	86	98	0	85	89	99	60
Batalium II + Evito + NIS + AMS	13.7 oz + 1 oz + 0.25% + 1.7 lb	63	98	0	88	98	0	82	87	99	56
Huskie Complete + NIS + AMS	13.7 oz + 0.25% + 1.7 lb	45	98	0	84	98	0	78	92	99	61
PerfectMatch + NIS + AMS	16 oz + 0.25% + 1.7 lb	50	98	0	86	98	0	83	91	99	59
WideARmatch + Everest 3.0 + NIS + AMS	14 oz + 2 oz + 0.25% + 1.7 lb	53	98	0	87	97	0	83	90	99	60
LSD (0.05)		4	–	–	3	1	–	3	3	–	7

RCB: 4 reps
Variety: Prevail
Planting Date: 4/6/21
Post: 5/28/21 Sp Wht 4 lf, 1 tiller, 6-9 in; Wioa 3-4 lf, 4-7 in; Colq 1-3 in.

Soil: Clay Loam; 4.1% OM; 5.8 pH

Wioa=Wild oat
Colq=Common lambsquarters
VCRR=Visual Crop Response Rating (0=no injury; 100=complete kill)

Comments: Objective of the study was to look at treatments for spring wheat weed control. Moderate wild oats and lambsquarter pressure. The year started dry with enough moisture to start spring wheat, and some moisture was received by the postemergence timing. Late season precipitation was good. Average yields were seen with no significant differences noted. Some small differences in wild oats control were noted.

South Dakota State University Extension

2021 Broadleaf Control & Crop Safety with Huskie FX in Spring Wheat
Northeast Research Farm

Treatment	Rate/A	6/7/21		6/15/21		7/20/21			8/3/21
		Colq	VCRR	Wioa	Wibw	Colq	Wibw	VCRR	Yield bu/A
Check	—	0	0	0	0	0	0	0	54
Post									
Huskie FX	15.5 oz	98	0	53	98	99	99	0	56
Huskie FX	18 oz	98	0	55	98	99	99	0	56
WideMatch + MCPA ester	16 oz + 8 oz	91	0	45	91	99	99	0	57
Talinor + CoAct+	13.7 oz + 2.75 oz	95	0	73	98	99	99	0	58
Bison	16 oz	98	0	53	96	99	98	0	54
LSD (0.05)		2	–	8	4	–	1	–	4

RCB: 4 reps
Variety: Prevail
Planting Date: 4/6/21
Post: 5/28/21 Sp Wht 4 lf, 1 tiller, 6-9 in; Wioa 3-4 lf, 4-7 in; Colq 1-3 in; Wibw 1-5 in.

Soil: Clay Loam; 4.1% OM; 5.8 pH

Wioa=Wild oat
Colq=Common lambsquarters
Wibw=Wild buckwheat
VCRR=Visual Crop Response Rating (0=no injury; 100=complete kill)

Comments: Objective of the study was to look at treatments for spring wheat weed control. Moderate wild oats and lambsquarter pressure. The year started dry with enough moisture to start spring wheat, and some moisture was received by postemergence timing. Late season precipitation was good. Average yields were seen with no significant differences noted. No late season differences in weed control were noted.

2021 Oats
Northeast Research Farm

Treatment	Rate/A	6/7/21		6/22/21			8/3/21
		Colq	Wibw	Colq	Wibw	VCRR Stunt	Yield bu/A
Check	—	0	0	0	0	0	118
Post							
MCPA amine	1 pt	50	40	99	47	0	137
2,4-D amine	1 pt	57	47	99	50	0	142
2,4-D ester	1 pt	53	53	99	62	0	139
Maestro MA	1 pt	90	60	99	99	0	135
Callisto + NIS	3 oz + 0.25%	50	50	99	99	0	141
Sterling Blue + MCPA amine	3 oz + 1 pt	77	77	99	98	0	141
Starane Ultra	0.4 pt	53	53	99	91	0	145
Voucher	1.5 pt	53	50	99	96	0	141
Starane Flex	13.5 oz	50	50	99	77	10	154
Starane NXT	20 oz	85	80	99	99	0	136
WideMatch	1.33 pt	53	53	99	99	0	137
Weld	2 pt	50	50	99	99	0	142
Curtail M	2 pt	73	67	99	96	0	142
Carnivore	1.5 pt	80	80	99	99	0	147
Aim EC + NIS	1 oz + 0.25%	63	63	99	87	0	140
Orion	17 oz	50	50	99	93	5	142
Harmony 50SG + NIS	0.6 oz + 0.25%	50	50	99	96	0	146
Supremacy + NIS	4 oz + 0.25%	53	53	99	96	3	147
Scorch	1 pt	50	50	99	98	13	104
LSD (0.05)		6	12	–	7	5	22

RCB: 3 reps
Variety: Saddle
Planting Date: 4/20/21
Post: 6/2/21 Oat 4 lf tillered, 8-10 in; Colq 2-6 in; Wibw 3-7 in.

Soil: Clay Loam; 3.0% OM; 6.1 pH

Colq=Common lambsquarters
Wibw=Wild buckwheat
VCRR=Visual Crop Response Rating (0=no injury; 100=complete kill)

Comments: Objective of the study was to look at treatments for oats weed control. Moderate wild buckwheat and lambsquarter pressure. The year started dry with enough moisture to start oats, and some moisture was received by postemergence timing. Late season precipitation was good. Average yields were seen with a few significant differences noted. Some small differences in weed control were noted early.

South Dakota State University Extension

2021 MON 301668 Crop Safety in Alfalfa
Brookings County

Treatment	Rate/A	5/18/21	5/24/21	
		Dali	Dali	VCRR
Check	—	0	0	0
Epost				
Warrant	48 oz	0	0	0
MON 301668	30 oz	0	0	0
Warrant	64 oz	0	0	0
MON 301668	42 oz	0	0	0
Warrant + RU Powermax 3 + Amsol	64 oz + 30 oz + 2.5%	66	75	0
MON 301668 + RU Powermax 3 + Amsol	42 oz + 30 oz + 2.5%	65	76	0
Warrant + Select Max + NIS	48 oz + 16 oz + 0.25%	0	0	0
MON 301668 + Select Max + NIS	30 oz + 16 oz + 0.25%	0	0	0
Warrant + Raptor + NIS	48 oz + 6 oz + 0.25%	31	31	0
MON 301668 + Raptor + NIS	30 oz + 6 oz + 0.25%	29	31	0
Warrant + Pursuit + NIS	48 oz + 6 oz + 0.25%	45	49	0
MON 301668 + Pursuit + NIS	30 oz + 6 oz + 0.25%	40	45	0
LSD (0.05)		4	3	–

RCB: 4 reps
Variety:
Planting Date:
Epost: 5/4/21 Alfalfa 4-7 in; Dali 3-10 in diam.

Dali=Dandelion
VCRR=Visual Crop Response Rating (0=no injury; 100=complete kill)

Comments: Objective of the study was to look at treatments for injury in alfalfa and weed control. No injury noted. Heavy dandelion pressure. Varying weed control with several treatments. The treatments with glyphosate had the greatest weed control.

South Dakota State University Extension

2021 Huskie FX in Sorghum
Southeast Research Farm

Treatment	Rate/A	6/29/21			7/6/21				8/2/21		
		Vele	Cowh	VCRR	Grft	Vele	Cowh	VCRR	Vele	Cowh	VCRR
Check	—	0	0	0	0	0	0	0	0	0	0
Post											
Huskie FX + AMS + Atrazine	18 oz + 1 lb + 16 oz	97	92	20	88	99	99	10	99	99	0
Huskie + AMS + Atrazine	16 oz + 1 lb + 16 oz	95	93	19	87	99	99	9	99	99	0
LSD (0.05)		1	2	3	2	–	–	3	–	–	–

RCB: 4 reps
Variety: DKS 29-28
Planting Date: 5/21/21
Post: 6/22/21 Sorg 6 lf, 14-16 in; Vele 2-10 in; Cowh 2-10 in.

Soil: Clay Loam; 4.4% OM; 6.8 pH

Vele=Velvetleaf
Cowh=Common waterhemp
Grft=Green foxtail
VCRR=Visual Crop Response Rating (0=no injury; 100=complete kill)

Comments: Objective of the study was to look at treatments for sorghum weed control. Heavy velvetleaf, common waterhemp and moderate green foxtail pressure. The year started out with moisture for sorghum emergence and enough moisture until post treatments were sprayed and then severe drought set in. No variation in weed control noted.

South Dakota State University Extension

2021 MON 301668 in Grain Sorghum
Southeast Research Farm

Treatment	Rate/A	6/9/21			6/16/21			6/29/21				7/6/21			
		Grft	Vele	Cowh	Vele	Grft	Cowh	Grft	Vele	Cowh	VCRR	Grft	Vele	Cowh	VCRR
Check	—	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre															
Dual II Mag + Atrazine	1.33 pt + 1 qt	65	33	60	28	95	95	86	25	91	0	89	20	83	0
Warrant + Atrazine	48 oz + 1 qt	88	35	89	33	96	97	93	23	93	0	90	23	90	0
MON 301668 + Atrazine	30 oz + 1 qt	91	40	90	50	96	97	94	23	91	0	89	23	89	0
Epost															
Dual II Mag + Atrazine	1.33 pt + 1 qt	–	–	–	–	–	–	76	45	83	0	85	71	90	0
Warrant + Atrazine	48 oz + 1 qt	–	–	–	–	–	–	78	44	64	0	83	71	88	0
MON 301668 + Atrazine	30 oz + 1 qt	–	–	–	–	–	–	70	44	70	0	85	67	91	0
Warrant + Atrazine + Huskie + NIS + Amsol	48 oz + 0.5 qt + 1 pt + 0.25% + 5%	–	–	–	–	–	–	77	97	94	20	88	99	99	10
MON 301668 + Atrazine + Huskie + NIS + Amsol	30 oz + 0.5 qt + 1 pt + 0.25% + 5%	–	–	–	–	–	–	77	97	94	20	88	99	99	10
Huskie FX + Atrazine + NIS + Amsol	18 oz + 0.5 qt + 0.25% + 5%	–	–	–	–	–	–	65	97	95	20	81	99	99	10
Warrant + Huskie FX + Atrazine + NIS + Amsol	48 oz + 18 oz + 0.5 qt + 0.25% + 5%	–	–	–	–	–	–	71	97	94	19	82	99	99	10
MON 301668 + Huskie FX + Atrazine + NIS + Amsol	30 oz + 18 oz + 0.5 qt + 0.25% + 5%	–	–	–	–	–	–	70	97	92	20	83	99	99	10
LSD (0.05)		11	7	15	5	2	2	11	5	8	1	6	8	4	–

RCB: 4 reps
Variety: DKS 29-28
Planting Date: 5/21/21
Pre: 5/21/21
Epost: 6/22/21 Sorg 6 lf, 14-16 in; Vele 2-10 in; Cowh 2-10 in.

Precipitation: (inches)
Pre: 1st week 0.58; 2nd week 0.37

Soil: Clay Loam; 4.4% OM; 6.8 pH

Grft=Green foxtail
Vele=Velvetleaf
Cowh=Common waterhemp
VCRR=Visual Crop Response Rating (0=no injury; 100=complete kill)

Comments: Objective of the study was to look at treatments for sorghum weed control. Heavy velvetleaf and common waterhemp and moderate green foxtail pressure. The year started out with moisture to activate preemergence treatments and enough moisture until post treatments were sprayed and then severe drought set in. Some variation in weed control noted with preemergence and postemergence treatments.