

Giant ragweed efficacy in 2012 corn and soybean trials



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- Review control strategies
 - Share 2012 results from
 - One corn study at Prarie du Sac, WI
 - One soybean study at Janesville, WI

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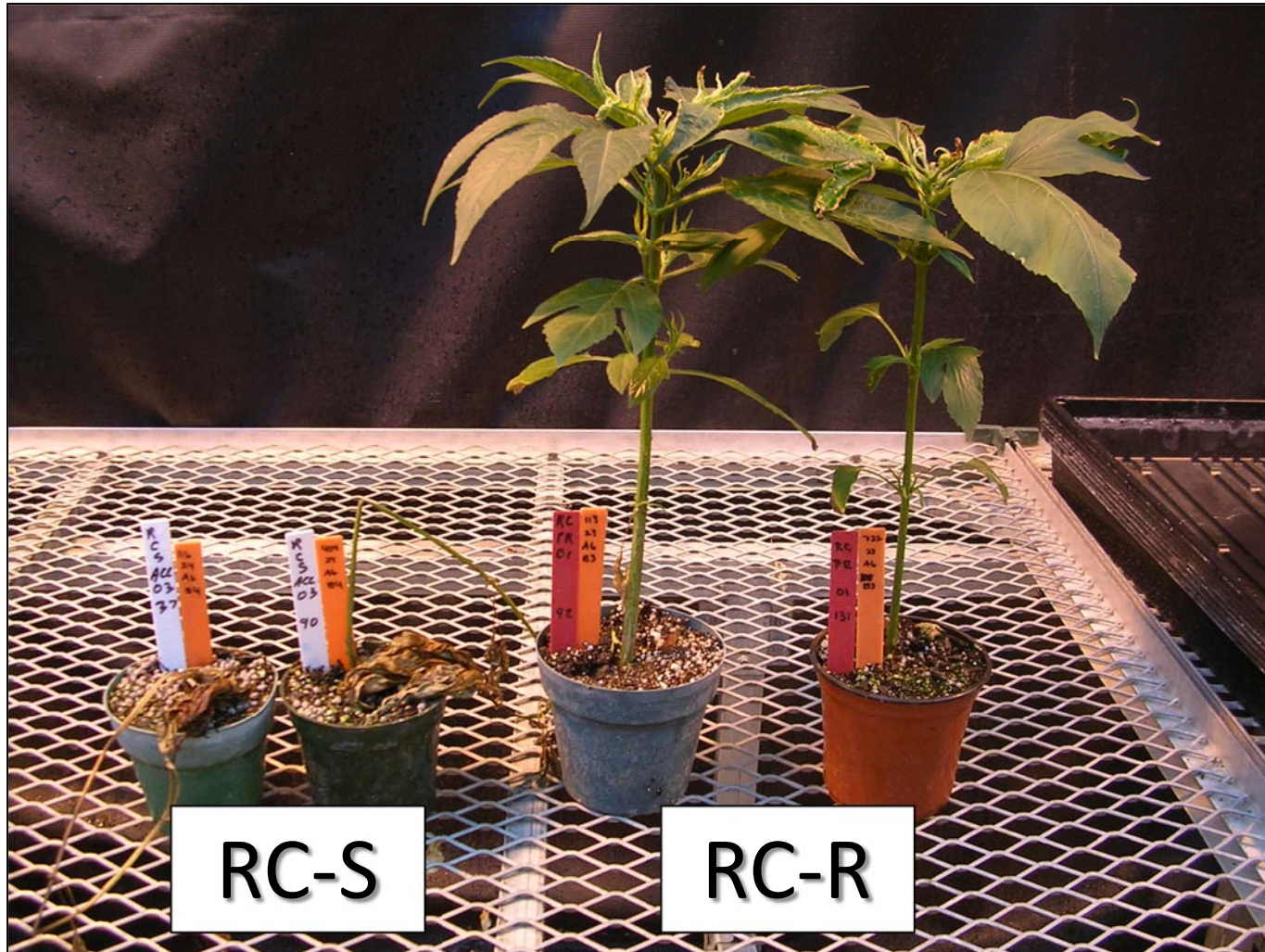
Herbicide resistance review

- Giant Ragweed
 - CONFIRMED resistant to glyphosate
 - CONFIRMED resistant to cloransulam-methyl (FirstRate®)
- Amaranthus sps. (Palmer Amaranth and Waterhemp)
 - None confirmed resistant, but movement continues north (evidence in MI and IN)

Rock County Giant Ragweed

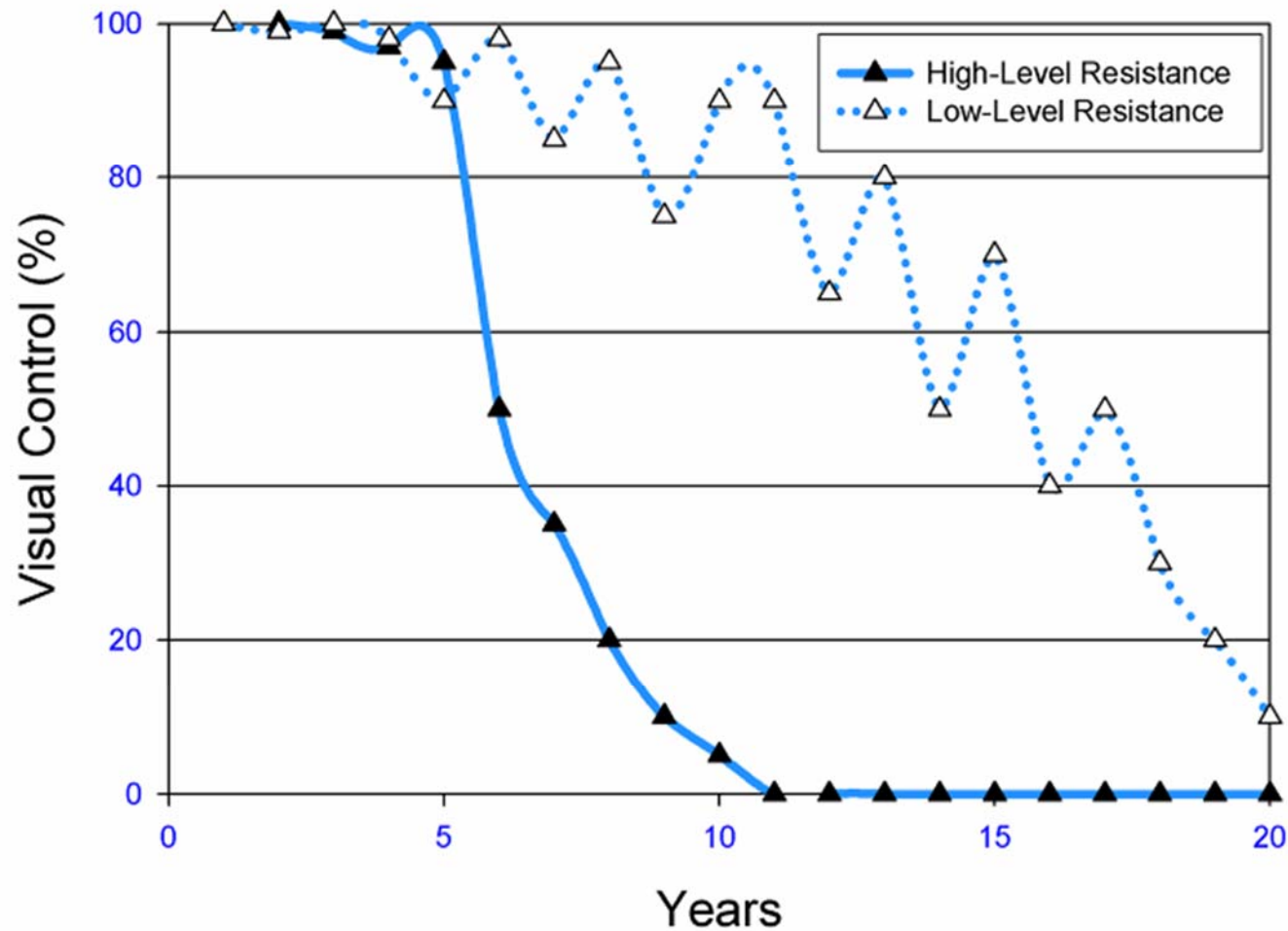
3.0 lb ae/acre glyphosate

4 WAT



Dr. Dave Stoltenberg

Hypothetical Development of High-Level vs. Low-Level Resistance



Giant ragweed management

- One-pass programs –WILL NOT WORK
- Start with clean field, Use a residual herbicide
- In soybean
 1. Use a PRE PPO + cloransulam (Authority First/Sonic; Gangster)
 2. Use a PRE PPO + imazethapyr (Authority assist, Optill) or PRE PPO + PSII (Authority MTZ or Lorox) or PRE PPO + seedling shoot inhibitor (Prefix)
- Follow all pre programs with TIMELY postemergence applications!

Giant ragweed management

- In corn

Use a PRE triazine + acetanilide + HPPD

Followed by: Glyphosate +

HPPD and/or triazine and/or ALS and/or growth regulator (Callisto Xtra, Halex, Laudis, Capreno, Status, Northstar, Yukon)

- Spray postemergence applications **TIMELY!**

Giant ragweed management

- Spray postemergence applications **TIMELY!**

Herbicide	Rate (per acre)	Giant ragweed height –Maximum (inches)
Roundup Powermax	22 fl oz	12
	32 fl oz	18
Liberty	22 fl oz	6
	29 fl oz	12
Callisto	3 fl oz	2
Callisto Xtra	24 fl oz	10
Capreno	3 fl oz	6
Halex GT	3.6 pt	4
FirstRate	0.3 oz	10
Flexstar GT 3.5	3.5 pt	4 gly-sus 2 gly-res
	4.5 pt	6 gly-sus 2 gly-res

Giant Ragweed Control in 2012

(Sauk corn study)

- No-till, planted 5/11/12, PRE's sprayed 5/12
- Giant Ragweed pressure 1 to 2 plants/ ft²
- POST application data
 - EPOST: 6/1/12; corn V2; GRag < 8"
 - MPOST: 6/5/12; corn V3; GRag 2-12"
 - POST: 6/13/12; corn V5-V6; GRag 3-14"
 - LPOST: 6/22/12; corn V6-V7; GRag 4-24"
- 24 herbicide programs, 10'x28' plots, 4 reps



June 11, 2012; Untreated Check

Giant Ragweed Control in 2012 (Sauk corn study)

- PRE 5/12/12
- POST applications
 - EPOST: 6/1/12
 - MPOST: 6/5/12
 - POST: 6/13/12
 - LPOST: 6/22/12
- Efficacy Ratings
- 6/27 Efficacy ratings:
 - NS (all > 94%)
- Yield: 154 to 199

Treatment	rate			7/10/2012		9/26/2012		Yield bu/ac
Harness	1.75 pt/a	A		99ab		99ab		185
Impact	0.75 fl oz/a	C						
atrazine	1 pt/a	C						
MSO	1% v/v	C						
28% UAN	2.5% v/v	C						
Harness	1.75 pt/a	A		96ab		99ab		180
Impact	1 fl oz/a	C						
atrazine	1 pt/a	C						
MSO	1% v/v	C						
28% UAN	2.5% v/v	C						
Harness	1.75 pt/a	A		97ab		97ab		181
Laudis	3 fl oz/a	C						
atrazine	1 pt/a	C						
MSO	1% v/v	C						
28% UAN	2.5% v/v	C						

Treatment	rate		7/10/2012	9/26/2012	Yield bu/ac
Harness	1.75 pt/a	A	95ab	98ab	168
Roundup PowerMax	22 fl oz/a	C			
N-Pak AMS	3 pt/a	C			
Harness	1.75 pt/a	A	99ab	99ab	178
Impact	0.75 fl oz/a	C			
atrazine	1 pt/a	C			
Roundup PowerMax	22 fl oz/a	C			
N-Pak AMS	3 pt/a	C			
MSO	0.5% v/v	C			
Warrant	3 pt/a	B	93ab	94b	182
Impact	0.75 fl oz/a	B			
atrazine	1 pt/a	B			
Roundup PowerMax	22 fl oz/a	B			
N-Pak AMS	3 pt/a	B			
MSO	0.5% v/v	B			

Treatment	rate			7/10/2012		9/26/2012		Yield bu/ac	
Halex GT	3.6 pt/a	B		94ab		97ab		169	
atrazine	1 pt/a	B							
Activator 90	0.25% v/v	B							
N-Pak AMS	3 pt/a	B							
Dual II Magnum	2 pt/a	A		92b		100ab		184	
Roundup WeatherMax	22 fl oz/a	B							
AMS	2.5 lb/a	B							
Roundup WeatherMax	22 fl oz/a	D							
AMS	2.5 lb/a	D							
Dual II Magnum	2 pt/a	A		97ab		100ab		193	
Roundup WeatherMax	32 fl oz/a	B							
AMS	2.5 lb/a	B							
Roundup WeatherMax	32 fl oz/a	D							
AMS	2.5 lb/a	D							

Treatment	rate			7/10/2012		9/26/2012		Yield bu/ac	
Lumax	3qt/a	A		97ab		100ab		183	
Option	1.5 fl oz/a	D							
NorthStar	5oz/a	D							
MSO	1.5 pt/a	D							
AMS	2.5 lb/a	D							
Lumax	3qt/a	A		99ab		100a		182	
Option	1.5 fl oz/a	D							
Yukon	6oz/a	D							
MSO	1.5 pt/a	D							
AMS	2.5 lb/a	D							
Lumax	3qt/a	A		99ab		100ab		190	
Option	1.5 fl oz/a	D							
Status	4oz/a	D							
MSO	1.5 pt/a	D							

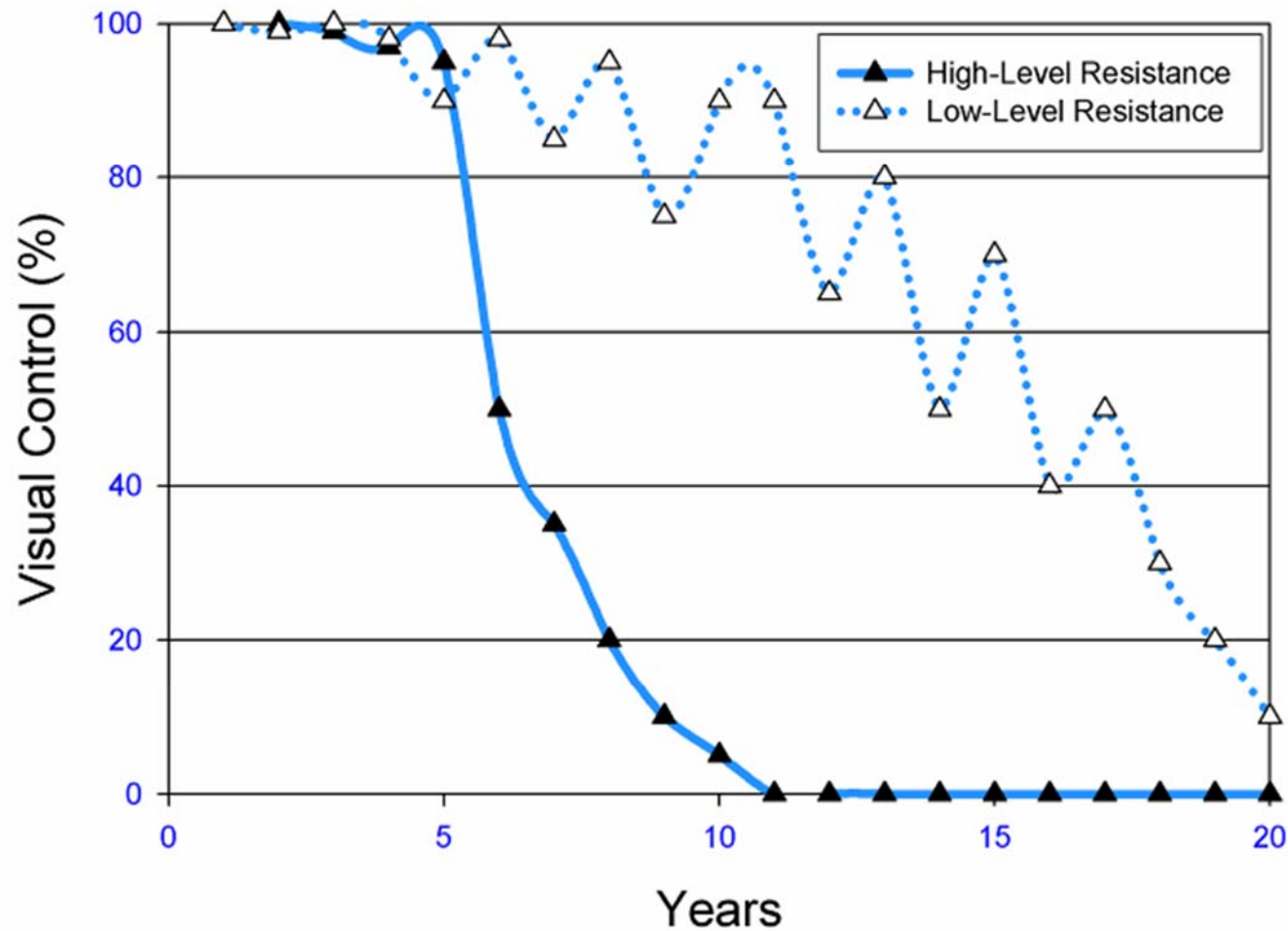
Treatment	rate			7/10/2012		9/26/2012		Yield bu/ac	
Lumax	3 qt/a	A		100a		100a		178	
Liberty 280	22 fl oz/a	D							
AMS	2.5 lb/a	D							
Lumax	2.5 qt/a	A		99ab		100a		199	
Roundup WeatherMax	22 fl oz/a	D							
Status	2.5 oz/a	D							
AMS	2.5 lb/a	D							
NIS	0.25 % v/v	D							
Lumax	2.5 qt/a	A		99ab		100a		172	
Roundup WeatherMax	22 fl oz/a	D							
Status	4 oz/a	D							
AMS	2.5 lb/a	D							
NIS	0.25 % v/v	D							

Treatment	rate			7/10/2012		9/26/2012		Yield bu/ac	
Harness Xtra	2.3 qt/a	A		99ab		99ab		156	
Roundup WeatherMax	22 fl oz/a	D							
Status	4 oz/a	D							
AMS	2.5 lb/a	D							
NIS	0.25 % v/v	D							
Verdict	15 fl oz/a	A		98ab		100ab		178	
Roundup WeatherMax	22 fl oz/a	D							
Status	4 oz/a	D							
AMS	2.5 lb/a	D							
NIS	0.25 % v/v	D							
Bicep Lite II Magnum	2.2 qt/a	A		99ab		100a		191	
Roundup WeatherMax	22 fl oz/a	D							
Status	4 oz/a	D							
AMS	2.5 lb/a	D							

Treatment	rate			7/10/2012		9/26/2012		Yield bu/ac	
Surestart	2 pt/a	A		99 ab		100 a		185	
Roundup WeatherMax	22 fl oz/a	D							
Status	4 oz/a	D							
AMS	2.5 lb/a	D							
NIS	0.25 % v/v	D							
Surestart	2 pt/a	A		95 ab		98 ab		177	
Laudis	3 fl oz/a	B							
MSO	1 % v/v	B							
AMS	2.5 lb/a	B							
Surestart	2 pt/a	A		96 ab		98 ab		188	
Capreno	3 fl oz/a	B							
COC	1 % v/v	B							
AMS	2.5 lb/a	B							

Treatment	rate		7/10/2012	9/26/2012	Yield bu/ac
Surestart	2 pt/a	A	93 ab	96 ab	191
Liberty 280	22 fl oz/a	B			
AMS	2.5 lb/a	B			
Halex GT	3.6 qt/a	B	97 ab	98 ab	154
AAtrex	1 pt/a	B			
AMS	2.5 lb/a	B			
NIS	0.25 % v/v	B			
Capreno	3 fl oz/a	B	87 c	89 c	187
AAtrex	1 pt/a	B			
Roundup WeatherMax	22 fl oz/a	B			
AMS	2.5 lb/a	B			
COC	1 % v/v	B			

Hypothetical Development of High-Level vs. Low-Level Resistance



Prairie du Sac, WI

To die.....
or not to die?

June 11, 2012; 14 D after 32 Fl oz Roundup Weathermax



June 11, 2012; 14 D after 32 Fl oz Roundup Weathermax



June 11, 2012; 14 D after 32 Fl oz Roundup Weathermax

Giant Ragweed Control in 2012

Question:

- What do you recommend in soybean if ALS Inhibitors (e.g. FirstRate) will be in-effective due to resistance
 - AND
- POST Performance of Glyphosate starts to fail?
- Or, worse yet, tank-mix combinations of Glyphosate+FirstRate performs poorly?

Giant Ragweed Control in 2012 (Janesville soybean study)

- Options are limited, and relies on PPO chemistry
- flumioxazin, sulfentrazone, saflufenacil, fomesafen, lactofen
- Other options? ----How do we rotate MOA's?
 - Glufosinate!
 - Metribuzin?
 - Lorox (linuron)?
 - ?

Giant Ragweed Control in 2012 (Janesville soybean study)

- Giant Ragweed pressure 4 to 8 plants/ ft²
- POST application data
 - 6/13/12; soybean VC; Giant Ragweed 5-12"
 - 6/21/12; soybean V2; Giant Ragweed 2-18"
 - 6/28/12; soybean V4; Giant Ragweed 3-20"

Rainfall Data from Janesville, 2012

Month	Rainfall (inches)
May (Before Planting) (After Planting)	2.51 (0.23) (2.28)
June	0.3
July	3.53
August	2.57
September	2.13
Total	11.04

Giant Ragweed Control - soybean

[illegible]

Giant Ragweed Control - soybean

[illegible]

Giant Ragweed Control - soybean

Treatment	Rate		Spray Date	Giant Ragweed Control (%)		
				6/26	7/5	8/24
Rup Wmax	16fl oz/a		6/13	78 bc	84 abc	39 bcd
Rup Wmax	44fl oz/a		6/13	92 a	92 ab	79 ab
Rup Wmax	16fl oz/a		6/21	45 e	68 de	55 bcd
Rup Wmax	44fl oz/a		6/21	44 e	77 bcd	95 a
Flexstar GT (coc + ams)	3.5pt/a		6/13	84 ab	83 abc	33 cd
Rup Wmax	16fl oz/a		6/13	83 abc	84 abc	20 cd
Cobra (coc + ams)	12.5fl oz/a		6/13			

Giant Ragweed Control - soybean

Treatment	Rate	Spray Date	Giant Ragweed Control (%)		
			6/26	7/5	8/24
Rup Wmax	16fl oz/a	6/13	78 bc	84 abc	39 bcd
Rup Wmax	44fl oz/a	6/13	92 a	92 ab	79 ab
Rup Wmax	16fl oz/a	6/21	45 e	68 de	55 bcd
Rup Wmax	44fl oz/a	6/21	44 e	77 bcd	95 a
Flexstar GT (coc + ams)	3.5pt/a	6/13	84 ab	83 abc	33 cd
Rup Wmax	16fl oz/a	6/13	83 abc	84 abc	20 cd
Cobra (coc + ams)	12.5fl oz/a	6/13			
Rup Wmax	16fl oz/a	6/13	94 a	91 ab	38 bcd
fb Flexstar (coc + ams)	1.3pt/a	6/21			
Rup Wmax	16fl oz/a	6/13	88 ab	91 ab	33 cd
fb Cobra (coc + ams)	12.5fl oz/a	6/21			

Giant Ragweed Control - soybean

Treatment	Rate	Spray Date	Giant Ragweed Control (%)		
			6/26	7/5	8/24
Rup Wmax	16fl oz/a	6/13	78 bc	84 abc	39 bcd
Rup Wmax	44fl oz/a	6/13	92 a	92 ab	79 ab
Rup Wmax	16fl oz/a	6/21	45 e	68 de	55 bcd
Rup Wmax	44fl oz/a	6/21	44 e	77 bcd	95 a
Flexstar GT (coc + ams)	3.5pt/a	6/13	84 ab	83 abc	33 cd
Rup Wmax	16fl oz/a	6/13	83 abc	84 abc	20 cd
Cobra (coc + ams)	12.5fl oz/a	6/13			
Rup Wmax	16fl oz/a	6/13	94 a	89 ab	59 bcd
fb Flexstar (coc + ams)	1.3pt/a	6/26			
Rup Wmax	16fl oz/a	6/13	88 ab	86 ab	60 cd
fb Cobra (coc + ams)	12.5fl oz/a	6/26			

Janesville, WI giant ragweed trial

Oct. 2, 2012





Thanks for your attention!
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