

Volunteer canola control in soybean

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**BIG
DISCLAIMER**

DISCLAIMER

- **I will mention some off-label uses**
- **I am not encouraging off-label uses**
- **Use info to seek new labels, if applicable**

DISCLAIMER (cont.)

- **There is no silver bullet for \$1 per acre**
- **Prices are ball park figure, may change significantly.....danger here**

Frequent question

- How do you control volunteer canola in soybean?
- Does canola stage make a difference?

Controlling volunteer canola

- **Limit seed reaching the ground**
- **Swath and combine at correct time**
- **Set combine properly**
- **Minimize secondary dormancy**
 - **4+ years**
 - **dry, dark conditions induce dormancy**
 - **leave seeds exposed**
- **Crop rotation (follow with cereal preferable)**
- **Liberty Link canola**
- **Control in the fall, if possible**
- **Spring burn-down is critical**

Cobra applied to 5-leaf canola on June 10



Cobra applied to bolting canola on June 16



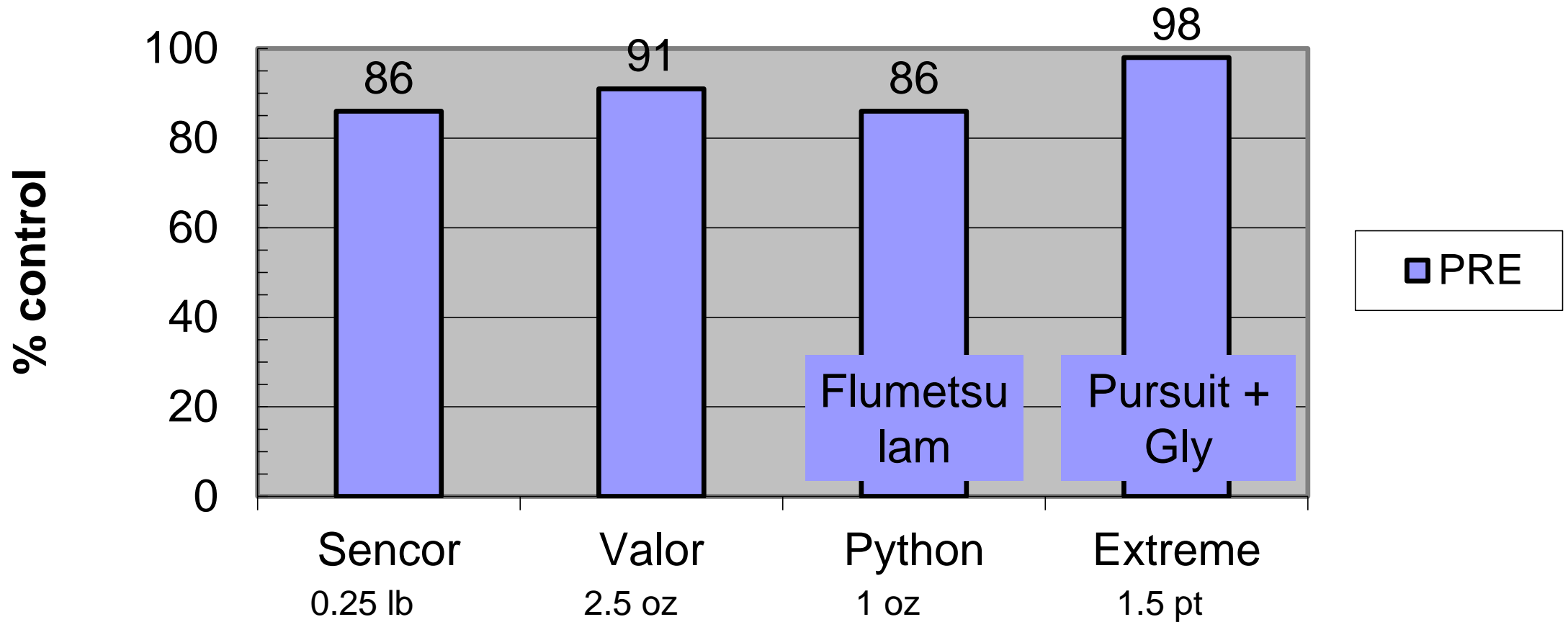
2004 and 2005 studies

- **Conventional tillage**
- **Seeded canola**
- **Seeded soybean across**
- **Applied PRE, POST herbicides**
- **POST applied at ~3-lf and 6-lf canola**

Volunteer canola control in soybean

(ave 2004 and 2005)

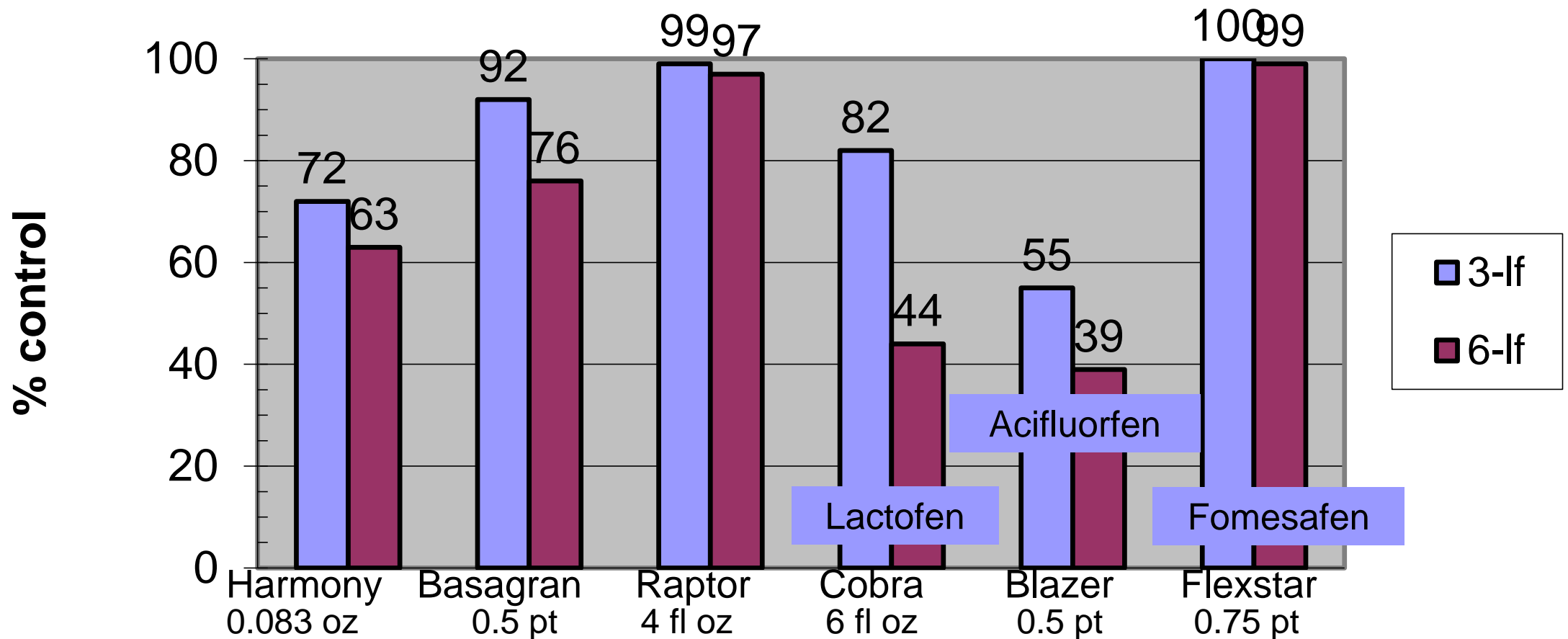
(preemergence)



Volunteer canola control in soybean

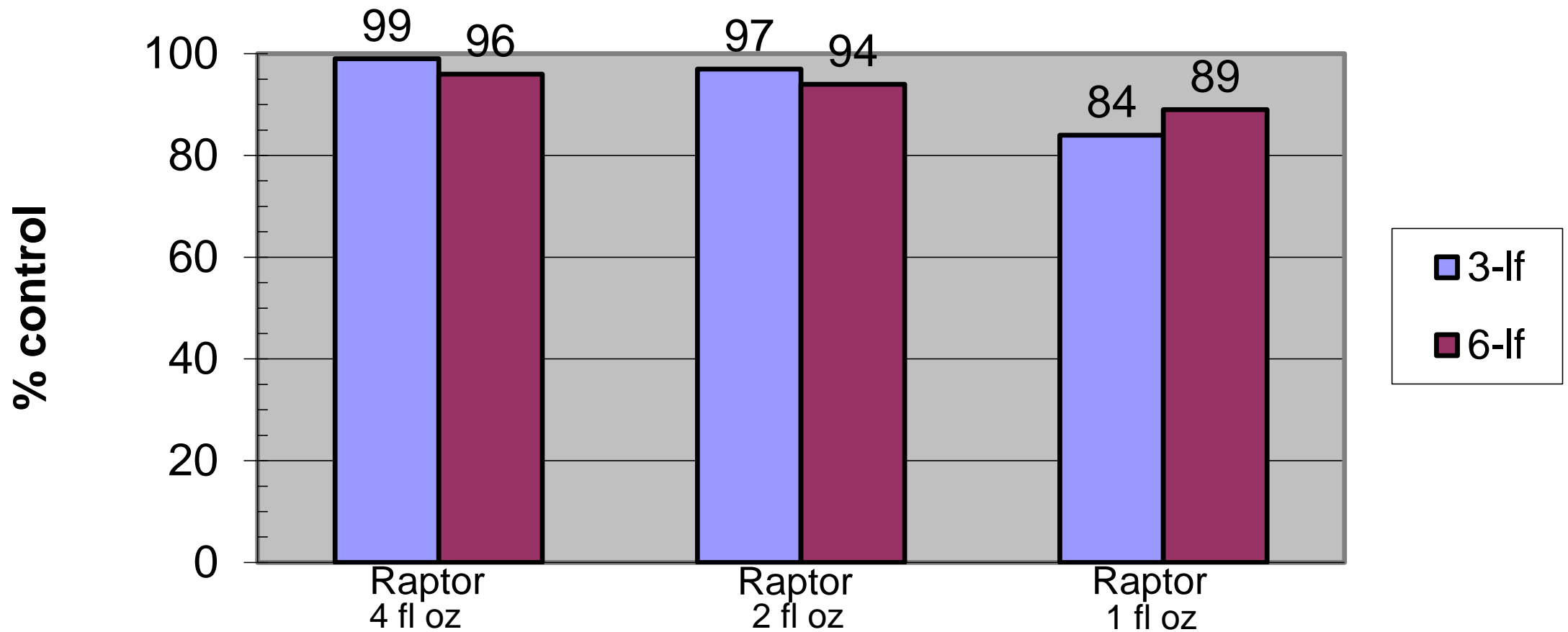
(ave 2004 and 2005)

(postemergence)



Volunteer canola control in soybean (2005 only)

(postemergence)



Rating scale in weed guide

E = Excellent = 90-100% control

G = Good = 80-90% control

F = Fair = 65-80% control

P = Poor = 40-65% control

N = None = No control

***VP = Very poor = <40% control**

Volunteer canola control in soybean

(Soil-applied herbicides)

Herbicide	Rate	g ai/ha	Cost*	Rating
Sencor	0.25 lb	210	4.50	G
Valor	2.5 oz	89	16.00	G-E
Python	1 oz	56	14.50	G
Extreme	1.5 pt	35 + 420	5.65	E

*Approximate 2015 retail cost

Volunteer canola control in soybean

(Postemergence herbicides)

Herbicide	Rate	g ai/ha	Cost	3-If	6-If
Harm GT	1/12 oz	4.4	5.00	F	P
Basagran	0.5 pt	280	6.50	G-E	F
Raptor	4 fl oz	35	18.00	E	E
Cobra	6 fl oz	105	10.30	F-G	VP
Blazer	0.75 pt	210	8.50	P	VP
Flexstar	0.75 pt	200	13.00	E	E

Volunteer canola control in soybean

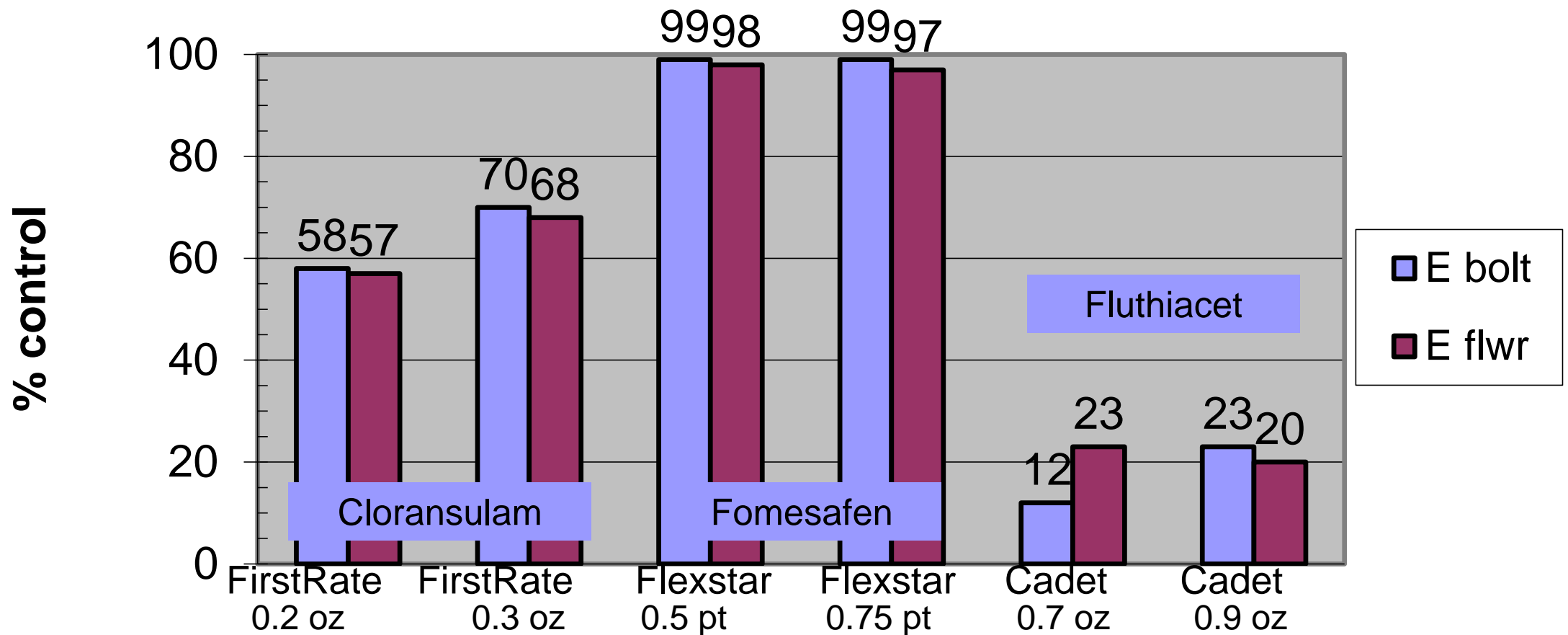
(Postemergence herbicides)

Herbicide	Rate	g ai/ha	Cost	3-If	6-If
Raptor	4 fl oz	35	18.00	E	E
Raptor	2 fl oz	17.5	9.00	E	E
Raptor	1 fl oz	8.25	4.50	G	G

Volunteer canola control in soybean

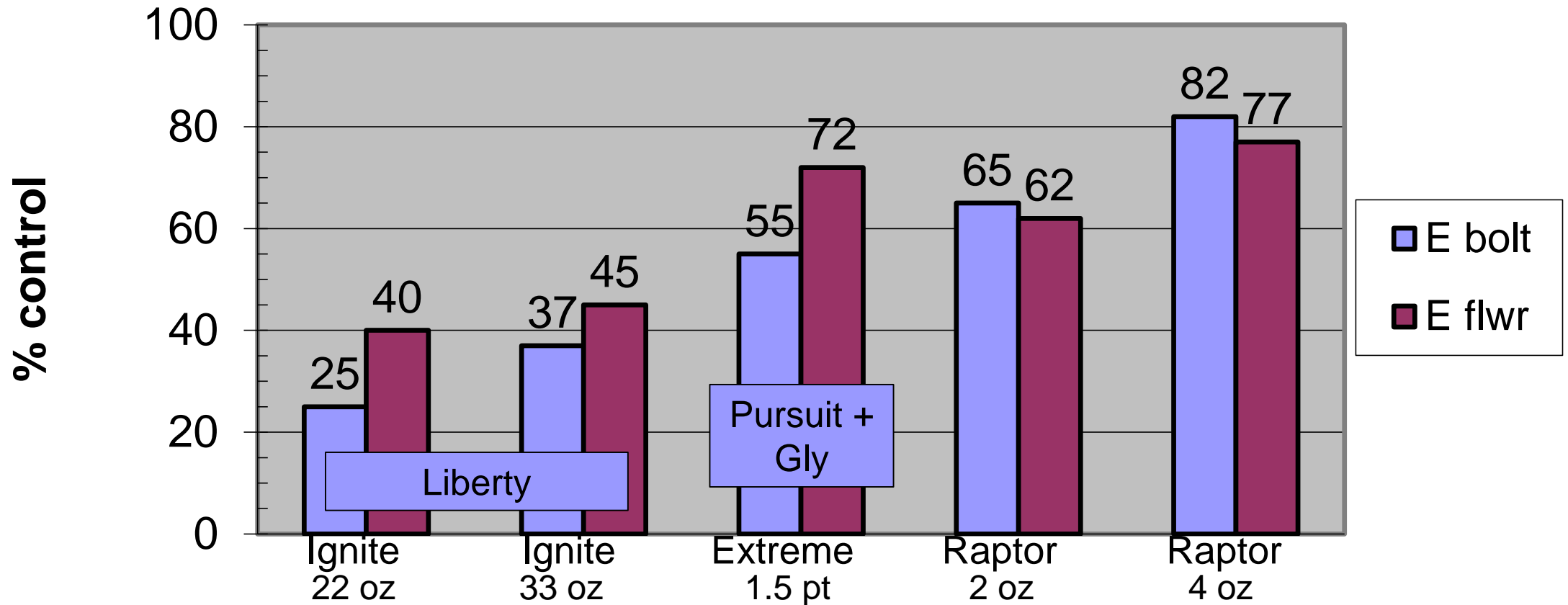
(2010 - Fargo)

(postemergence)



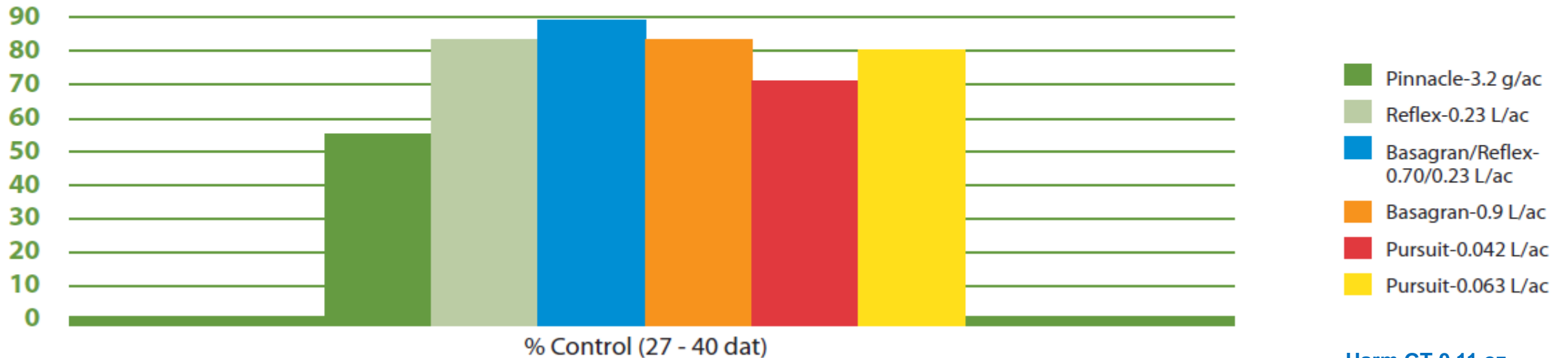
Volunteer canola control in soybean (2010 - Fargo)

(postemergence)



Monsanto Research 2002-2005

VOLUNTEER ROUNDUP READY CANOLA POST EMERGENT CONTROL IN ROUNDUP READY SOYBEANS



Harm GT 0.11 oz
Reflex 0.5 pt
Basagran 1.4 pt
Basagran 1.9 pt
Pursuit 1.4 fl oz
Pursuit 2.1 fl oz

Controlling RR canola in soybean – Ontario

Table 1: Control of volunteer "Roundup Ready" canola with selected herbicides applied pre-plant to soybeans and to small volunteer canola (cotyledon to 4 leaf).

Treatment	Rate	% Control - 40 DAA*			Price**
		2002	2003	Avg	
glyphosate	1 L/ac	0	0	0	\$9.00/ac
glyphosate + Sencor	1 L/ac + 200 g/ac	99	100	99.5	\$20.40/ac
glyphosate + Pursuit	1 L/ac + 60 ml/ac	96	88	92	\$21.66/ac
glyphosate + Pursuit	1 L/ac + 90 ml/ac	97	89	93	\$27.99/ac
glyphosate + FirstRate	1 L/ac + 8.5 g/ac	----	94	94***	\$20.95/ac

* DAA = Days after application.

** Pricing for comparative purposes only and will vary across the province.

*** Rating based on only 1 year of data therefore level of consistency is unknown.

Controlling RR canola in soybean – Ontario

Table 2: Control of volunteer "Roundup Ready" canola with selected herbicides

applied post-emergent to "Roundup Ready" soybeans and to large volunteer canola (flowering) in 2002 but to small volunteer canola (2 - 4 leaf) in 2003.

Treatment	Rate	% Control - 40 DAA*			Price**
		2002	2003	Avg	
glyphosate	1 L/ac	0	0	0	\$9.00/ac
glyphosate + Pursuit	1 L/ac + 60 ml/ac	53	80	67	\$21.66/ac
glyphosate + Pursuit	1 L/ac + 90 ml/ac	58	96	77	\$27.99/ac
glyphosate + Pinnacle	1 L/ac + 3.2 g/ac	41	----	41***	\$21.80/ac
glyphosate + Classic	1 L/ac + 14 g/ac	81	98	90	\$17.50/ac
glyphosate + FirstRate	1 L/ac + 8.5 g/ac	-----	96	96***	\$20.95/ac

This rate (0.3 oz) achieved only 70% control of bolt/flwr at Fargo

*DAA = Days after application.

** Pricing for comparative purposes only and will vary across the province.

*** Rating based on only 1 year of data

2002: Flwr
2003: 2-4 lf

Sharpen (saflufenacil)

- PPO inhibitor (same as Spartan, Valor)
- Burndown
- Residual control (depends on rate)
- No POST application!
 - Corn
 - Soybean
 - Dry pea
 - Chickpea
 - Lentil
 - Small grains
 - Sunflower (desiccation)
 - Fallow
 - Postharvest

Best options (early app)

Soil-applied

Product	\$/A	Rating
Sharpen (no residual)	5.70	E
Sencor	4.50	G
Extreme	5.65	E
Valor	13-19	G-E
Python	14.50	G
First Rate (.3oz)	12.50	G-E
Authority First	17.50	G-E
Authority Assist	18.00	E
Authority MTZ	14-18	G
Fierce (V + Pyroxasulfone)		?

POST-applied (early)

Product	\$/A	Rating
Basagran	6.50	G-E
Raptor	4-18	G-E
Pursuit	9.80	G-E
Flexstar	13.00	E
Liberty	16.00	G-E

Product	Cost	Rating
Harm SG	5.00	P-F
Cobra	10.30	F-G

North Dakota Weed Guide

Roundup Ready Corn - Herbicides to apply in tank-mix or sequentially with glyphosate for control of weeds not controlled by glyphosate.

Refer to pages 18 through 21 for additional herbicides.

Herbicides <small>Site of action-pg 98-99</small>	Rate/A	Cost/A	Buckwheat, Wild	Canola, Vol. RR ^b	Horseweed (Marestail)	Kochia	Lambsquarters	Nightshade species	Pigweed, Redroot	Prickly lettuce	Ragweed, Common	Smartweed, Annual	Waterhemp
Preplant-burndown herbicides^a - add AMS at 1.5-3 lb/A.			Weed Control Ratings^{c,d} - <i>without glyphosate</i>										
2,4-D ⁴ + oil adjuvant	1 pt + 1-2 pt	\$5.00	N	P-G	F-E	P	E	N-P	G	E	E	P	F-G
Banvel/dicamba ⁴ + MSO	8 fl oz + 1.5 pt	\$9.00	E	N	F-E	E	G	E	G	G-E	G	E	F
	16 fl oz + 1.5 pt	\$16.00	E	N	E	E	E	G-E	E	E	E	E	G
Glyphosate ⁹ (4.5 lb ae) + AMS	32 - 105 fl oz	\$7.00-25.00	F-E	N	P-E	P-E	E	E	E	E	P-E	E	P-E
Glyt(4.5lb ae)+2,4-D ⁴ e+Express ² +HSMOC	44oz+1pt+0.3oz	\$25.00	F-E	G-E	P-E	P-E	E	E	E	E	P-E	E	P-E
Paraquat ^{22*} + NIS	3pt 2SL+1-2 qt	\$20.00	F	-	F-G	G-E	E	G-E	E	F-G	G-E	E	G-E
Sharpen¹⁴ + MSO	2-3 fl oz + 1.5 pt	\$15.00-22.00	G-E	F-E	G-E	E	E	G-E	G-E	G-E	G-E	E	G-E
PRE herbicides^a			Weed Control Ratings^{c,d} - <i>without glyphosate</i>										
Acetochlor ¹⁵	1.25 - 2.25 pt	\$17.00-31.00	P	N	N-P	P-F	F-E	F-G	G-E	-	N-P	P	F-E
Anthem^{14,15}	5 - 12 fl oz	\$15.00-40.00	F-E	P-F	N-P	F-E	F-E	F-E	G-E	-	P-F	F-E	G-E
Balance Flexx²⁷ No aerial application	3 - 4.5 fl oz	\$17.00-25.00	P	E	G-E	G-E	E	E	E	G-E	G-E	G	E
Banvel/dicamba ⁴	8 fl oz	\$5.50	E	P	F-E	E	G	E	G	G-E	G	E	F
Corvus^{2,27} No aerial application	3.33 - 5.6 fl oz	\$23.00-39.00	P	E	G-E	G-E	E	E	E	G-E	G-E	G	E
Fierce^{14,15}	3 oz	\$21.00	G-E	F-G	F-G	F-E	F-G	F-E	G-E	F-G	P	F-G	G
Hornet^{2,4}	3 - 4 oz	\$14.50-19.00	G-E	P-F	F-E	N	G-E	G-E	G-E	-	F-G	G-E	N

North Dakota Weed Guide

Roundup Ready Soybean - Herbicides to apply in tank-mix or sequentially with glyphosate for control of weeds not controlled by glyphosate.

Refer to pages 25 through 28 for additional herbicides.

Herbicide <small>Site of action-pg 98-99</small>	Rate/A	Cost/A	Buckwheat, Wild	Canola, Vol. RR ^b	Horseweed (Marestail)	Kochia	Lambsquarters	Nightshade species	Pigweed, Redroot	Prickly lettuce	Ragweed, Common	Smartweed, Annual	Waterhemp
Preplant-burndown herbicides^a - add AMS at 1.5-3 lb/A.			Weed Control Ratings^{c,d} - <i>without glyphosate</i>										
2,4-D ester ⁴ + oil adjuvant	1 pt + 1 to 2 pt	\$5.00	N	P-G	F-E	P	E	N-P	G	E	E	P	F-G
Glyphosate ⁹ (4.5 lb ae)	32-105 fl oz	\$7.00-25.00	F-E	N	P-E	P-E	E	E	E	E	P-E	E	P-E
Glyphosate ⁹ (4.5 lb ae) + 2,4-D ⁴ ester	32-44 fl oz + 1 pt	\$9.50-12.00	F-E	N	P-E	P-E	E	E	E	E	P-E	E	P-E
Glyt ⁹ + 2,4-D ⁴ e + Express + HSMOC	44 oz+1 pt+0.3 oz	\$25.00	F-E	G-E	P-E	P-E	E	E	E	E	P-E	E	P-E
Paraquat ²² + NIS adjuvant	3 pt 2SL + 1-2 pt	\$20.00	F	-	F-G	G-E	E	G-E	E	F-G	G-E	E	G-E
Verdict ^{14,15} + MSO	5 fl oz + 1.5 pt	\$11.00	G-E	G-E	G-E	G-E	G-E	G-E	G-E	G-E	G-E	G-E	G
PRE herbicides^a			Weed Control Ratings^{c,d} - <i>without glyphosate</i>										
Authority Assist ^{2,14}	6-9 fl oz	\$18.00-27.00	P	P-E	F	F-E	G-E	F-E	F-E	E	N	G-E	F-E
Authority Elite ^{14,15}	20-32 fl oz	\$30.00-48.00	P-G	P-F	F	G-E	G-E	G-E	G-E	P	N	G-E	G-E
Authority First/Sonic ^{2,14}	4-7 oz	\$22.00-40.00	P	E	P-E	F-E	G-E	F-E	F-E	P	N	G-E	F-E
Authority MTZ ^{5,14}	12-15* oz	\$21.00-26.00	F-G	E	F	F-E	G-E	G-E	G-E	G-E	F-G	G-E	F-E
Boundary ^{5,15}	1.6* -2.4** pt	\$18.00-27.00	F-G	E	F	F-G	G	P	G-E	G-E	P-F	G	G-E
Fierce ^{14,15}	3 oz	\$21.00	G-E	G-E	F-G	F-E	F-E	G-E	G-E	F-G	P	F-G	G-E
FirstRate ²	0.3-0.75 WDG	\$13.00-33.00	N	E	P-E	N	P-F	N	P-F	-	P	G-E	N
Gangster ^{2,14}	2.4-3.6 oz	\$25.00-36.00	P-F	E	F-E	P-G	F-E	G-E	G-E	F-E	F-G	G-E	G
Metribuzin ⁵	0.33-0.5 lb	\$6.00-9.00	F-G	E	F	F-G	P-G	P	G-E	G-E	P-F	G	F-G