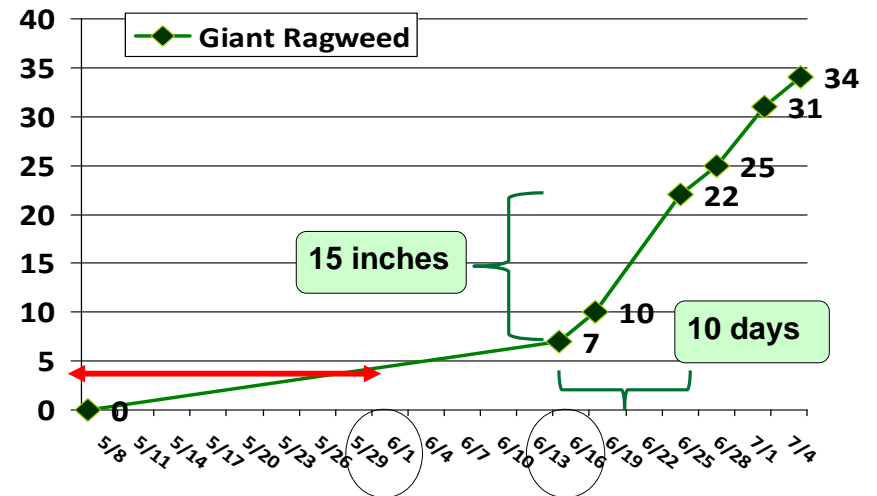


# Is this Important? Time of Weed Removal

**TAKE CONTROL**

UNIVERSITY OF MINNESOTA | EXTENSION  
Driven to Discover™

## Growth of Giant Ragweed



UNIVERSITY OF MINNESOTA | EXTENSION  
Driven to Discover™

### Roundup PowerMax 30 fl oz/a + AMS 8.5 lb/100gal POST I (V1-V2) sprayed on 5/18/12

May 18, 2012



June 18, 2012



June 26, 2012



July 19, 2012



UNIVERSITY OF MINNESOTA | EXTENSION  
Driven to Discover™

### Roundup PowerMax 22 fl oz/a + AMS 8.5 lb/100gal POST II (V3-V4) sprayed on 6/4/12

June 4, 2012



June 18, 2012



June 26, 2012



July 19, 2012



UNIVERSITY OF MINNESOTA | EXTENSION  
Driven to Discover™

## Roundup PowerMax 22 fl oz/a + AMS 8.5 lb/100gal POST III (V5-R1) sprayed on 6/12/12

June 11, 2012



June 18, 2012



June 26, 2012



July 19, 2012



June 26, 2012



July 19, 2012



Sprayed

5/18/12



6/4/12



6/12/12

Table 1. Performance of herbicide systems for giant ragweed control in soybean and grain yield at 13% at , in 2011.

Treatment	Rate (rate/A)	Giant Ragweed Control (% Control)		
		6/8	6/13	6/24
<b>Tier 2/3 Options based on control of GIRW</b>				
<b>PRE/POST I (4 inch weeds) June 13</b>				
<b>Boundary /</b> Flexstar + Fusion + Harmony SG + MSO + 28% N	1.5 pt/a / 16 oz/a + 8 oz/a + 0.125 oz/a + 1% v/v + 2.5% v/v	34	15	99
<b>PRE/POST II (6 inch weeds) June 16</b>				
<b>Anthem / Roundup PowerMax + N-Pak</b> AMS	<b>3 days later than POST I  (Tier 2/3)</b>	31	16	94
<b>Boundary / Touchdown Total + N-Pak</b> AMS		31	15	92
<b>Valor SX / Roundup PowerMax + N-</b> Pak AMS		55	30	96

Table 1. Performance of herbicide systems for giant ragweed control in soybean and grain yield at 13% at , in 2011.

Treatment	Rate (rate/A)	Giant Ragweed Control (% Control)		
		6/8	6/13	6/24
<b>Tier 2 Options based on control of GIRW</b>				
<b>PRE/POST I (4 inch weeds) June 13</b>				
<b>Boundary /</b> Flexstar + Fusion + Harmony SG + MSO + 28% N		34	15	99
<b>PRE/POST II (6 inch weeds) June 16</b>				
<b>PRE / POST III (6 inch weeds) June 25</b>				
<b>Fierce / Roundup PowerMax + N-Pak</b> AMS	<b>12 days later than POST I  (Tier 2)</b>	62	49	53
<b>Fierce + Classic / Roundup PowerMax</b> N-Pak AMS		63	51	57
<b>OpTill / Roundup PowerMax + + N-Pak</b> AMS (Tier 1)		90	86	90
<b>Sonic / DMA + N-Pak AMS</b>		83	74	70
<b>Enlite / Abundit S + N-Pak AMS</b>		75	61	50
<b>Enlite / Abundit S + Harmony SG + N-</b> Pak AMS		71	57	49

Table 1. Performance of herbicide systems for giant ragweed control in soybean and grain yield at 13% at , in 2011.

Treatment	Rate (rate/A)	Giant Ragweed Control		
		6/8	6/13	6/24
Tier 1 Options based on control of GIRW				
<i>PRE/POST I (4 inch weeds) June 13</i>				
Boundary / Flexstar + Fusion + Harmony SG + MSO + 28% N	1.5 qt/A	34	15	99
<i>PRE / POST IV (4 inch weeds) June 29</i>				
Authority First / Roundup PowerMax + N-Pak AMS		91	88	88
Prefix / Touchdown Total + N- Pak AMS		93	90	86
Verdict + Outlook / Roundup PowerMax + + N-Pak AMS		93	90	84
Zidua + Verdict / Roundup PowerMax + + N-Pak AMS		97	94	93

**16 days later than POST I (Tier 1)**

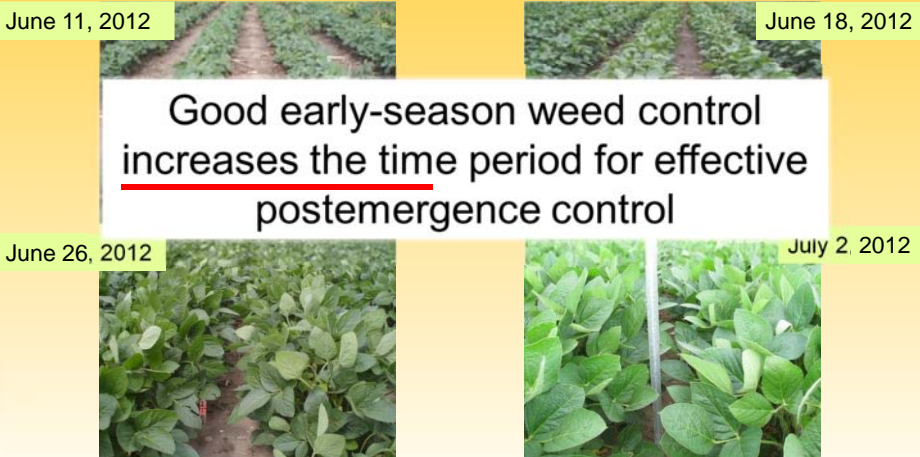
Table 1. Performance of herbicide systems for giant ragweed control in soybean and grain yield at 13% at , in 2011.

Treatment	Rate (rate/A)	Giant Ragweed Control		
		6/8	6/13	6/24
<i>PRE/POST I (4 inch weeds) June 13</i>				
Boundary / Flexstar + Fusion +			15	99
<i>PRE/POST II</i>				
Anthem / R				94
Boundary				92
Valor SX /				96
<i>PRE / POST I</i>				

**Postemergence ONLY programs were sprayed on June 13, when weeds were 4 inches.**

**SYSTEMS**

Authority First 3.2 oz/a + Dual II MAG 16 fl oz/a  
PRE sprayed on April 24, 2012  
Roundup PowerMax 22 fl oz/a + AMS 8.5 lb/100gal  
POST III (V5-R1) sprayed on June 12, 2012



**Good early-season weed control increases the time period for effective postemergence control**

Trt. 4  
Warrant 24 fl oz/a  
PRE sprayed on April 24, 2012  
Roundup PowerMax 22 fl oz/a + AMS 8.5 lb/100gal  
POST III (V5-R1) sprayed on June 12, 2012



- **Poor early-season weed control reduces the time period for effective postemergence control**
- **Effective postemergence weed control depends on:**
  - Weed species diversity, time of weed emergence, density, and difficulty to control

## Herbicide Resistant Weeds

### So, what will you do if and when glyphosate fails?

In 2013, we conducted a field trial on a known glyphosate and ALS resistant GIRW site. Glyphosate systems provided only 20-35% control **SOA 9 & 2**  
PRE programs with ALS herbicides provided only 36% control.

Roundup PowerMax 44 fl oz/a + N-PaK AMS 3 qt/a  
POST I (1-2" weeds) sprayed 6/28/13



July 22, 2013 28% GIRW Control



September 6, 2013

1-2 inch weeds!

Roundup PowerMax 64 fl oz/a + N-PaK AMS 3 qt/a  
POST III (5-6" weeds) sprayed 7/12/13



July 22, 2013 29% GIRW Control



September 6, 2013

5-6 inch weeds!

Roundup PowerMax 44 fl oz/a + N-PaK AMS 3 qt/a  
POST I (1-2" weeds) sprayed 6/28/13  
Roundup PowerMax 22 fl oz/a + N-PaK AMS 3 qt/a  
POST II (14 days after) sprayed 7/1/13



July 22, 2013 33% GIRW Control



Sept. 6, 2013 23.8 bu.a (b)

1-2 inch weeds!

**Sonic 6.4 oz/a**  
**PRE sprayed on 6/13/13**  
**Flexstar GT 3.5 pt/a + 28% UAN 2.5% V/V + MSO 1% V/V**  
**POST II (1-2" weeds) sprayed 7/1/13**



July 1, 2013 PRE = 36% GIRW Control

July 22, 2013 84% GIRW Control



**1-2 inch weeds!**

**SOA**  
**2 +14 / 14 + 9**

Sept. 6, 2013 32.4 bu.a (a)

**Flexstar GT 3.5 pt/a + 28% UAN 2.5% V/V + MSO 1% V/V**  
**POST I (1-2" weeds) sprayed 6/28/13**  
**Cobra 12 fl oz/a + 28% UAN 4% V/V + COC 0.5% V/V**  
**POST IV (5-6" weeds) sprayed 7/15/13**



July 22, 2013 99% GIRW Control

**SOA**  
**14 + 9 / 14**

**1-2 inch weeds!**



Sept. 6, 2013 33.5 bu.a (a)

**Liberty 280 28 fl oz/a + N-PaK AMS 3 qt/a**  
**POST I (1-2" weeds) sprayed 6/28/13**  
**Liberty 280 28 fl oz/a + N-PaK AMS 3 qt/a**  
**POST IV (5-6" weeds) sprayed 7/15/13**



July 22, 2013 92% GIRW Control

**SOA**  
**10 / 10**

**1-2 inch weeds!**



September 6, 2013