Efficacy of Herbicides, Timing, and Tank Mixes on Novel Herbicide Tolerant Traits in MD Soybean Systems

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MSB
MARYLAND SOYBEAN BOARD

2021 Field Trials

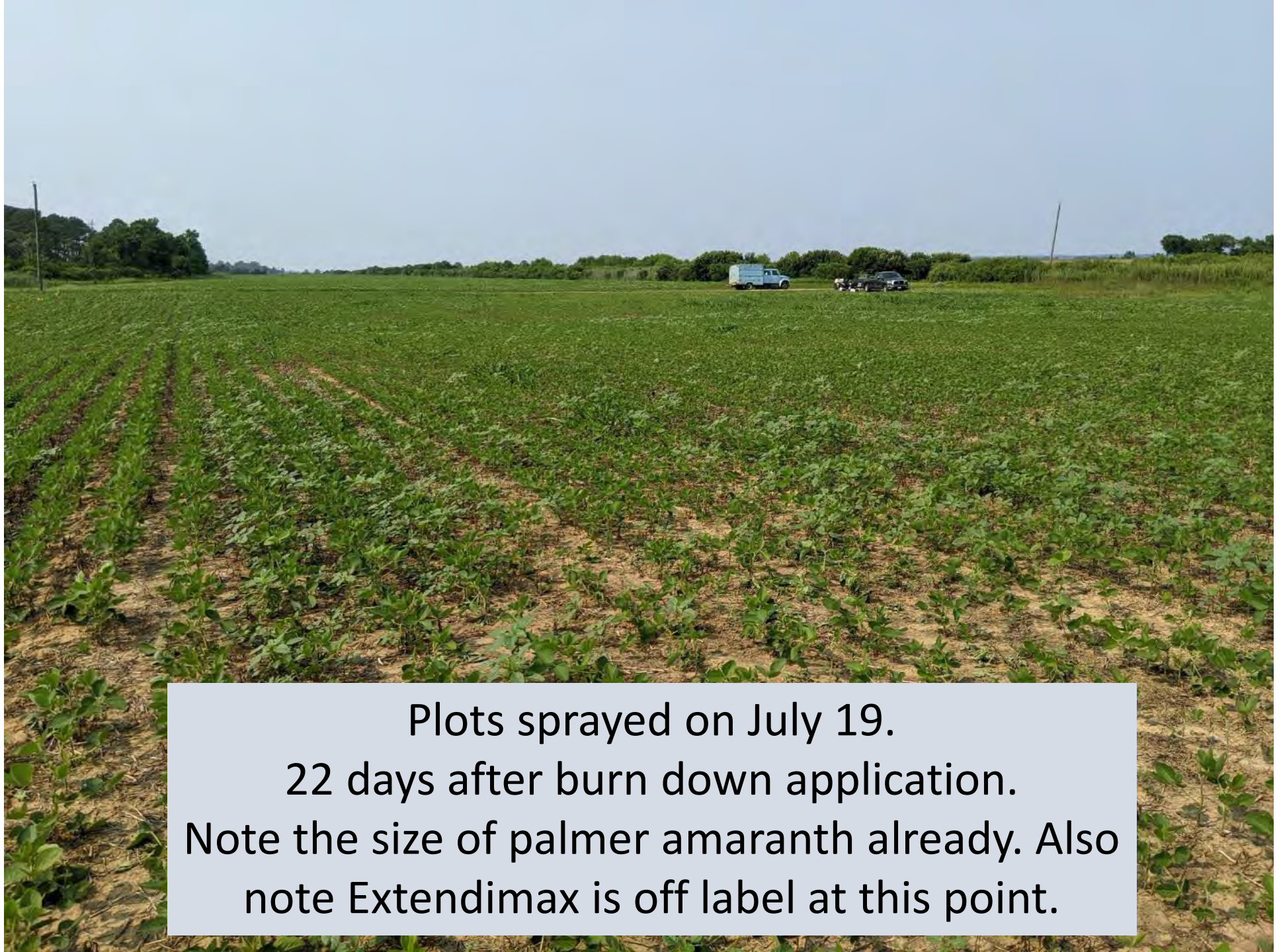
- Efficacy controlling Palmer amaranth
  - Glufosinate
  - Dicamba
  - 2,4-D
- Efficacy on controlling annual grass weeds
  - Glufosinate
  - Glyphosate
  - Clethodim
- Any antagonism from tank-mixes
- Effects of application timing

1	Control
2	Roundup
3	Liberty + AMS
4	Roundup + Liberty + AMS
5	Enlist One
6	Roundup + Enlist One
7	Roundup + Liberty + Enlist One + AMS
8	Liberty + Enlist One + AMS
9	Xtendimax + Drift Guard
10	Roundup + Xtendimax + DRA + VRA
11	Roundup + Xtendimax + Liberty + Drift Guard
12	Xtendimax + Liberty + Drift Guard
13	Select Max + NIS + AMS
14	Select Max + Xtendimax + Drift Guard
15	Enlist One + Select Maxx + NIS
16	Liberty + Select + AMS + NIS
17	Enlist One + Liberty + Select + AMS + NIS

	Rep 1			Rep 2			Rep 3			Rep 4		
Buffer	6	6	Buffer			Buffer	13	13	Buffer	4	4	Buffer
	1	1		10	10		4	4		8	8	
	17	17		12	12		6	6		7	7	
	15	15		9	9		7	7		15	15	
	7	7		16	16		1	1		17	17	
	13	13		11	11		15	15		13	13	
	5	5		2	2		5	5		6	6	
	8	8		14	14		17	17		1	1	
	4	4		3	3		8	8		5	5	
	9	9		6	6		2	2		9	9	
	3	3		13	13		16	16		2	2	
	2	2		5	5		3	3		14	14	
	16	16		15	15		11	11		11	11	
	12	12		17	17		12	12		16	16	
	14	14		7	7		10	10		10	10	
	10	10		8	8		14	14		3	3	
	11	11		1	1		9	9		12	12	
				4	4							
	Late	Early		Late	Early		Late	Early		Late	Early	

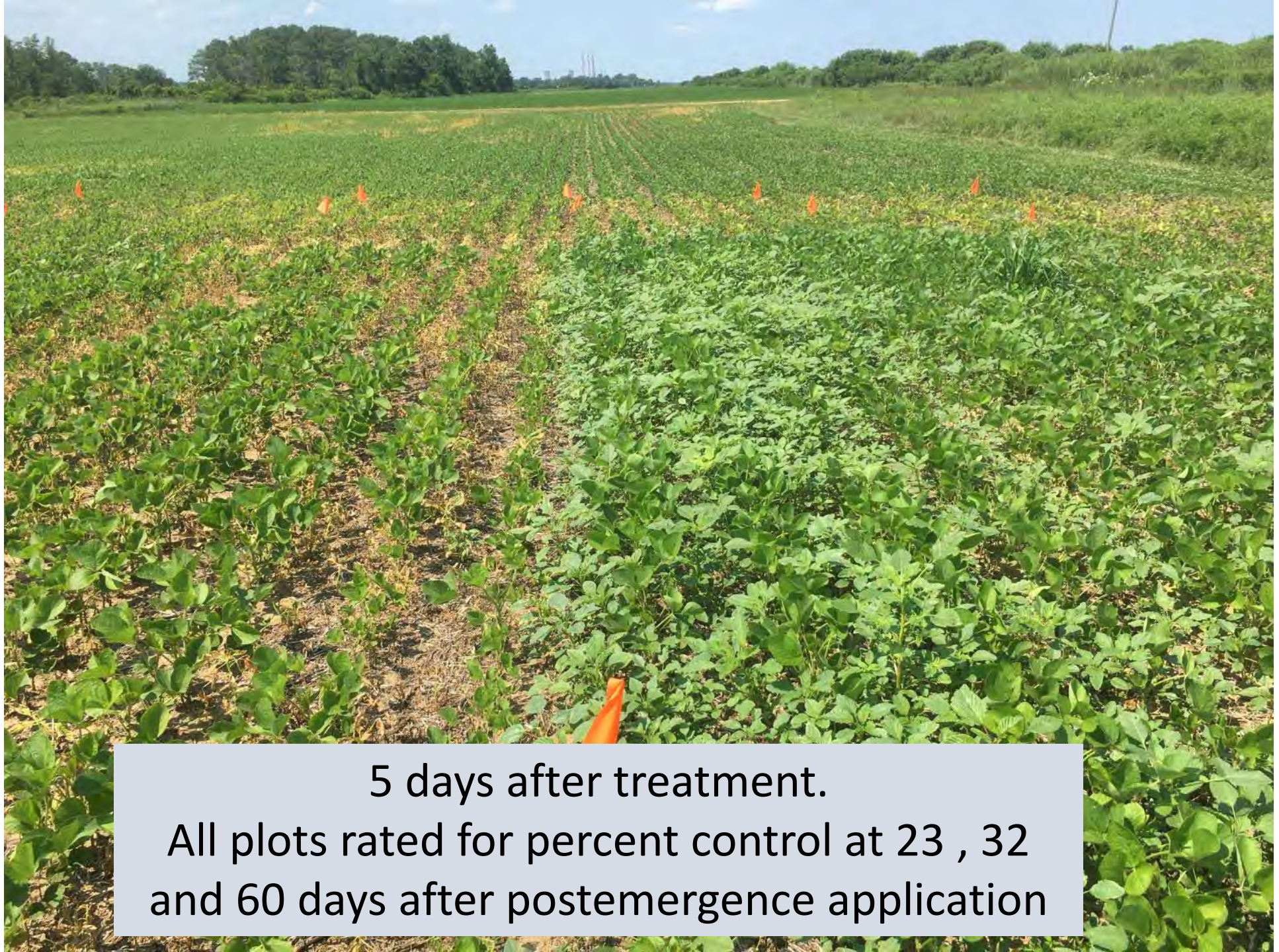
June 24-Soybeans planted.
Pioneer P45T88 Enlist E3
Asgrow AG47XFO Xtendflex

All plots received a burn down/residual treatment prior to soybean emergence. Treatment consisted of Dual Magnum at 1 pint per acre; Gramoxone SL 3.0 at 2 pints per acre and Roundup Powermax at 1 quart per acre

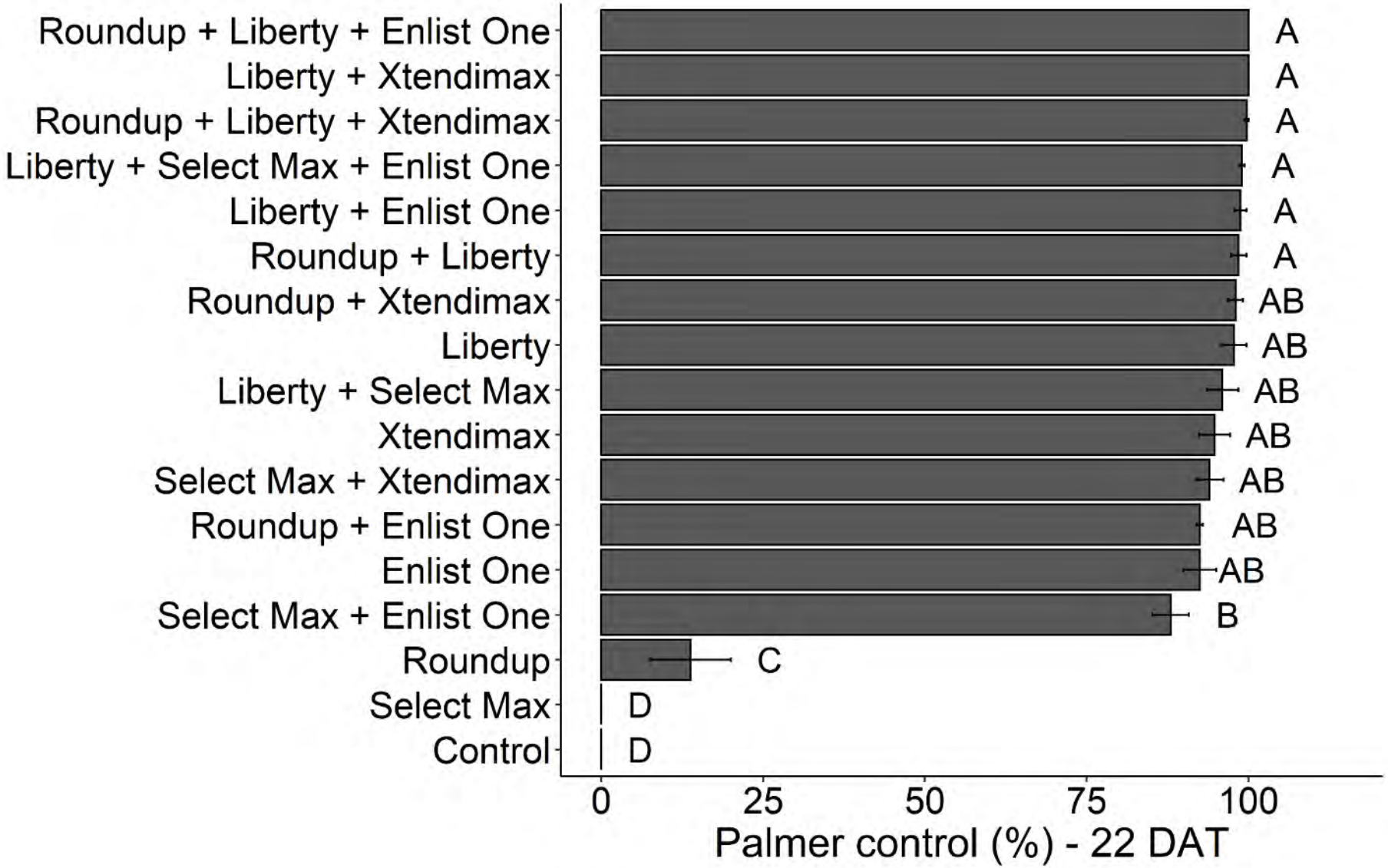


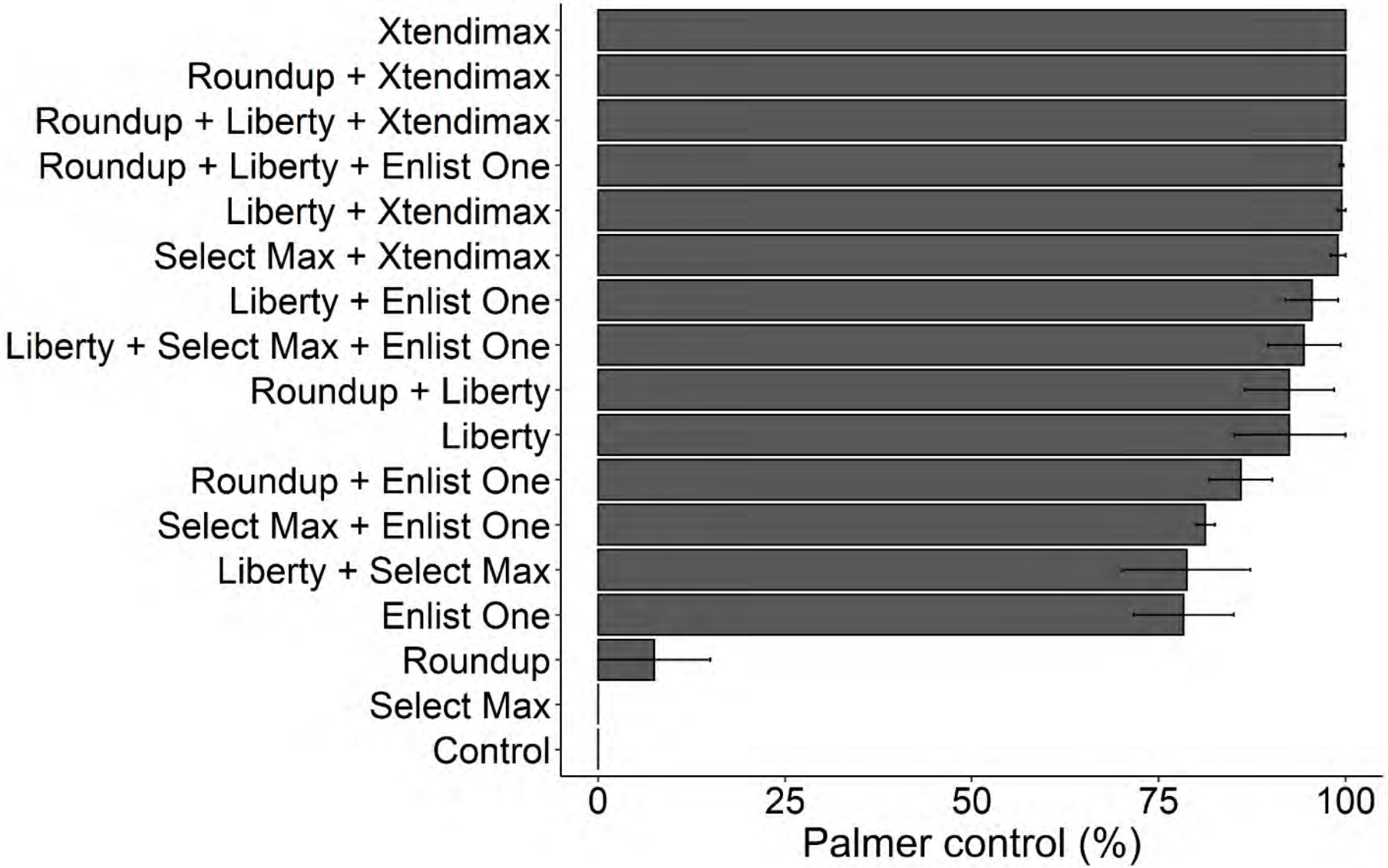
Plots sprayed on July 19.
22 days after burn down application.
Note the size of palmer amaranth already. Also note Extendimax is off label at this point.

July 19- Some plants are over 8 inches tall. Again proves the importance of a good residual.



5 days after treatment.
All plots rated for percent control at 23 , 32 and 60 days after postemergence application


Roundup + Liberty + Enlist One
Liberty + Xtendimax
Roundup + Liberty + Xtendimax
Liberty + Select Max + Enlist One
Liberty + Enlist One
Roundup + Liberty
Roundup + Xtendimax
Liberty
Liberty + Select Max
Xtendimax
Select Max + Xtendimax
Roundup + Enlist One
Enlist One
Select Max + Enlist One
Roundup
Select Max
Control
A
A
A
A
A
A
AB
AB
AB
AB
AB
AB
AB
B
C
D
D
0
25
50
75
100
Palmer control (%) - 22 DAT



Early application timing, rating at 58 DAT

1

Control Plots that received no herbicide.
Picture taken Aug 30th.

13

2

7

11


Enlist One + Liberty + Select + AMS + NIS
99% Control

8

4

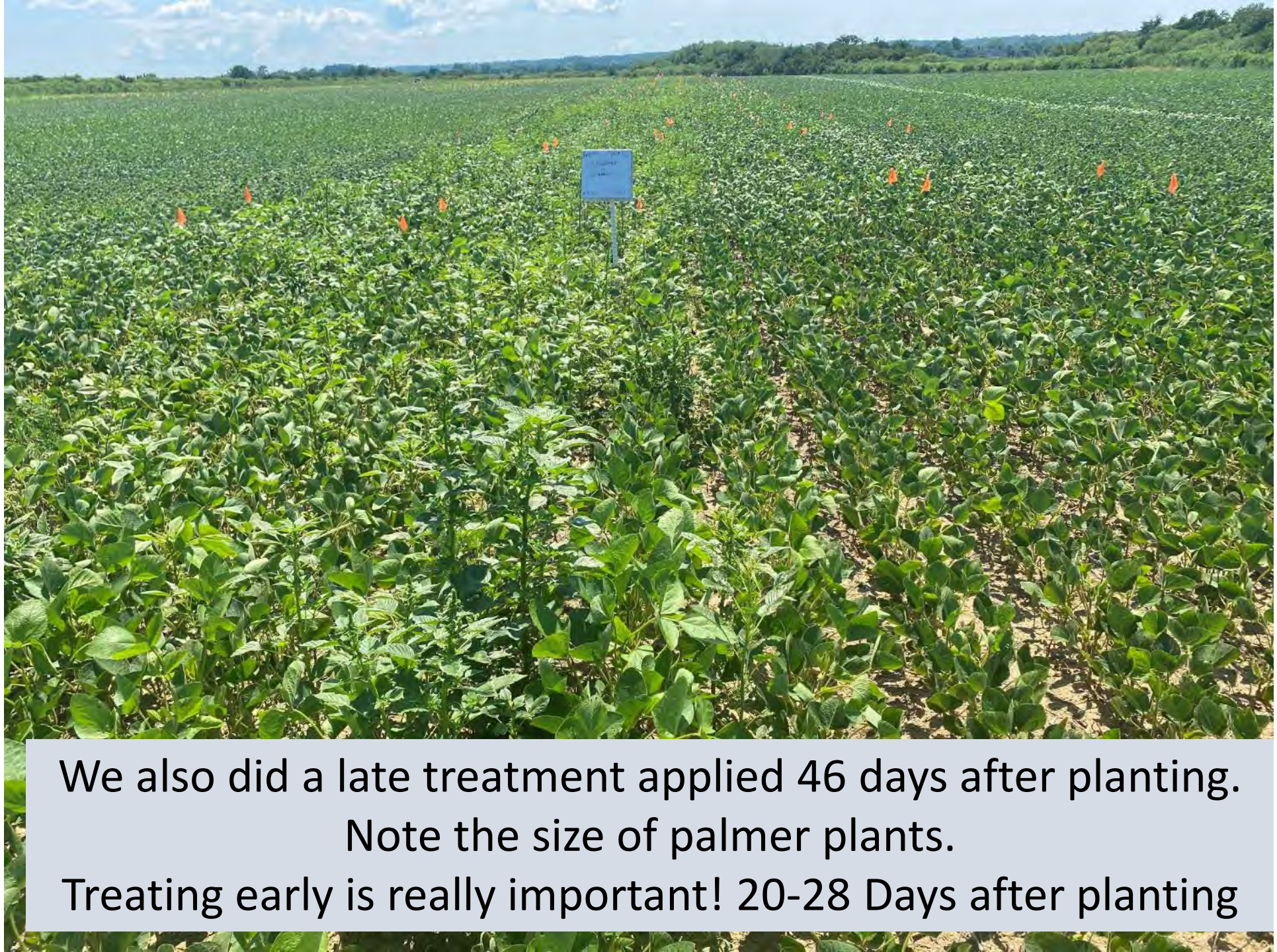
16


Xtendimax + Drift Guard
94.8% Control

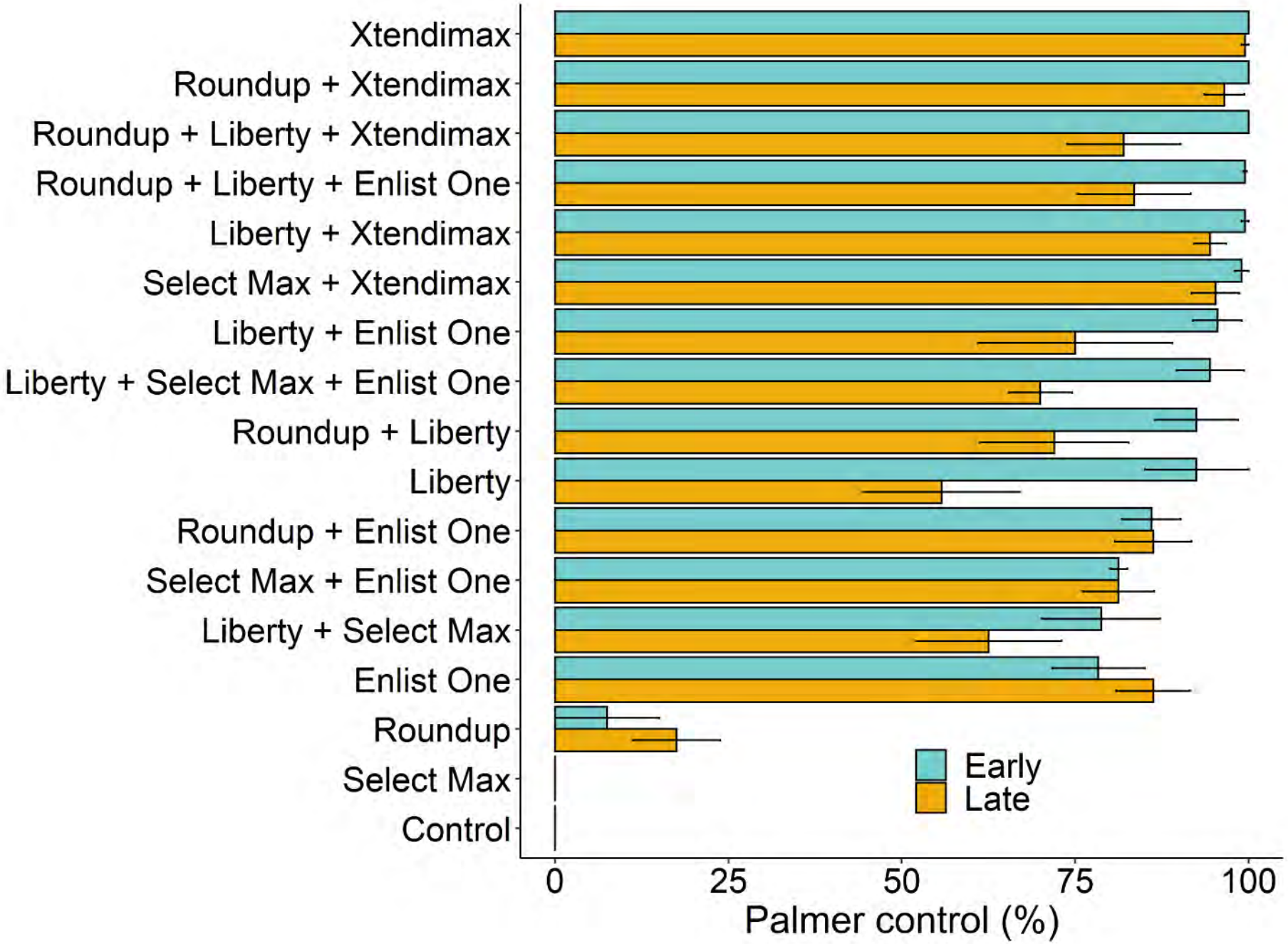

Select Max + Xtendimax + Drift Guard
94% Control

5

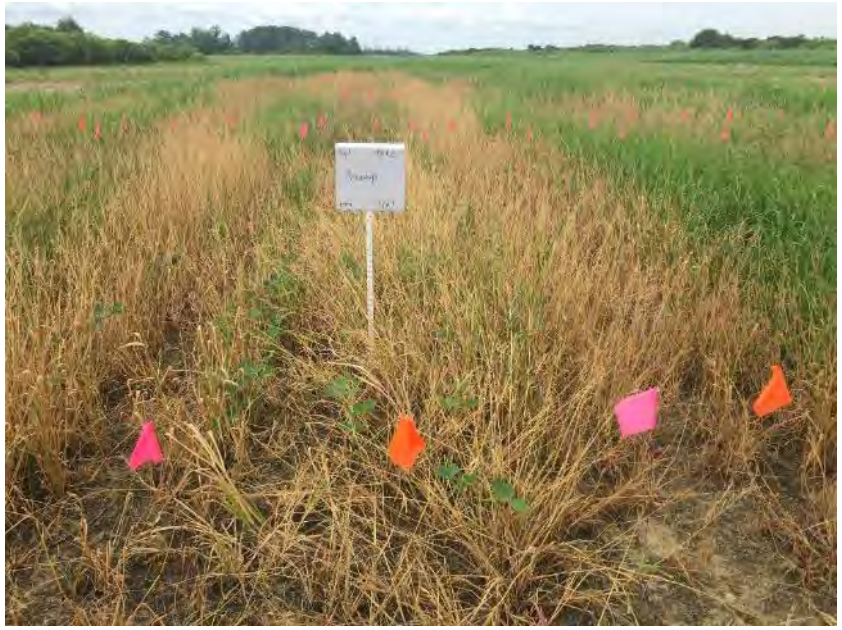
6



We also did a late treatment applied 46 days after planting.
Note the size of palmer plants.
Treating early is really important! 20-28 Days after planting


Xtendimax
Roundup + Xtendimax
Roundup + Liberty + Xtendimax
Roundup + Liberty + Enlist One
Liberty + Xtendimax
Select Max + Xtendimax
Liberty + Enlist One
Liberty + Select Max + Enlist One
Roundup + Liberty
Liberty
Roundup + Enlist One
Select Max + Enlist One
Liberty + Select Max
Enlist One
Roundup
Select Max
Control
Early
Late
0
25
50
75
100
Palmer control (%)

2021 Soybean Herbicide Trial Overview-Grass Trial



Plot Design:

The plot size was 5 feet wide by 10 feet long.

A 3 foot non treated running check is present on each side of all plots.

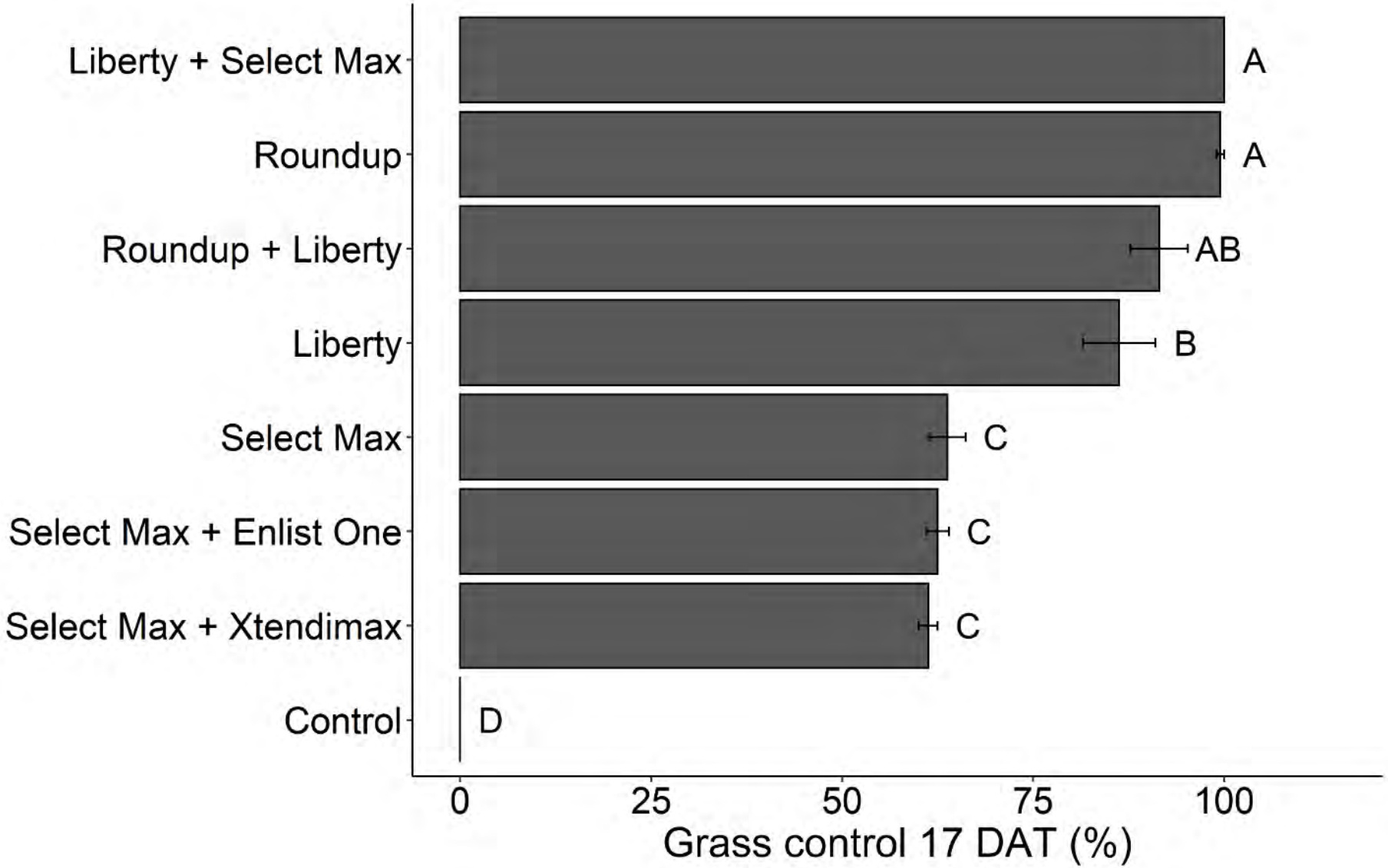
There will be a 5 foot aisle between treatments.

Timeline:
June 24-Soybeans planted. Pioneer P45T88 Enlist E3 as selected cultivar.

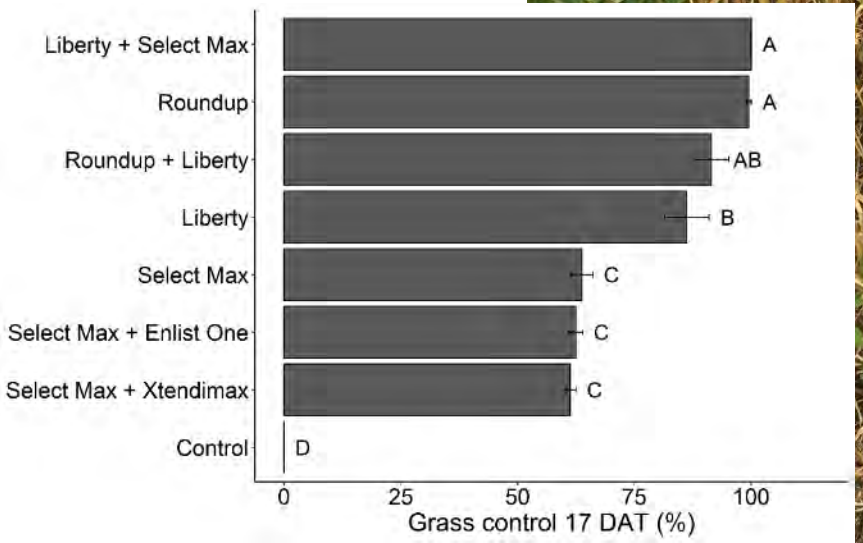
July 23- postemergence treatments applied to plots. Barnyardgrass and Fall Panicum were primary species present. Grass was an average height of 15-20 inches.

Data Collection:
Control percentage was rated from 0-100 with non-treated control plots and non-treated running checks along each plot being used as a reference point for 0% control.

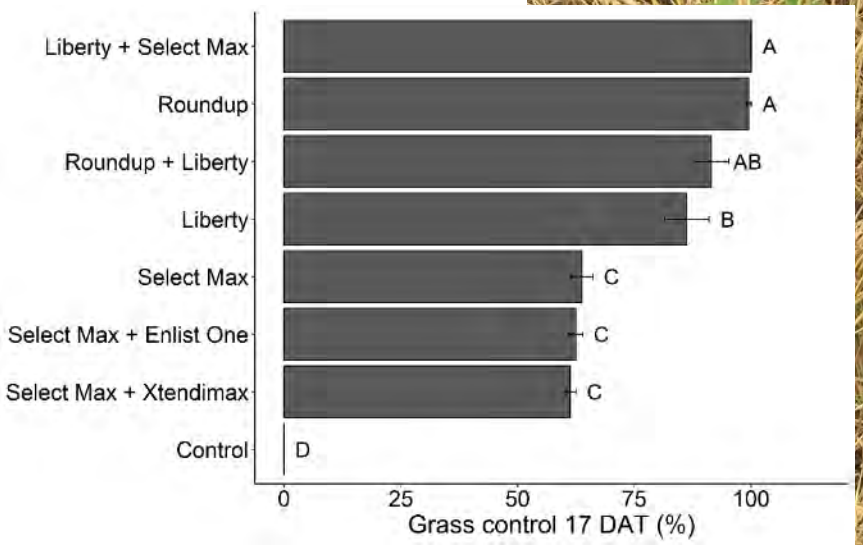
% Control of grass plots collected August 4 and August 9.


Liberty + Select Max
Roundup
Roundup + Liberty
Liberty
Select Max
Select Max + Enlist One
Select Max + Xtendimax
Control
A
A
AB
B
C
C
C
D
0
25
50
75
100
Grass control 17 DAT (%)

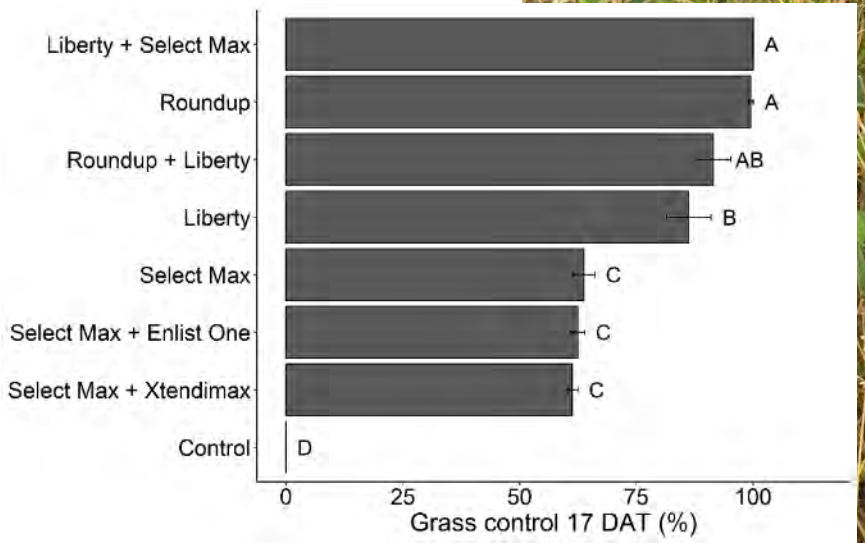
100% Control
17 DAT



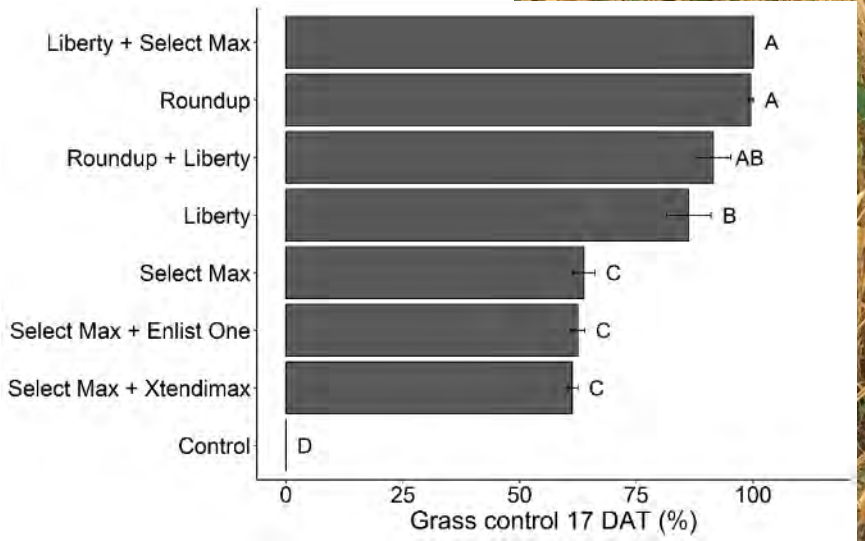
99.5% Control
17 DAT



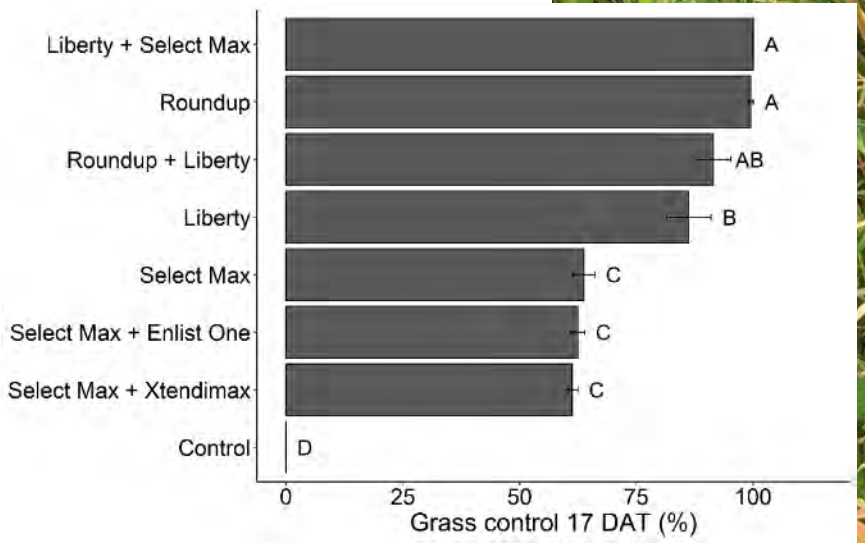
91.5% Control
17 DAT



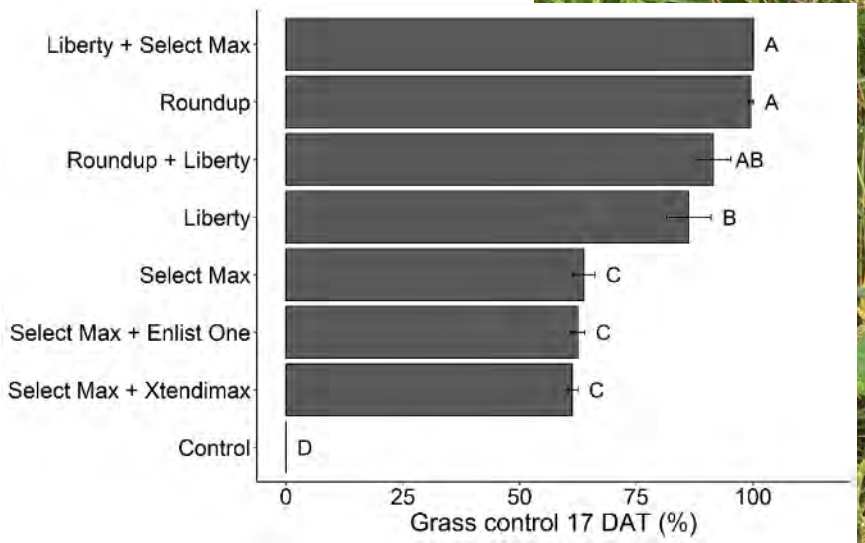
86.3% Control
17 DAT



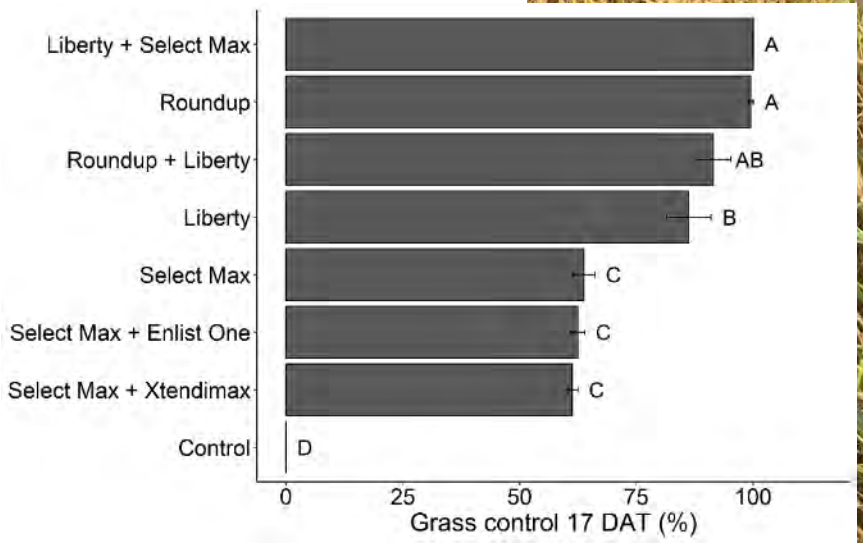
63.8% Control
17 DAT



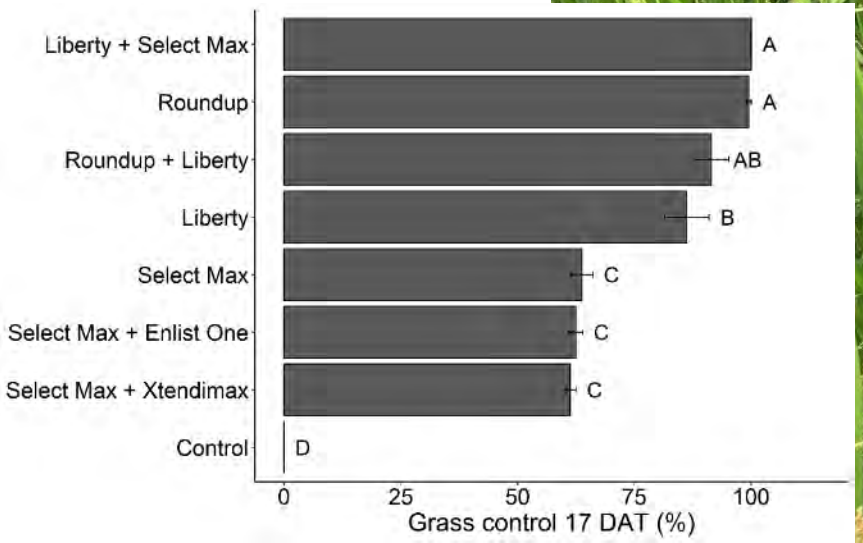
62.5% Control
17 DAT

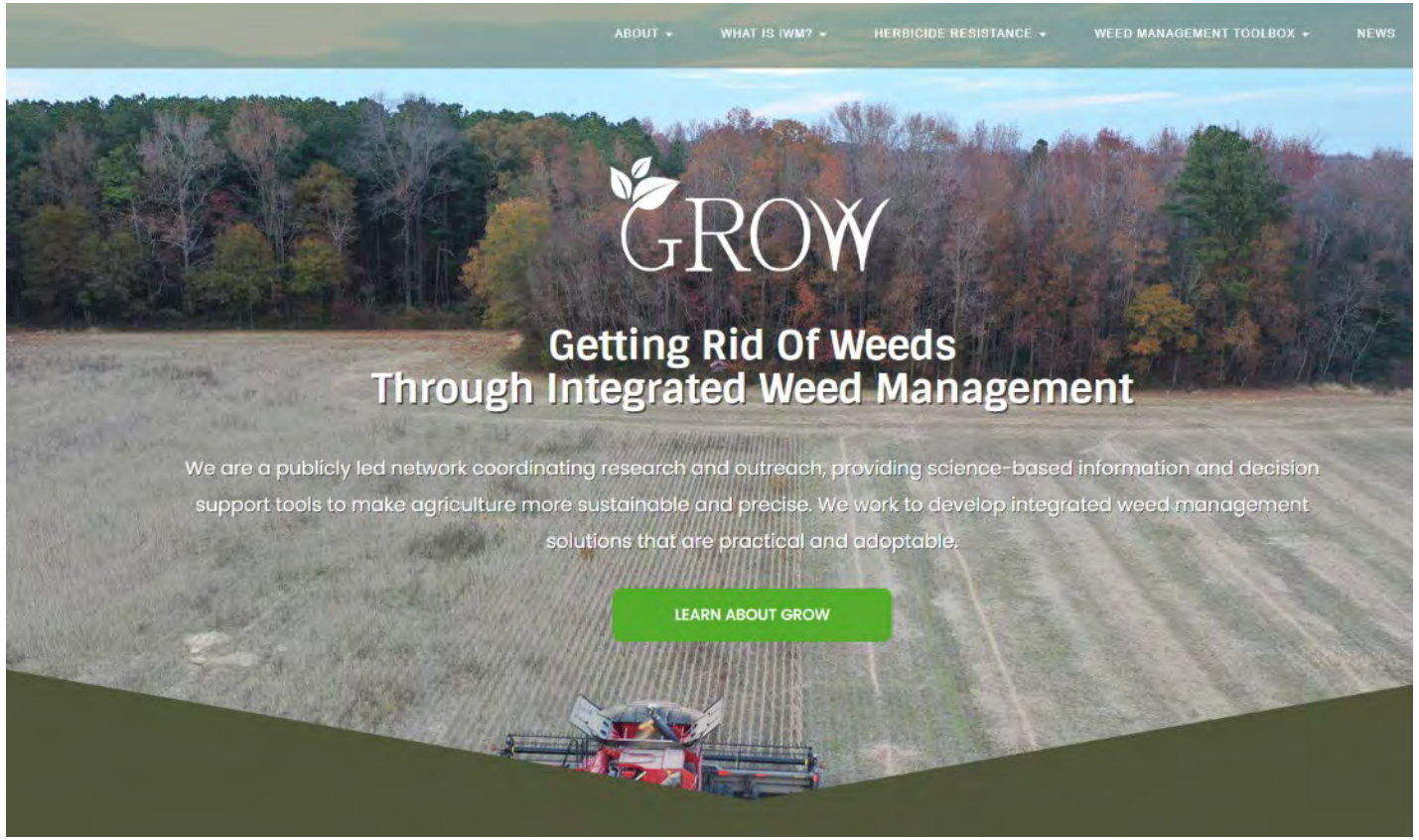


61.3% Control
17 DAT



61.3% Control
17 DAT





Additional resources regarding integrated weed management as well as recordings from the workshop can be viewed on the G.R.O.W. website (Getting Rid of Weeds Through Integrated Weed Management) at https://growiwm.org/. A direct link to the workshop can be found by scanning the QR code below or by going to: https://growiwm.org/mid-atlantic-workshop-on-herbicide-resistance-went-virtual-this-year/

SCAN ME

March 10:
Ag Service Center Conference Room
26737 Radio Station Way
Leonardtown, MD 20650
8am-1pm

March 14:
Sudlersville Volunteer Fire Department Hall
203 N Church St
Sudlersville, MD 21668
8am-1pm

March 15:
Olde Dominion Agricultural Complex
19783 U. S. Route 29 South
Chatham, VA 24531
12am-5pm

March 24:
Virtual via Zoom
8am-11am

Special thanks:

Maryland Soybean Board
Mark VanGessel (University of Delaware)
Michael Flessner (Virginia Tech)
Kurt Vollmer (UMD)

Michael King-Kirby Agri
Leonard Russell-Southern States
David Cross-R&D Cross SS
Carl Wise-Precision Ag Drone Technology

Earnest Morgan

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