

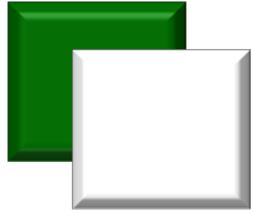


**Management of a new grass
weed problem, roughstalk
bluegrass, in winter wheat
(17-08-05-AS)**

Christy Sprague
Michigan State University

Roughstalk bluegrass issues in winter wheat



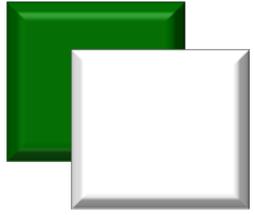


Roughstalk bluegrass

Poa trivialis

- Cool-season grass weed
 - Traditionally a problem in turfgrass
 - Also an issue for hay growers
 - Showing up more in wheat
- Characterized as a perennial – aboveground stolons
 - We believe in wheat it is spread by seed



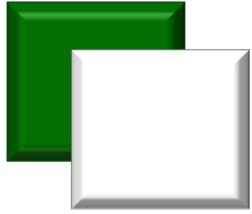


Roughstalk bluegrass characteristics

- Broad-tapering leaves
- Long pointed ligules
- Roughish leaf sheaths
- Slender rough stems
- Loose green panicle
- Often 1 to 3 feet tall



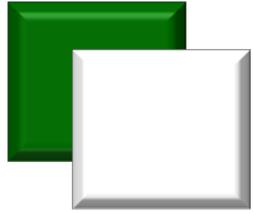




Problem statement

- Lack of knowledge of the biology of roughstalk bluegrass in agricultural systems, more specifically in winter wheat
- Little information available on how to manage roughstalk bluegrass in winter wheat





2018 Research Questions

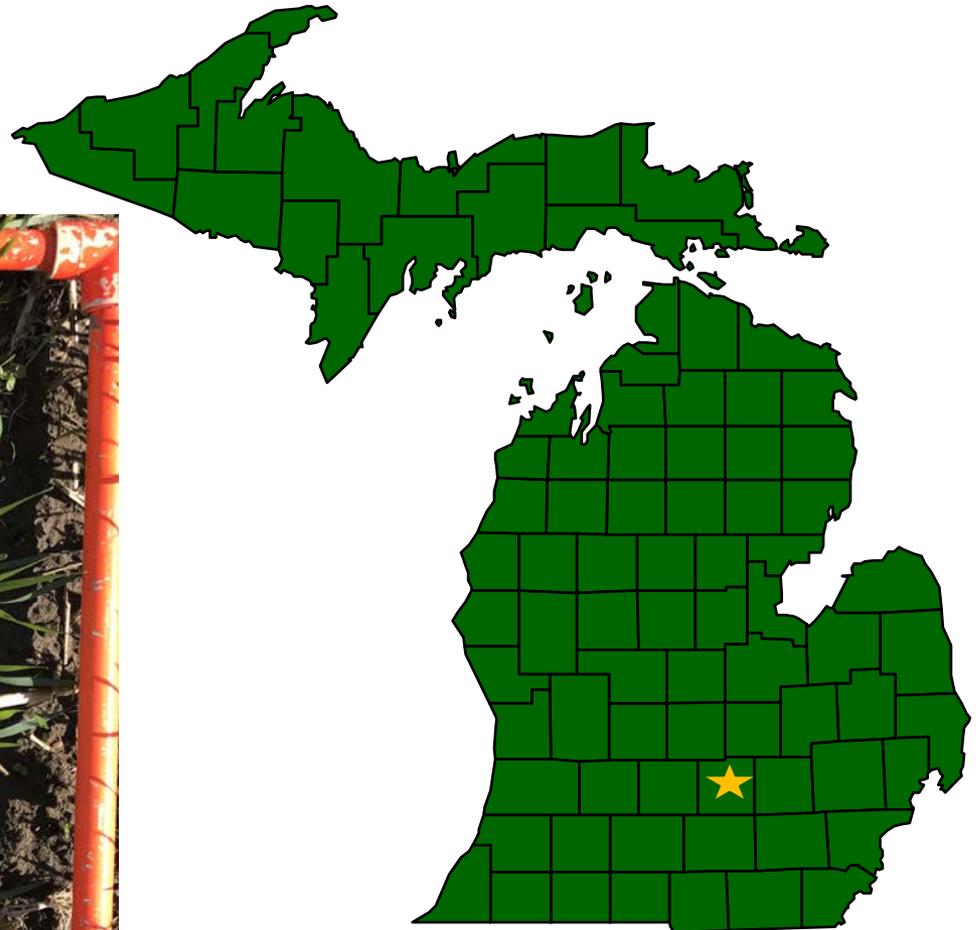
- 1) When does roughstalk bluegrass emerge in winter wheat in Michigan?
- 2) What herbicides and when is the best time to apply them to manage roughstalk bluegrass in winter wheat?

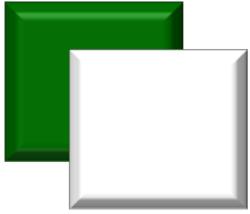
Site description

'Sunburst' soft red wheat

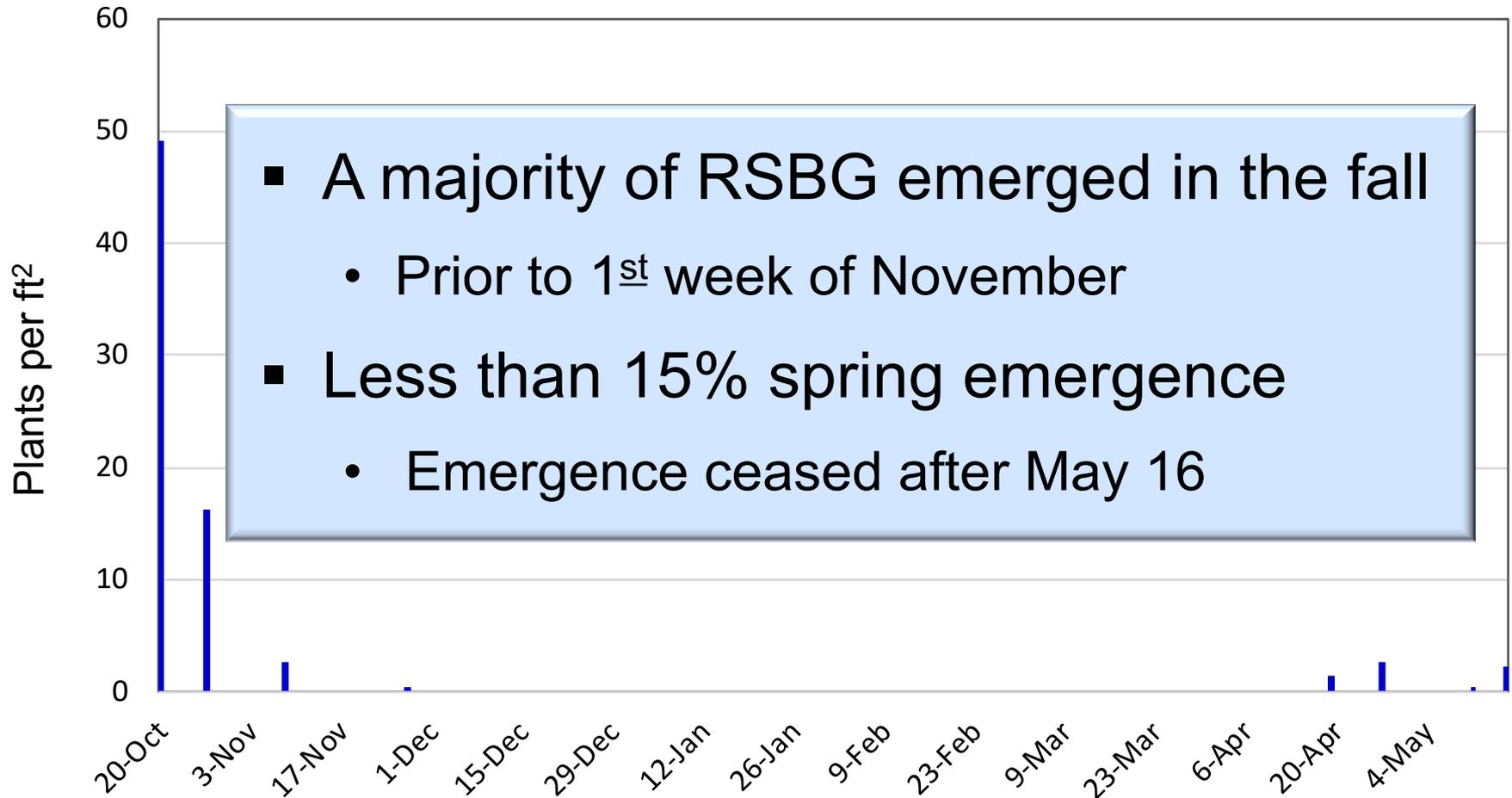
Planted: Sept. 28, 2017

1.8 million seeds/A

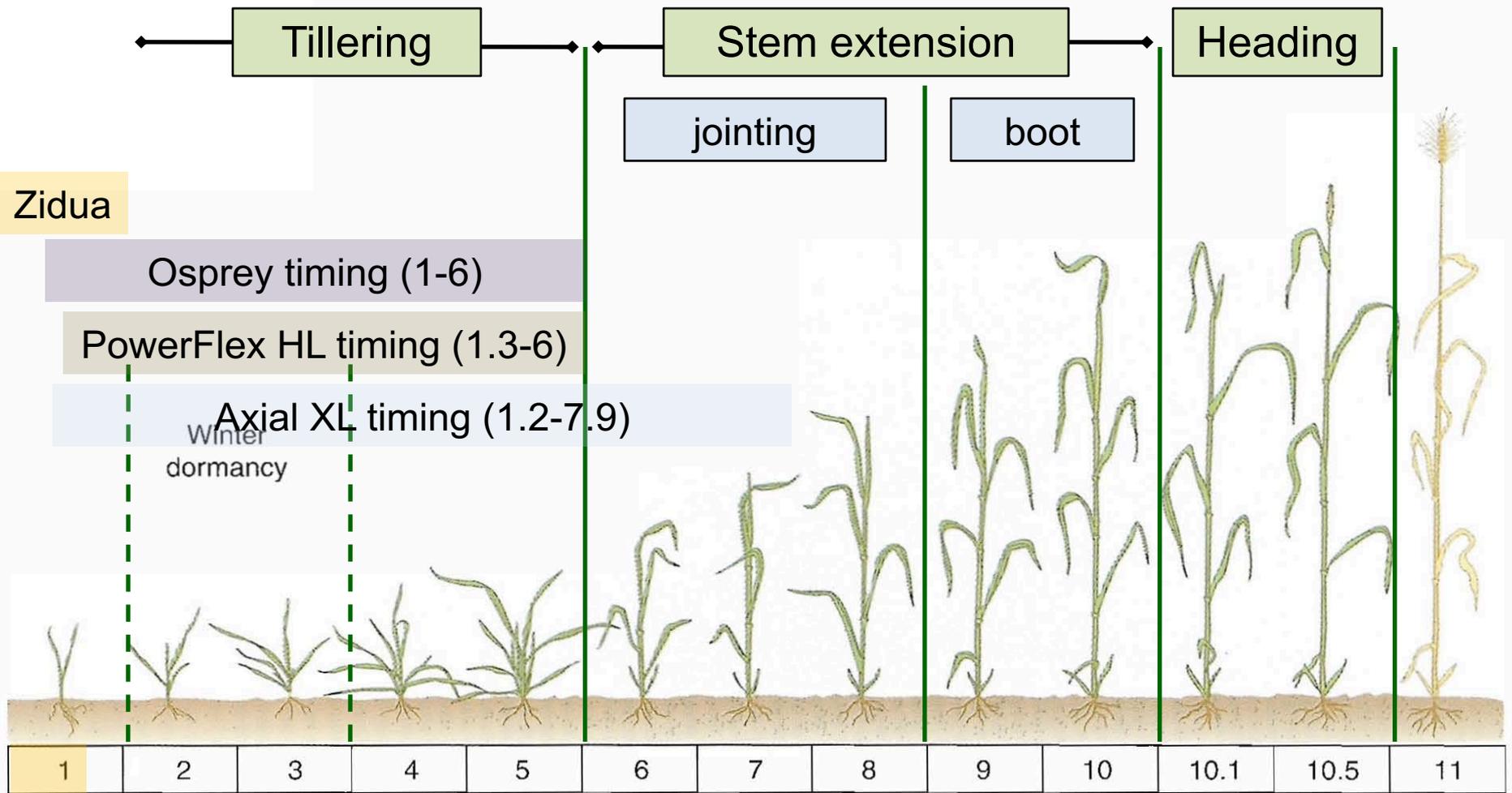




Roughstalk bluegrass emergence counts (2017-2018)



Herbicide application timings



Application timings

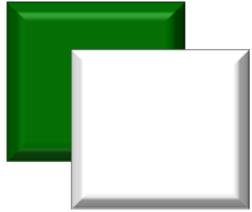
PRE: Sept. 29, 2017

FALL: Oct. 20, 2017

EPOS: April 26, 2018

POST: May 8, 2018





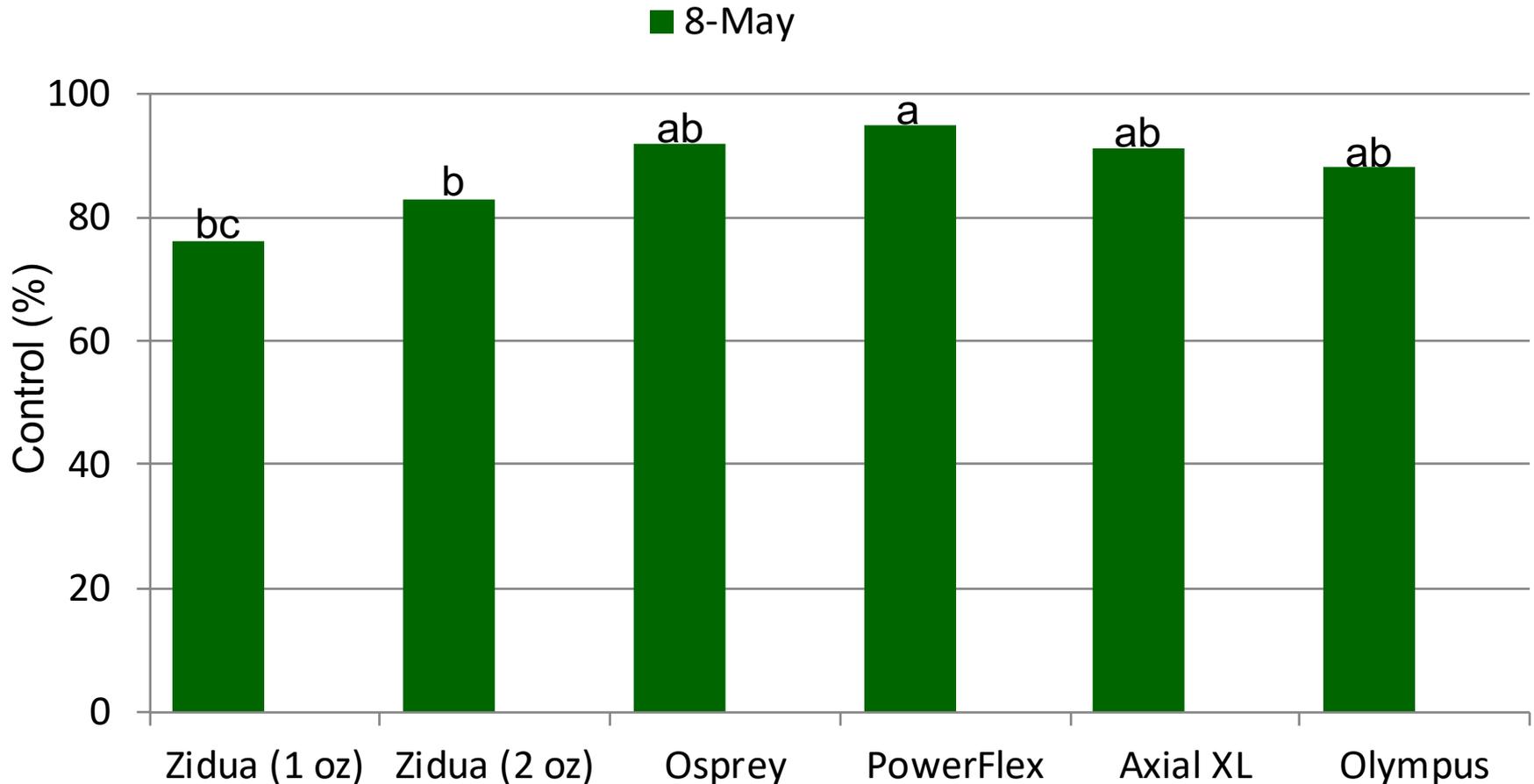
Herbicide options and timings examined

| Herbicide | SOA | Rate | Timings |
|--------------|-----|------------|------------------|
| Zidua | 15 | 1 & 2 oz | PRE |
| Osprey | 2 | 4.75 oz | Fall, EPOS, POST |
| PowerFlex HL | 2/2 | 2 oz | Fall, EPOS, POST |
| Axial XL | 1 | 16.4 fl oz | Fall, EPOS, POST |
| Olympus* | 2 | 0.9 oz | Fall |

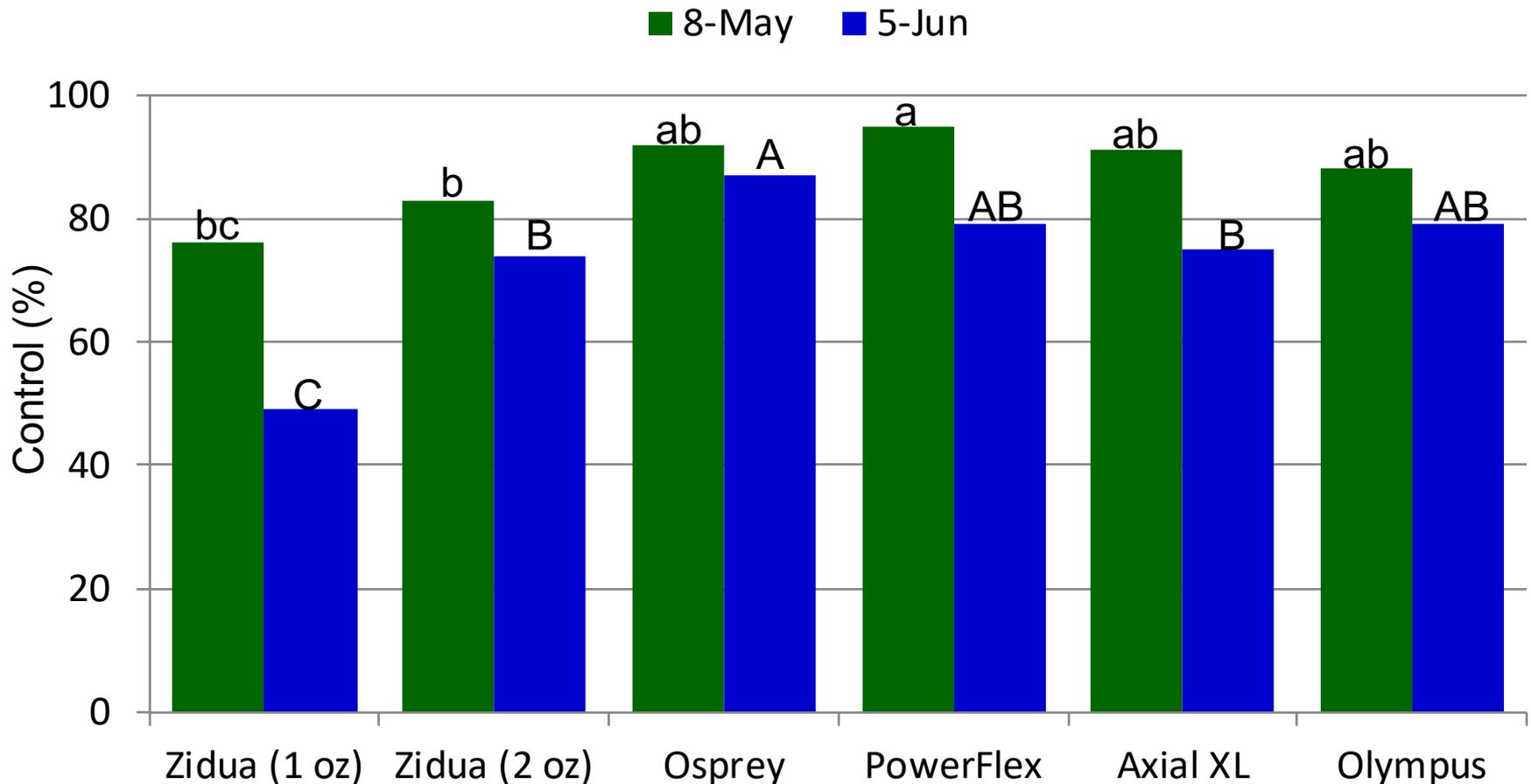
Osprey, PowerFlex HL, and Axial XL were also tank-mixed with Huskie or Talinor for the POST timing.

*Not registered for use in MI

Roughstalk bluegrass control from PRE & Fall applications

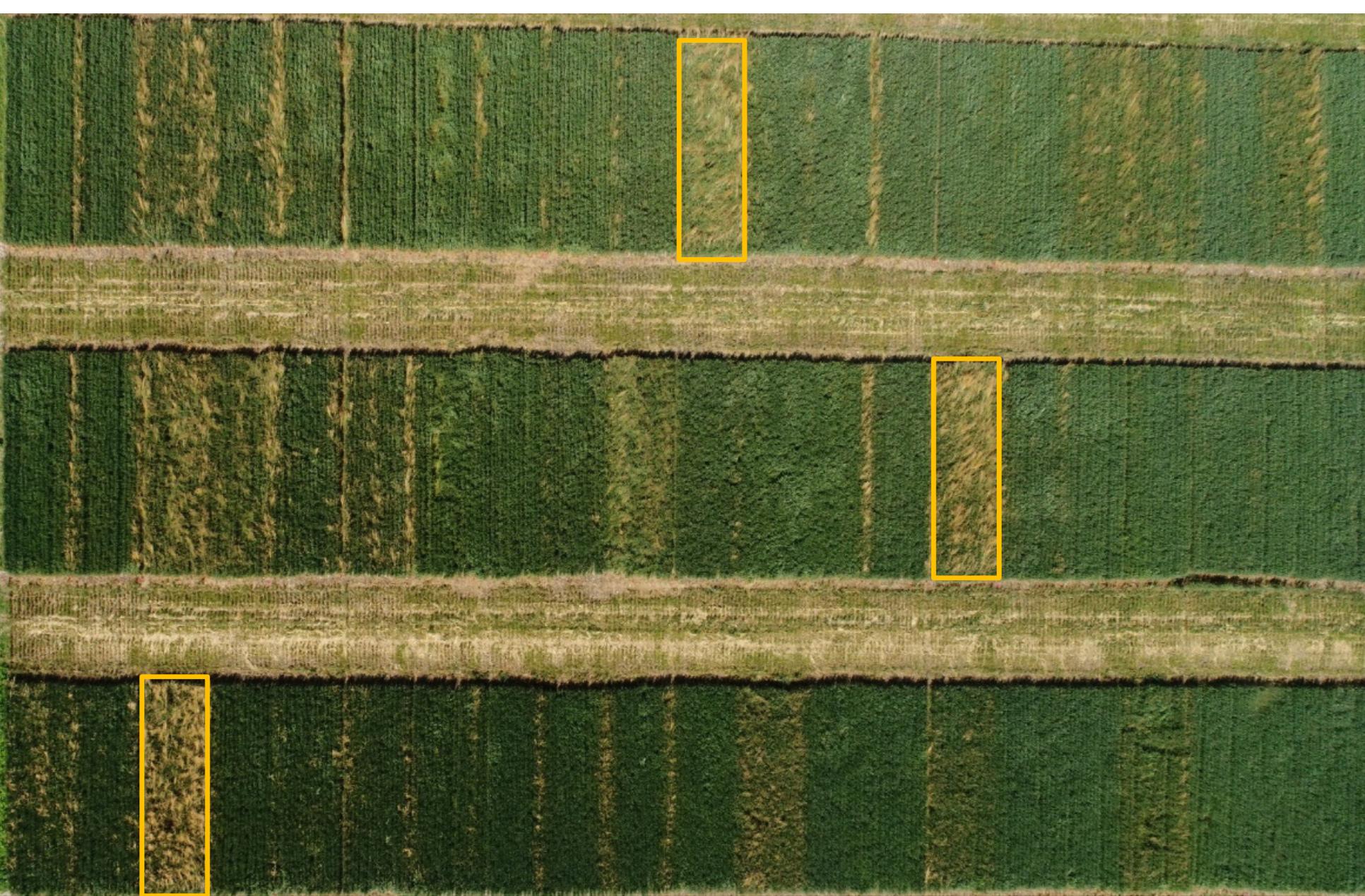


Roughstalk bluegrass control from PRE & Fall applications



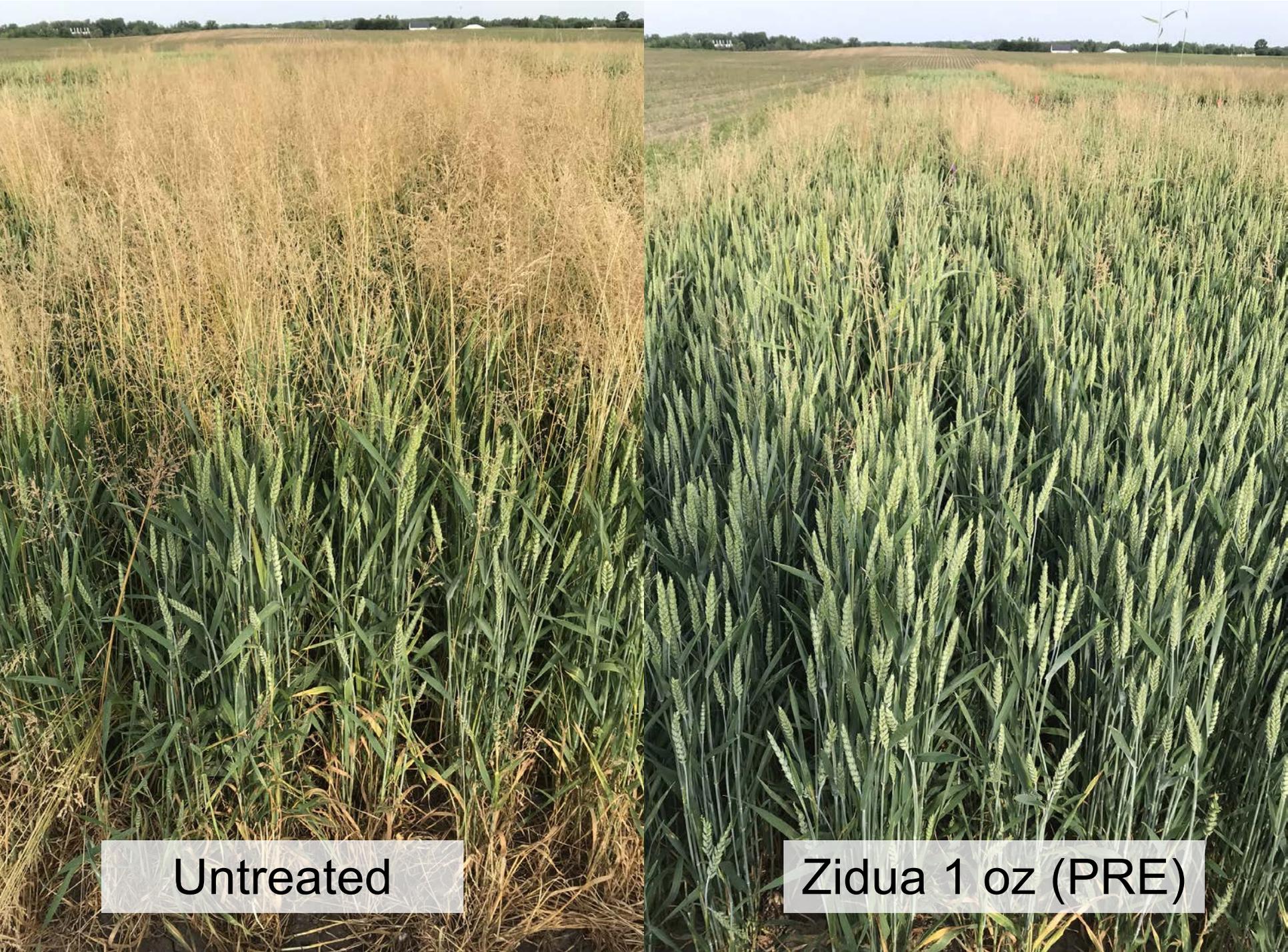


Untreated



Untreated

Arial image - June 11



Untreated

Zidua 1 oz (PRE)



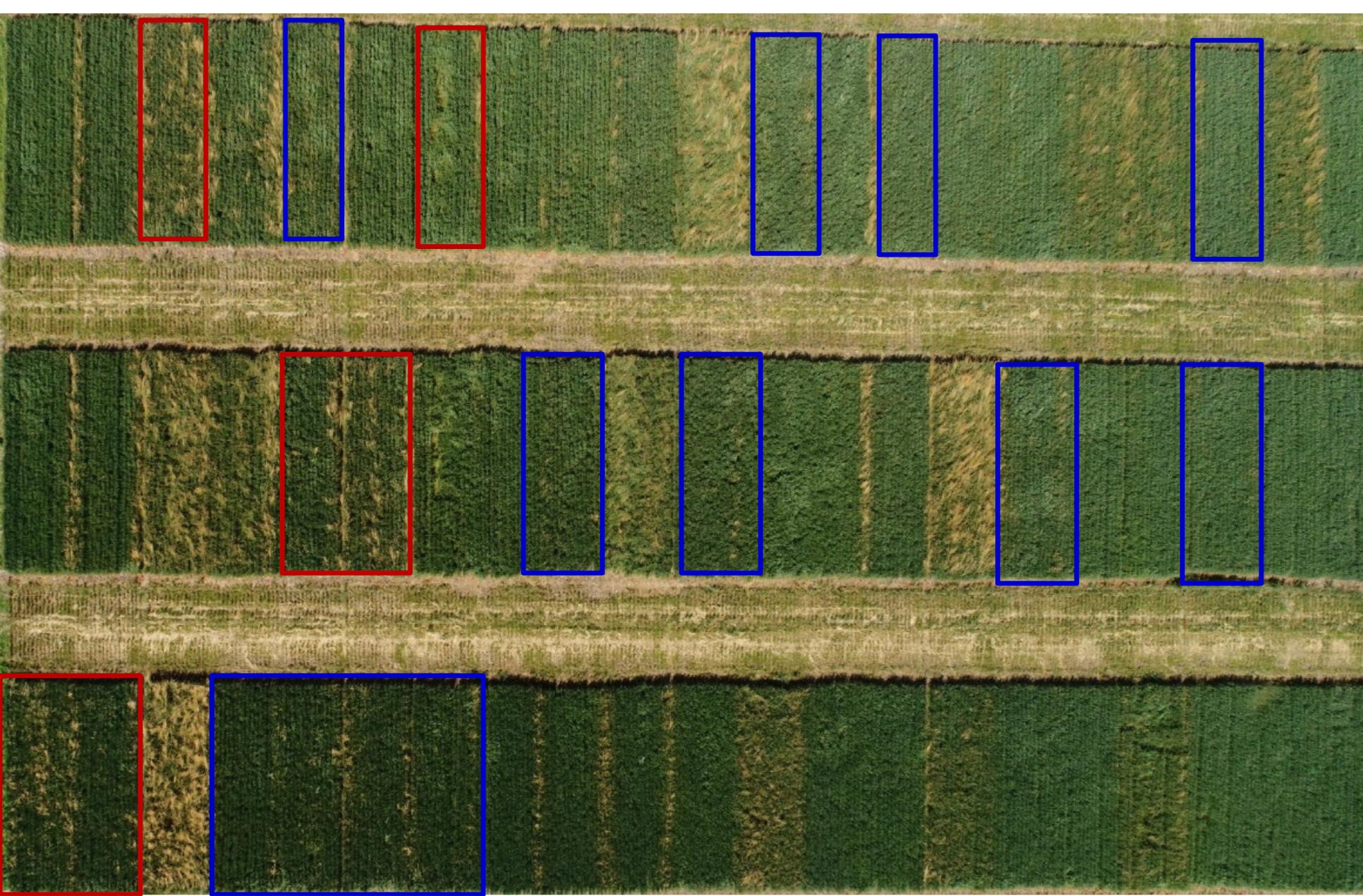
PRE

Arial image - June 11



Untreated

Osprey (Fall)

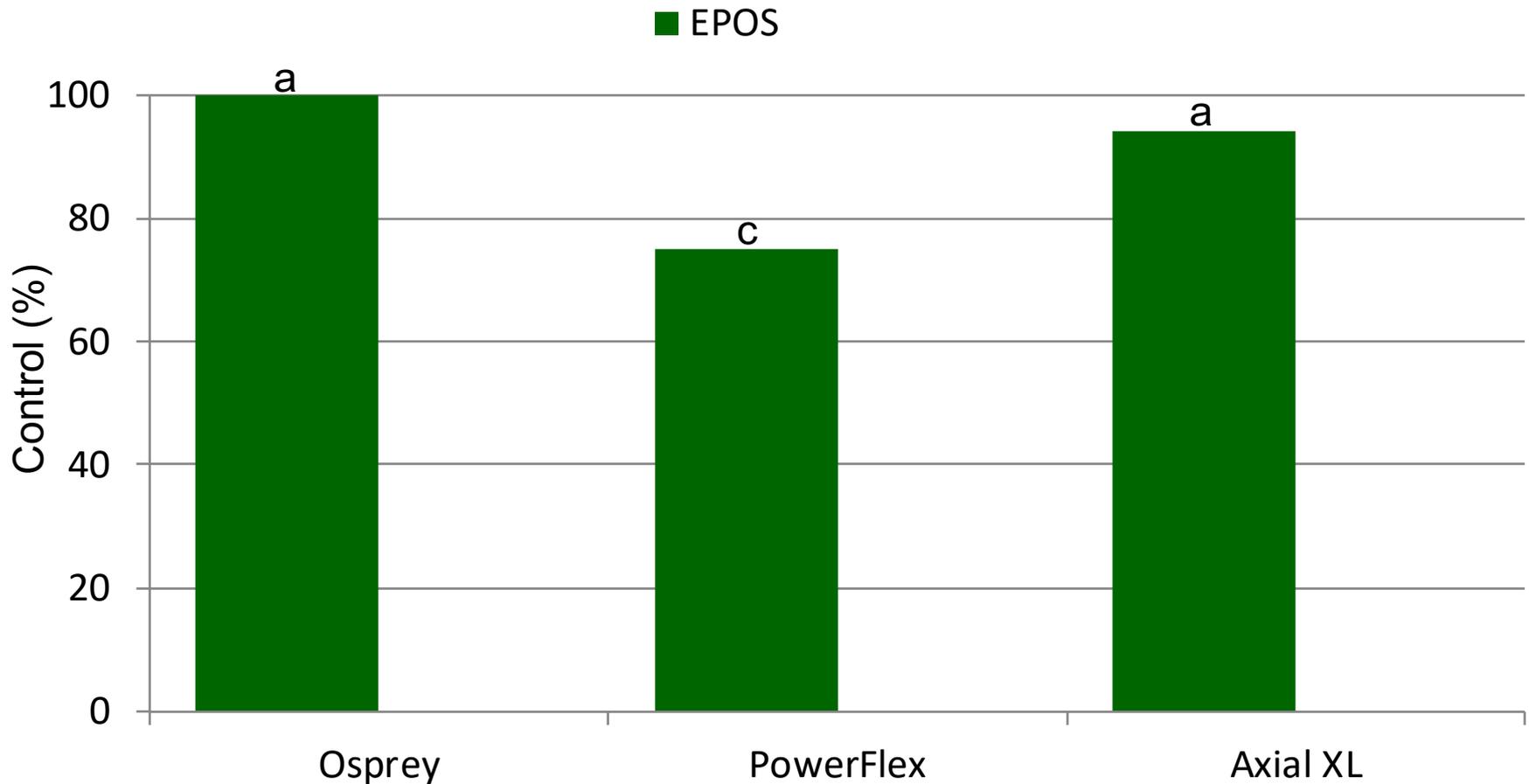


PRE

FALL

Arial image - June 11

Roughstalk bluegrass control from spring applications – *June 5*

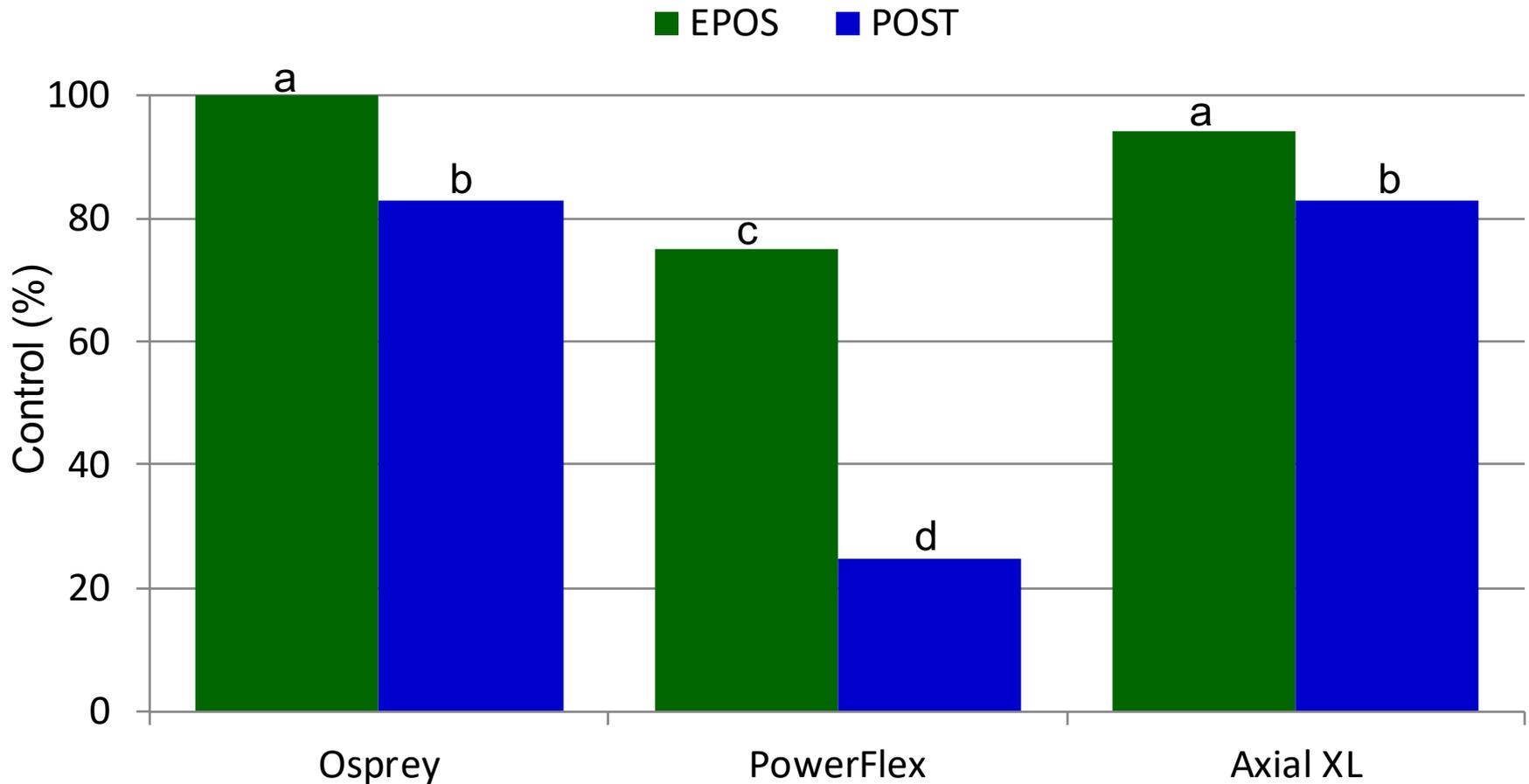


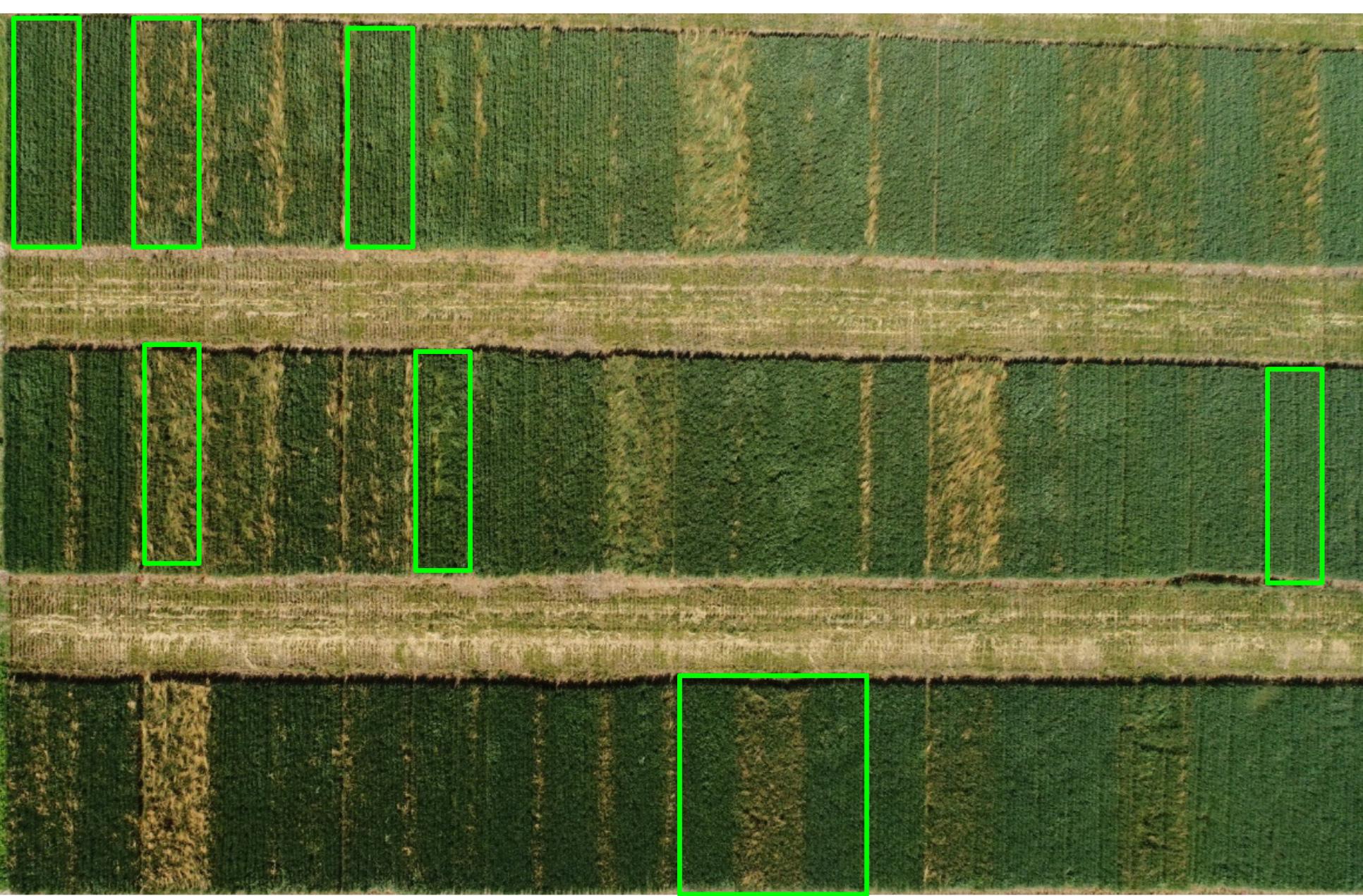


EPOS

Arial image - June 11

Roughstalk bluegrass control from spring applications – *June 5*



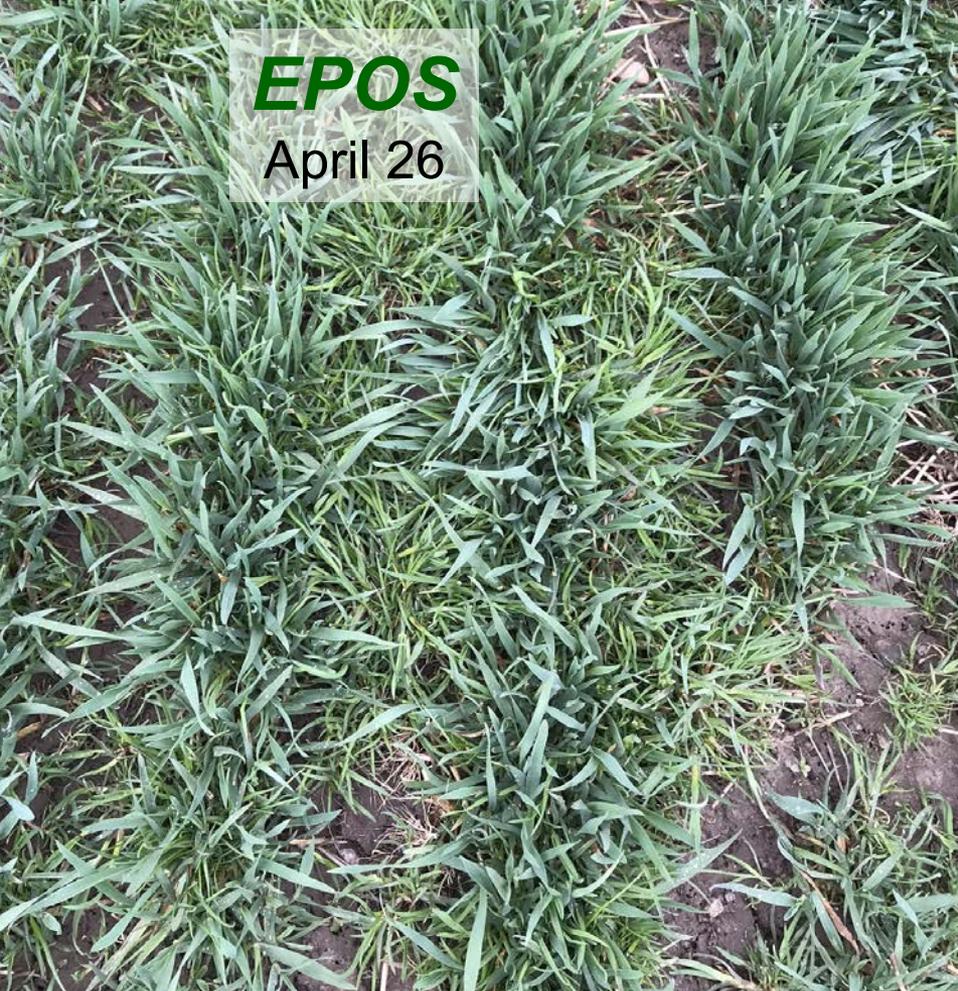


POST
Aerial image - June 11



EPOS

April 26



POST

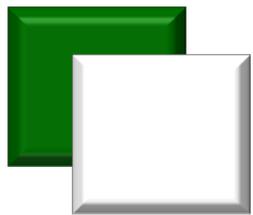
May 8



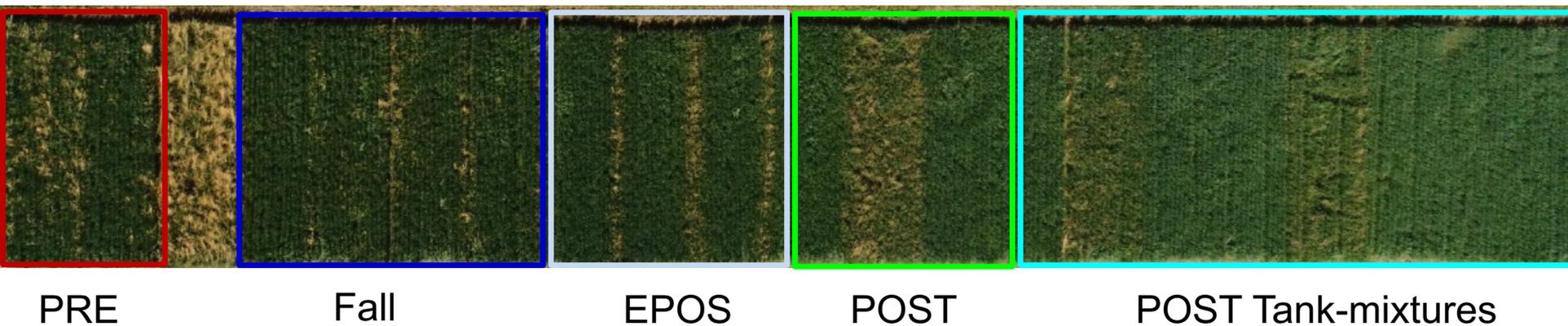
PowerFlex (EPOS)



PowerFlex (POST)

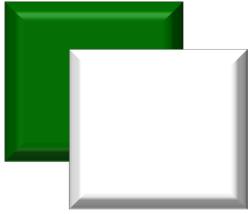


Roughstalk bluegrass control comparison with POST tank-mixtures

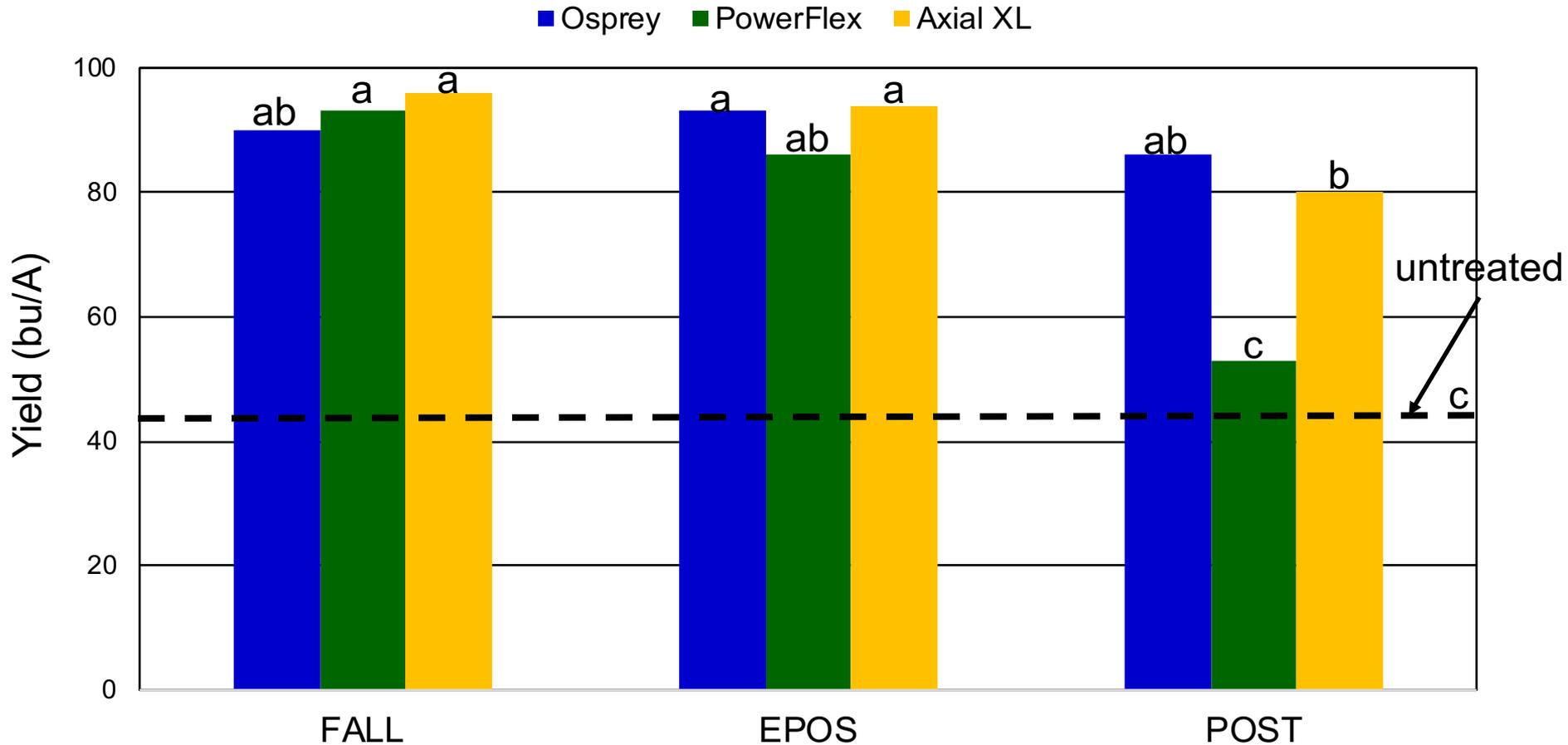


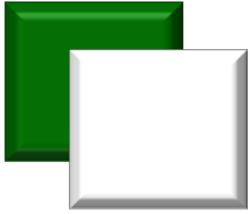
The addition of Huskie or Talinor to POST grass herbicides did not appear to affect roughstalk bluegrass control

Arial image - June 11



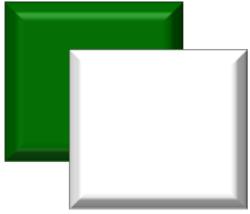
Roughstalk bluegrass control effect on winter wheat yield





Summary

- Roughstalk bluegrass is primarily a fall emerger
 - Some spring emergers can be missed if a fall herbicide applications are used
- Fall applications reduced RSBG populations, but were not 100% – no reductions in yield
- Early spring applications of Osprey and Axial XL resulted in the best RSBG control
- Later spring applications resulted in poorest control, especially with PowerFlex
 - POST applications of PowerFlex provided poor control that resulted in significant RSBG competition and yield reductions similar to the untreated control
- RSBG was very competitive and resulted in over 50% yield loss if not effectively controlled



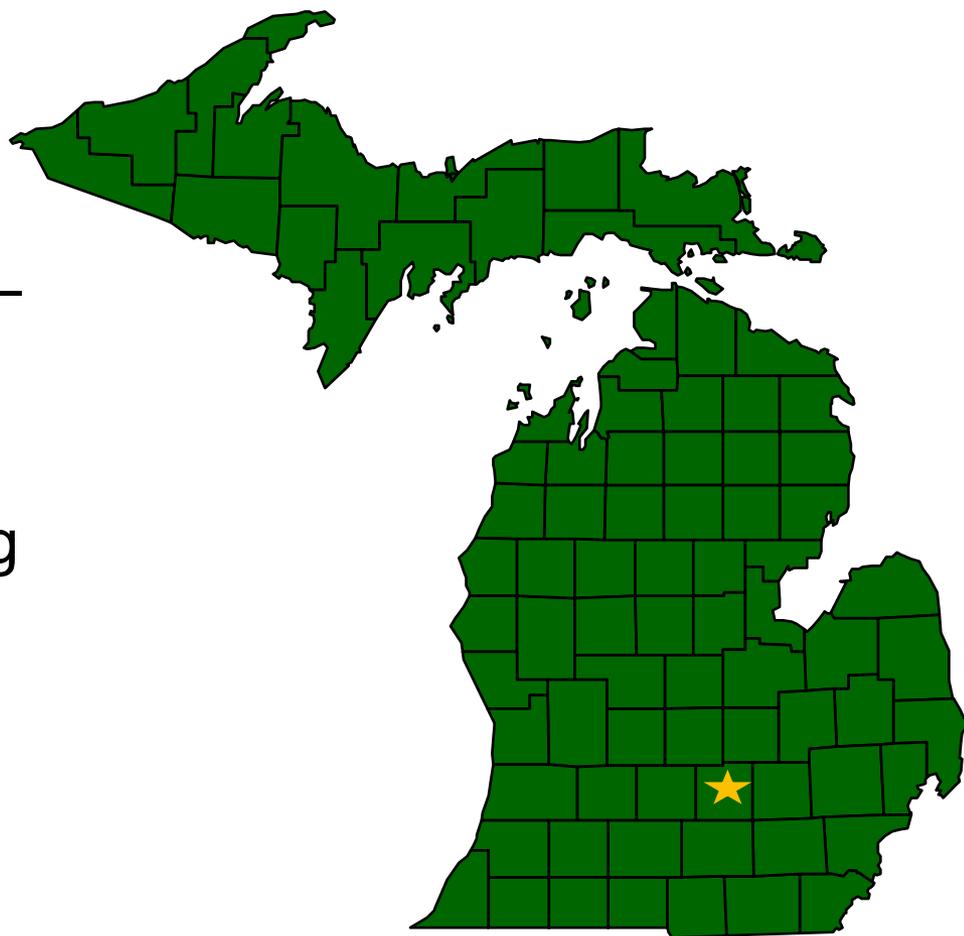
Recommendations

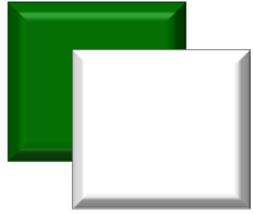
- Roughstalk bluegrass needs to be controlled or significant yield loss can occur
- Early spring applications of Osprey (4.75 oz/A), or Axial XL (16.4 fl oz/A) applied to 1-2" roughstalk bluegrass provides the greatest control
- However, if growers use fall applications they will be able to reduce RSBG populations to limit wheat yield loss
- Later spring applications should be avoided due to poorer control and yield reductions from RSBG competition

Roughstalk bluegrass management in winter wheat - Year 2

(proposed research FY18-19)

- Determine the emergence pattern and time to flowering of roughstalk bluegrass in winter wheat – correlate with GDD
- Evaluate the effect of herbicide application timing (fall vs. spring) and herbicide selection on RSBG control
- Provide management recommendations for RSBG to control





Impacts

- Develop recommendations on the most effective roughstalk bluegrass management strategies in winter wheat.
- Resulting data will be presented in fact sheets, added to the MSU Weed Control Guide for Field Crops (E-434), presented at extension meetings, and at www.MSUweeds.com.



Acknowledgements

