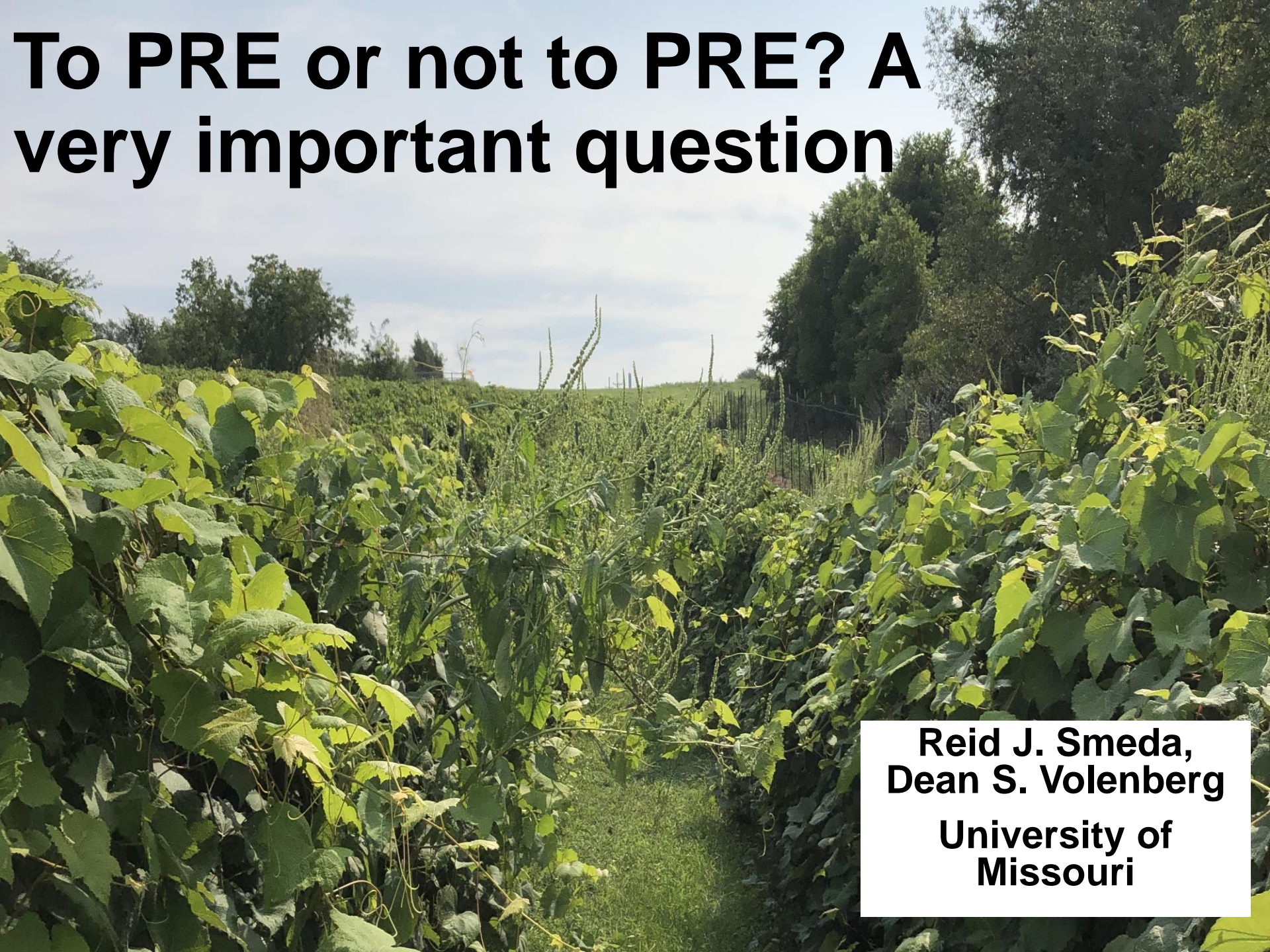


To PRE or not to PRE? A very important question



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Weed management is a planned activity

- Spring
- Summer
- Fall

- PRE
- POST
- Both

- ❖ Grasses
- ❖ Broadleaves

- Annuals
- Biennials
- Perennials



Why do we use preemergence (PRE) herbicides in agriculture?



Untreated control

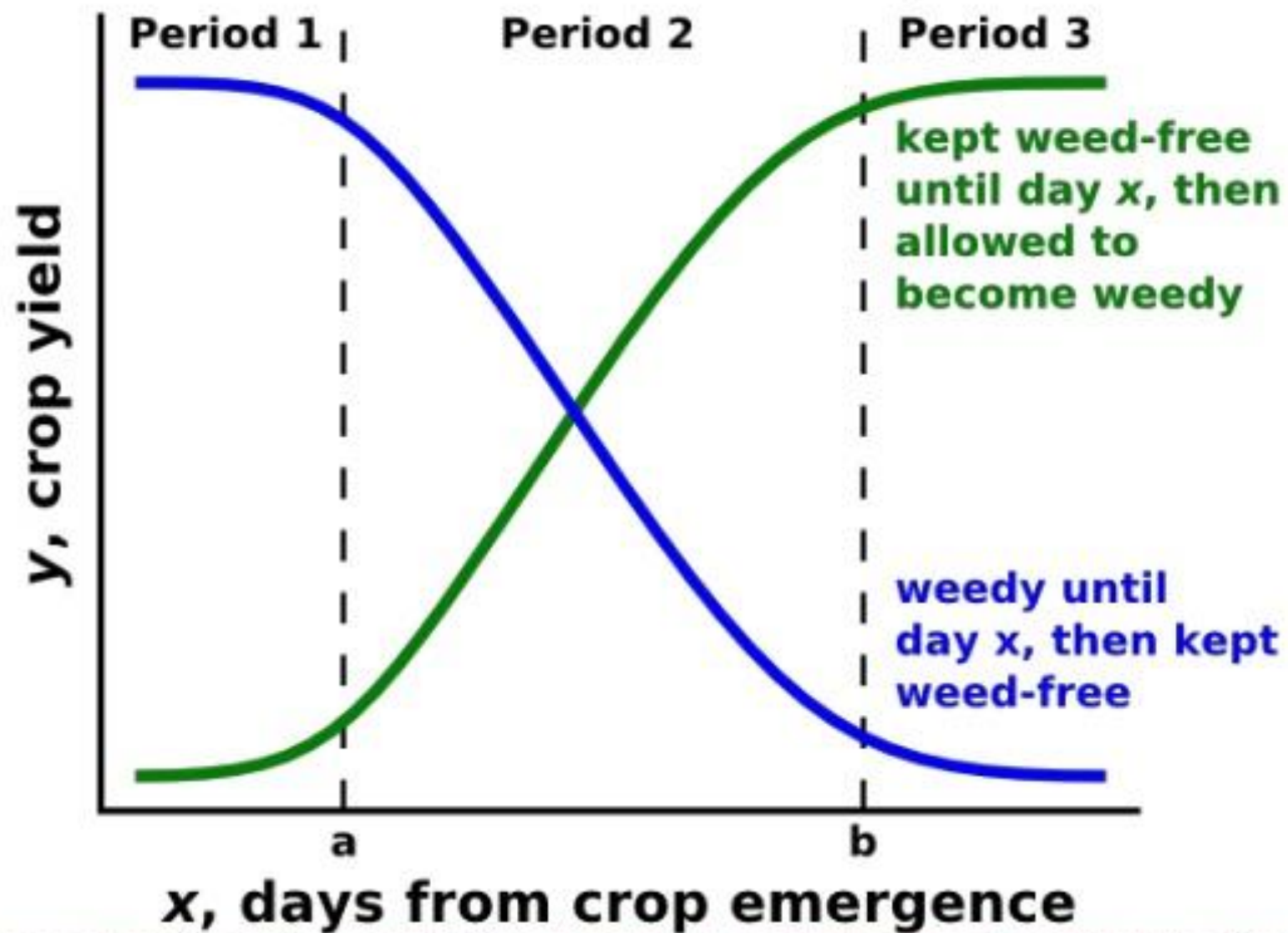


PRE herbicide

**Why not just use
postemergence (POST)
herbicides?**

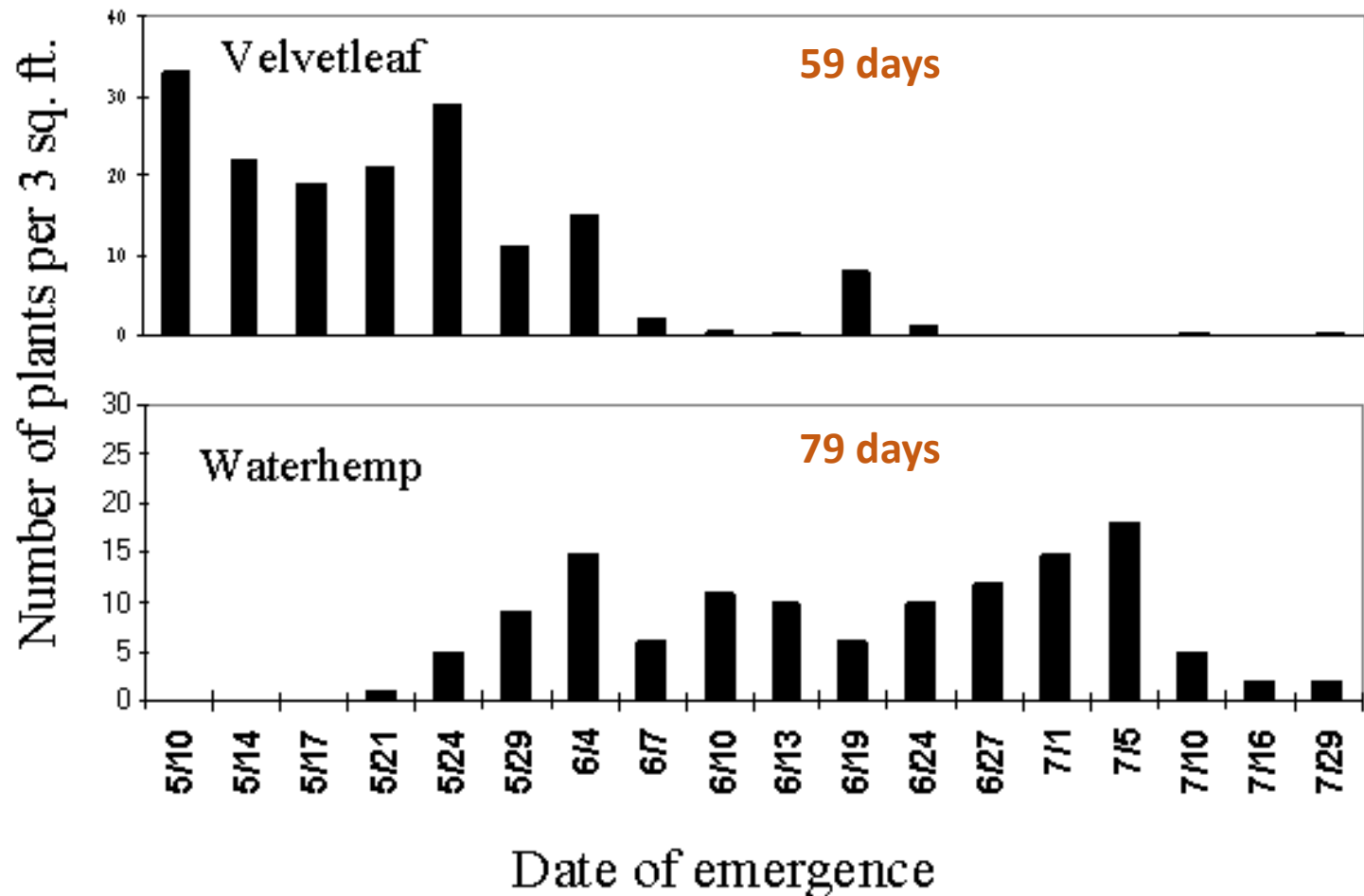


Critical weed free period



Objective:

Determine the effectiveness of fall- or spring-applied PREs followed by POST herbicides versus use of POST only herbicides



Treatment	Herbicide program and rate	Timing
1	Untreated control	--
2	Allion, 5 oz/A Liberty, 60 oz/A	PRE fall POST spring
3	Chateau, 9 oz/A Liberty, 60 oz/A	PRE fall POST spring
4	Solicam, 1.25 lbs./A Liberty, 60 oz/A	PRE fall POST spring
5	Mission, 2.5 oz/A Liberty, 60 oz/A	PRE fall POST spring
6	Allion, 5 oz/A Liberty, 60 oz/A	PRE spring POST spring
7	Chateau, 9 oz/A Liberty, 60 oz/A	PRE spring POST spring
8	Solicam, 1.25 lbs./A Liberty, 60 oz/A	PRE spring POST spring
9	Mission, 2.5 oz/A Liberty, 60 oz/A	PRE spring POST spring
10	Liberty, 60 oz/A Liberty, 60 oz/A	POST spring POST summer
11	Roundup Powermax, 22 oz/A Liberty, 60 oz/A	POST spring POST summer
12	Roundup Powermax, 22 oz/A Gramoxone, 32 oz/A	POST spring POST summer
13	Liberty, 60 oz/A Aim, 2 oz/A Fusilade DX, 20 oz/A	POST spring POST summer POST summer
14	Liberty, 60 oz/A XV Burn 1	POST spring POST summer
15	Gramoxone, 32 oz/A Gramoxone, 32 oz/A	POST spring POST summer

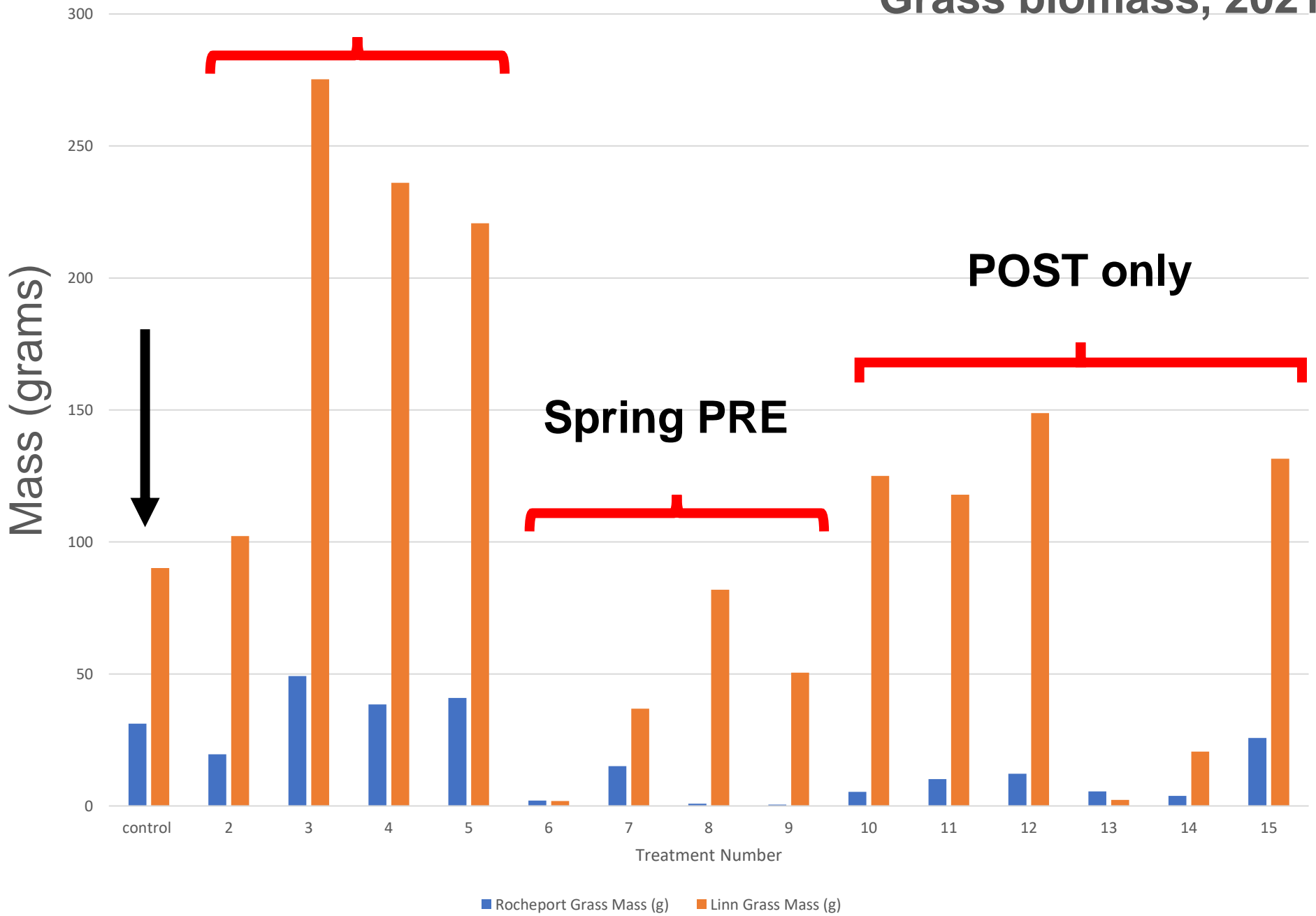
Methodology:

- Two locations (Linn & Rocheport)
- Plots were 30 inches wide by 25 feet long; 4 replications
- Applications:
 - Fall PREs = 12-10-2020
 - Spring PREs = 4-22 and 4-30-2021
 - POST = 6-17 & 6-23-2021; cleanup late July, 2021
- Weed biomass estimated ~7-15-2021
- CO₂ pressurized backpack at 15 gpa

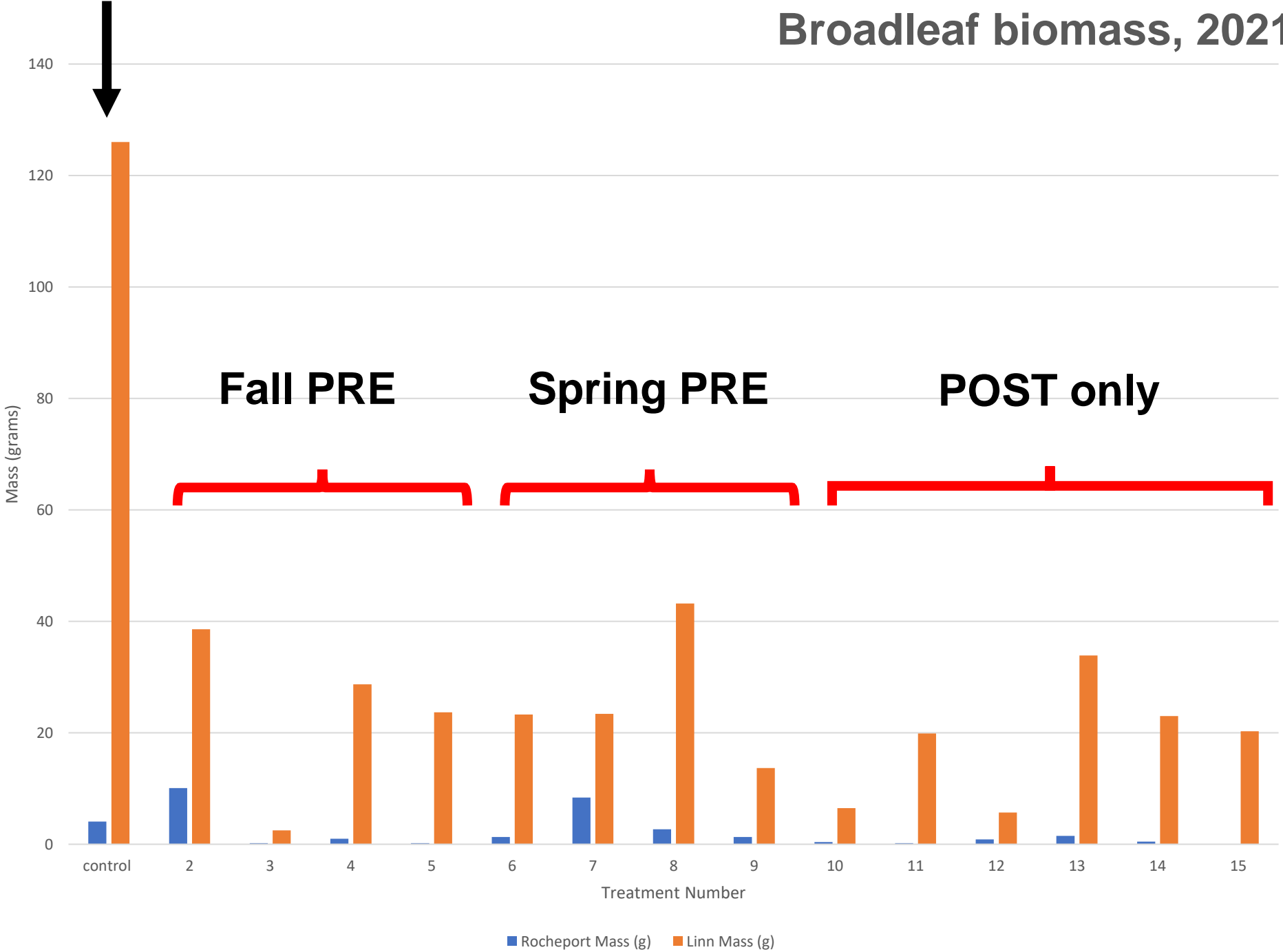


Fall PRE

Grass biomass, 2021



Broadleaf biomass, 2021



Results:

- **Untreated, broadleaf weeds dominated the biomass in control plots (at Linn)**
- **Fall PREs eliminated winter annual broadleaves, permitting rapid grass establishment; residual had no lasting power for grasses**
- **Spring PREs were similar to fall PREs for suppressing broadleaves (or slightly worse), but exhibited activity on emerging grasses**
- **Most POST only programs were intermediate in grass suppression compared to fall and spring PREs, and similar in broadleaf control**

Results:

Within PREs:

- Allion (indaziflam) was superior to all others [65-95% control] at both application timings

Within POSTs:

- Regardless of the initial POST, application of glufosinate (Rely, Liberty) or paraquat (Gramoxone) was inferior compared XV Burn 1 (Experimental) or Aim + Fusilade

Conclusion:

- **Continual emergence of weeds (fall and spring or spring to summer) requires multiple applications**
- **Residuals (PREs) offer extended control vs. no residual POSTs**
- **Spring PRE followed by POST was equally effective as sequential POST applications, IF you selected the correct herbicides**
- **Consider the weed species present as you develop your herbicide program**
- **More research is underway**

We need your help with our electronic surveys (we can provide hard copies if desired)



**Thanks to the MO
Grape and Wine
Institute for support
of this research!**



QUESTIONS?



The choice should be obvious