

Shock and Awe?

Some Thoughts on Electrocution as a Weed Control Tactic



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How the Weed Zapper™ Works:

- Copper boom attached to front of tractor which electrocutes any plant that it contacts
- <110,000 watt generator attached to back of tractor
- Up to 15,000 volts translocating through plants contacted



There are other companies...



Why would we look at these “weird” weed control options?

- We have been conditioned to think of herbicides as our only real method of weed management (**herbicide-centric**)
- Most expect herbicides/traits to “solve” this problem of resistant weeds (**techno-optimism**)
- Waterhemp has evolved resistance to 8 different herbicide modes of action in a 25 year period of time (**depressing**)



**What if we could do something about waterhemp
escapes once there are no longer any herbicide
options?**



Impressions of Electrocution as a Weed Control Tactic

- **#1 disadvantage – it can be dangerous!**



Impressions of Electrocution as a Weed Control Tactic

- The bigger the weed(s), the better! And results are immediate.



Electrocution of Tall, Flowering Horseweed/Marestail Plants

non-treated control



electrocuted 7 days previously



Electrocution of 24-inch Tall Ragweed Plants

non-treated control



electrocuted 7 days previously

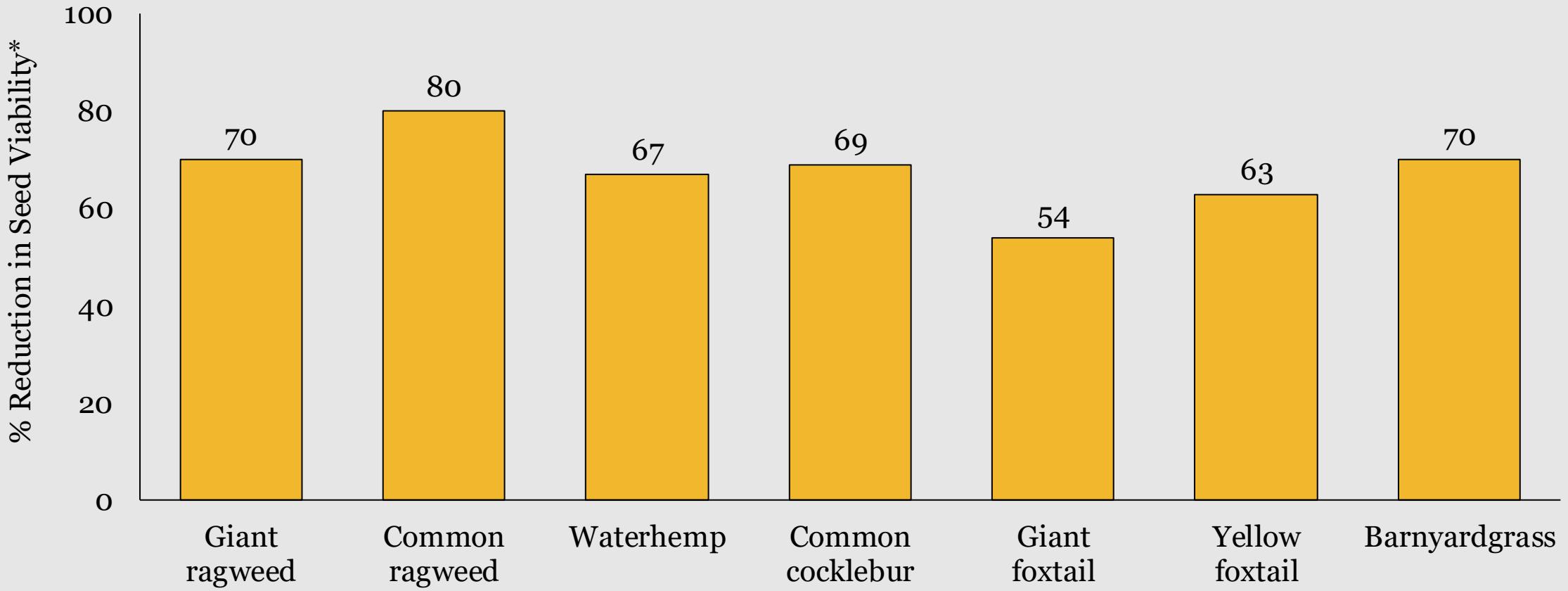


Impressions of Electrocution as a Weed Control Tactic

- **Most current electrocution implements are a better fit for control of weed escapes rather than full season weed management.**



Influence of Electrocution on Weed Seed Viability



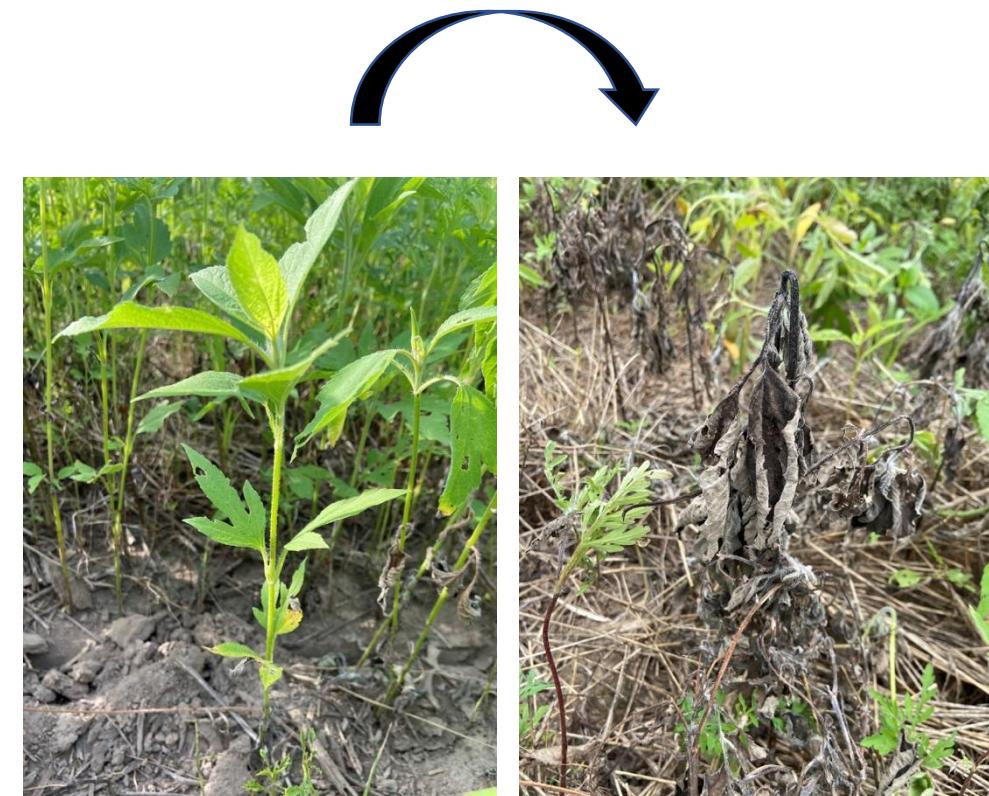
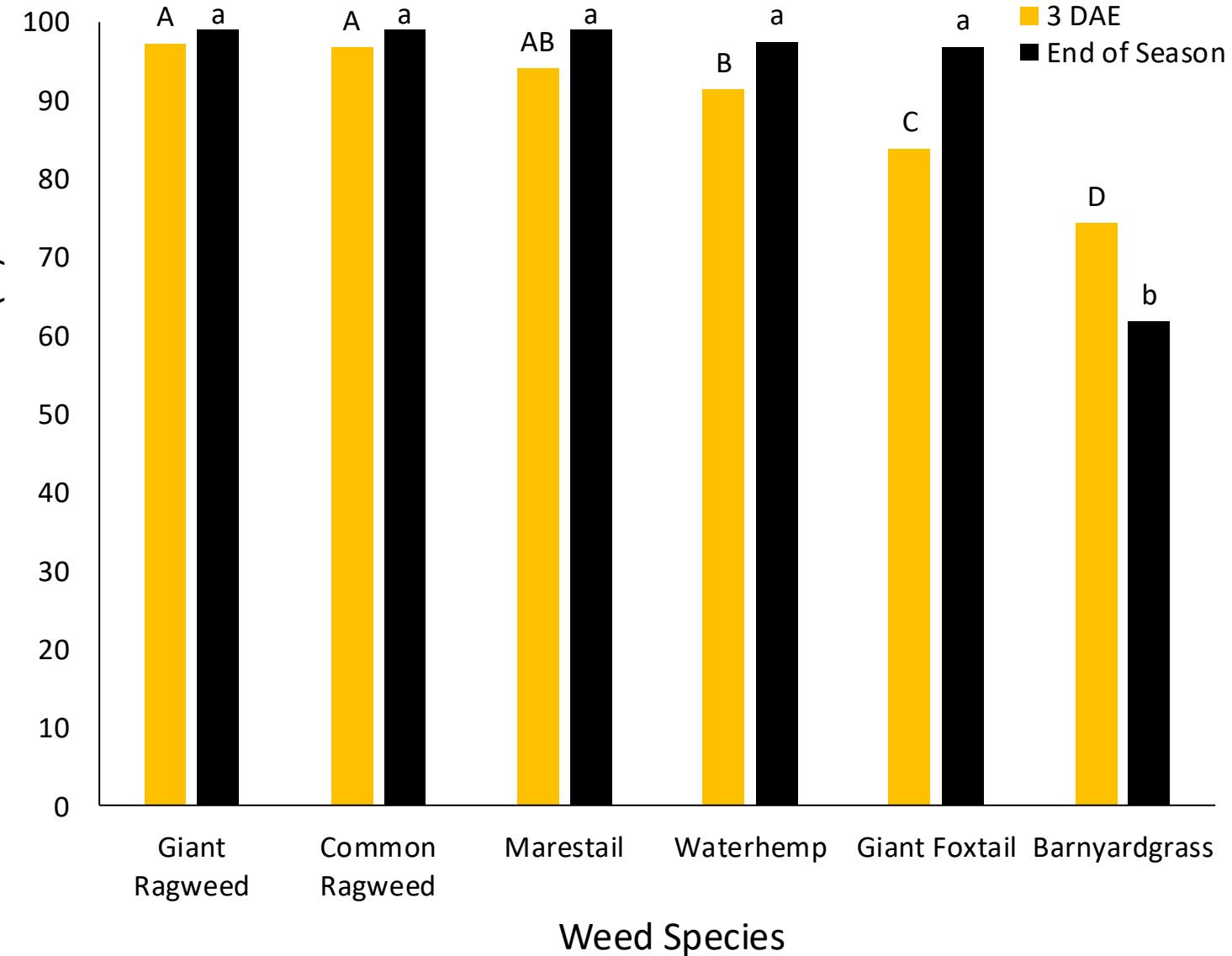
*Based on viability of non-treated seed of that species

Impressions of Electrocution as a Weed Control Tactic

- Not all weeds are controlled equally.

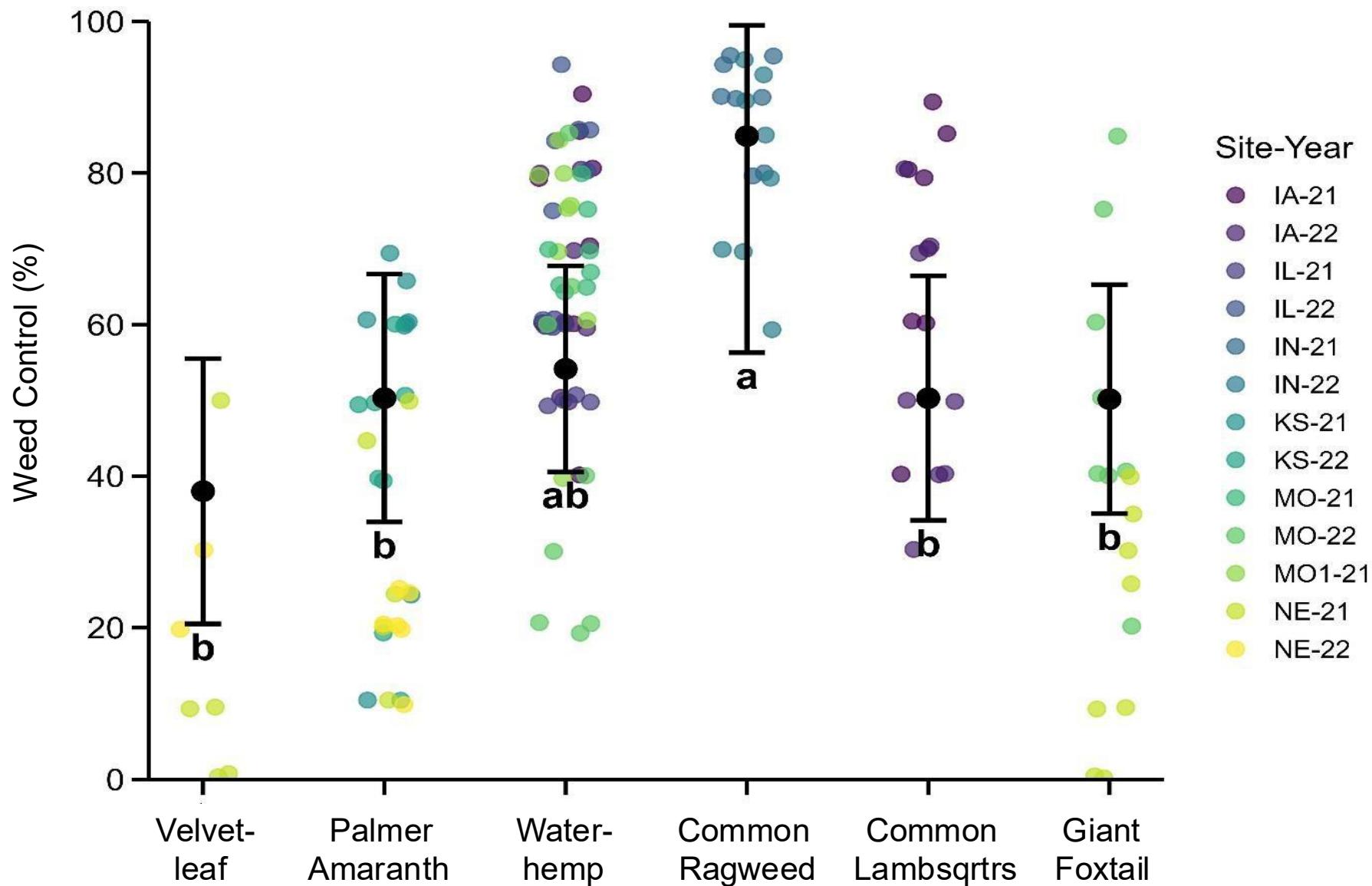


Control of Different Weed Species 3 Days After Electrocution (DAE) and at End of Season

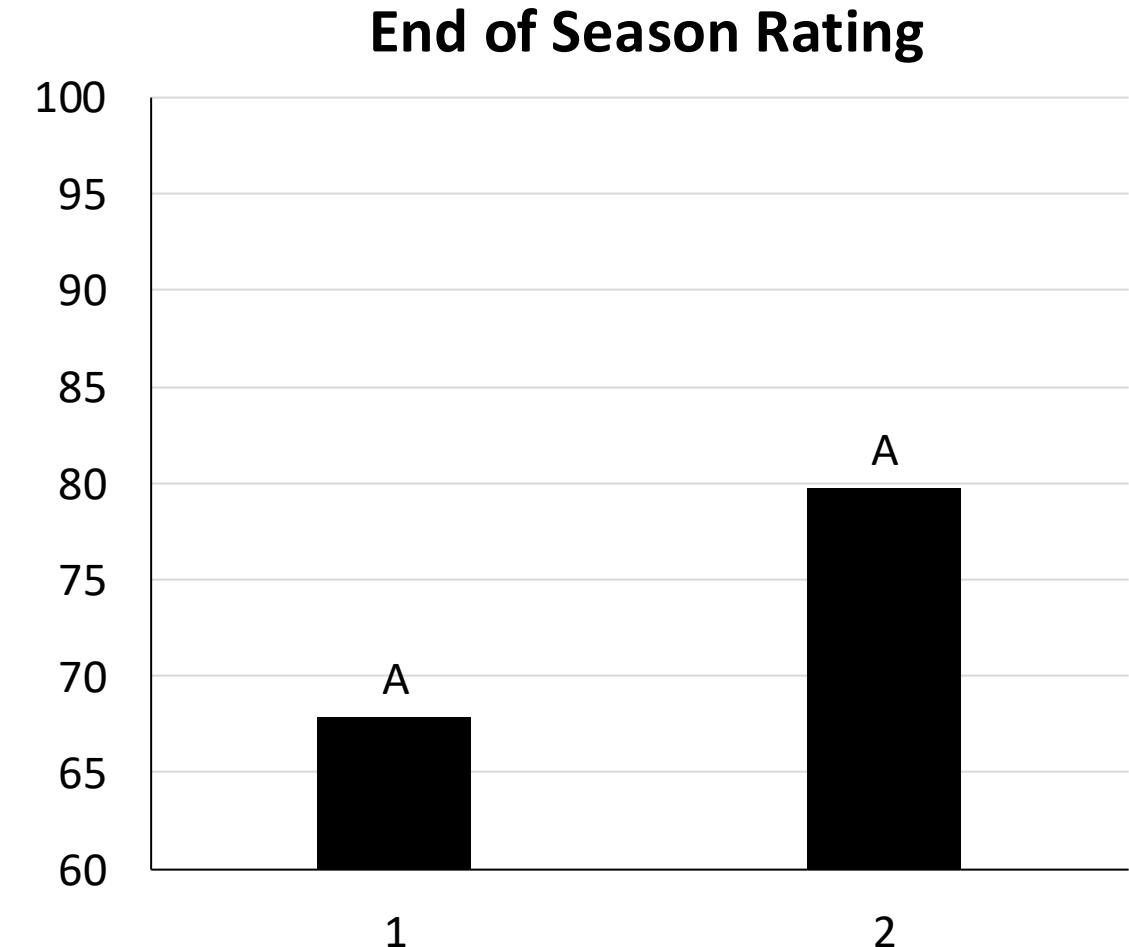
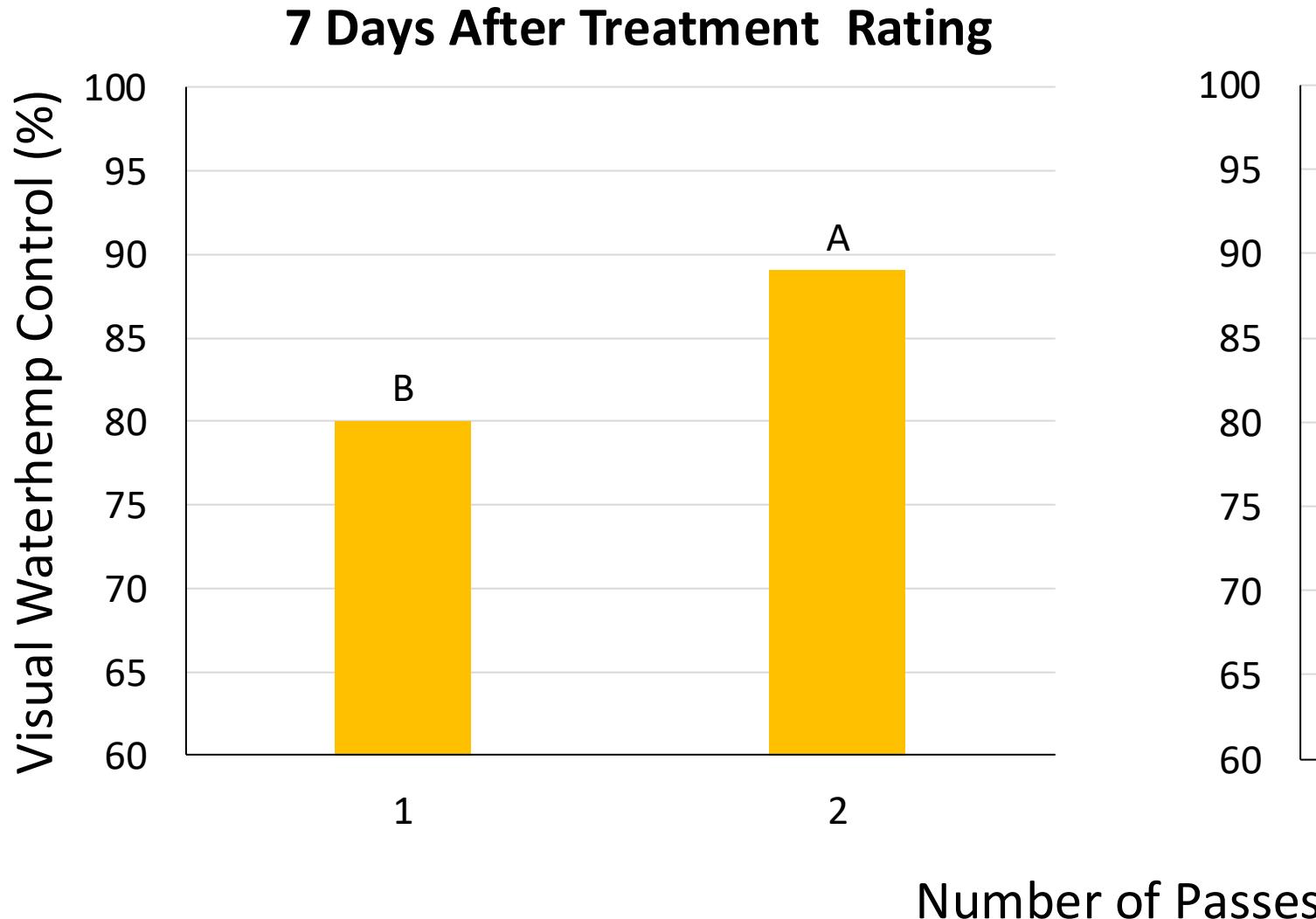


*Bars within a timing followed by the same letter are not different, LSD=0.05

Multi-state Assessment of Electrocution for Late-season Weed Control



The Effect of Number of Passes on Waterhemp Control

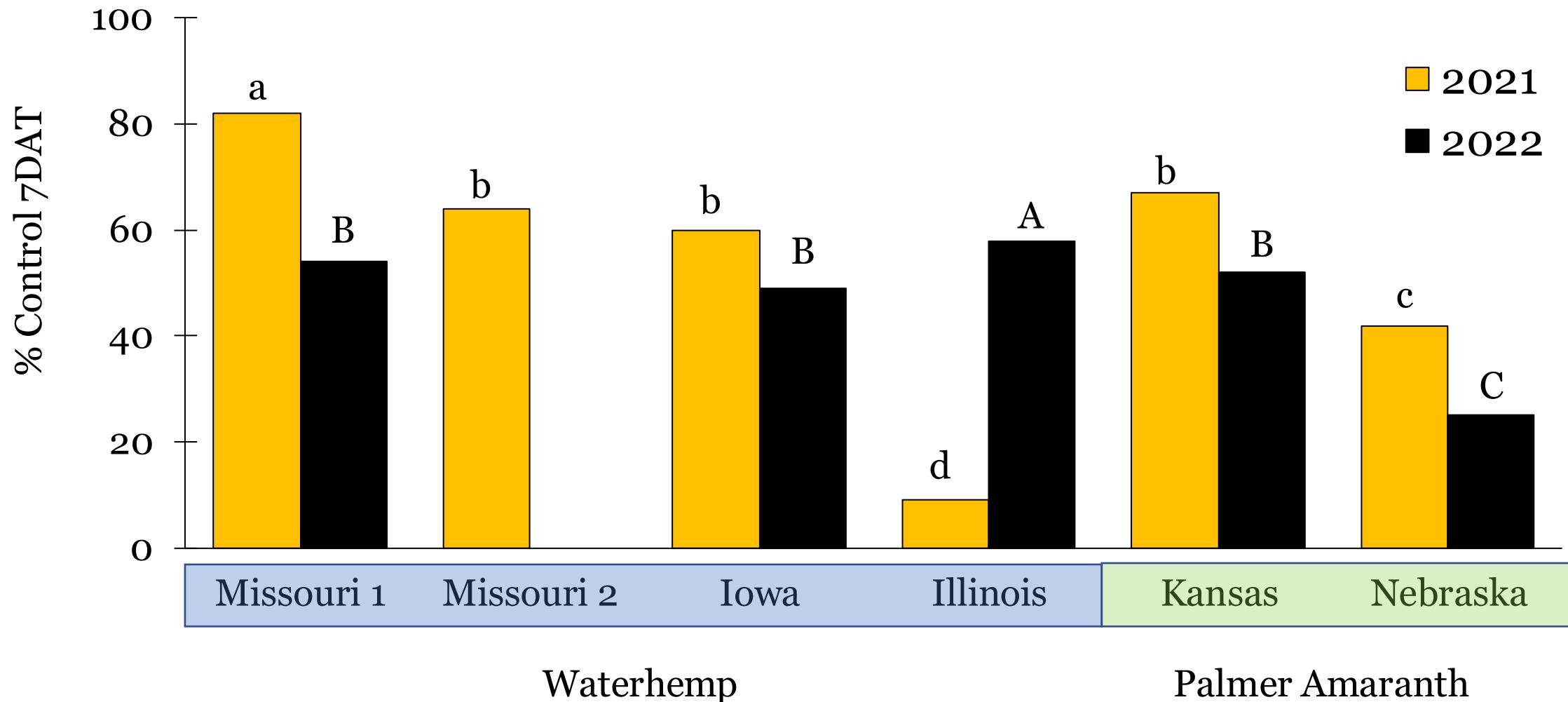


Impressions of Electrocution as a Weed Control Tactic

- There can be variability in control (and we're trying to figure out the reasons why).

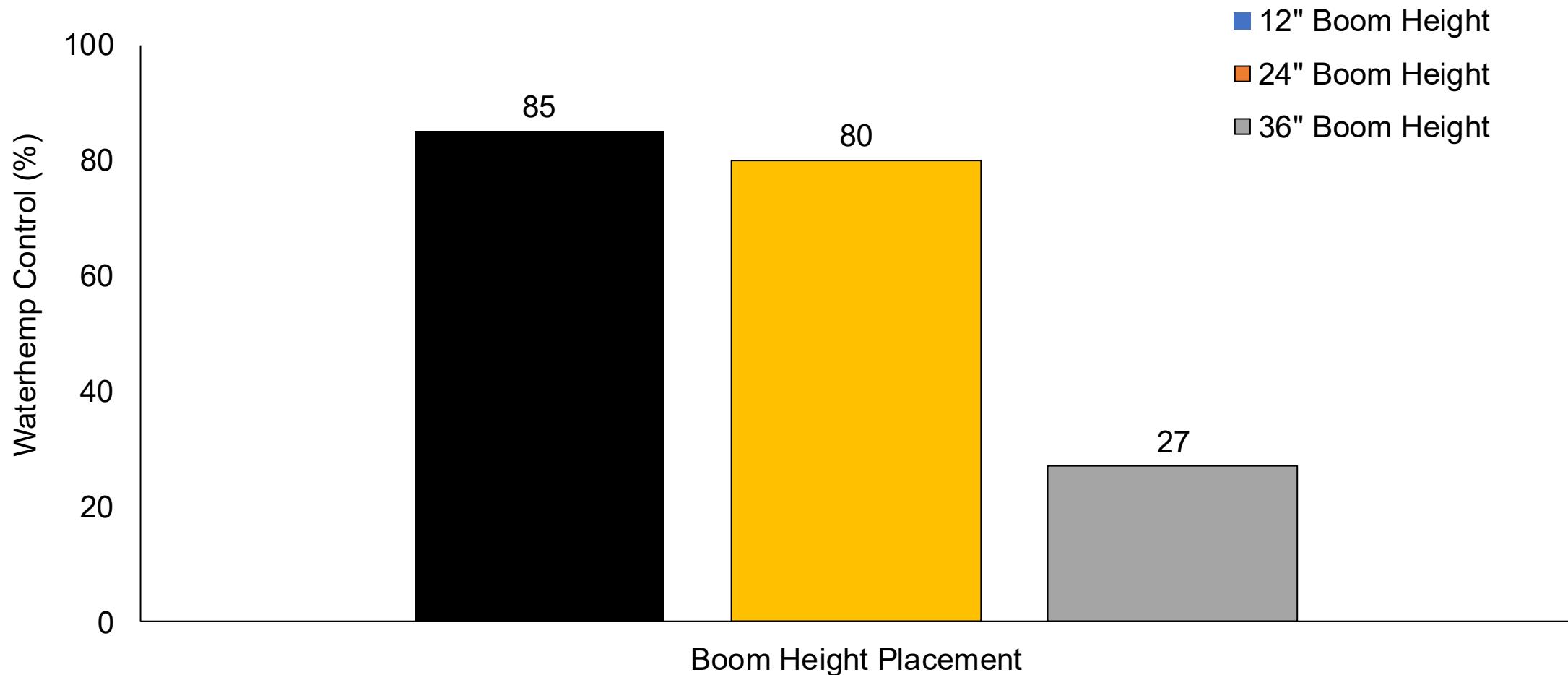


Response of Pigweed Species To Electrocution

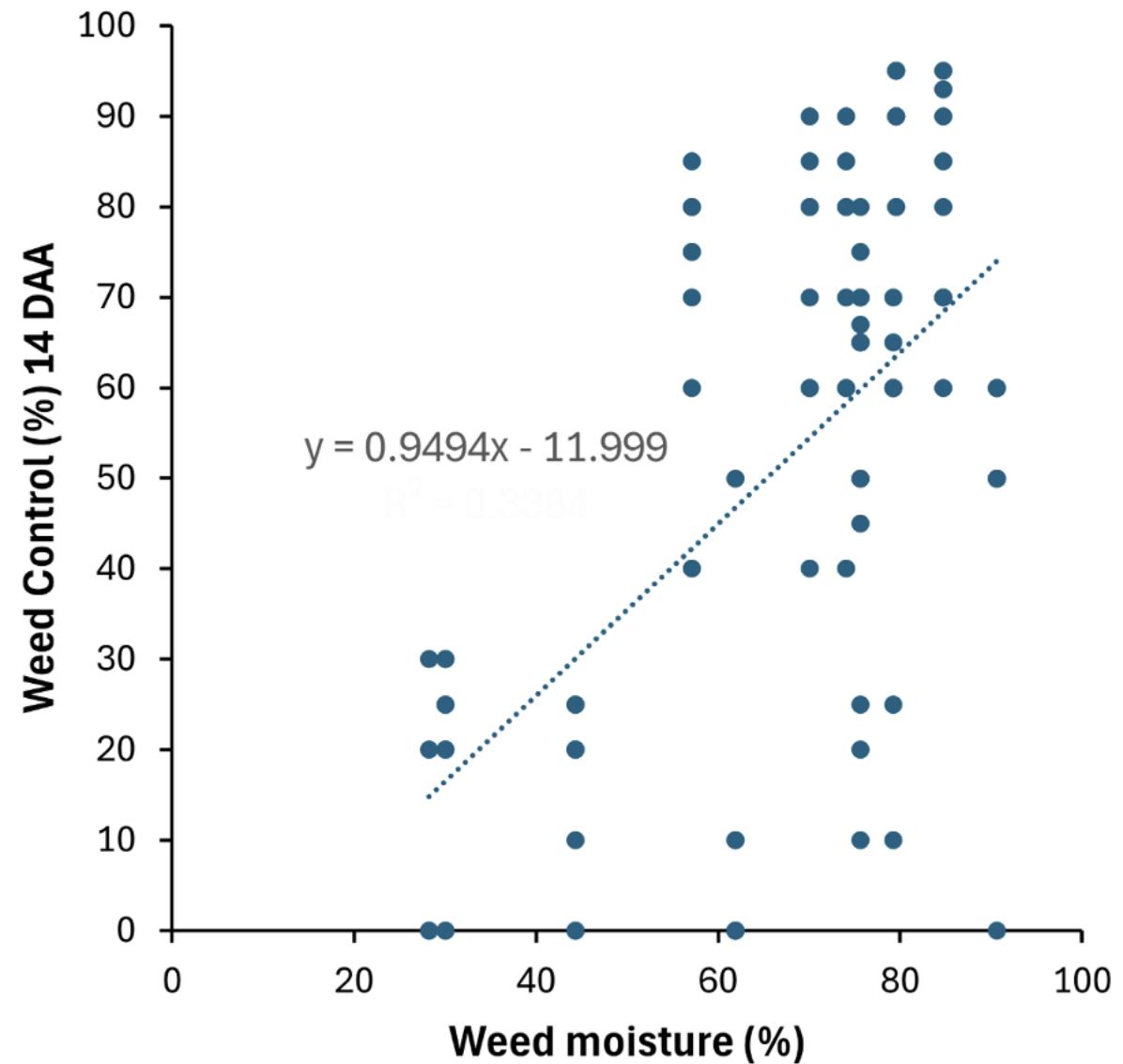


*Bars followed by the same letter within a year are not different, LSD < 0.05

Influence of Electrocution Boom Height Placement on the Control of Tall (38-40") Waterhemp Plants



Relationship Between Weed Moisture Content at the time of Electrocution on Weed Control



Impressions of Electrocution as a Weed Control Tactic

- These implements could have a fit in other crops as well.



Electrocution for Weed Control in Pastures

Table 1. Weed control relative to the best broadcast herbicide treatment(s) evaluated.

Alternative Treatment Type	Common Ragweed	Common Cocklebur	Bull Thistle	Ironweed Species	Buckbrush	Horsenettle
Single pass electr	↓	↓	=	=	=	↓
Two-pass electr same day	=	=	=	=	↑	↓
Two-pass electr 14-d apart	=	=	=	=	↑	↓
Single pass weed wiper	↓	=	=	=	↑	↓
Two-pass weed wiper	↓	=	=	=	↑	↓

↑, ↓, and = indicates higher, lower, and similar control than the best broadcast herbicide treatments, respectively



Mizzou weed science

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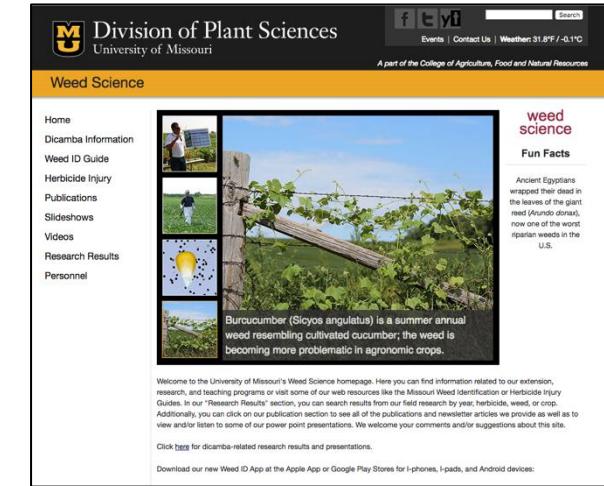
Phone: 573-882-4039



App: ID Weeds (free download)



Facebook: Mizzou Weed Science

A screenshot of the Division of Plant Sciences website. The header features the Mizzou logo, the text 'Division of Plant Sciences University of Missouri', and 'A part of the College of Agriculture, Food and Natural Resources'. It includes social media links for Facebook, Twitter, and YouTube, and a weather widget showing 31.8°F / -0.1°C. The main content area is titled 'Weed Science' and includes a sidebar with 'weed science' and 'Fun Facts' sections. The sidebar notes that ancient Egyptians wrapped themselves in the leaves of the giant weed (Amaruia oblonga), now one of the worst riparian weeds in the U.S. The main content area features a photo of a person in a field and a caption about Burcucumber (Sicyos angulatus) becoming more problematic in agronomic crops. A welcome message and a link for dicamba-related research results are also present.

weedscience.missouri.edu



Twitter: @ShowMeWeeds