

Focus on Common Ragweed and Horsetail / Marestail

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County

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UNIVERSITY OF
MARYLAND
EXTENSION



Virginia Tech • Virginia State University



Horseweed vs. Ragweed

- Horseweed / Marestalk

- Winter or summer annual
- Emergence: fall and March into May
- 200k seeds/plant
- 3' to 6' in height
- Fall emergence has rosette stage



- Common ragweed

- Summer annual
- Emergence: late April through June
- 32K - 62K seeds/plant
- 3' to 6' in height
- No rosette stage



Common Ragweed

- Summer annual, early emerging
 - Emergence slows into June
- Resistant to Groups 2, 9, 14
 - ALS, Glyphosate, and PPO
- A few fields, but slowly spreading
 - Seed spread seems to be sped up by equipment movement





**Sprayed with 2X rates of
glyphosate + Reflex + FirstRate**
(note population is mixture of
resistant and susceptible plants)



Why Should You Care?







Common Ragweed Management: Corn

Will have emerged by burndown timing

Corn:

- Paraquat + atrazine/simazine/metribuzin
- 2,4-D



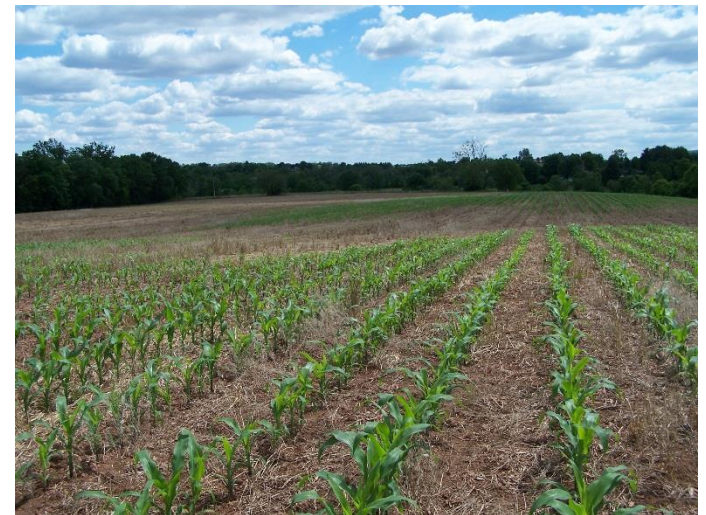
Common Ragweed Management: Corn

PRE:

- Atrazine/simazine/metribuzin

POST:

- atrazine
- atrazine + HPPD
- dicamba
 - Status
 - DiFlexx
- 2,4-D



Common Ragweed Management: Soybeans

- Starting clean is the key!
- Any plants emerged at planting will be very hard to control POST



Common Ragweed Management: Soybeans

- As with other weeds, ragweed that is larger than 3-4 inches, or under stress is very hard to control
- Many failures occur when early germinating ragweed is not controlled prior to planting

Common Ragweed Management: Soybeans

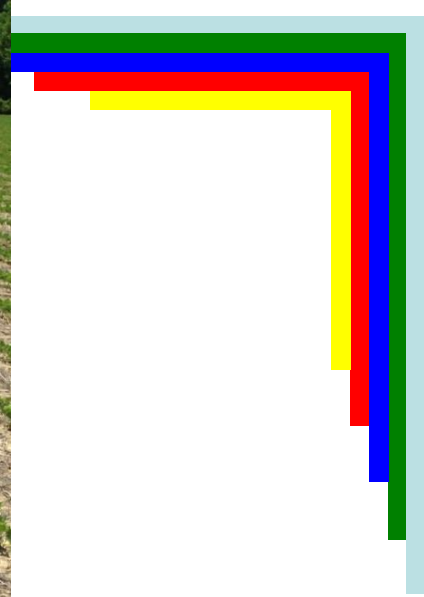
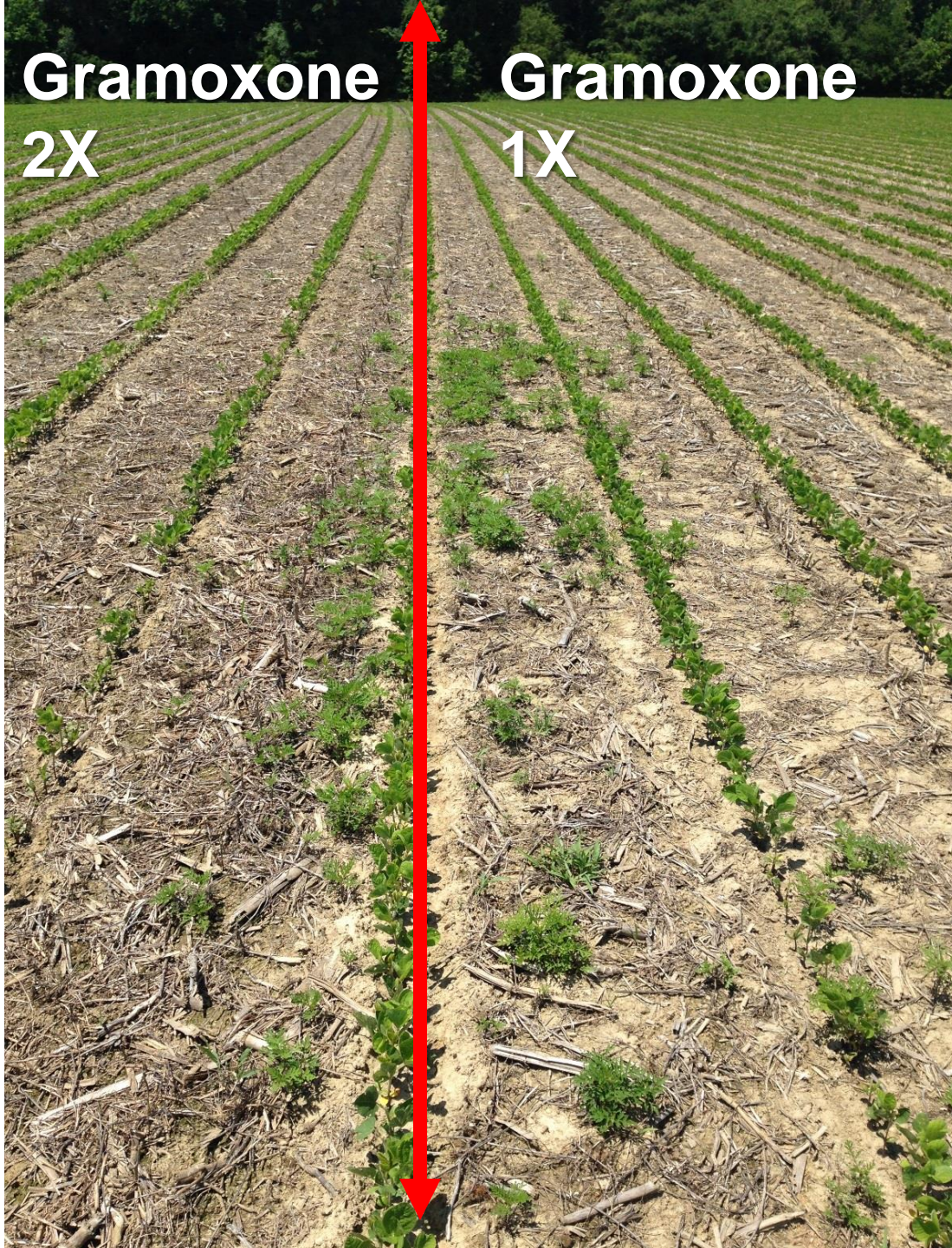
- Burndown (30d before planting)
 - 2,4-D (**1 lb ai**), dicamba, or Sharpen (1.5oz)
 - Timed 30 days ahead of planting
 - Planting restrictions on dicamba, 2,4-D, and sharpen
 - Paraquat for very small plants
 - Liberty for double cropped-soybeans
- Has to be used in combination with a residual!

Common Ragweed Management-RR Beans

1. Kill any emerged ragweed plants prior to planting. 2,4-D or Dicamba can be tank-mixed with glyphosate. Gramoxone is also a choice for small plants. Sharpen also works. Tillage also works, but will bring up new weed seeds.
2. **Always use a residual-** PPO's should be used where ALS resistance is known. **Valor or Valor premixes have mixed results on common ragweed. Authority type products are not very effective for Ragweed.**
3. Metribuzin and Linuron also have fairly good activity on Ragweed
4. Follow-up with timely post treatment if needed. PPO's such as Cobra or Flexstar (Eastern Shore may not have this option.)

**Gramoxone
2X**

**Gramoxone
1X**



**Gramoxone
2X**

**Gramoxone
1X**

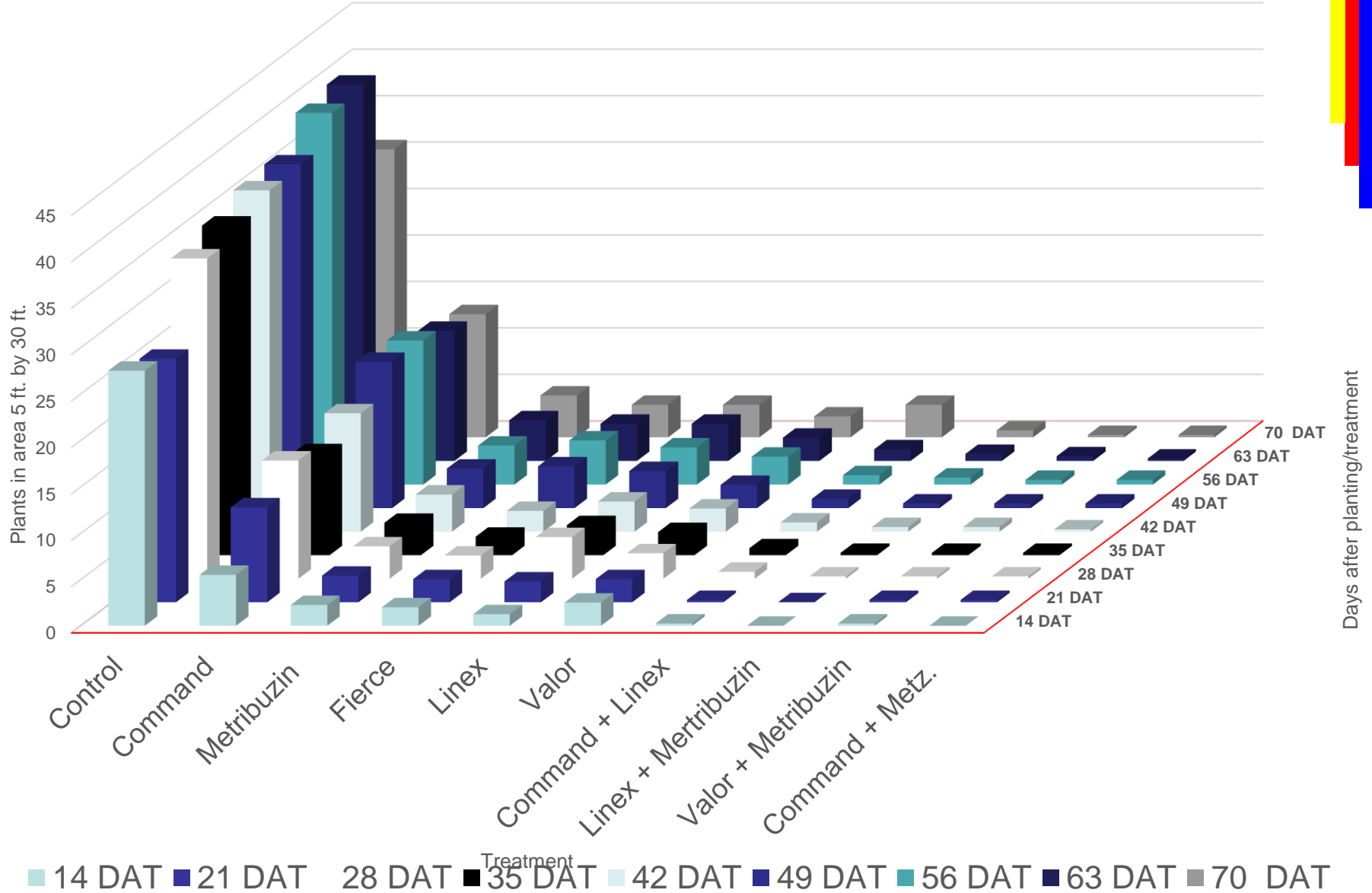


**Gramoxone
1X**

**Gramoxone
2X**



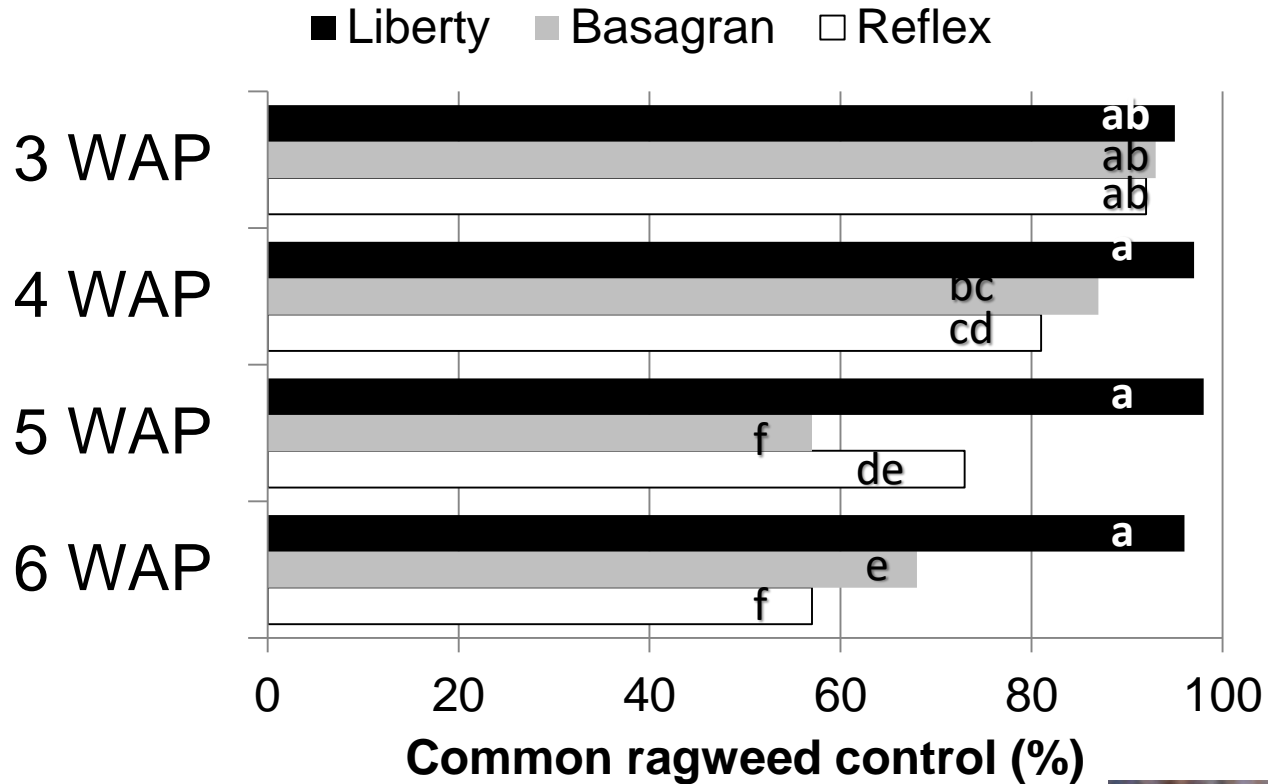
2017 Common Ragweed Control with Residual Herbicides



Days after planting/treatment

■ 14 DAT ■ 21 DAT ■ 28 DAT ■ 35 DAT ■ 42 DAT ■ 49 DAT ■ 56 DAT ■ 63 DAT ■ 70 DAT

Effect of Post Application Timing



Common Ragweed Escape Management

- If you have to resort to hand pulling an escaped patch
 - Aim to pull much earlier than palmer amaranth
 - Ragweed seeds detach from the seed head early in the season



Photo by
Richard Old
www.xidservices.com



HORSEWEED/ MARESTAIL



Horseweed / Marestalk

- First instance of glyphosate resistance: 2000
- Resistant to: glyphosate (9) and ALS (2)
- Prolific seed producer (200K/plant)
 - Easily carried by wind
- Two germination periods
- Considered one of the worst soybean weeds



Photo: Amit Jhala. <https://cropwatch.unl.edu/marestail-post-harvest-2015-wheat-and-oats>

Horseweed / Marestalk

- Winter and summer annual
 - Will emerge most months
- Spring emerging plants do not produce rosettes
- Very difficult to control once soybeans have emerged







Copyright 2002 University of Illinois



Herbicide Resistance: How quick can it happen?

Marestail:

- 1996 RoundUp Ready Soybeans released
 - Widespread use of glyphosate
- 2000 Marestail resistance to glyphosate confirmed (DE)
- ***Four seasons*** for marestail to have widespread resistance to glyphosate

Marestail / Horseweed

Cultural Practices

- Crop rotation
- Cover cropping
- Supplemental tillage

Chemical Options

- Effective herbicide program
- Rotate chemistry

Most effective results
combine cultural AND chemical



Horseweed / Mareetail Tillage

- 76% seed mortality in 10 months
- No emergence from 0.2 inches or greater depth



Davis, V.M., Gibson, K.D., Bauman, T.T., Weller, S.C. and Johnson, W.G., 2007. Influence of weed management practices and crop rotation on glyphosate-resistant horseweed population dynamics and crop yield. *Weed science*, 55(5), pp.508-516.

Nandula, V.K., Eubank, T.W., Poston, D.H., Koger, C.H. and Reddy, K.N., 2006. Factors affecting germination of horseweed (*Conyza canadensis*). *Weed Science*, 54(5), pp.898-902.

Horseweed / Mareetail: Corn

Tips to remember:

- Group 2 and 9 resistant
 - ALS and glyphosate resistant
- Control of emerged plants at planting (corn)
 - Burndown: paraquat + 2,4-D
 - Residual: atrazine or simazine
 - POST: dicamba, Callisto + atrazine

Residual/Preemergence Herbicides: Soybeans

- Assist with burndown
- Provide early-season weed control
 - As close to planting as possible
- Tankmix with postemergence herbicides to provide/enhance residual weed control
 - Most will not control emerged weeds

Horseweed / Marestalk:

Soybeans

- Control of emerged plants for burndown (30d):
 - Soybeans: 2,4-D (**1 lb ai**), dicamba, or Sharpen (1.5 oz)
 - Timed 30 days ahead of planting
 - Planting restrictions on dicamba, 2,4-D, and sharpen
 - Liberty for double cropped-soybeans
 - Soybeans residual: metribuzin, sulfentrazone (Authority products), flumioxazin (Valor)
- POST: Liberty with LL soybeans or dicamba with DT soybeans
 - Synchrony with STS soybeans ??
 - FirstRate ?? Glyphosate

Summary of Key Management Strategies

- Eliminate all marestail before planting beans
- Control marestail when it is small--preferably in the rosette stage
- Use an effective residual product(s) at planting
- Use multiple modes of action
- Rotation including corn and small grains
- Consider tillage if necessary.
- Use cover crops with good ground coverage
- Manage the seed bank

Marestail POST ??





Photo: Matt Morris

Horseweed / Mareetail: Small grain

- Herbicide applications can provide control going into DC soybeans
 - Huskie
 - Quelex



Horseweed / Marestalk

- Fall application of 2,4-D or paraquat
 - Fall germinating marestalk are much easier to kill fall vs. spring
 - Check under crop residue
 - Still need a strong spring herbicide program



<http://www.nrca-railroad.com/weed-control-seminar-information/members/weed-id-powerpoint/broadleaves-summer-annuals/marestalk-seedling>



<http://agfax.com/2016/10/31/nebraska-take-control-of-marestalk-now/>

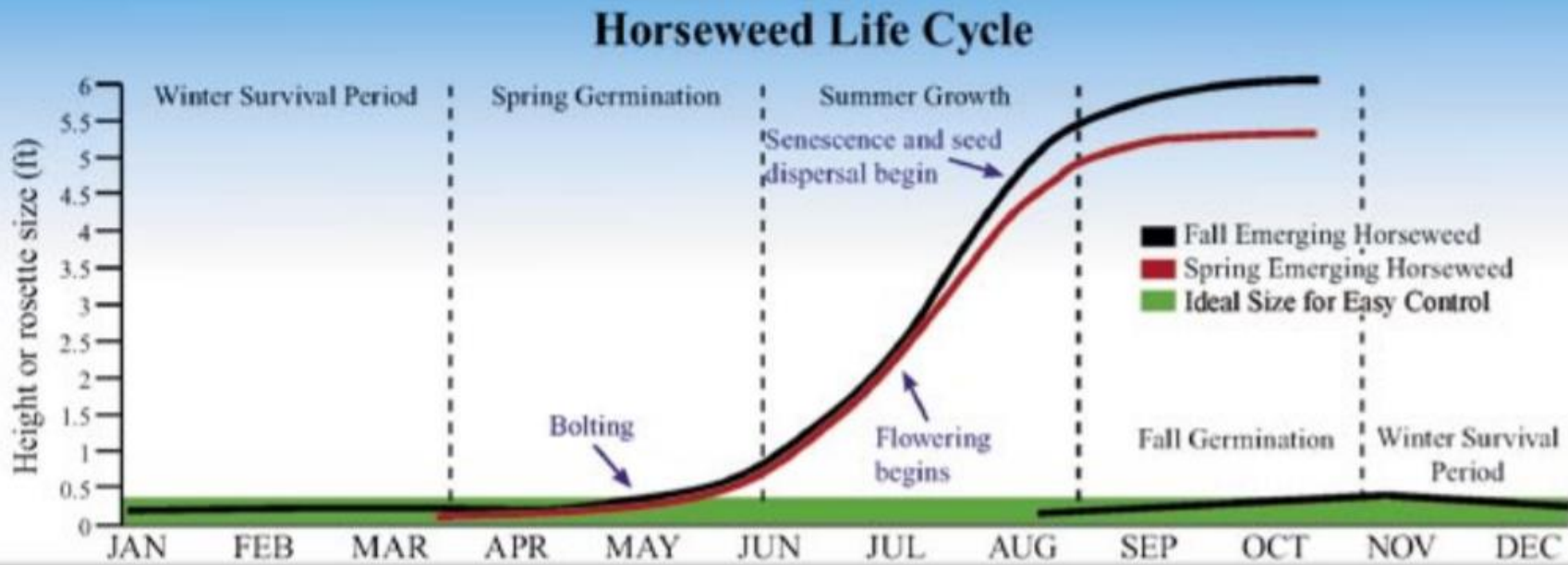


Figure 4. This graph shows the relative life cycles of horseweed throughout the year for plants that emerge in the spring and fall.

Biology and Management of Horseweed, Purdue University

Marestail / Horseweed

How big is too big?

- Too many rescue applications are occurring
- Most dicamba and 2,4-D formulations are labeled for 4" weeds or less
- Marestail = target when small
- Your burndown shouldn't double as a bushhog

******4" or less!******

Horseweed / Marestalk



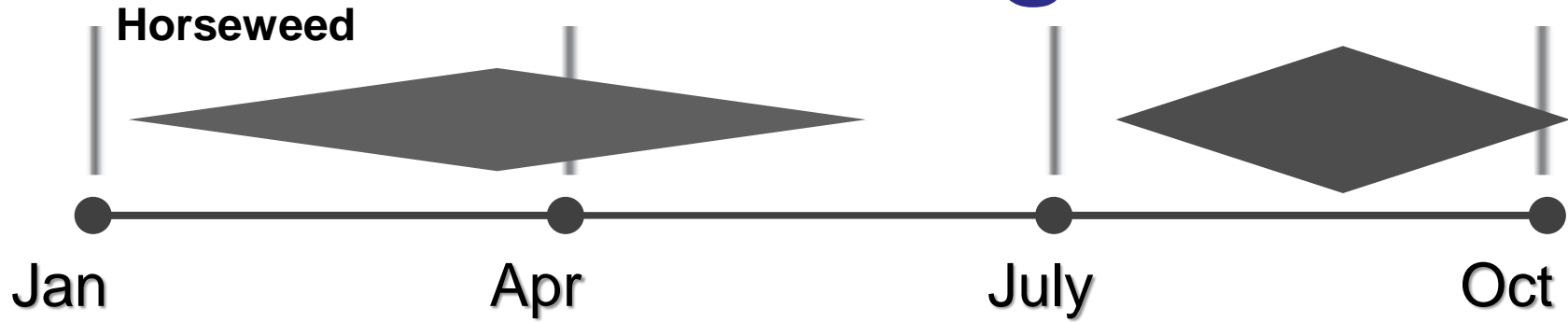
YES



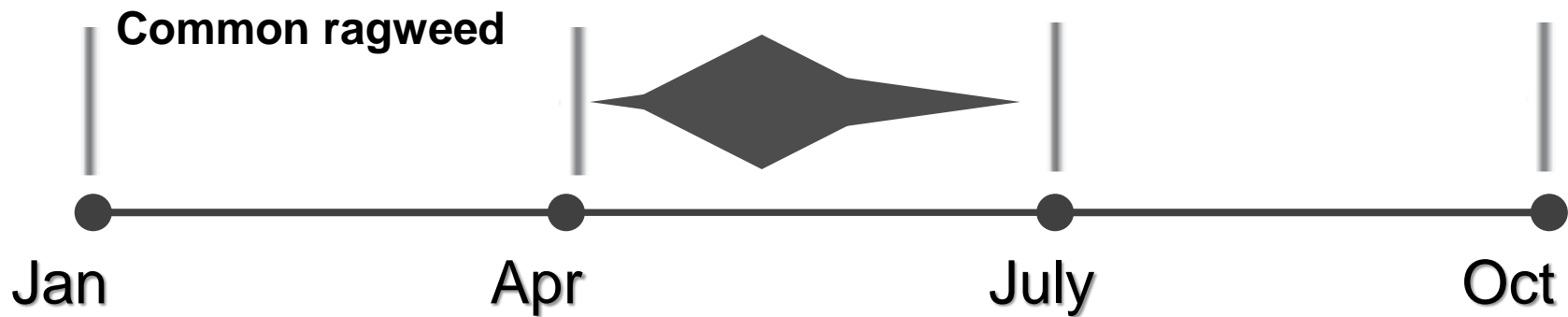
NO

Photos: Amit Jhala <https://cropwatch.unl.edu/post-emergence-herbicide-options-glyphosate-resistant-marestail-corn-and-soybean>

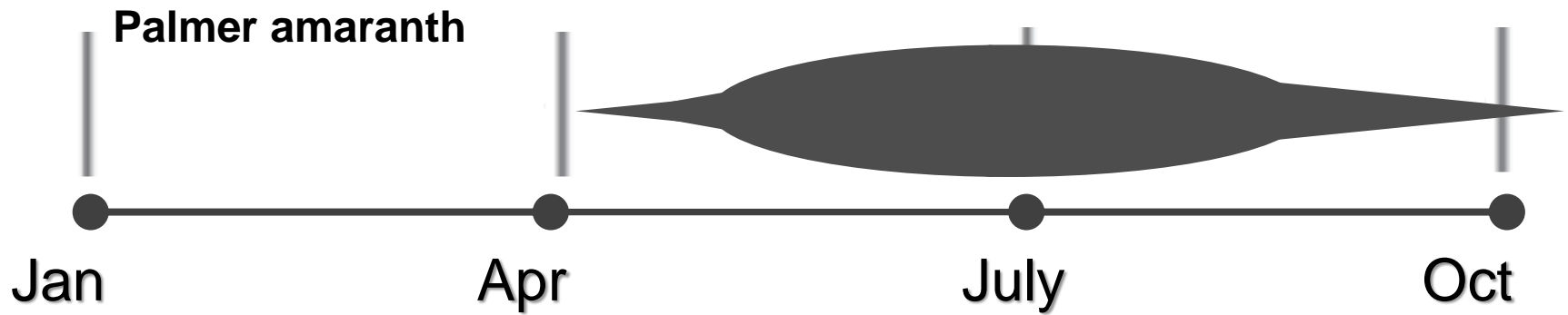
Weed Emergence



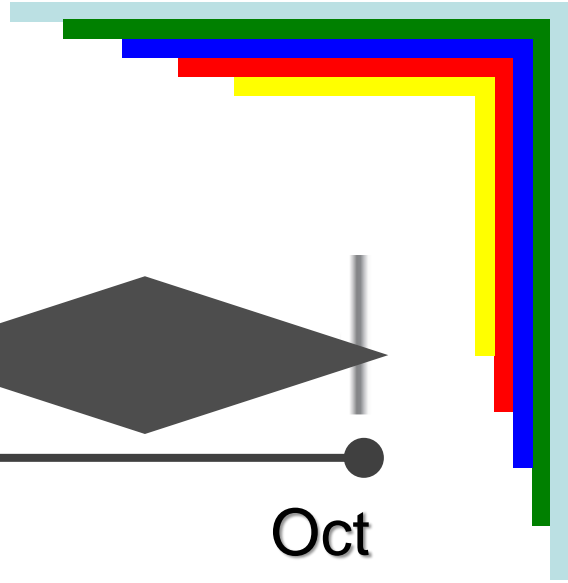
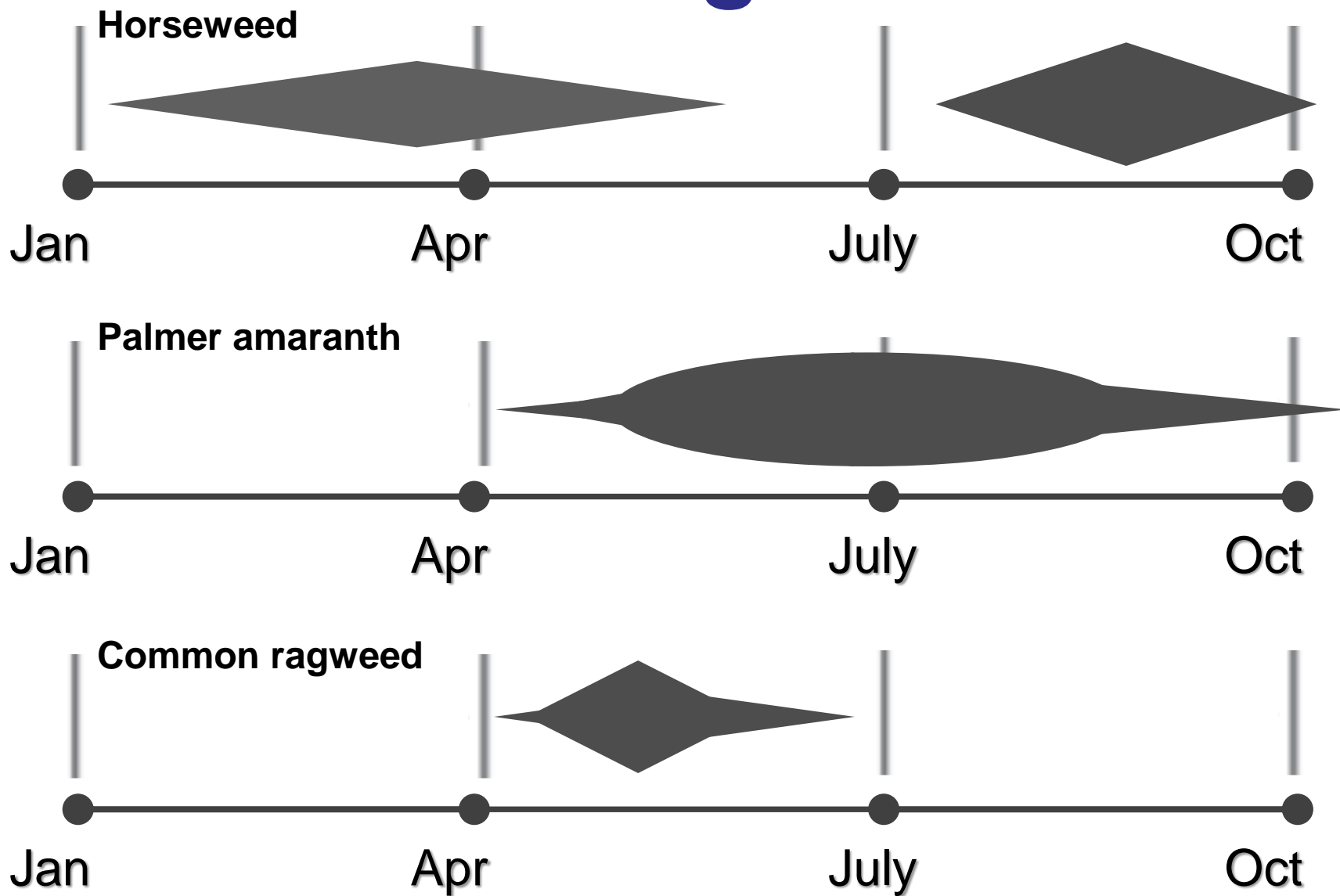
Weed Emergence



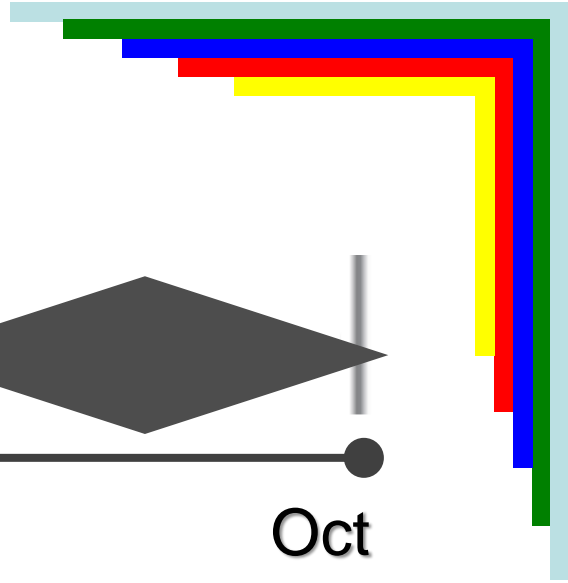
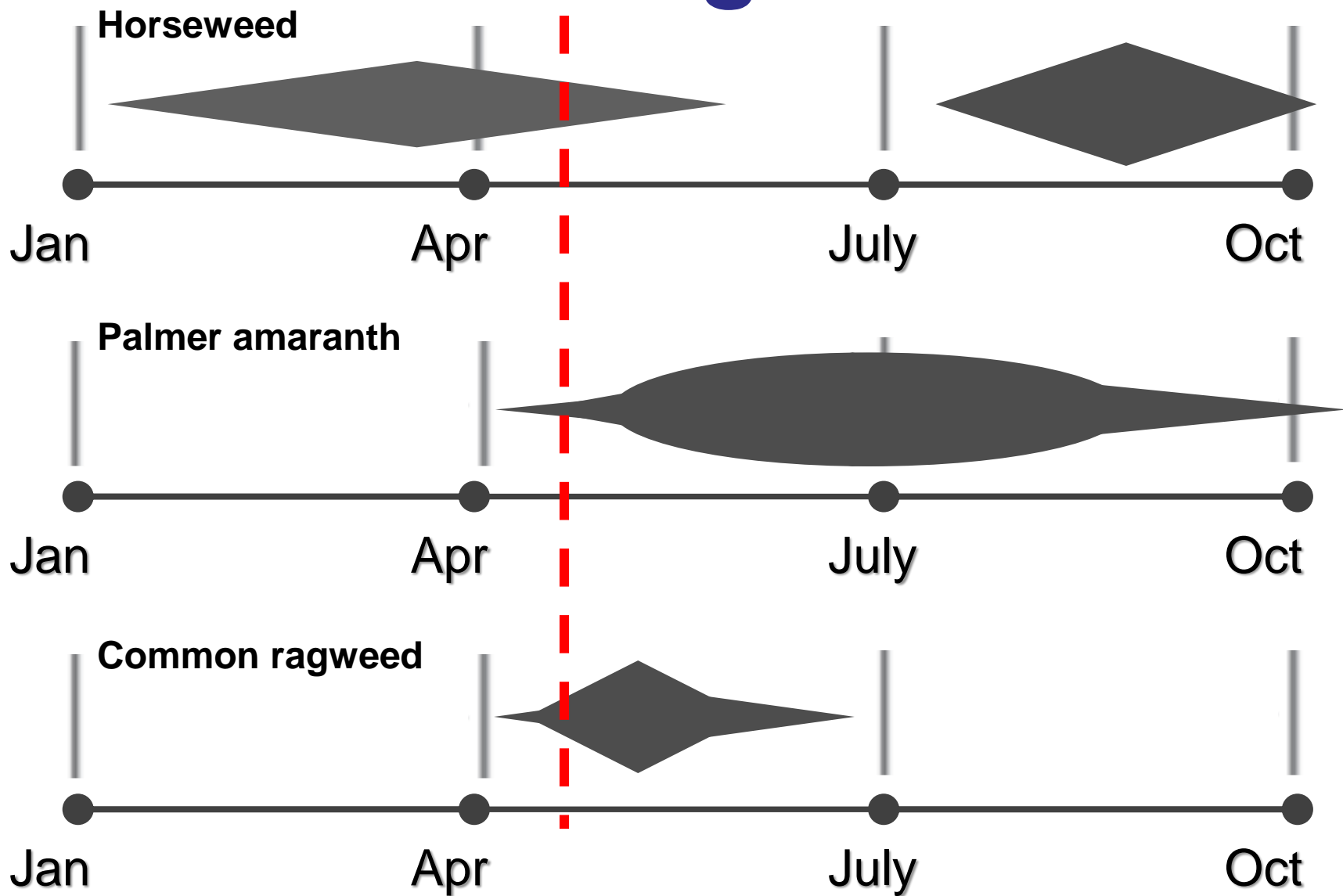
Weed Emergence



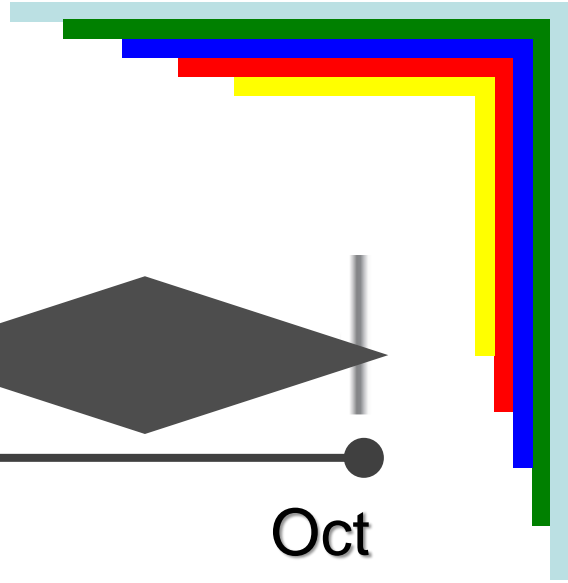
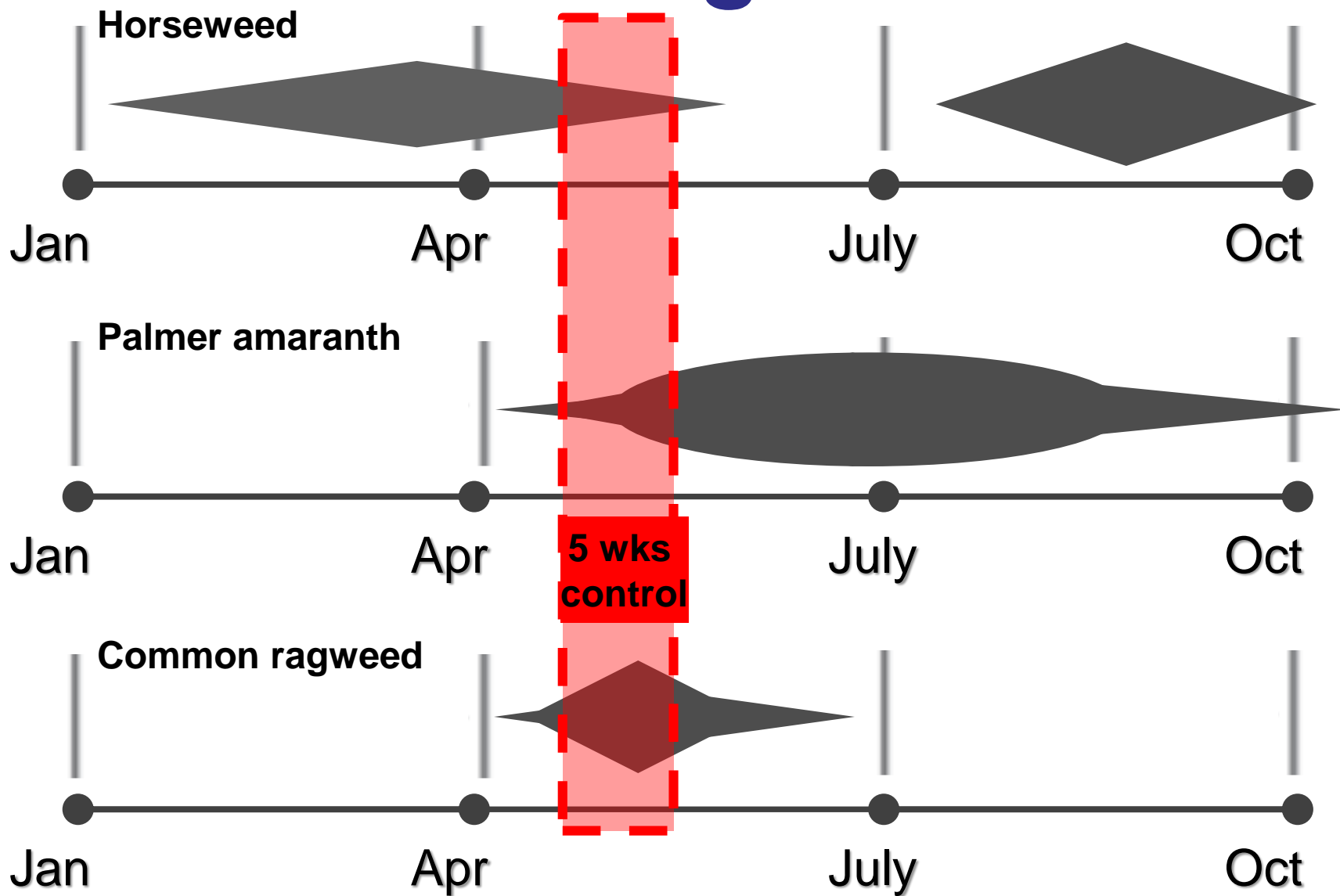
Emergence



Emergence



Emergence





**COVER CROPS FOR WEED
SUPPRESSION**



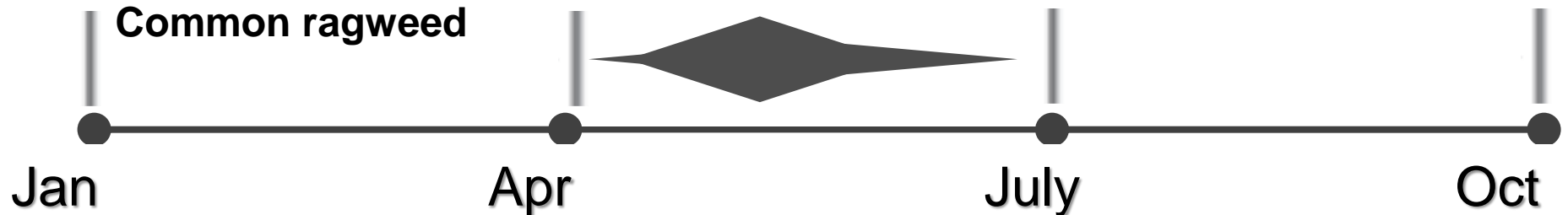
Cover Crops and Ragweed

- Ragweed is an early spring germinator
- A competitive cover crop is an excellent suppressor of seedling ragweed

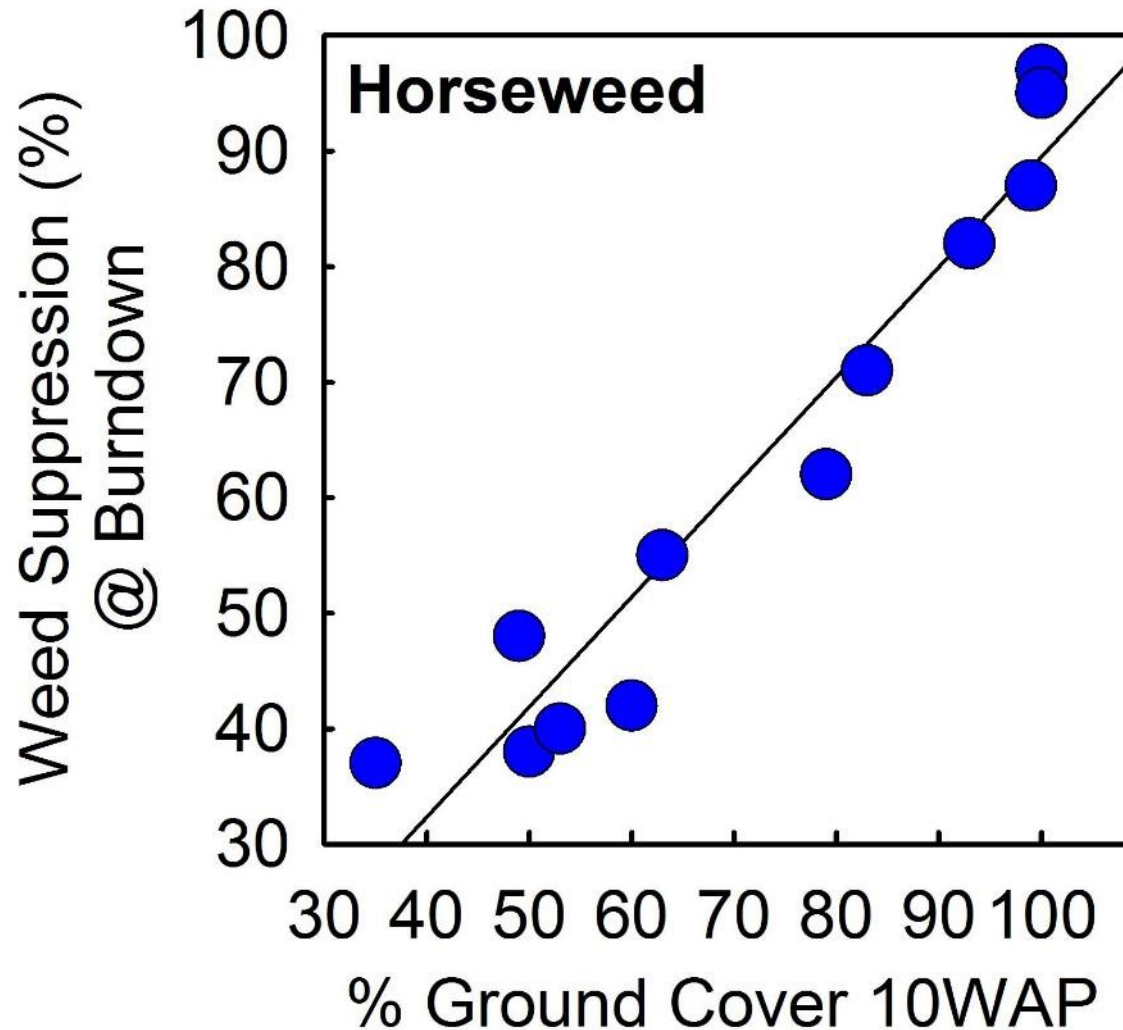
Cover Crop



Common ragweed

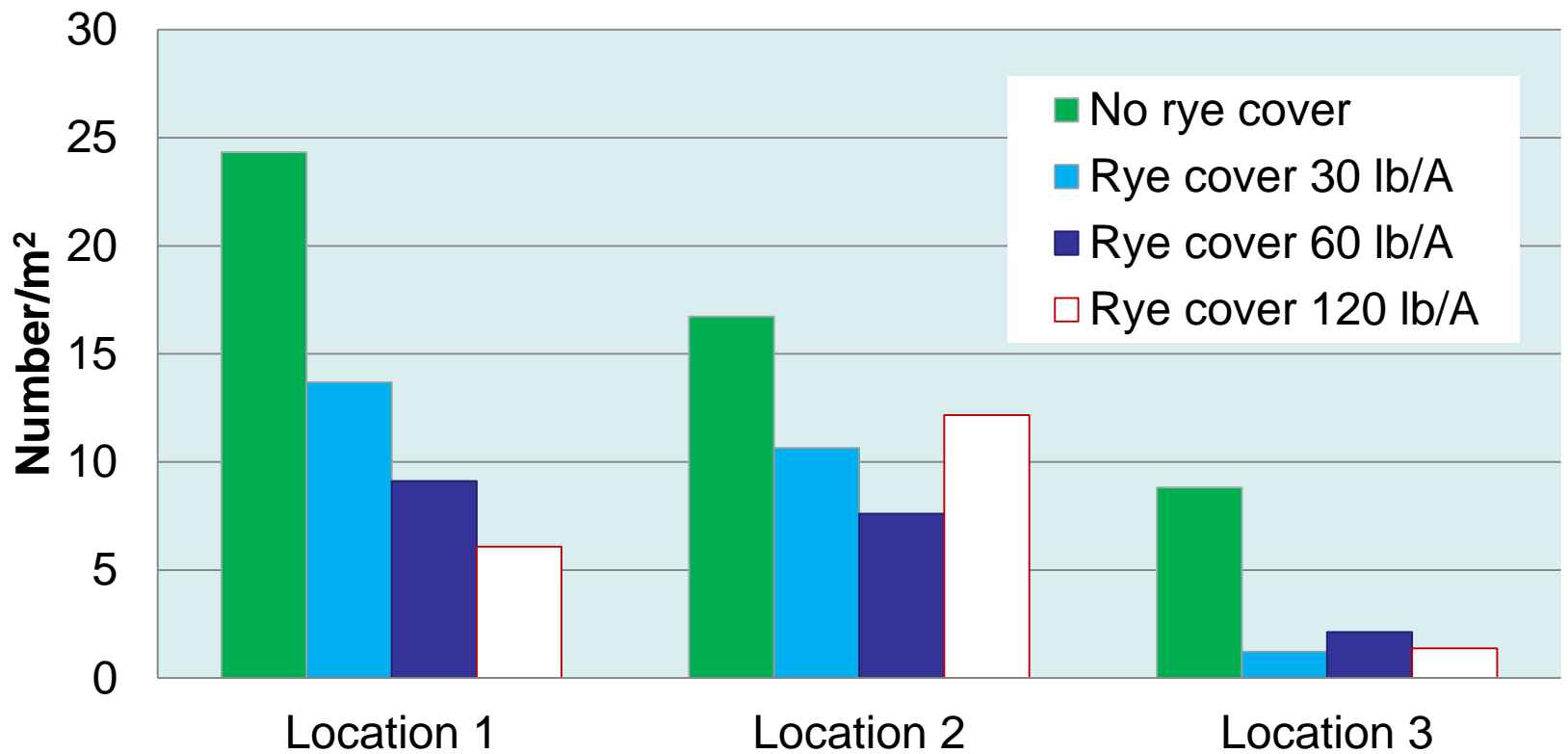


Effect of Cereal Rye Biomass on Horseweed Control: Penn State/ UDEL Study



Penn State: Herbicide Resistant Weeds in No-till Soybean-integrating cover crops

Effect of Cereal Rye on Horseweed Establishment



Horseweed / marestail is suppressed by cover crops

Ineffective herbicide at burndown
i.e. glyphosate resistant horseweed



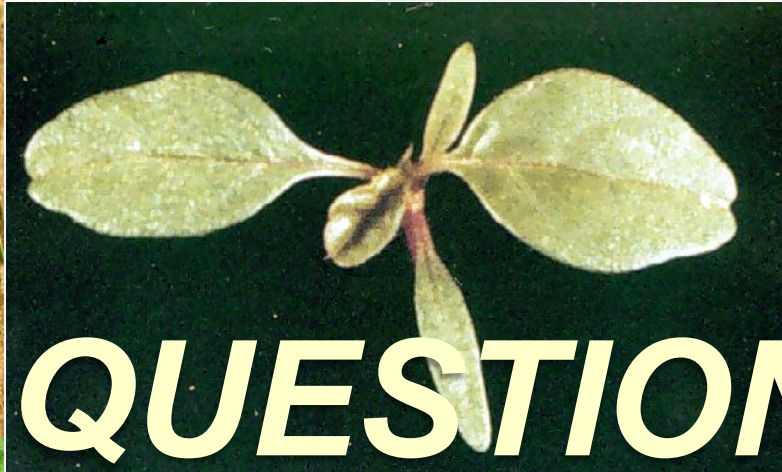
Summary

- Cover crops are used for different reasons with weed control being one of them
- Competitive cover crops during a fallow period
 - Winter annual weed suppression can be a key target
- Physical weed suppression of summer annuals
 - Increases management
 - CC biomass, termination, planting/machinery
- Cover crops should be considered for an integrated approach that considers crop rotation diversity, herbicide management, and opportunities for mechanical weed control



Wrap Up

- To achieve the best weed control, timing of application of effective herbicides is the most important consideration
 - do not allow more than 28 days between herbicide applications, until crop canopy develops
- Be cautious about overuse of PPO's
 - Group 14 herbicides
- Incorporate non-chemical strategies for resistance management



Any **QUESTIONS?**

Photo by
Richard Old
www.xidservices.com

