Targeting roots to manage spreading perennials in perennial cropping systems

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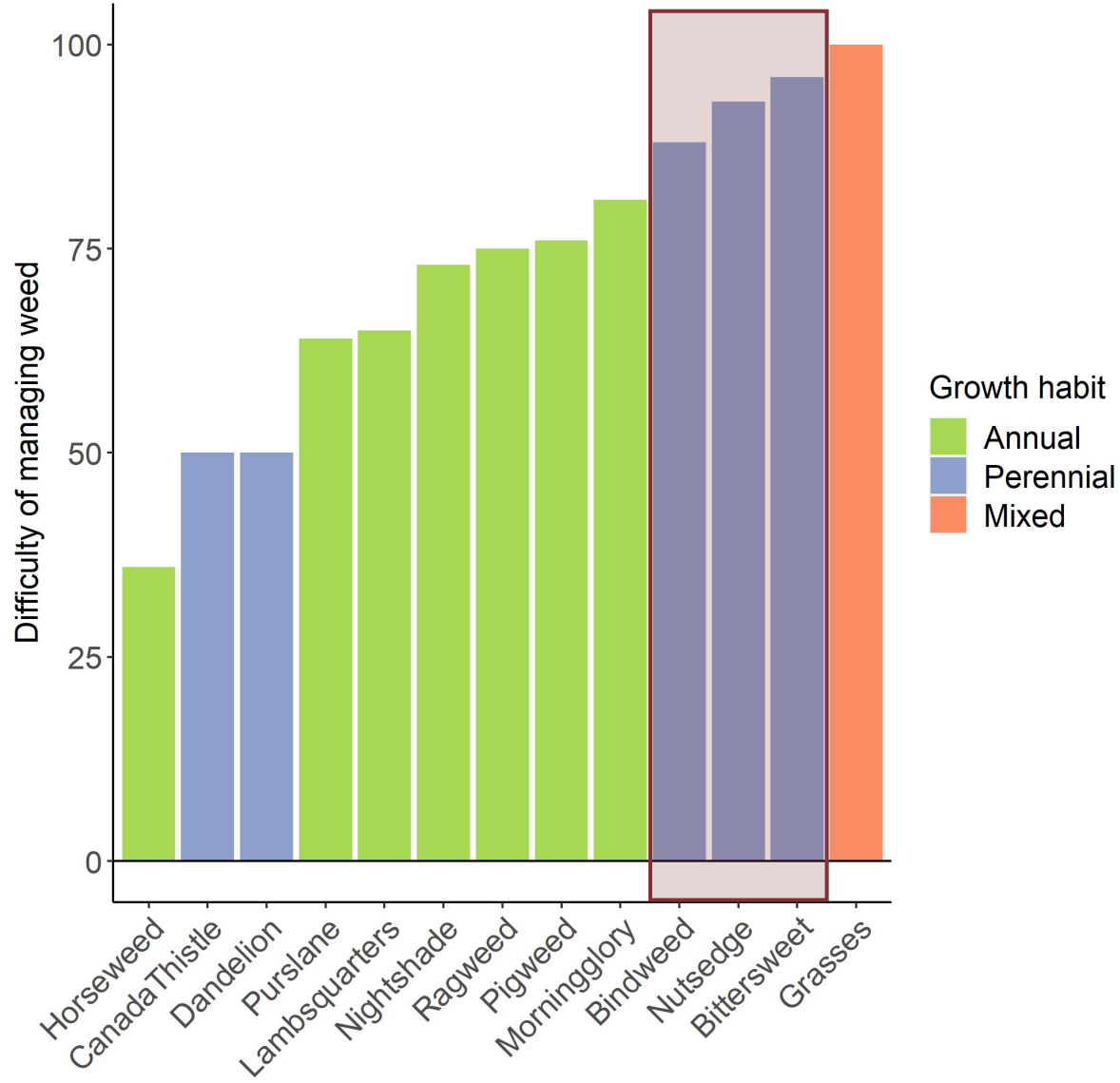
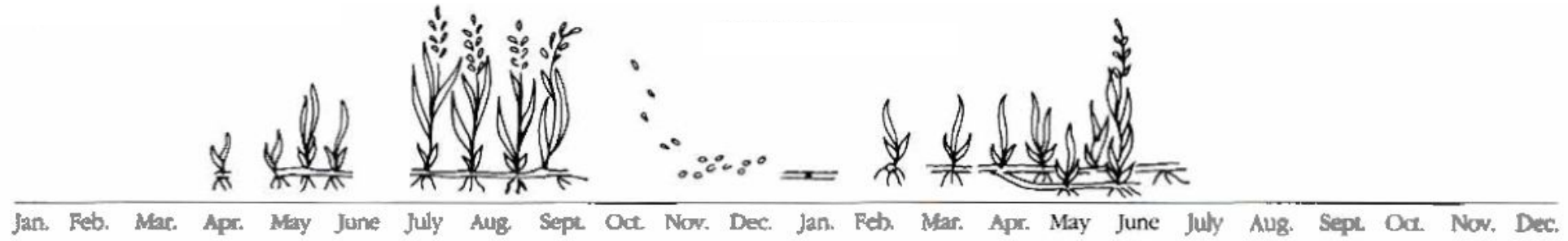
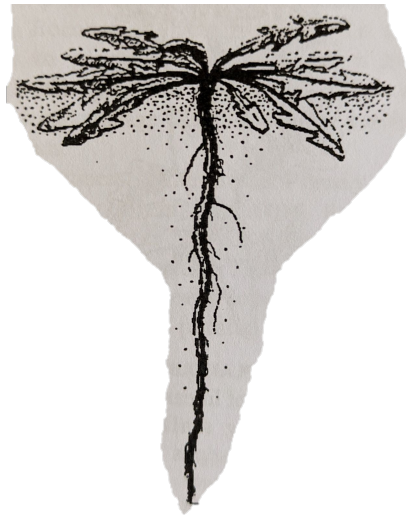


Creeping perennials spread through their extensive roots.

Creeping perennial



Simple perennial



Creeping perennials are especially challenging in perennial cropping systems.

Prepare a perennial-free site before planting.

Site selection

Site preparation

Manage site inputs carefully after planting.

Amendments

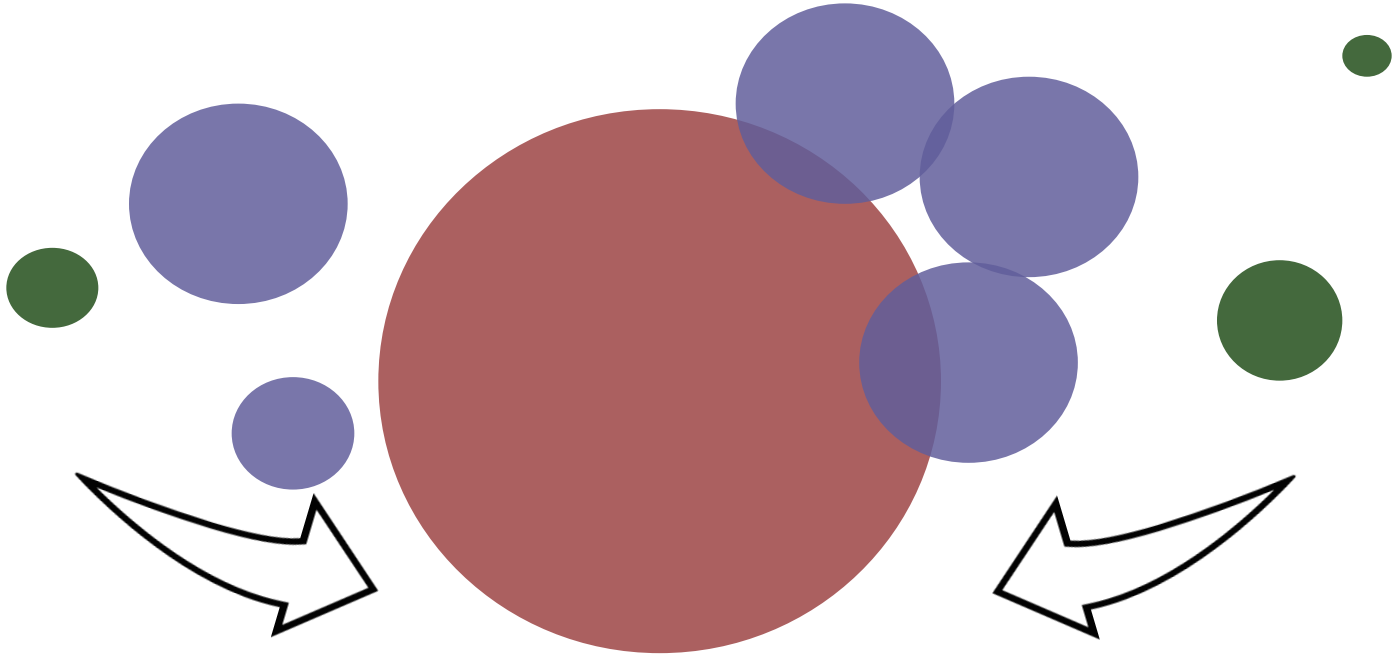
Farm equipment

Contaminated seed

Animals

Manage any seedling rhizomatous perennials as soon as you spot them.

Contain the spread of any perennial weed infestation.

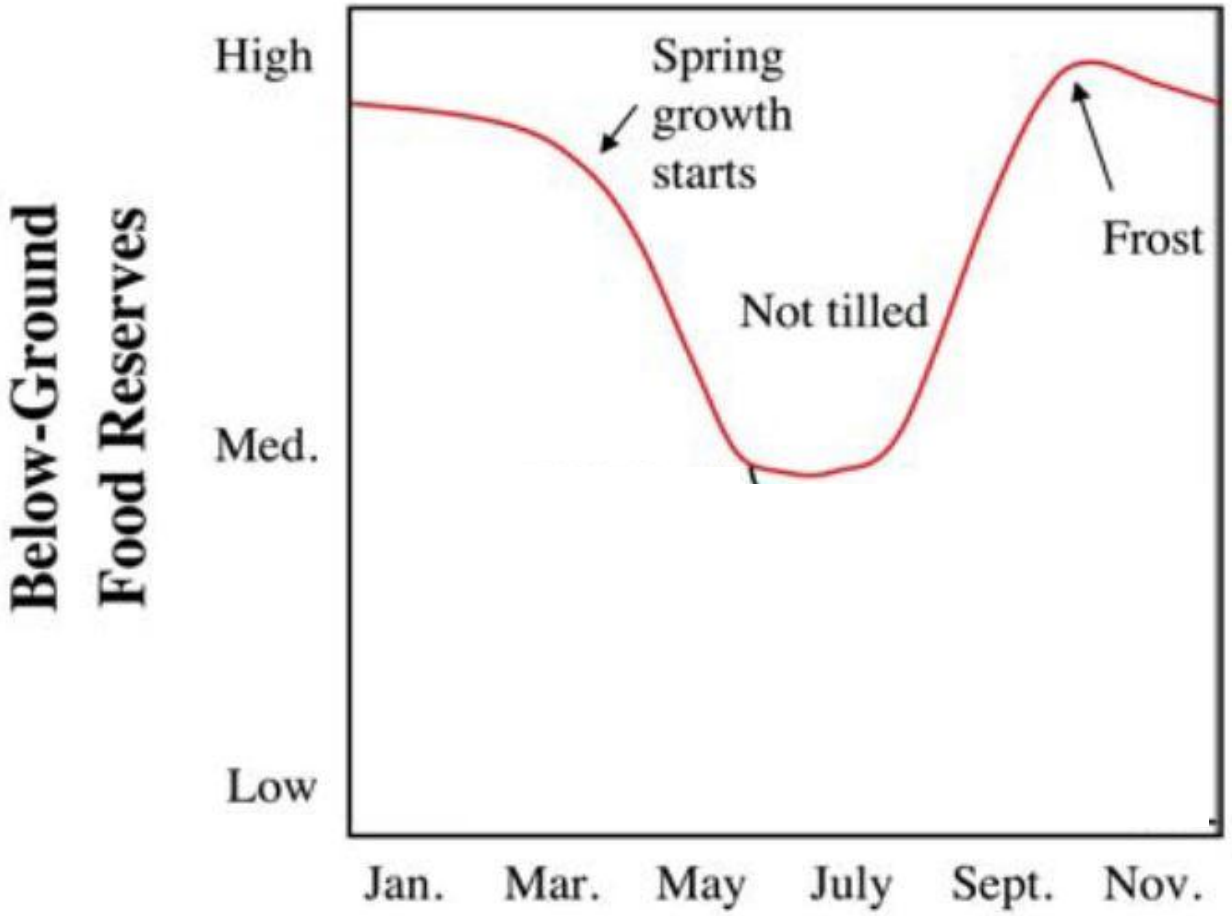


Work from the **least** to the **most** invaded sections

- Maximize uninvaded acreage
- Greater sense of accomplishment

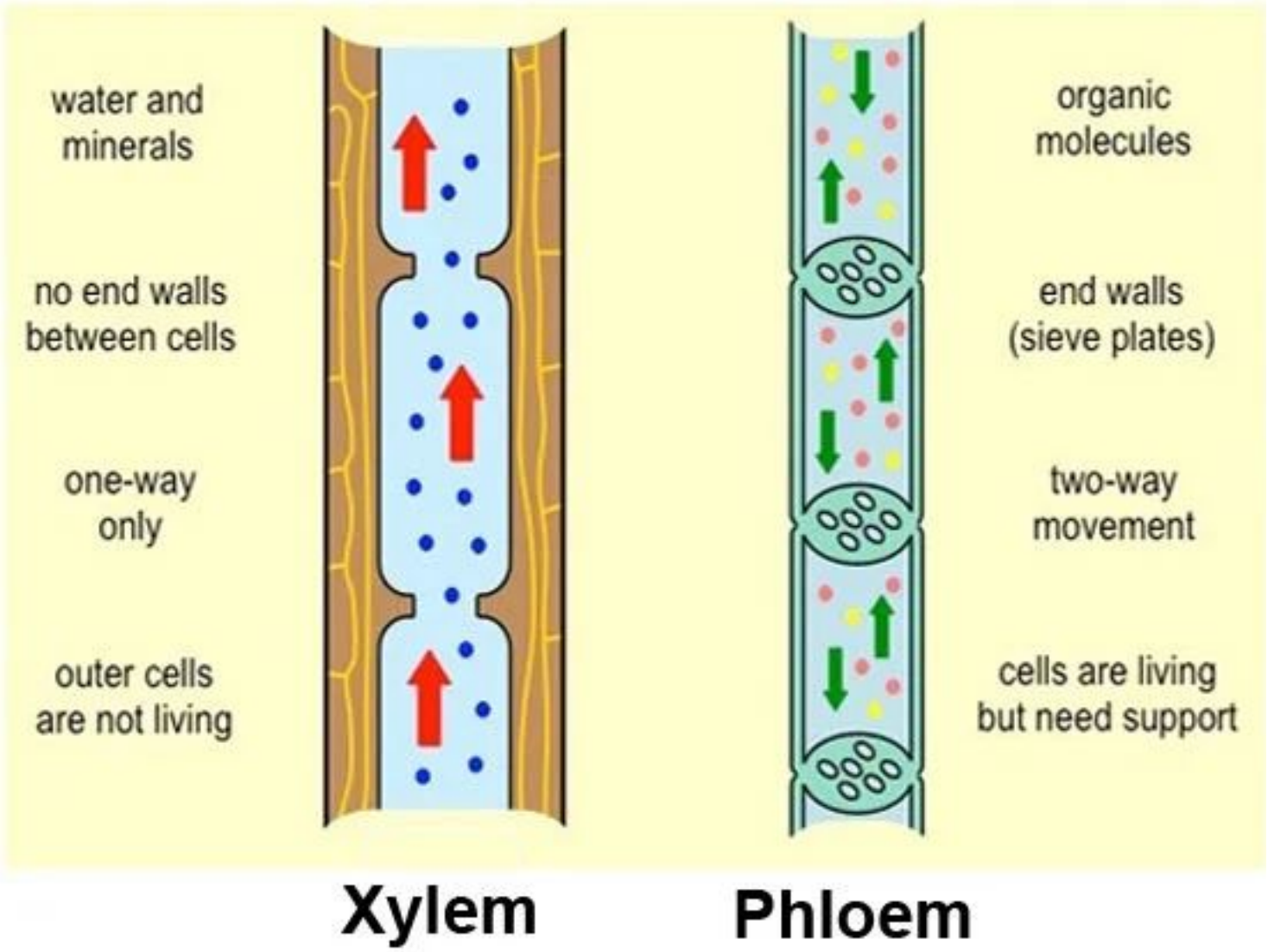
Target root reserves to control creeping perennials.

To mechanically draw down root reserves, remove aboveground growth continually for several years.



Use a systemic herbicides target root reserves.

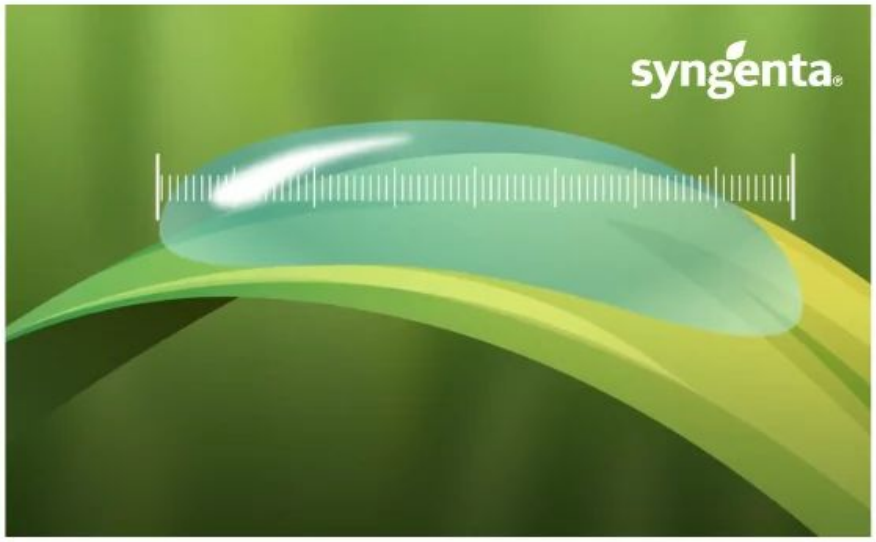
Most soil applied herbicides



Foliar applied, systemic herbicides

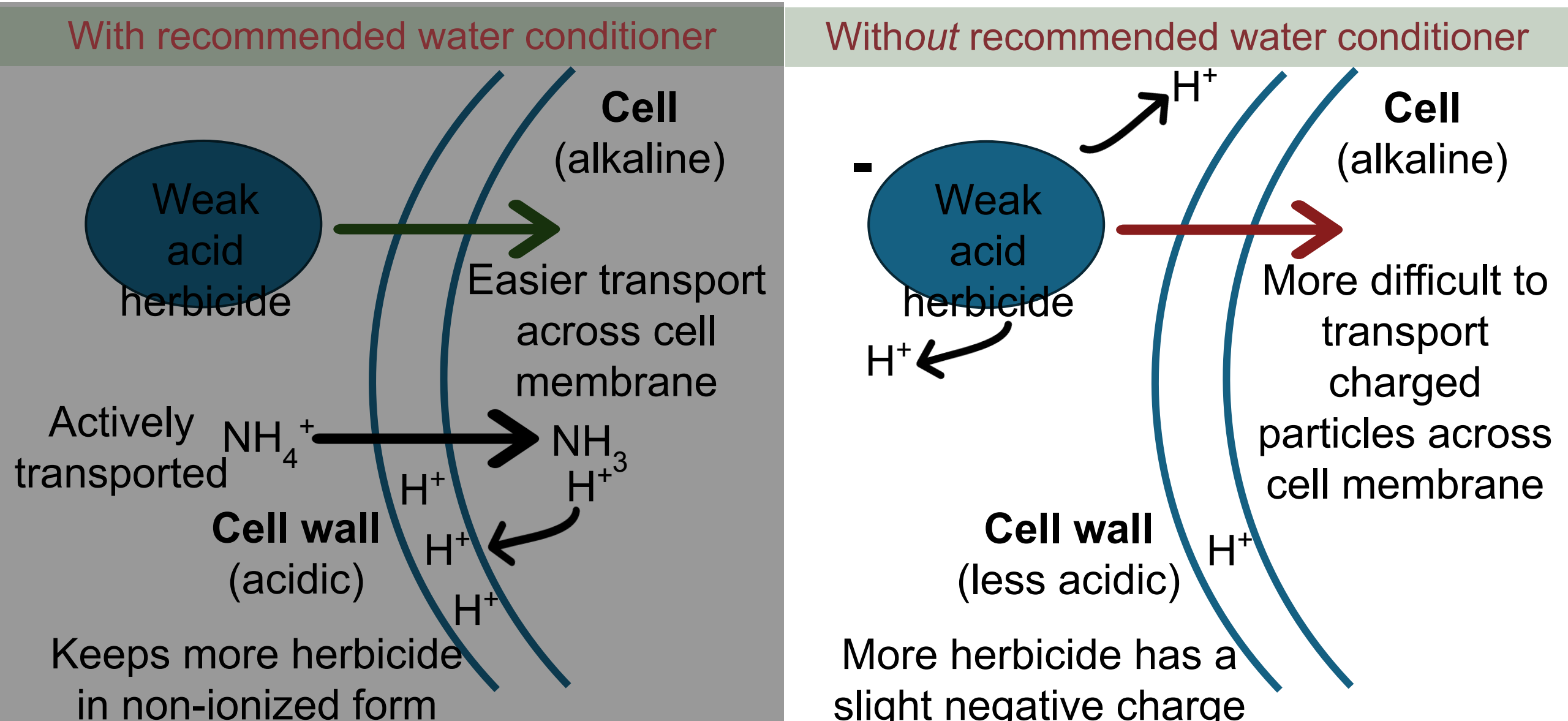
Apply to actively growing and healthy weeds for the greatest control.

Add suggested adjuvants to improve efficacy of systemic herbicides.

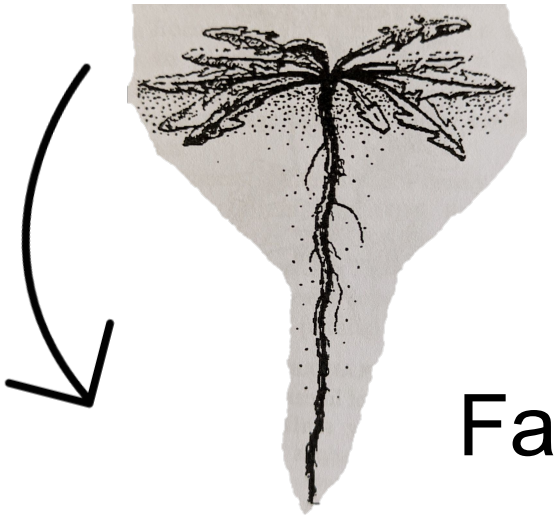


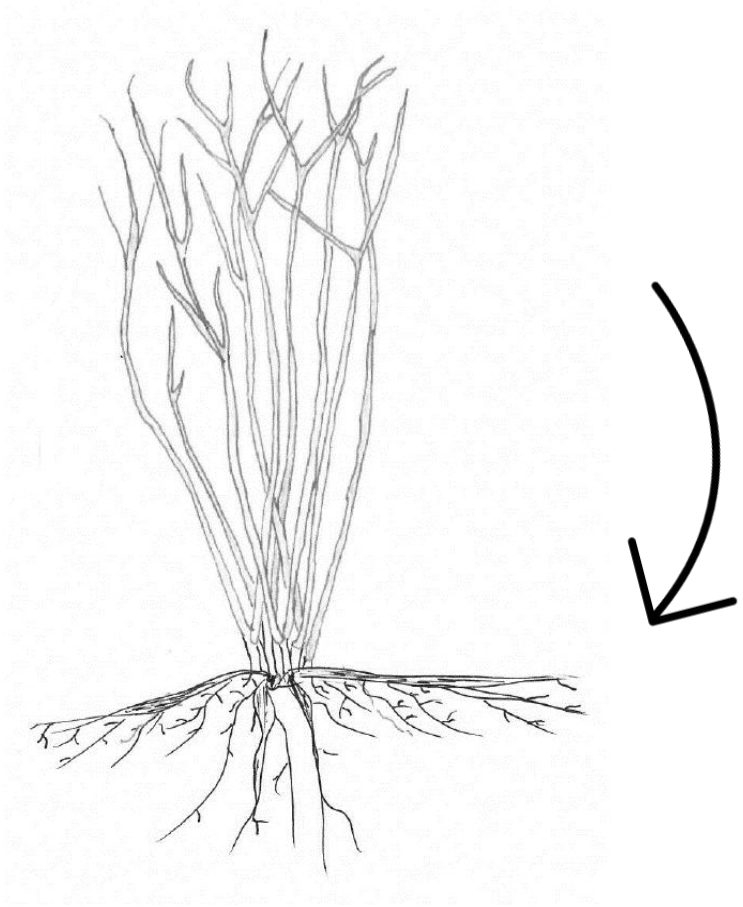
Crop oil concentrate

The pH of a systemic herbicide needs to be accurate to enter the leaf cell and then the phloem.



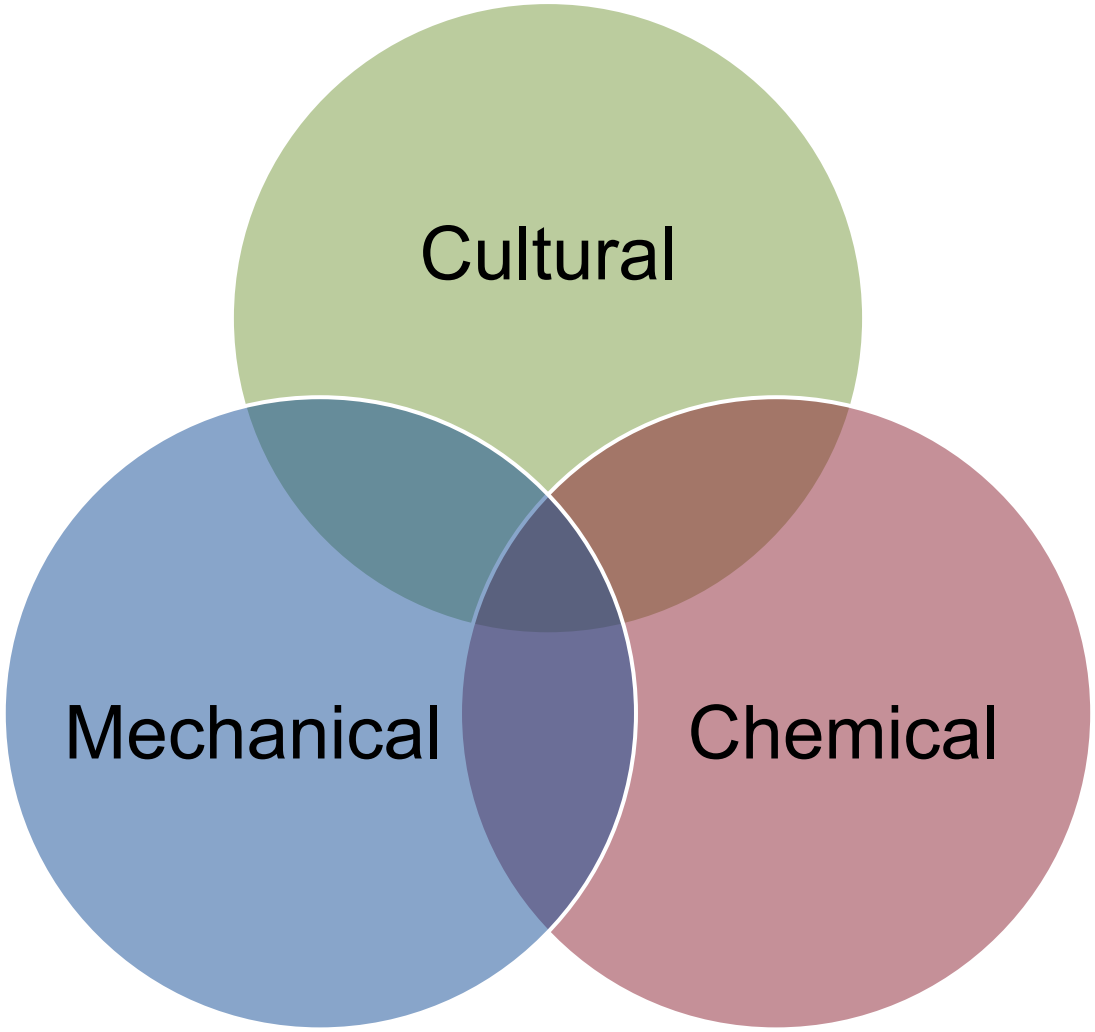
Apply systemic herbicides in the fall for the greatest efficacy.





Fall

Questions?



Group 1 herbicides target grasses.

Sethoxydim
(Poast)

Clethodim
(Select Max)

Quackgrass was controlled by both sethoxydim (Poast) and clethodim (Select Max).

Control

Select Max

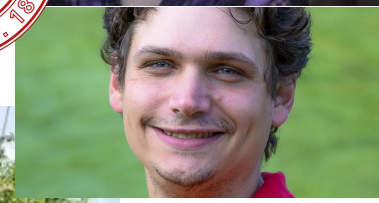
Group 4 herbicides are especially selective.

2,4-D (Embed Extra, 2021)
- many broadleaf plants, dandelion, field bindweed, common milkweed

Clopyralid (Stinger)
- composite and legume families as well as nightshades, smartweeds, plantain

Quinclorac (Quinstar)
- Several annual grasses, annual broadleaves, clover, bindweeds, Canada thistle, Russian thistle

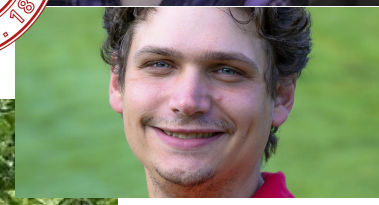
Canada thistle was controlled by clopyralid (Stinger) applied in the fall.



Control

Clopyralid

2,4-D (Unison) and clopyralid (Stinger) did not control hedge bindweed.



Control

2,4-D and Clopyralid

Quinclorac (Quinstar) provided some control of field bindweed in blueberries.

Post-emergent use in blueberries but Pre-emergent in other crops

↓

Oregon State University

↓

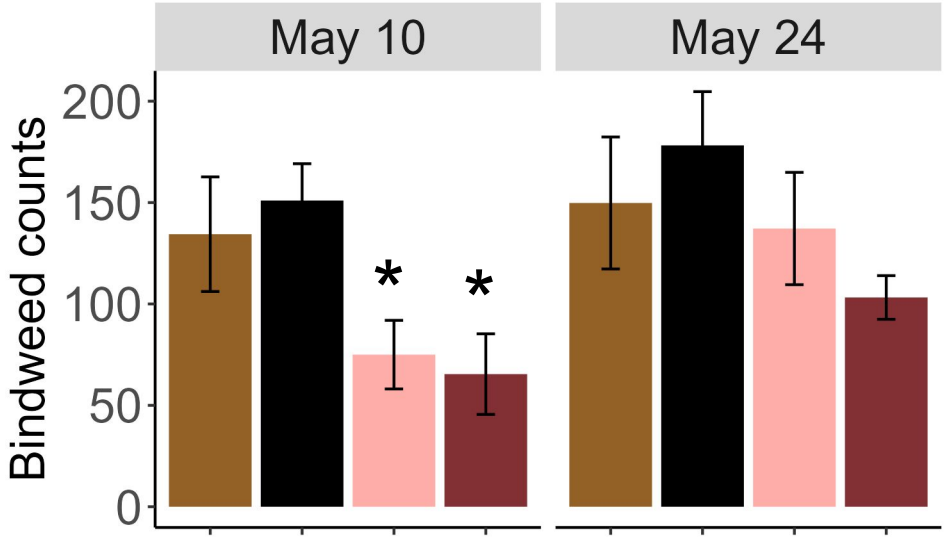
2018
Pre- and
Post-emergent

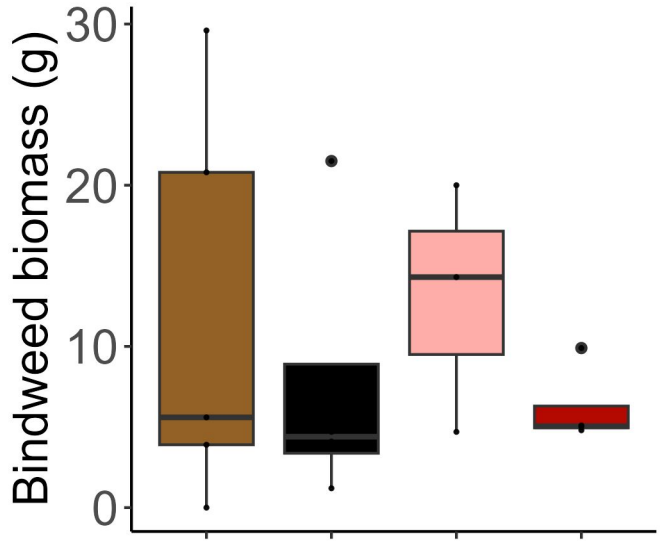
Pre- and
Post-emergent

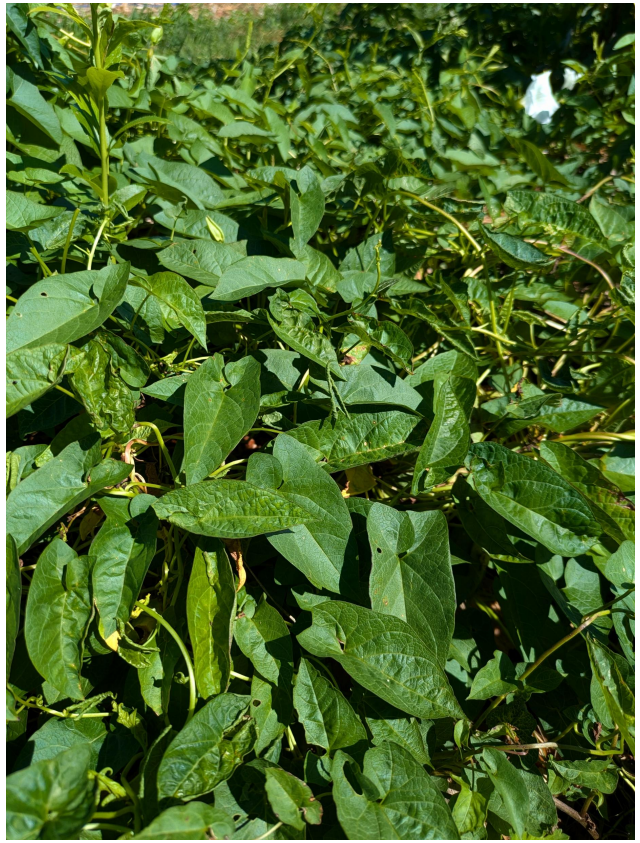
(March) (May)

Quinclorac (Quinstar) provided some control of hedge bindweed in MA blueberries.

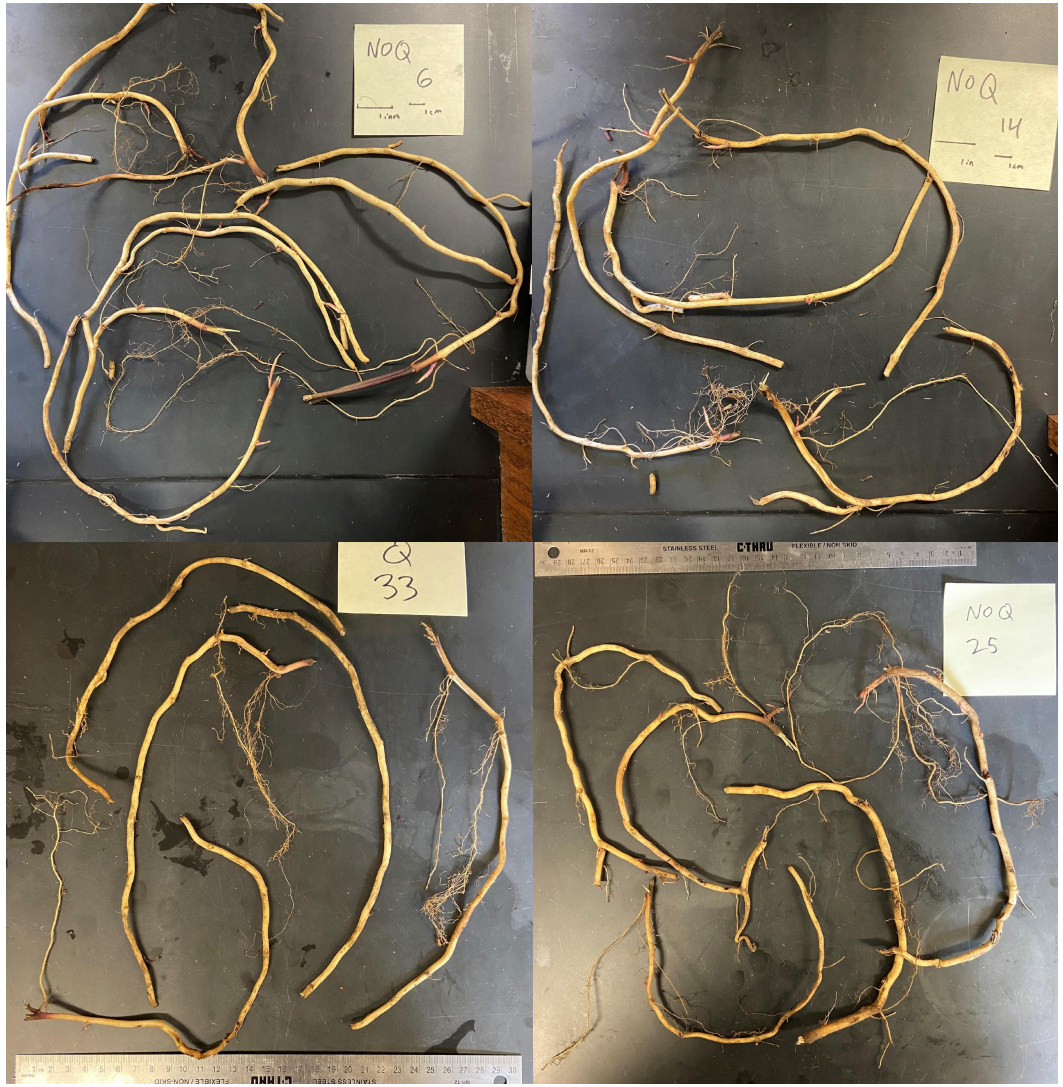
Mulch only
Current practice
Quinclorac low
Quinclorac high







Quinclorac (Quinstar) did affect bindweed root growth.



No quinclorac

High rate of quinclorac

Halosulfuron (Sandea) is useful for controlling yellow nutsedge and glyphosate (Roundup) is non-selective.

Halosulfuron (Sandea)

Use post-emergent to target nutsedge

Glyphosate (Roundup)

Shielded sprayer recommended

(*halosulfuron and 2,4-D as well!)

Target root reserves to control creeping perennials.