

Problem Weeds and What to Do About Them

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Early Detection of New Weeds

- **Identify the weed species**
 - Weed ID books
 - Consult with county extension office
- **Select control options**
 - Easier to control prior to population spreading
 - Mechanical or physical removal often possible
- **Review growing conditions and management practices**
 - Modifications can reduce spread and growth of weeds
 - Promote competition of the pasture grasses



Cultural control



Broomsedge, check pH

A photograph of a field of green vegetation, likely a grassland or meadow. The plants are dense and green, with some taller, thin stalks. Two orange markers are visible: one in the upper center and one in the lower center. The markers are small, rectangular pieces of wood or plastic. The overall scene is a natural, outdoor setting with bright green foliage.

Dogfennel



Restrictions

Group 3 Herbicide

Supplemental Label



For use in cool-season forage grasses grown for forage or hay production, or in pastures or rangeland

This supplemental label expires April 30, 2019, and must not be used or distributed after this date.

Active Ingredient*:	
pendimethalin; N-(1-ethylpropyl)-3,4-dimethyl-2,6-dinitrobenzenamine	38.7%
Other Ingredients:	61.3%
Total:	100.0%

*1 gallon contains 3.8 pounds of pendimethalin formulated as an aqueous capsule suspension.

EPA Reg. No. 241-418
CAUTION

Directions For Use

- It is a violation of federal law to use this product in a manner inconsistent with its labeling.
- The supplemental labeling and the entire Prowl H₂O herbicide container label, EPA Reg. No. 241-418, must be in possession of the user at the time of application.
- Read the label affixed to the container for Prowl H₂O before applying.
- Use of Prowl H₂O according to this labeling is subject to the use precautions and restrictions imposed by the label affixed to the container for Prowl H₂O.

Product Information

Prowl H₂O is a selective herbicide for controlling most annual grasses and certain broadleaf weeds as they germinate. Refer to the Prowl H₂O container label for a complete list of weeds controlled.

Application Instructions

Prowl H₂O may be applied by ground or chemigation, by air, or on dry bulk fertilizer.

Use Method, Rate, and Timing

Established Perennial Cool-season Grasses

Apply Prowl H₂O to solid stands of perennial cool-season forage grasses [including bentgrass, bluegrass (Kentucky), bromegrass, fescue (fine, tall), orchardgrass, perennial ryegrass, timothy, wheatgrass, and others] grown for forage, green chop, silage, hay production, and/or grown in pastures or rangeland for livestock grazing.

Apply Prowl H₂O only to established (grass with 6 or more tillers per plant) perennial cool-season grasses.

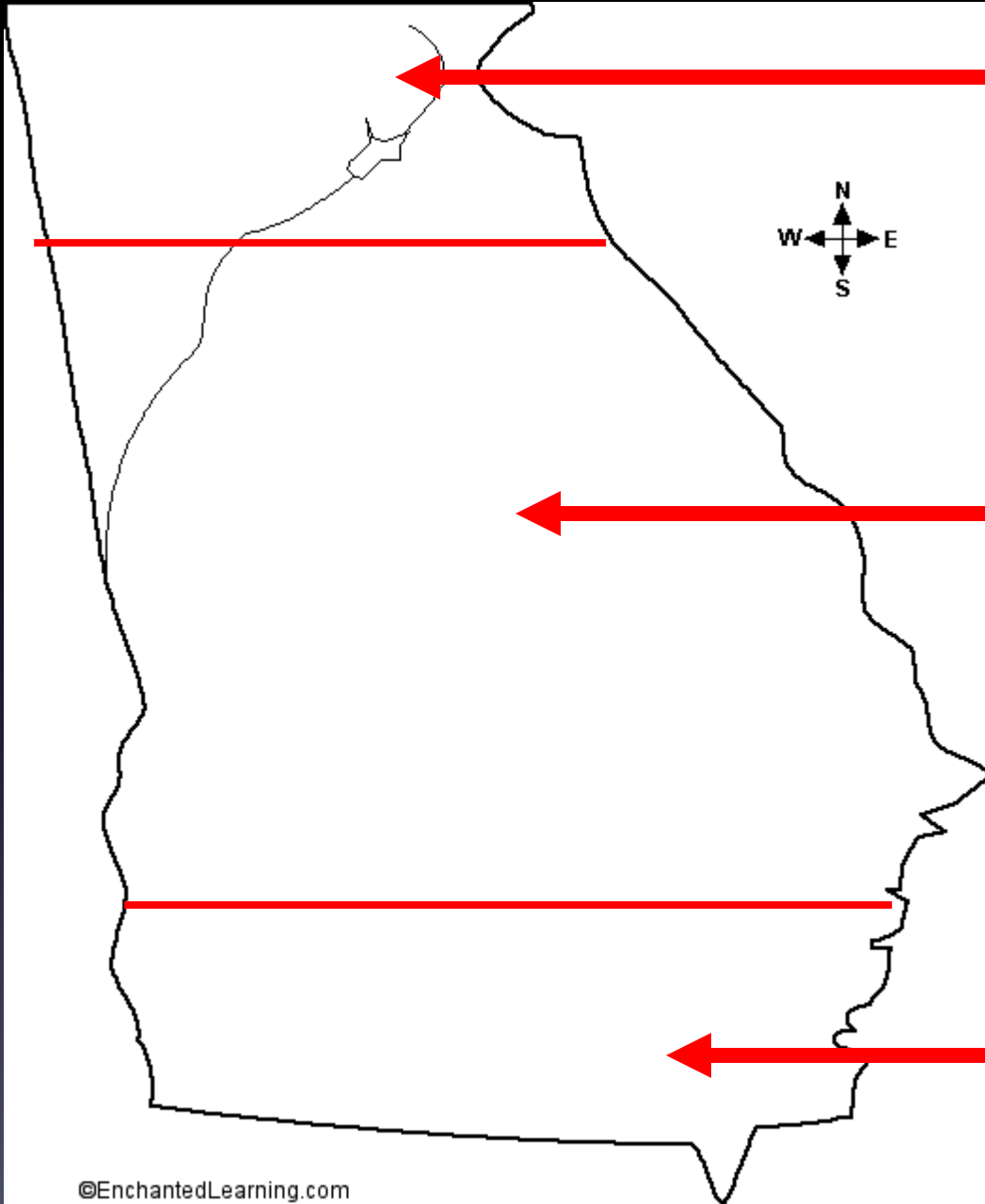
Apply Prowl H₂O before target weed germination in fall after the last cutting/mowing/grazing, in winter, in spring, or in-season between cuttings.

Uniformly apply at a broadcast rate of 1.1 quarts (1.0 lb ai/A) to 4.2 quarts (4.0 lbs ai/A) of Prowl H₂O per acre in a single application or sequential applications made 30 or more days apart.

- Do not exceed 4.2 qt/a per year
- Do not apply to mixed stands of grasses with legumes (other than alfalfa)
- There is no pre-harvest or pre-grazing interval restriction
- Mixed stands of grasses and alfalfa may be grazed or harvested 14 or more days after applications

BASF Corporation
26 Davis Drive, Research Triangle Park, NC 27709

BASF
We create chemistry



March 1 to April 1

March 1 to 20

**January 1 to
March 1**

Extending the Length of Annual Weed Control

- Apply split applications 6-8 weeks apart
 - Split in between cuttings
- For example, Prowl H₂O at 4.2 qts/acre
 - **In March**, apply 2.1 qts /acre
 - **In mid-June**, apply 2.1 qts/acre

Annual Grassy Weed Control (Crabgrass, Sandbur, Foxtails, Goosegrass)

- **Bermudagrass**

- Consider tank-mixtures of Pastora + Prowl H₂O
- Sequential treatments or tank-mixtures

- **Bahiagrass**

- No POST herbicides for crabgrass, Prowl timing is critical

- **Tall fescue**

- Prowl H₂O treatments
- Facet (quinclorac) + Prowl H₂O for crabgrass and annual foxtails

Annual Grassy Weed Control (Crabgrass, Sandbur, Foxtails, Goosegrass)

Bermudagrass

- Preemergence control critical
 - Prowl H2O (pendimethalin) at 3.1 to 4.2 qt/acre
 - Apply when soil temps are in low 50's
- Postemergence control
 - Pastora: 1 to 1.5 oz/acre (early-POST)
 - Impose: 4 to 8 oz/acre (early to late POST)



Annual Grassy Weed Control (Crabgrass, Sandbur, Foxtails, Goosegrass)

Bermudagrass

- Pastora
 - May be applied 7 days after cutting
 - Does not have haying restrictions
 - Little to no reductions in yield after treatments
- Impose
 - More injurious than Pastora on bermudagrass
 - Can reduce initial yield up to 50%
 - 7 day cutting restriction



Annual Grassy Weed Control (Crabgrass, Sandbur, Foxtails, Goosegrass)

- **Bahiagrass**

- Prowl applications (PRE control)

- **Tall fescue**

- Facet as an early POST treatment (64 oz/acre)

- Does not control goosegrass or sandbur

- Promote stand density in early spring



Pre-Plant Weed Control

- **Bermudagrass**
 - Diuron: applied before sprigging in summer
 - Must be applied pre-plant, may stunt growth
 - Not labeled for grazed pastures
- **Alfalfa (may have yield reduced in first year)**
 - EPTC (Eptam): 3.5 pt/acre
 - Benefin (Balan): 2 lb/acre
- **Other species**
 - No pre-plant options
 - Consider glyphosate or paraquat prior to planting to control seedlings

Yellow Foxtail

Giant Foxtail



Cultural Control options:
Keep foxtail mowed down
Roundup and reseed/replant
Promote competition

Green and Yellow Foxtail Control

Common Name	Trade Name	Control
imazapic	Impose*	G
imazamox	Raptor	F-G
imazethapyr	Pursuit	G
nicosulfuron + metsulfuron	Pastora	F-G
pendimethalin (PRE)	Prowl	F
sethoxydim	Poast*	E

*Grazing restrictions

Knotroot Foxtail





Knotroot Foxtail Control



- Prowl not effective
- Pastora + glyphosate
(partial control/suppression)
- Spot treat glyphosate



Suppression of invasive weeds:

Dogfennel

Broomsedge

Vaseygrass



Control Perennial Weeds in Fall with Herbicides





Sedge Control

Imazapic (Impose)

Halosulfuron (Sandeia)

Sulfosulfuron (Outrider)

Fall herbicide applications



Blackberry control with Remedy, 1 qt/ac, Fall application, 6 MAT

Horsenettle



Warm-season perennial
Rhizomatous growth
Poisonous to livestock

Mow in summer, treat in fall

Horsenettle Control

Common Name	Trade Name	Control
2,4-D	various	P
2,4-D + dicamba	Weedmaster	F
2,4-D + picloram	Grazon P + D	G-E
2,4-D + triclopyr	Crossbow	P-F
aminopyralid	Milestone	E
aminopyralid + 2,4-D	GrazonNext	E
dicamba	Banvel, Clarity	G
metsulfuron	Cimaron, others	P
metsulfuron + chlorsulfuron	Cimarron Plus	P-F
metsulfuron + 2,4-D + dicamba	Cimarron Max	P-F
picloram + fluroxypyr	Surmount	E
triclopyr	Remedy	F

Plant Back Concerns for Fall

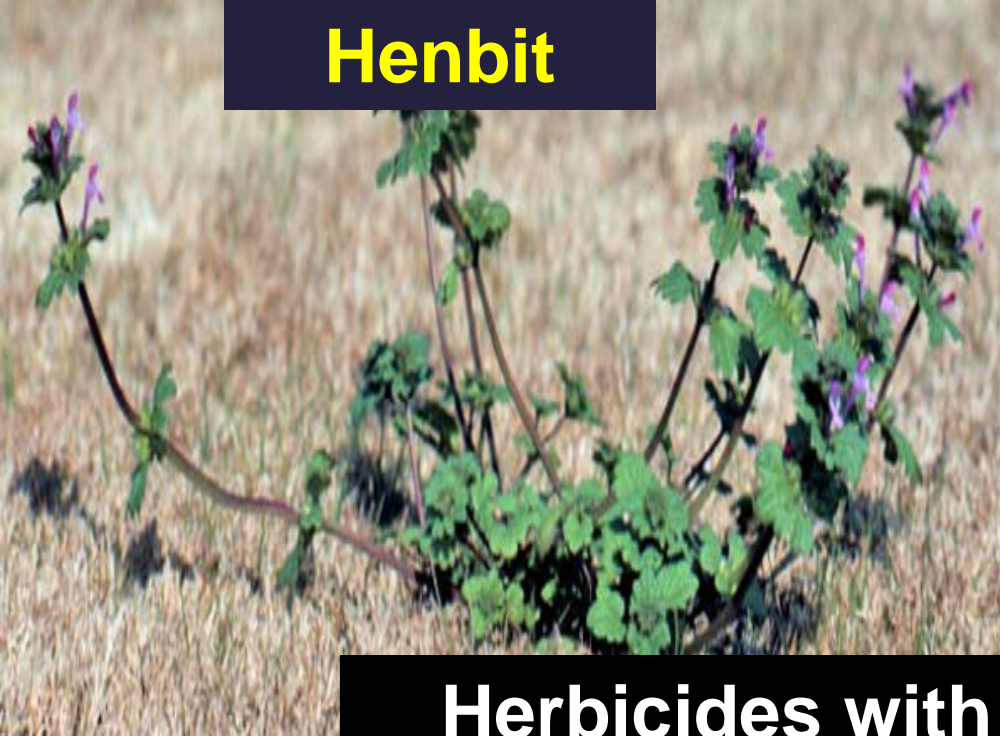
Grasses

- GrazonNext – 15 days prior to planting
- Chaparral – 30 days prior to planting
- PastureGard – day of planting
- Pastora - 4 months

Legumes (examples)

- 2,4-D – 3 to 4 weeks
- PastureGard – 1 month
- GrazonNext – bioassay recommended
- Chaparral – bioassay recommended
- Milestone – bioassay recommended
- Pastora – 12 months

Henbit



Hop Clover



**Herbicides with residual activity
(Grazon, Milestone, Remedy, others)**



Hairy Bittercress



**Pastora 1.5 oz/acre + Roundup at 8 fl
oz/acre + NIS 0.25% v/v**



56 DAT



Vaseygrass

Control in pastures:

Imazapic (Impose)

Pastora (nicosulfuron +
metsulfuron)

sethoxydim

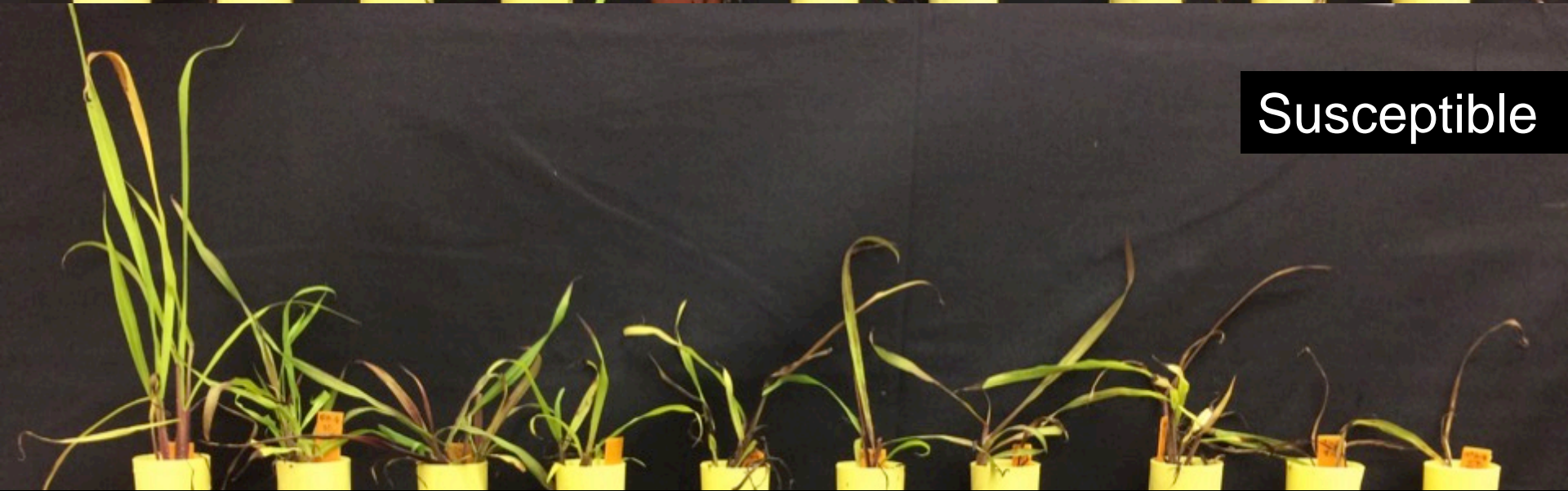
Vaseygrass Control in Pastures

WSSA Group	Common Name	Trade Name
1	sethoxydim	Poast, others
2	nicosulfuron + metsulfuron	Pastora
2	imazapic	Impose
9	glyphosate	various

Resistant



Susceptible



0 8.8 17.5 35 70 140 280 560 1120 2240
imazapic (g ae ha⁻¹)



R

S

Nontreated



R

S

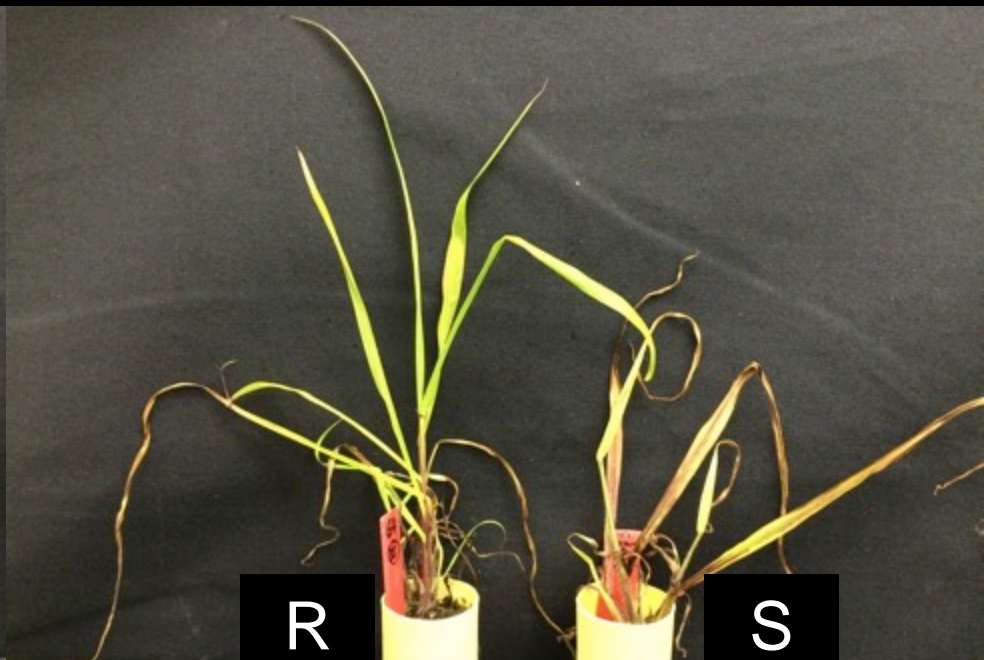
Impose (imazapic)



R

S

Oust (sulfometuron)



R

S

Accent (nicosulfuron)

Vaseygrass Control Options

- **Control considerations**
 - Make treatments when plants are about 18” or smaller
 - Mowing will suppress growth and enhance control from herbicides
 - Use high quality adjuvant with vaseygrass herbicides
- **Fall vs. spring**
 - Spring treatments will suppress populations
 - Fall is best time of year for long-term control









Yellow Nutsedge





Terminal tubers

Sedge Control in Pastures

- Cultural
 - Reduce moisture, improve drainage
 - Early detection is critical
- Chemical
 - Bermudagrass and bahiagrass: Outrider, Impose, Sandea
 - Perennial peanut: Impose
 - Other species: no control options available
 - Consider fall applications for controlling perennial sedges

Ryegrass (*Lolium* spp.)

- Transition out overseeded ryegrass in bermudagrass
 - Competitive growth in spring
 - Causes thinning of pasture grasses in early summer
- Hayfields
 - Increases maintenance costs
 - Yield losses
 - Establishment of summer weeds





Herbicide resistant ryegrass

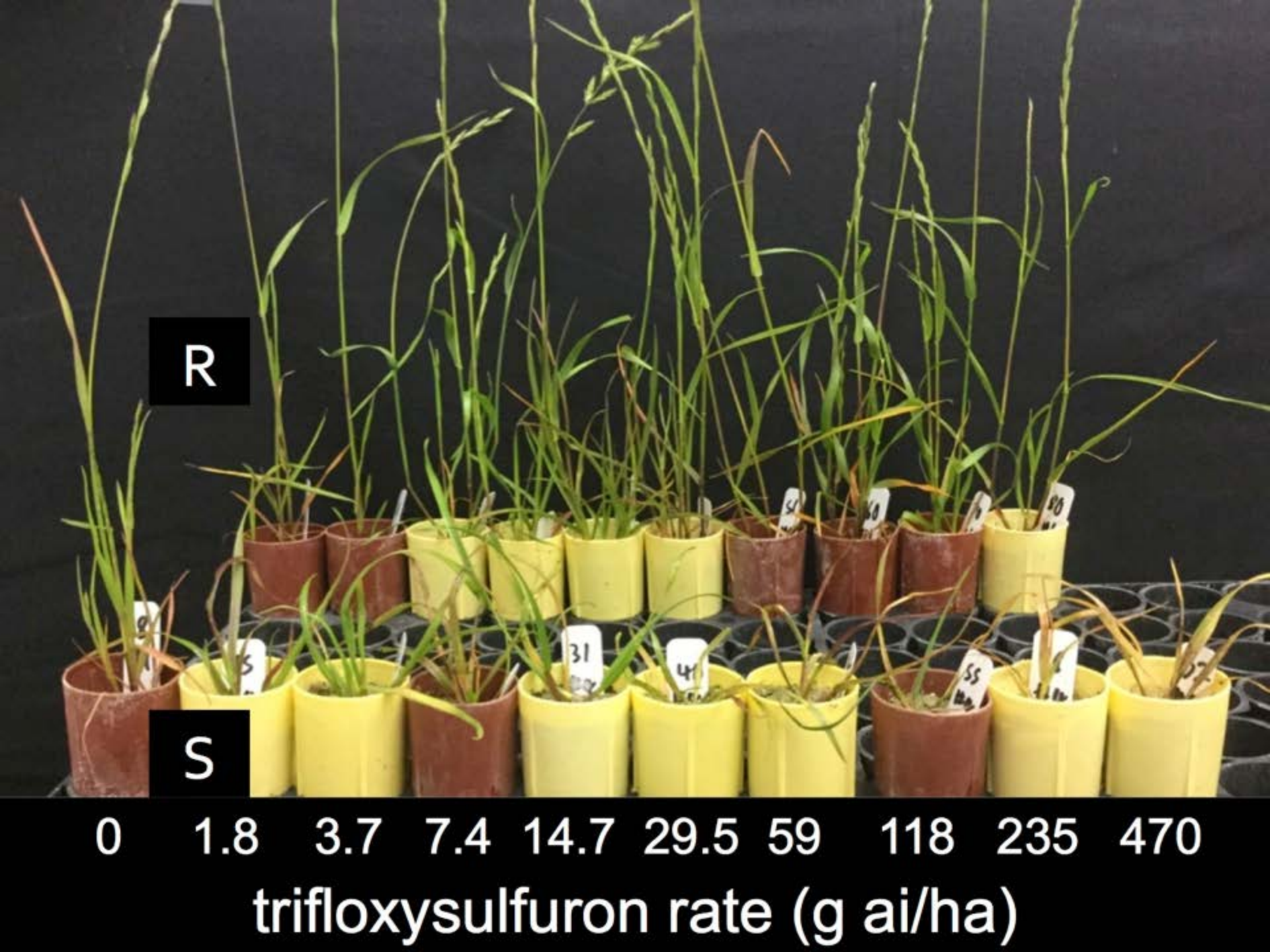
- Altered site of action
- Overproduction of target site enzyme
- Enhanced metabolism
- Sequestration

R

S

0 1.8 3.7 7.4 14.7 29.5 59 118 235 470

trifloxysulfuron rate (g ai/ha)



Popular Herbicides For Ryegrass Control

WSSA Group	Common Name	Trade Name
1	sethoxydim	Poast, others
2	metsulfuron	Cimarron, others
2	nicosulfuron + metsulfuron	Pastora
2	imazapic	Impose
9	glyphosate	Roundup, others

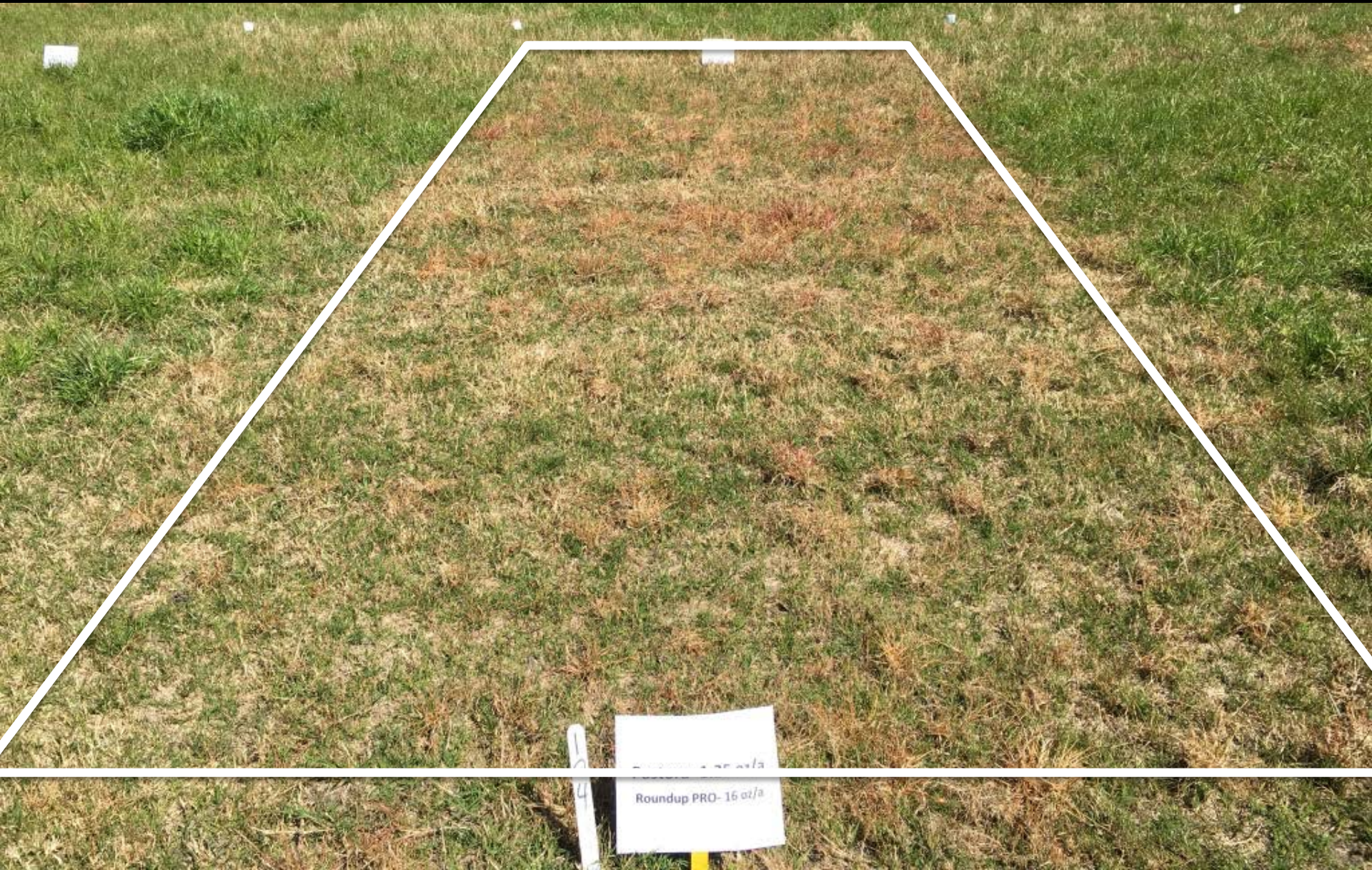
Pastora at 1.25 oz/acre in February (ALS-Resistant Ryegrass)



Roundup Pro at 16 oz/acre in February (ALS-Resistant Ryegrass)



Pastora + Roundup Pro in February (ALS-Resistant Ryegrass)



Ryegrass Control

Bermudagrass

- Fall timings
 - Pastora at 1 to 1.25 oz/acre in November/December
 - Impose (Imazapic) at 4 to 6 oz/acre
 - Metsulfuron (60%) at 0.3 to 0.5 oz/acre (erratic control)
- Winter timings
 - Pastora at 1 to 1.5 oz/acre + glyphosate at moderate rates (8 to 12 oz/acre of 4 lb ai/gal product)

Ryegrass Control

- **Perennial peanut**
 - Sethoxydim (Poast)
 - Impose (Imazapic)
- **Bahiagrass**
 - Prowl (preemergence)
- **Tall fescue**
 - Prowl (preemergence)

Questions