

# **Western Weed Control**

## **Plateau and Other Chemistries**

**Jim Bean**

**Strategic Account Manager**

**Professional Vegetation Management**  
**BASF Corporation**

**150 years**

 **BASF**

We create chemistry

# Western Weed Control

150 years

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- **Base Products**

- Plateau
- Overdrive

- **New Products**

- Detail
- Frequency

- **Tips For Success**

# Plateau Review

**BASF**  
Herbicides

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- Unique product for selective grass control
  - Native grass restoration
- Post-emerge control + residual soil activity
- Non-restricted use
- No grazing restrictions
- 7 day haying restriction
- Can be used near sensitive crops
- Clean, easy to use liquid formulation
  - No odor, non-volatile

**PLATEAU**  
herbicide  
QUALITY TAKES TIME.

# Plateau Review

## ■ Important Species Controlled

- Medusahead
- Cheatgrass
- Downey Brome
- Leafy Spurge
- Japanese Brome
- Russian Knapweed
- Dalmatian Toadflax
- Many others

# Medusahead

- 1200 acre site near Drewsey, WA
- Sprayed 2011
- Medusahead controlled and desirable native vegetation is now dominating
- BLM has documented shifting of plant population toward desirable native vegetation.
- BASF has worked with BLM for over 10 years to develop protocols to support BLM rehab efforts



# Cheatgrass

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**Non-Treated**



Native Range Release Sheidan, WY

# Downey and Japanese Brome

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Downey & Japanese Brome Control

**PLATEAU**  
herbicide

# Native Vegetation Restoration

150 years



	Cheatgrass Pre-Treat	Cheatgrass Post Treat	Native Vegetation Pre-Treat	Native Vegetation Post Treat
Non-Treated	67%	75%	33%	25%
Plateau	84%	0%	16%	100%





# Native Vegetation Restoration

- **Sagebrush:**
  - **Fringed, Silver, Wyoming, Sand, etc.**
- **Antelope Bitterbrush**
- **Atroplexes – Four wing, Shadscale**
- **Mountain Mahogany**
- **Rabbit brush species**
- **Greasewood**
- **And many others**

# Tips for Success

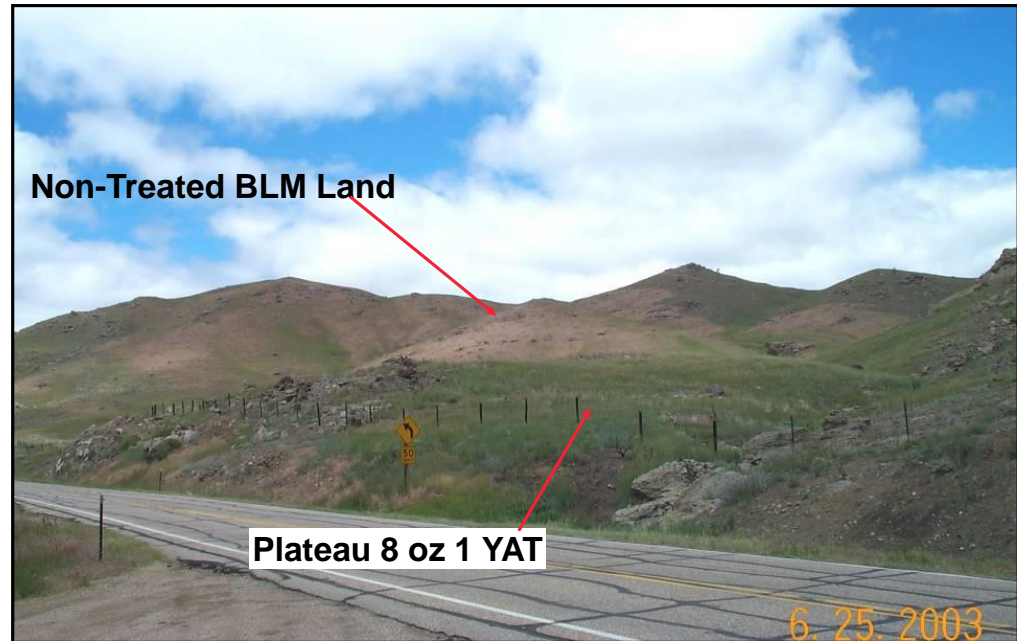
- Plateau is used in August/September as pre emerge to control Medusahead, Cheatgrass and Downey Brome emergence
- In many cases, 6 oz. per acre is the appropriate rate providing control but not damaging desirable forbs and grasses
- Use lower rate 2-4 oz. on sandy soils, with low pH or in in cool dry sites. Use higher rates in high rainfall areas
- Reducing the thatch layer through burning or heavy grazing will greatly improve performance
- Add 1% MSO for post-emergent applications

# Plateau Summary

150 years

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- Outstanding product with many unique uses
- Contact and residual control
- Reduces fire hazards
- Restore native plants
- Improves grazing quality



# Overdrive Review

- Overdrive contains a novel active ingredient
  - Diflufenzopyr + Dicamba
  
- Diflufenzopyr is a member of a unique class of chemistry
  - Semicarbazone
  - Polar auxin transport inhibitor (ATI)
    - Fast, long-term control of broadleaf weeds
    - Lower rate of active ingredient
    - Better efficacy
    - The tank mix platform

# Broadleaf Weeds Controlled

## ■ Control of over 90 annual broadleaves including:

- Waterhemp/pigweed
- Kochia
- Russian thistle
- Maretail (horseweed)
- Woolly and tropic croton
- Sowthistle
- Bitter sneezeweed
- Prostrate spurge
- Prickly lettuce

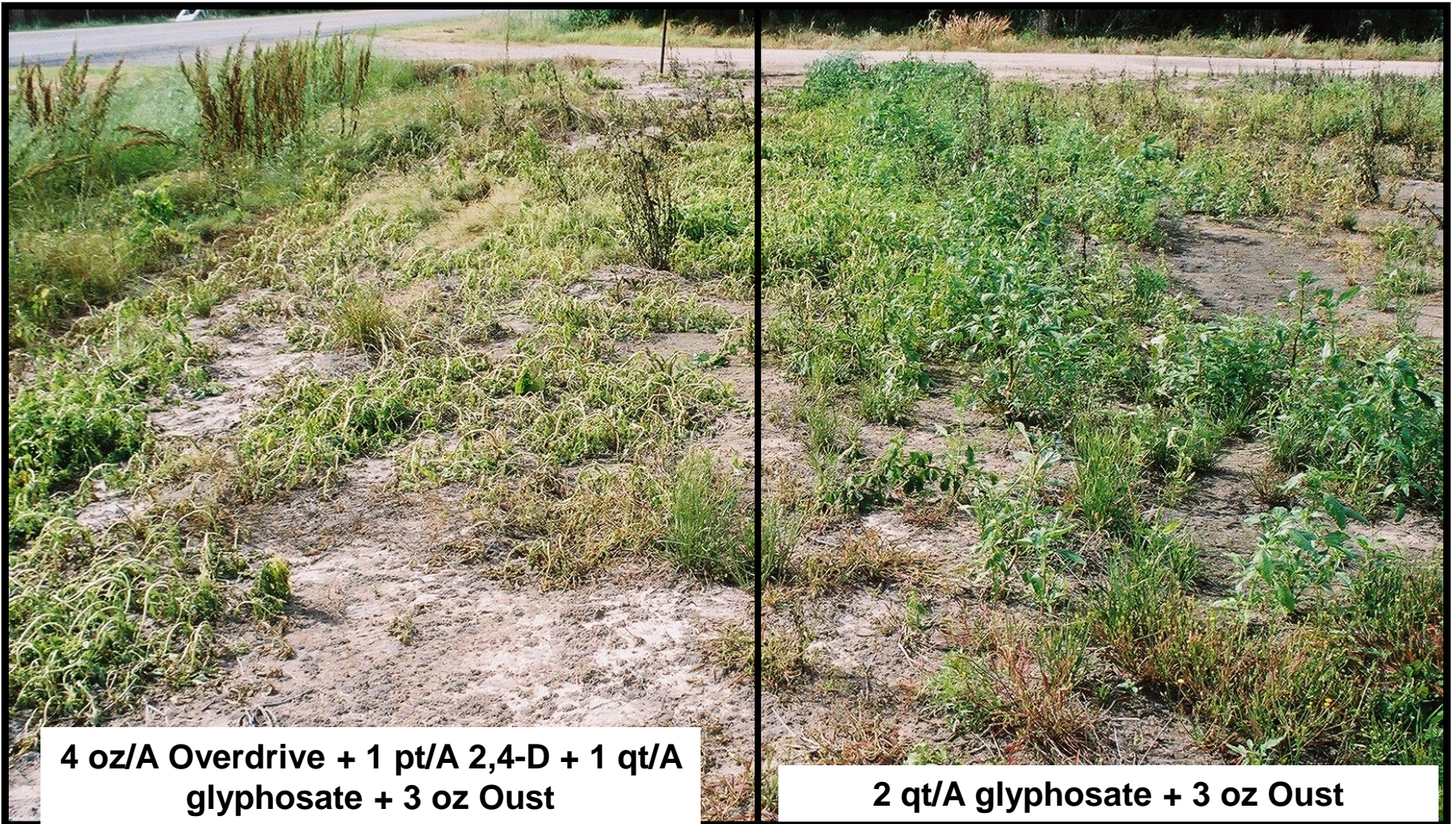
## ■ Control of over 50 biennial and perennial weeds including:

- Musk thistle
- Yellow starthistle
- Teasel
- Canada thistle
- Curly dock
- Plantain
- Buttercup
- Western ragweed
- Horsenettle

# Fast Activity- 1 WAT

150 years

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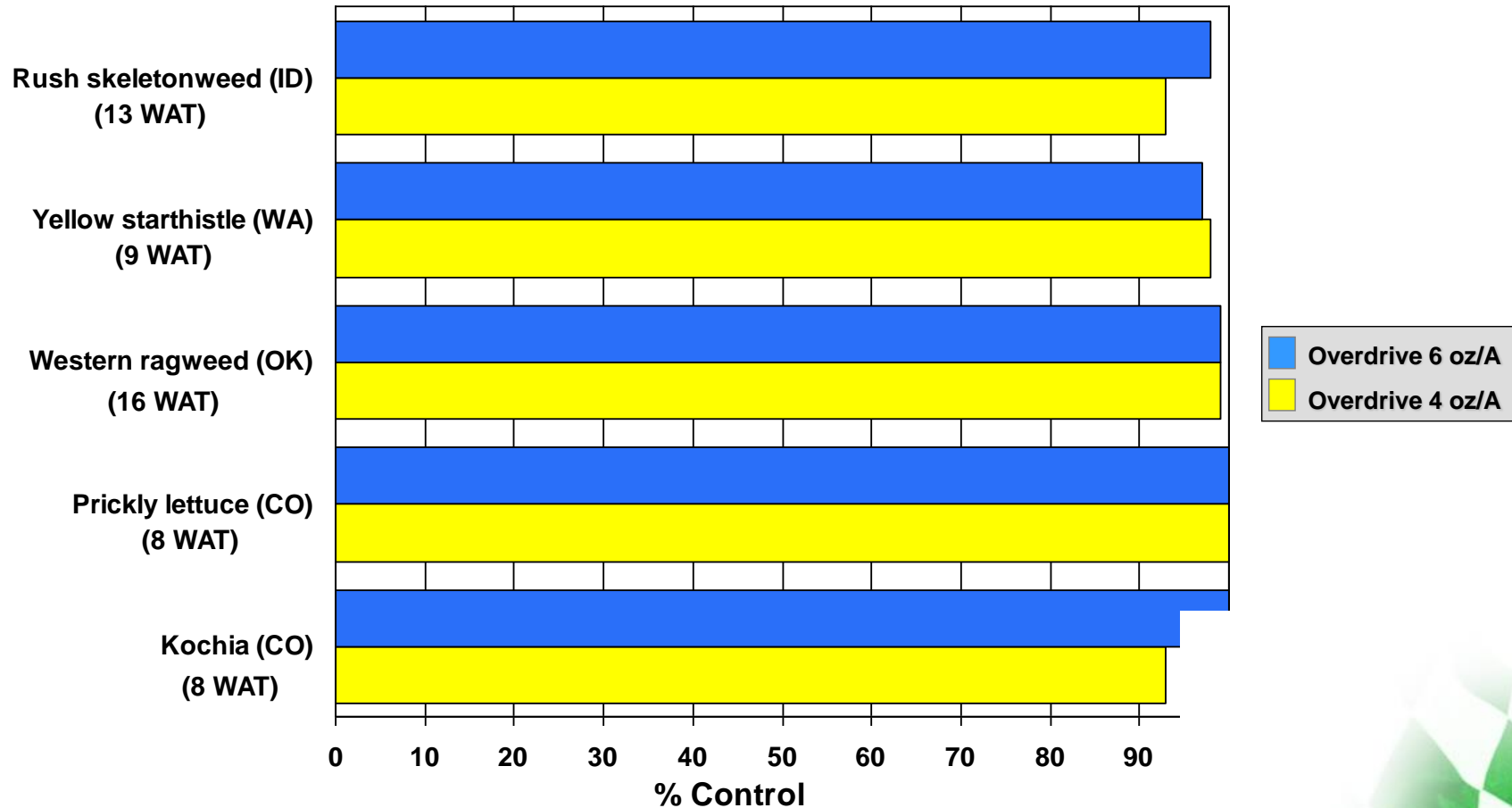
**4 oz/A Overdrive + 1 pt/A 2,4-D + 1 qt/A  
glyphosate + 3 oz Oust**

**2 qt/A glyphosate + 3 oz Oust**

# Perennial Weed Control In Western states

150 years

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Source: BASF Research Trials

**overdrive**  
herbicide

# Western Pasture and Rangeland

- Excellent thistle and general broadleaf control
  - Biennial thistles (musk, plumeless, bull)
  - Yellow starthistle
  - Canada thistle efficacy
- Overdrive can enhance tank mix partners
  - Diflufenzopyr impact
  - picloram (Picloram), clopyralid (Transline), triclopyr (Garlon, Remedy®)
  - Thistles, knapweeds, bindweed, lespedeza, leafy spurge (spring)
- No grazing restrictions
- Recommended rates:
  - 4 oz/A (biennial thistles)
  - 6 oz/A (perennials)
- Add 1% MSO



# Tips For Success

- Mixing Order is Important
  - Add Overdrive to a clean half full tank with water
  - Add surfactant, then add remaining water
  - Use agitation and provide sufficient time for granules to saturate and dissolve
  - See label instruction for other tank mixture partners

# Overdrive Summary

150 years

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- Very effective
- Great tank-mix partner
- Excellent for resistance management
- No grazing restrictions
- Improves grazing quality



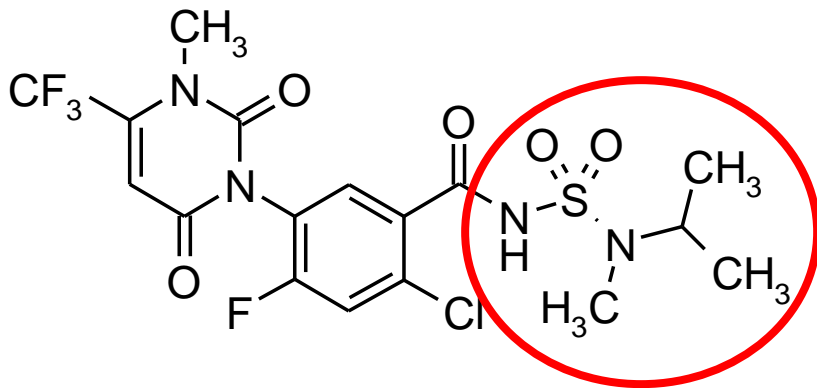
*overdrive*  
herbicide

# Detail Review

150 years

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## Pyrimidinedione Class of Chemistry



### ■ Innovation Comes From The Unique Molecular Structure - Pyrimidinedione

- Rapid Burndown - rapidly metabolized by crops
- Soil activity - water soluble & bioavailable
- Foliar activity - systemic movement in plants due to acidic property (pKa 4.3)

**DETAIL™** X  
POWERED BY **KIXOR®** HERBICIDE

The Kixor global active ingredient is the platform for broadleaf weed control solutions in a wide range of markets.

**DETAIL™** X  
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# Detail Review

150 years

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## amaranth spp.

beggarticks, hairy  
beggarweed, Florida  
bindweed, field\*  
buckwheat, wild  
canola, volunteer  
carpetweed  
chamomile, mayweed  
chickweed, common  
cocklebur, common  
cockle, corn  
copperleaf, Virginia  
cowcockle  
dandelion\*  
devil's-claw  
eclipta  
eveningprimrose, cutleaf  
filaree spp.

fleabane, hairy  
galinsoga  
groundcherry, cutleaf  
groundsel, common  
jimsonweed  
knotweed, prostrate  
**kochia**  
**lambsquarters spp.**  
lettuce, prickly  
mallow, Venice  
**marestail/horseweed**  
melon spp.  
morningglory spp.  
mustard spp.  
nettle, burning  
nightshade spp.  
purslane, common  
pennycress, field

## pigweed spp.

prickly sida/teaweed  
puncturevine  
**ragweed, common & giant**  
rocket, London  
sesbania, hemp  
shepherd's-purse  
smartweed spp.  
sowthistle spp.  
**spurge spp.**  
**sunflower, common**  
tansymustard spp.  
thistle, Canada\*  
**thistle, Russian**  
velvetleaf  
waterhemp spp.  
willowweed

Performance may vary depending upon growth stage and application method (PRE vs. POST)

\*Control of seedling stage and suppression of perennial growth stage

**DETAIL**™   
POWERED BY **KIXOR**® HERBICIDE

# Detail Review

150 years



- Very fast acting
- Synergy patent - Improves spectrum and burn down of glyphosate
- Non volatile
- Soluble concentrate formulation
- Caution label
- Limited soil residual
- Does not antagonize with slow acting ALS chemistry
- Supplemental label for use in rangeland that is grazed
  - No grazing or haying restrictions
- Developed as a pine control product
  - Controls easternred cedar

# Detail

Burndown Kochia Post  
14 DAT - Detail + glyphosate

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Razor Pro 32 oz + Detail (3oz)

Razor 32 + Edict 1 oz

# Detail Field Trial Results

## Kochia 12 DAT – Fort Collins, CO



**Faster and more complete kill than 2,4-D**

# How Should I Use Detail?

- **Bareground Residual program @1-2 oz.**
  - Adds rapid burndown of existing broadleaf weeds
  - Quick cleanup of broadleaf escapes
- **Selective Weeding @ 1-2 oz.**
  - Resistant weed management
  - Adds quick burndown and kill
  - Not volatile
- **Brush Control ROW @ 1/4 - 1/2 %**
  - Adds fast brown-up of brush
  - Very effective for pine and cedar control
  - Partner with other products on brush to improve control



**Partner with Arsenal, Plateau, Perspective,  
Glyphosate, Auxin, Sahara, Diuron, pyradine**

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# Detail Utility ROW Results

## Duke Energy – Durham, NC

150 years

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**DETAIL** X  
POWERED BY KUPON HERBICIDE

**10 DAT**

**9 MAT**



¼% Detail + ½% Arsenal PowerLine + 3% Accord XRT + 1% Escort

**Detail for Effective Pine Control**

# Detail Forestry Results

## Virginia

150 years

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**DETAIL** X  
POWERED BY KUPON HERBICIDE

**June 2015**



**August 2015**



2 oz. Detail + 4 qts. Accord XRT + 40 oz. Chopper GEN2

**Detail for Effective Pine Control**

# Detail / Plateau Leafy Spurge - Spring

150 years

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- Univ of NE (Dr. Stevan Knezevic), initiated in 2007 and repeated in 2008.
- Applications were made at the yellow bract stage of leafy spurge in the spring.
- Results –
  - Adding DETAIL improved leafy spurge control over Plateau alone applied in the spring. This improved performance held 2 years (2 YAT) after treatment.

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POWERED BY **KIXOR**® HERBICIDE

# Detail / Plateau

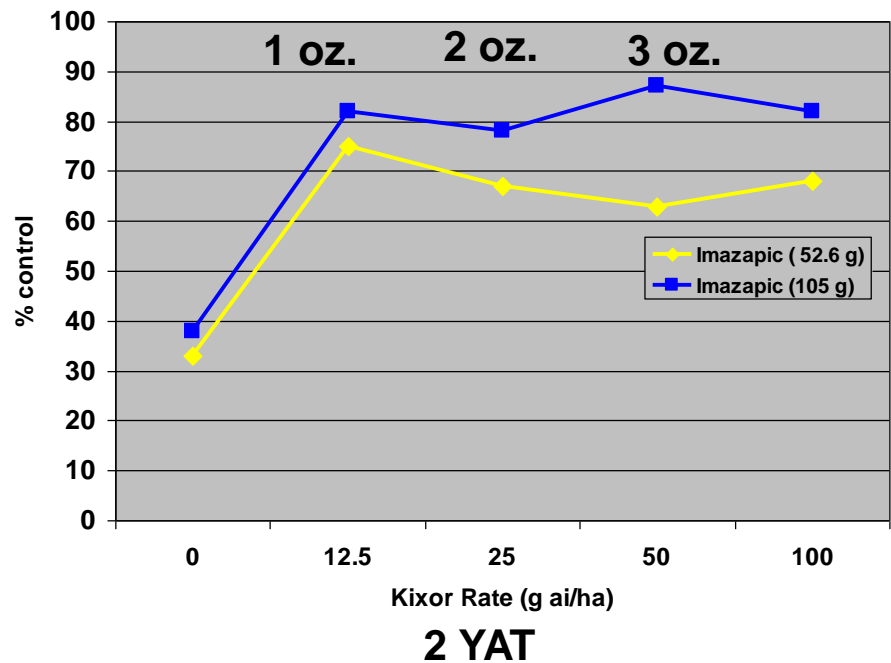
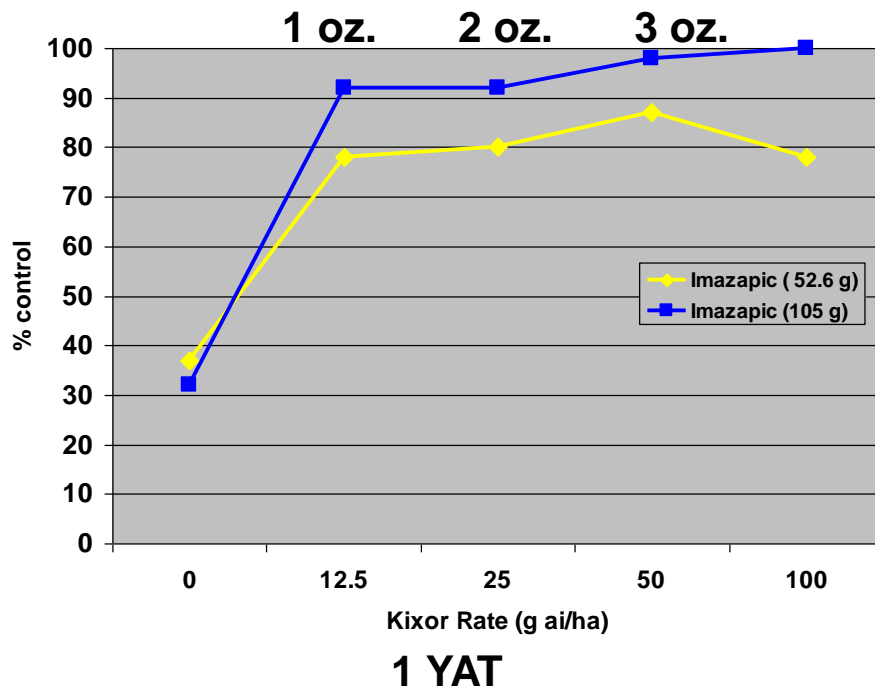
## Leafy Spurge - Spring

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■ Plateau at 3 oz. and 6 oz.:

Leafy Spurge Control with Spring applications of DETAIL  
(Kixor) plus Plateau @ 1 and 2 YAT



# Tips For Success

- Best fit as a broadleaf partnering product (not stand alone)
- Add MSO 1% for best results
- Coverage is critical +10 gpa.
- pH must be between 6.0 – 7.5
  - Do not add acidifying agents
- Maximum 6 oz. per year



# Detail Summary

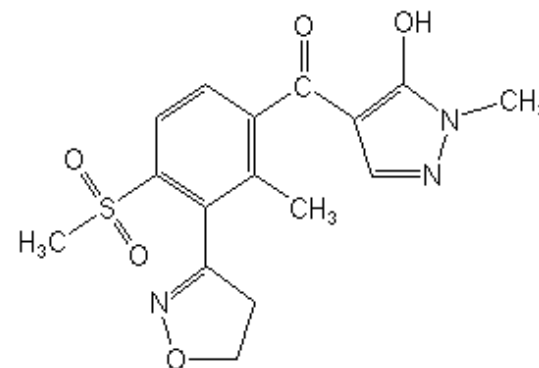
150 years

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- Excellent tank-mix partner for fast burn-down
- Patented enhancement of glyphosate
- Provides selective control of many difficult western weeds
- Resistance management

# Frequency Review

- Active ingredient: Topramezone
  - Chemical Family: benzoylpyrazole; pyrazolone
  - HPP Inhibitor (Bleacher)
- Residual and early postemergence control of annual grasses and broadleaf weeds
- Absorbed by roots and foliage
- Xylem and phloem mobile
- Non-volatile
- Caution label
- No lateral or vertical movement



# Broadleaves Controlled

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- Palmer Amaranth
  - Powell Amaranth
  - Burcucumber
  - Carpetweed
  - Common Chickweed
  - Common Cocklebur
  - Common Lambsquarters
  - Common Mallow
  - Dandelion\*
  - Hairy Galinsoga
  - **Horseweed (Marestail)**
  - Jimsonweed
  - **Kochia**
  - Venice Mallow\*
  - Morningglory sp.\*
  - Mustard sp.
  - Nightshade - Black, E. Black, Hairy
  - **Pigweeds - Redroot, Smooth, Tumble and Prostrate**
  - Prickly Lettuce
  - **Common Ragweed**
  - **Giant Ragweed**
  - Shepardspurse
  - Prickly Sida
  - Pennsylvania Smartweed
  - Ladysthumb
  - Sunflower - Wild and Volunteer
  - Canada Thistle\*
  - **Russian Thistle**
  - Velvetleaf
  - Waterhemp - Common and Tall
- \*partial control

**Frequency**<sup>™</sup>  
herbicide



# Grasses Controlled

- Palmer Amaranth
- Barnyardgrass
- Large Crabgrass
- Smooth Crabgrass
- Giant Foxtail
- **Goosegrass**
- Green Foxtail
- Yellow Foxtail\*
- Seedling Johnsongrass\*
- Shattercane\*
- **Sprangletop**
- **Rhodes grass, windmill grass**
- Fall Panicum\*
- Wild-Proso Millet
- Broadleaf Signalgrass\*
- Woolly Cupgrass\*

\*partial control

# Use Patterns: Frequency

150 years

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## ■ Target Areas:

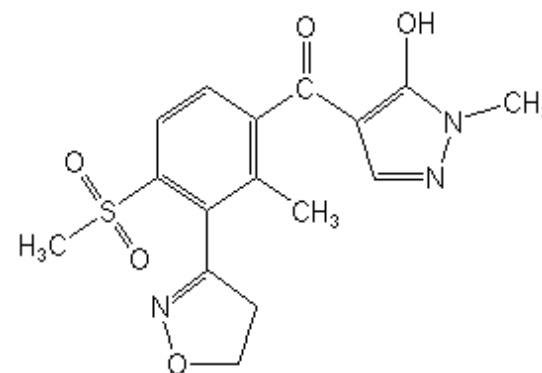
- Industrial Bareground
- Selective weeding
- Conifer and hardwood site preparation



**Frequency**<sup>™</sup>  
herbicide

# Frequency Review

- Soluble concentrate
- Use Rates: 4-16 oz.
  - Go-to rate
    - Stand alone 8-16 oz
    - Tankmix 4-8 oz
- Post-emergence applications require a MSO or COC @ 1%v/v or 0.25% to 0.5% v/v NIS
  - Minimum 10-20 gpa
  - Weed size range: 3-6 inches



# Frequency Use

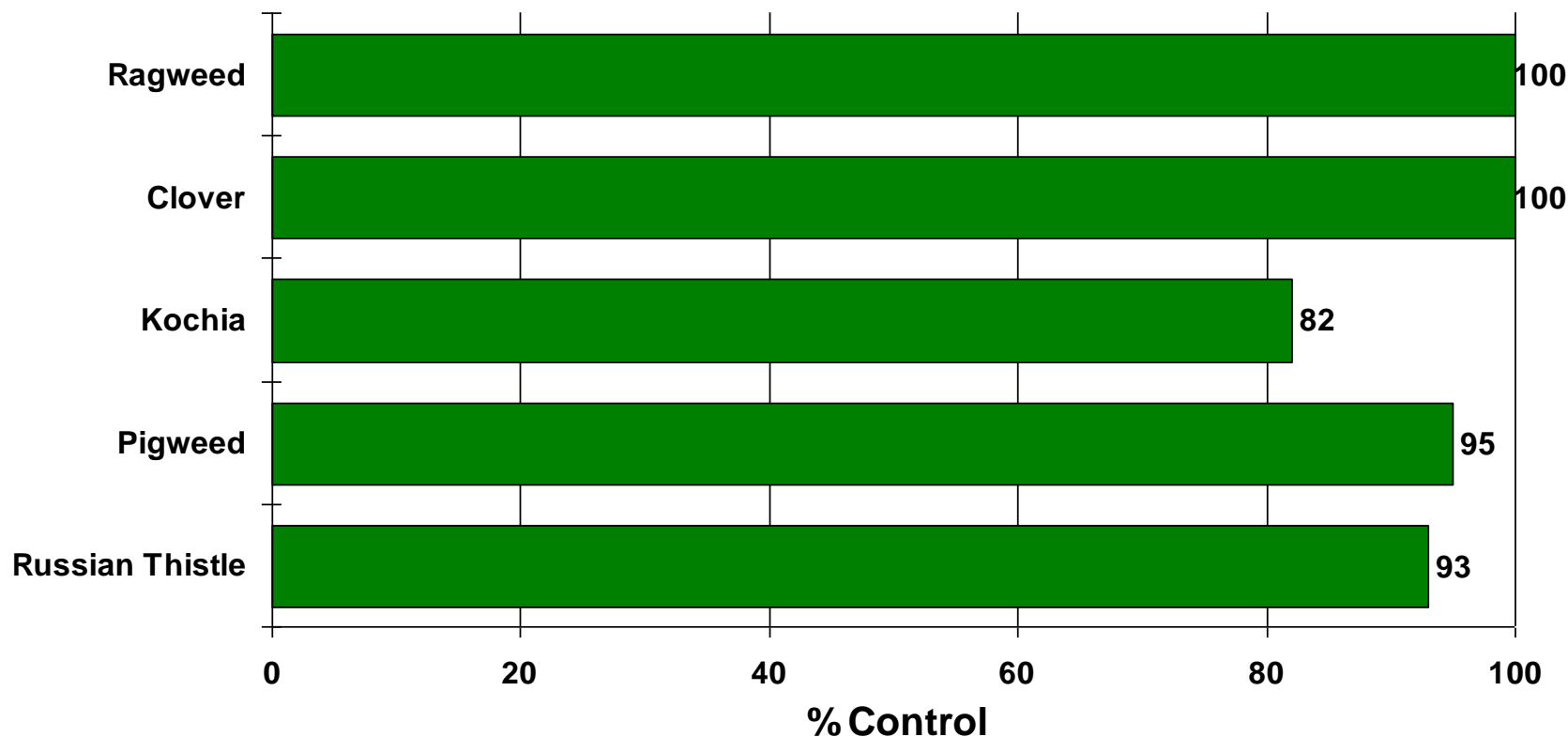
150 years

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- Caution label
- AI has been approved for aquatic uses
- Excellent for high rainfall areas
- COC or MSO @ 1 – 1.5% for post emerge activity
- Keep out of root zone of desirable trees and shrubs
- @ 4 oz. certain Perennial grasses are tolerant (see label)
- Label can be downloaded at [www.cdms.net](http://www.cdms.net)
  - BASF Specialty Products

# Broadleaf Weed Control

Rate 4 oz/A; Ratings 4-6 WAT; Weeds 3-6" at treatment



MSO @ 1%v/v

Cool season grass roadsides

# Grass Tolerance

150 years

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## ■ Cool Season

- Chewings Fescue
- Creeping Red Fescue
- Hard Fescue
- Tall Fescue
- Kentucky Bluegrass
- Perennial Ryegrass
- Wheatgrasses
- Sherman Big Bluegrass

## ■ Warm Season

- Big Bluestem
- Little Bluestem
- Indiangrass
- Eastern Gammagrass

# Frequency 8 oz Perennial Grasses

150 years

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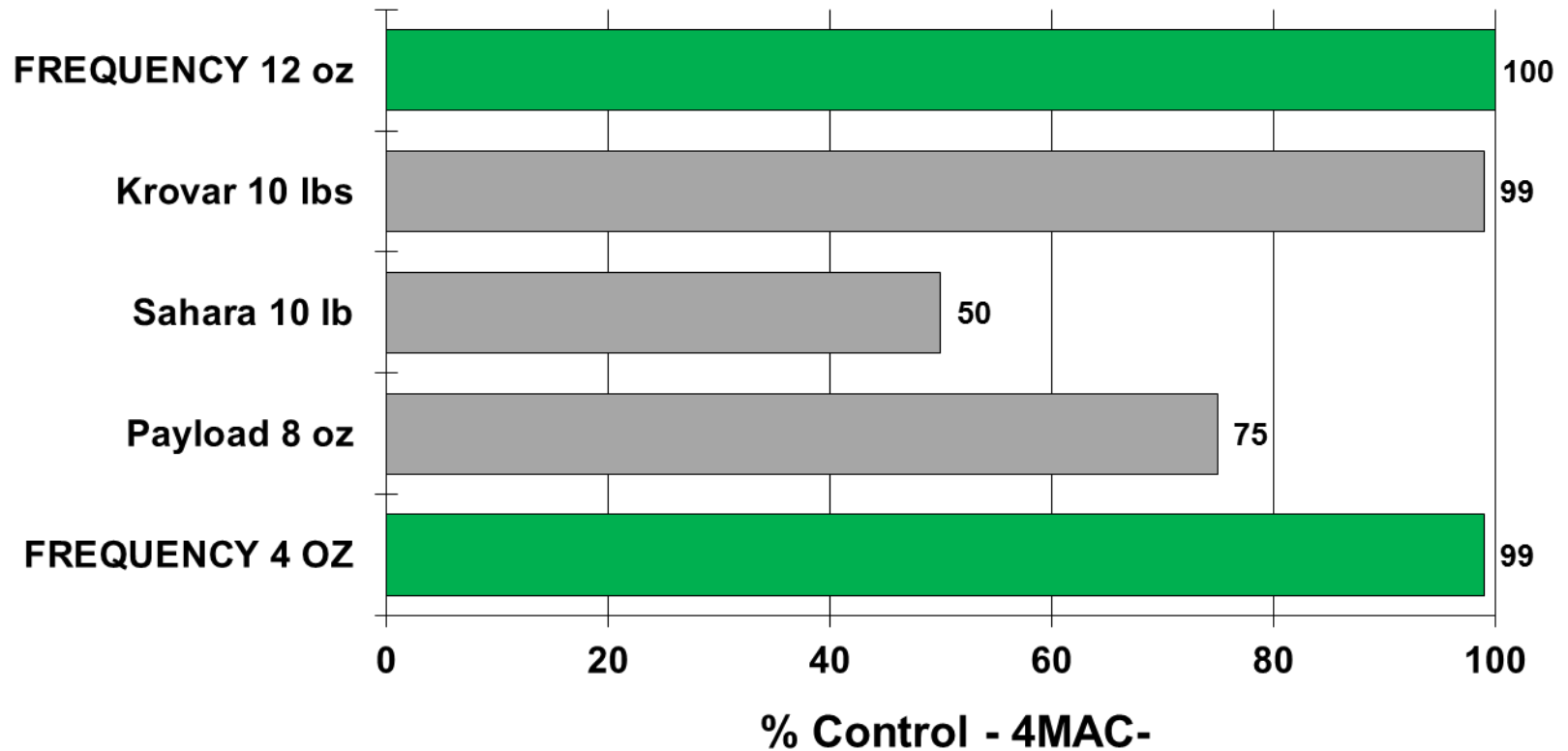
# Russian Thistle Control

150 years



Bareground NV Applied: 3/27/08

Evaluated: 7/31/08

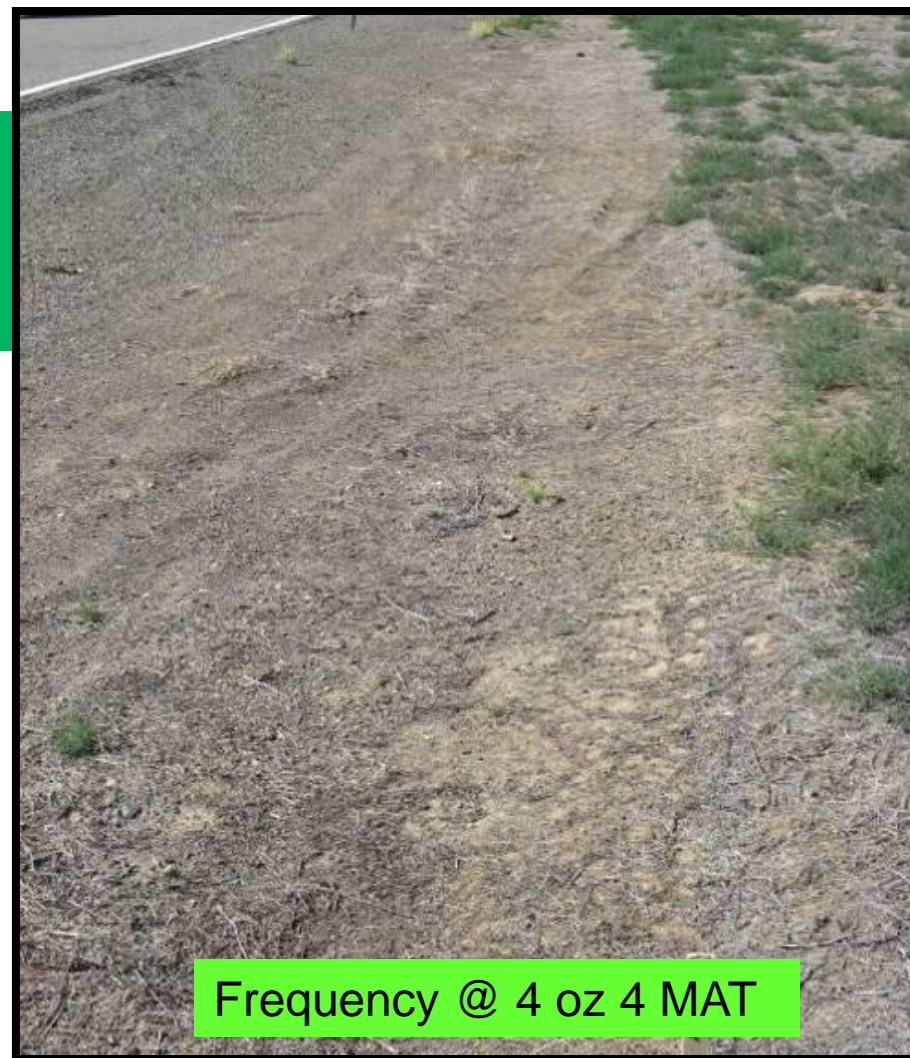




# Russian Thistle Control

150 years

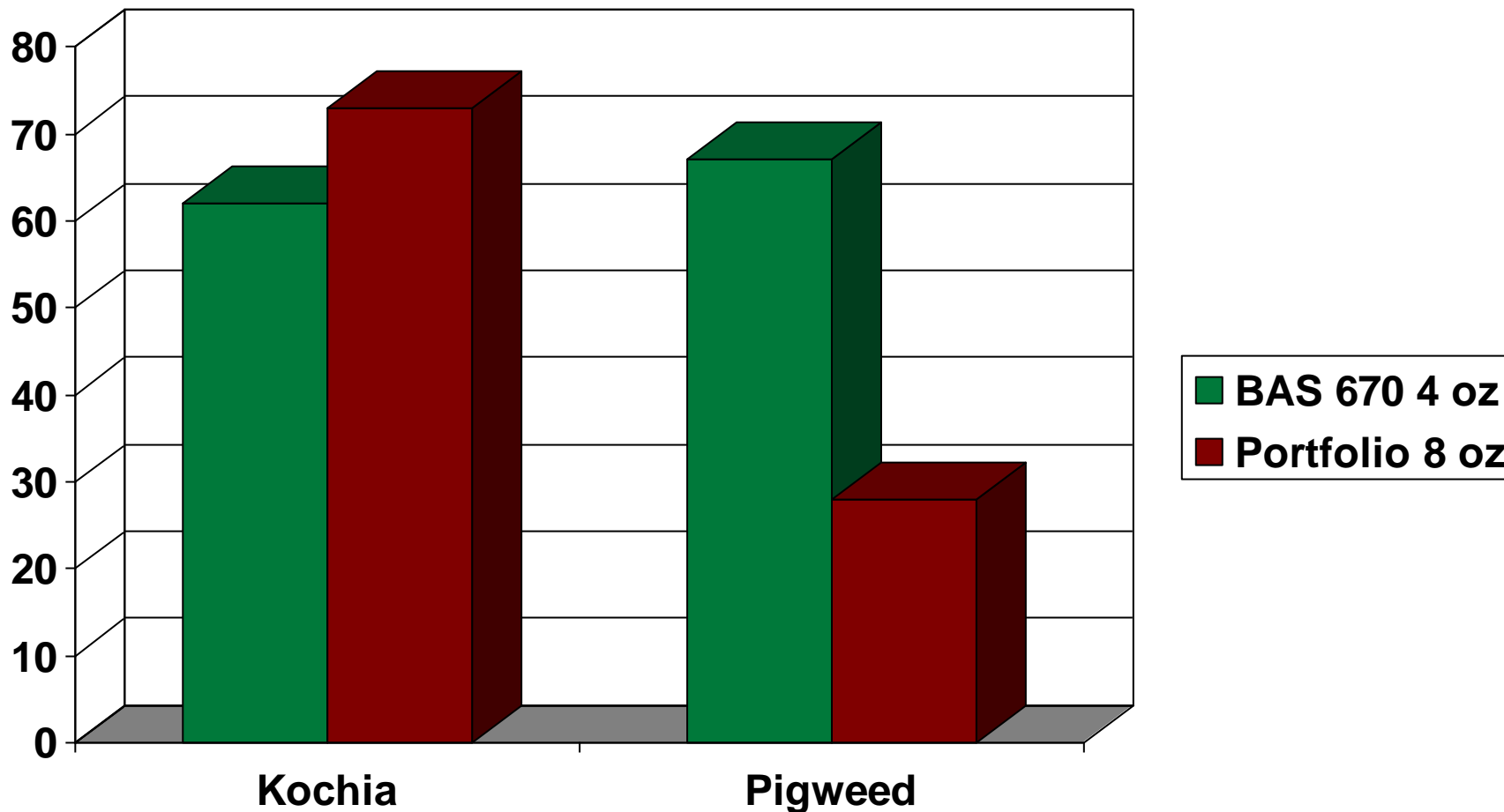
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# Frequency @ 4 oz/A Bareground

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**Frequency**<sup>™</sup>  
herbicide

# Tips For Success

- Do not apply to areas that can be grazed or cut for hay
- Follow order of mixing on label
- Use with tank-mix partners to improve nutsedge and vine control

# Frequency Summary

150 years

 **BASF**  
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- Excellent long-term control at 8 – 12 oz. of difficult to control weeds
- Low use rates
- Tank-mix partner for resistance management
- Selective weed control at 1-4 oz. rate

# Important Points for Success:

- Long-term management plan
  - Monitor results
  - Utilize competitive plant species
  - Manage to give desirable species the advantage
  - Consider thatch complications
  - Spray herbicide prior to planting!

# Questions

150 years



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