Roadside Vegetation Management

Grass Growth Regulation, Seedhead Suppression and Broadleaf Weed Control

Jim Bean

Strategic Accounts Manager

BASF Professional Vegetation Management Group

BASF

We create chemistry

Agenda

- What is a PGR program?
- History
- Benefits
- Mowing
- Issues by region
- Program details
- Results
- Pollinator habitat and native grass improvement
- Recommendations

BASF
We create chemistry

PGR Program

- **To regulate the height of grass and the development of seedheads to minimize mowing. The addition of broadleaf weed control provides longer and more uniform results as broadleaf weeds typically grow taller than most grasses.**

BASF
We create chemistry

PGR Program Goal

- **Decrease mowing**
- **Decrease costs**
- **Increase productivity**
- **Improve safety**
- **Improve pollinator habitat and increase native grasses**
- **Create time for other important maintenance projects**
- **Minimize need for seasonal or temporary help**

Seedhead Suppression History

PLATEAU herbicide
QUALITY TAKES TIME.

BASF
We create chemistry

Seedhead Suppression History

PLATEAU herbicide
QUALITY TAKES TIME.

BASF
We create chemistry

Seedhead Suppression History

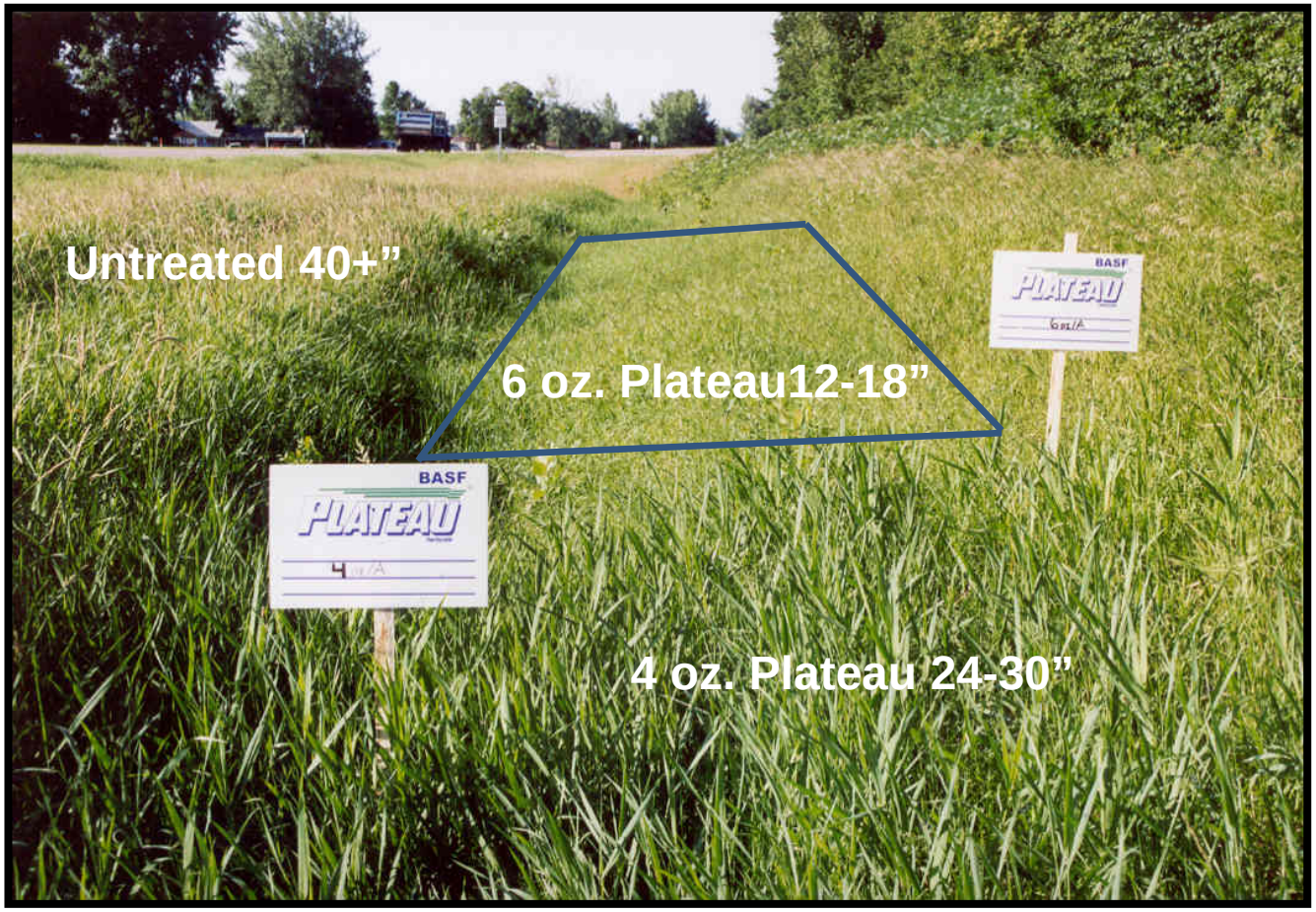
2004 IL DOT PGR Results – 4WAT
Plateau 4.0 oz. + Escort 1/3 oz

BASF
We create chemistry

Seedhead Suppression and PGR History

Alexandria, MN (2 MAT)

Smooth Bromegrass and Reed Canarygrass



BASF
We create chemistry

Grasses for Seedhead Suppression

- **Tall Fescue**
- **KY Bluegrass**
- **Smooth Bromegrass**
- **Crested Wheatgrass**
- **Bermudagrass**
- **Bahiagrass**
- **Unimproved Centipede**

PLATEAU herbicide
QUALITY TAKES TIME.

BASF
We create chemistry

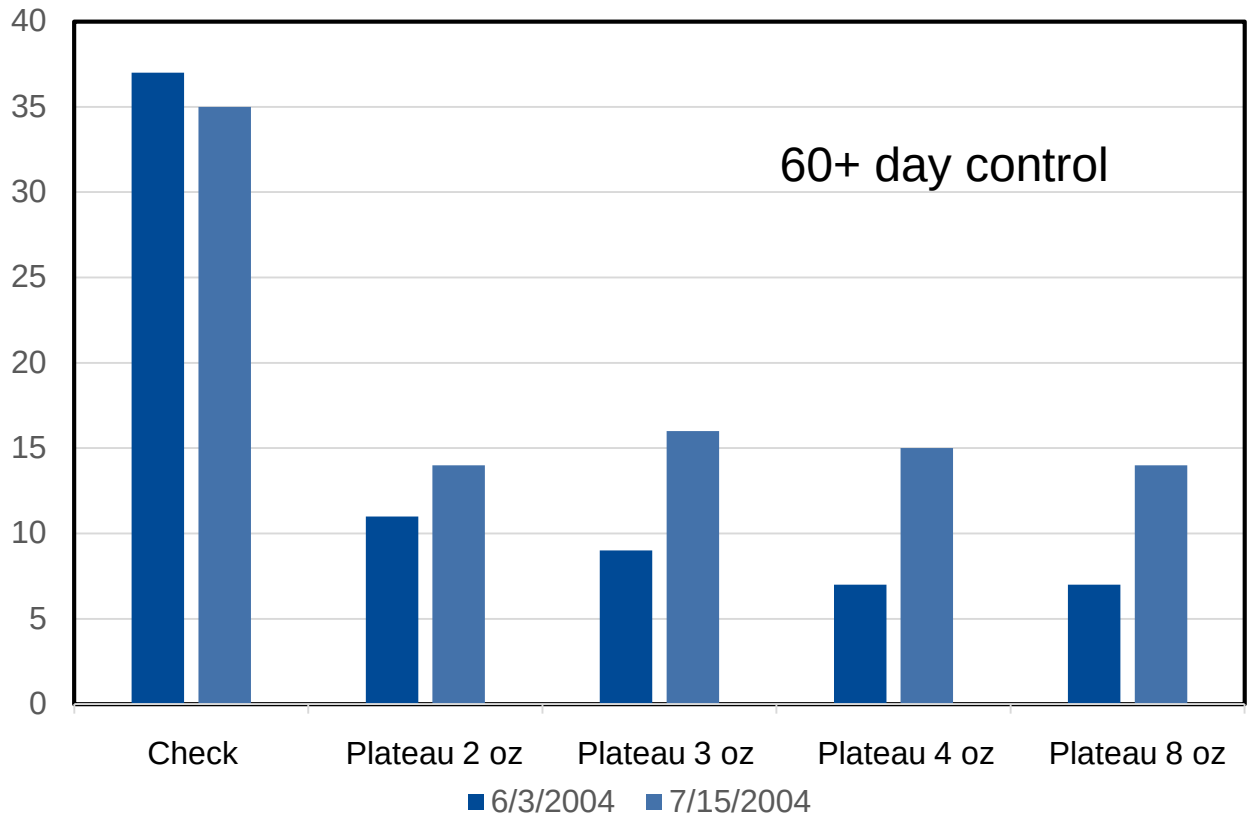
Problem Grasses Suppressed

- **Reed Canarygrass**
- **Johnsongrass**
- **Smutgrass**
- **Vaseygrass**
- **Dallisgrass**
- **Japanese knotweed**
- **Phragmites**

PLATEAU herbicide
QUALITY TAKES TIME.

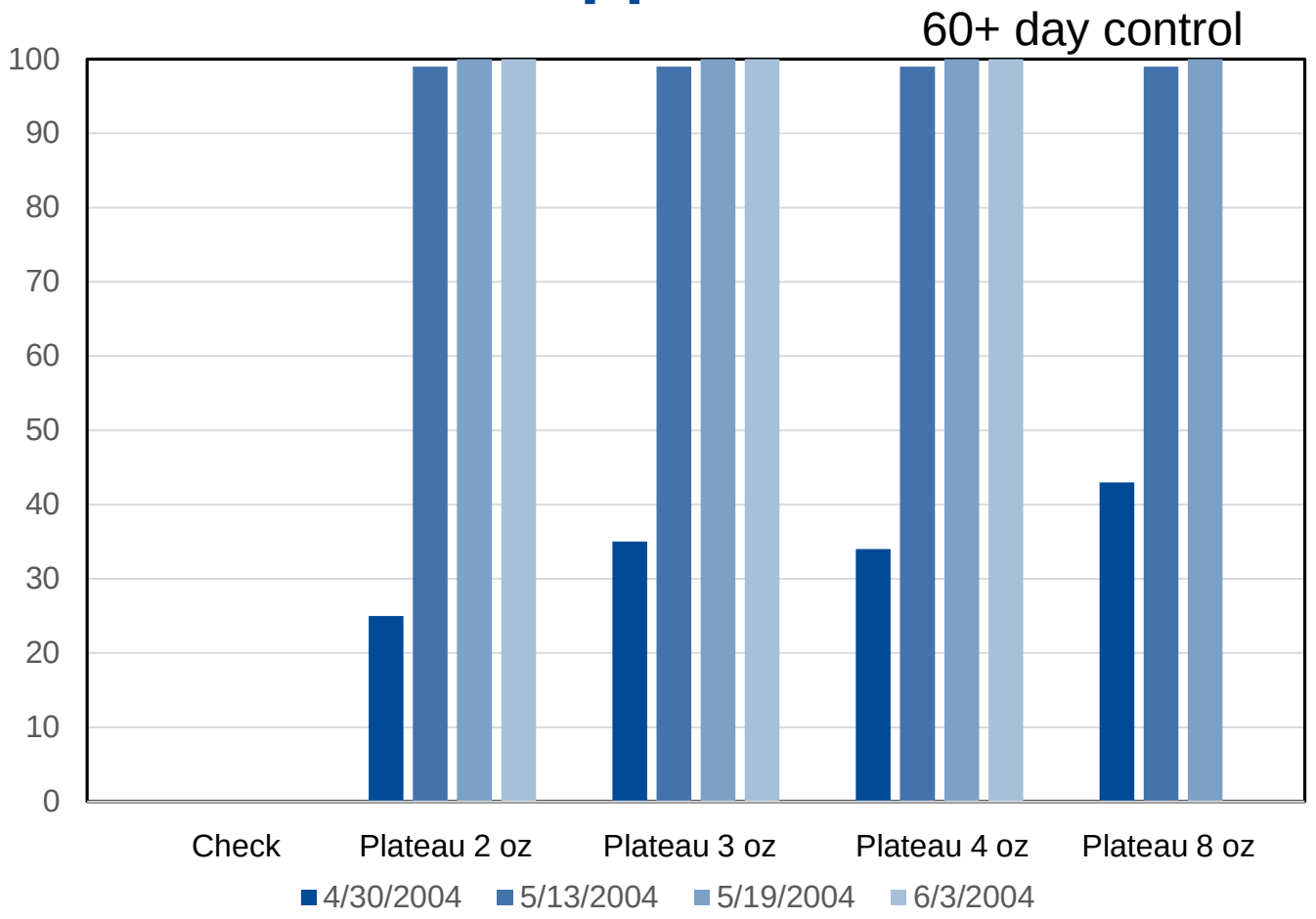
BASF
We create chemistry

2004 University of Tennessee Tall Fescue Height (in)

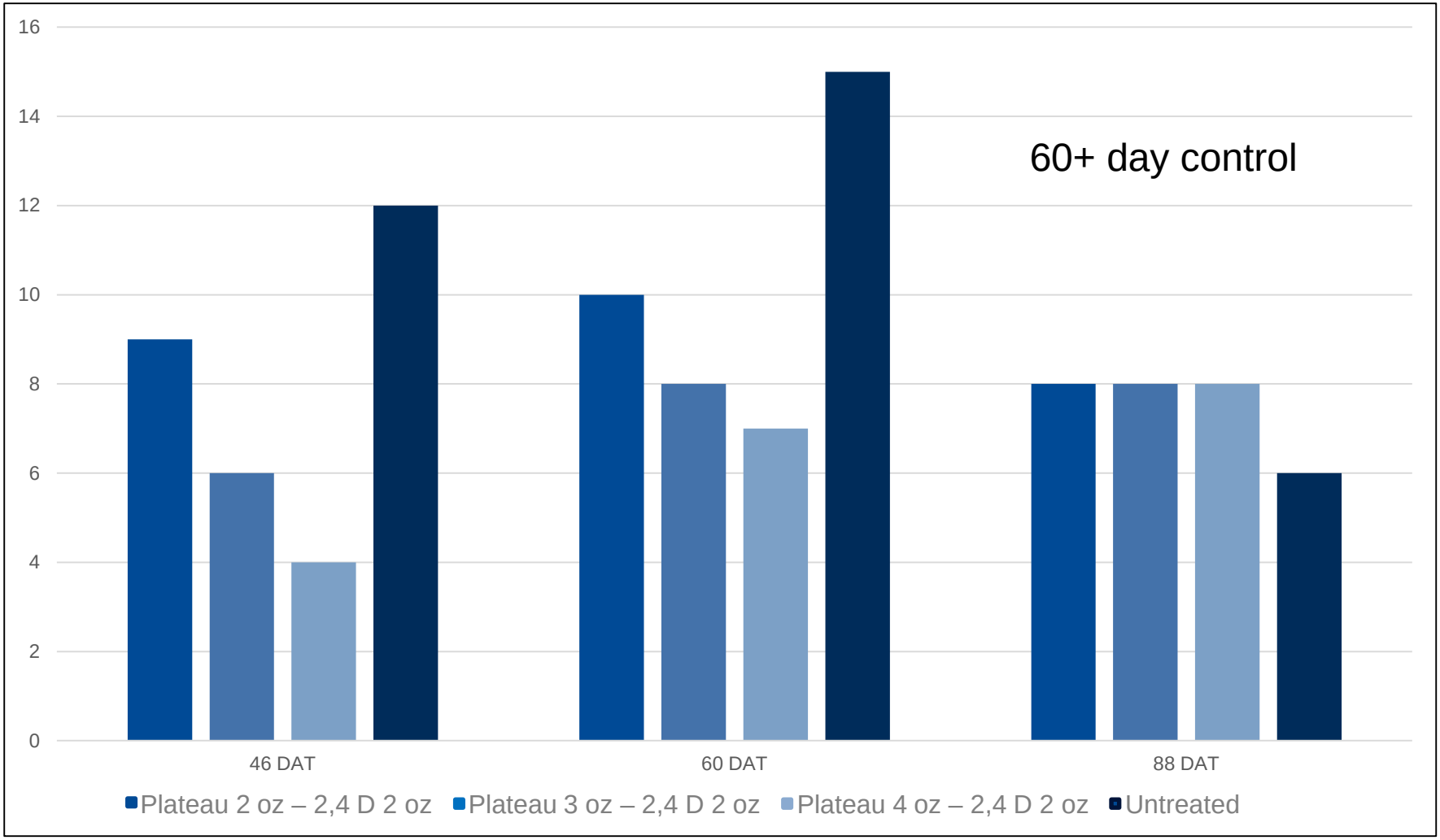


Application Early April 2004

2004 University of Tennessee Tall Fescue Seedhead Suppression



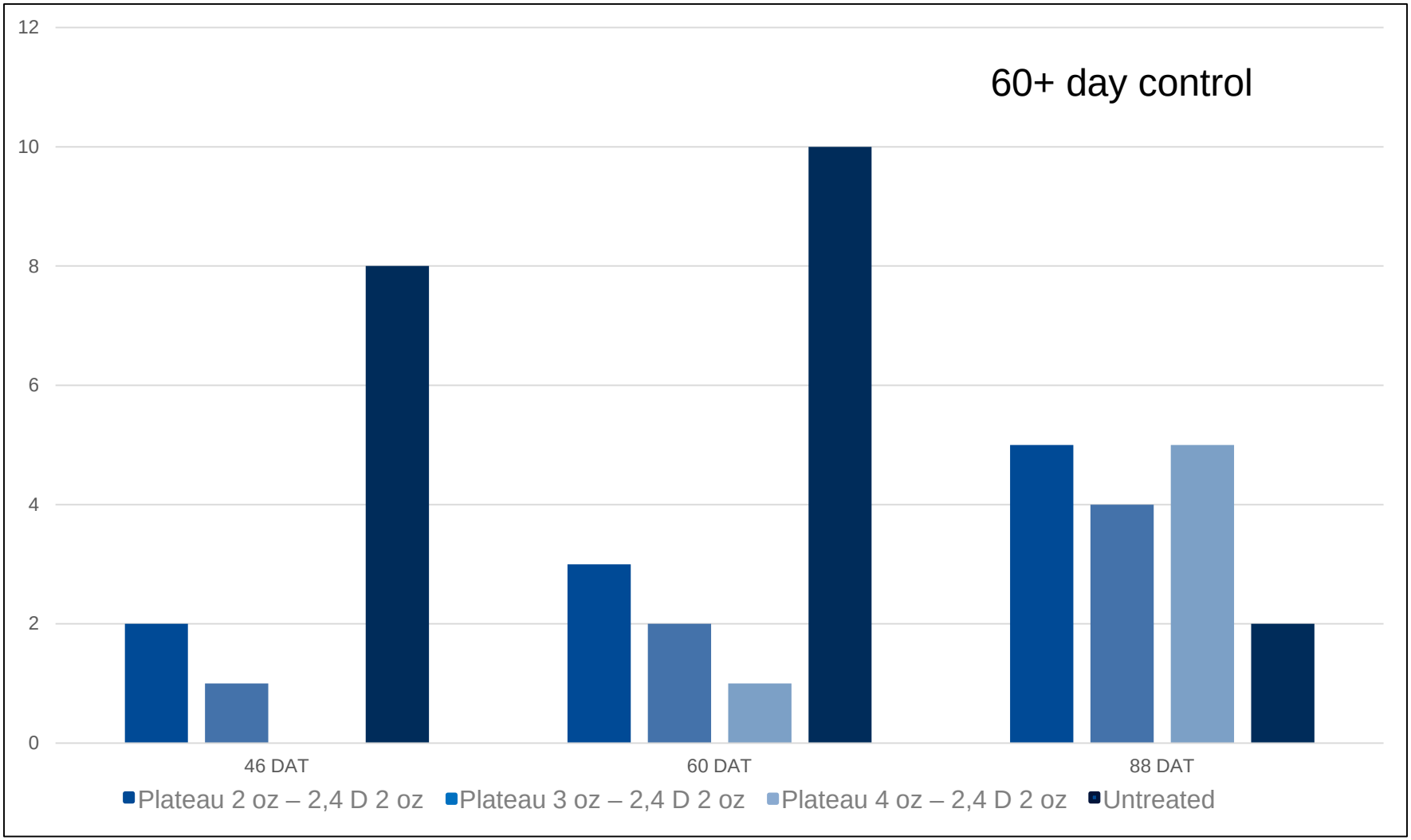
Auburn Bermudagrass Trials



PLATEAU herbicide

BASF
We create chemistry

Auburn Bermudagrass Trials



PLATEAU herbicide

BASF
We create chemistry

Seedhead Suppression Lessons

- **Use proper rates**
- **Calibration is critical**
- **Uniform application**
- **Add broadleaf weed control**
- **Dry conditions will extend PGR effects**

PLATEAU herbicide
QUALITY TAKES TIME.

BASF
We create chemistry

Recent History

- **Increase in PGR programs**
  - **Lack of labor**
  - **Decreased mowing budgets**
  - **Need to accomplish more with less**
  - **Pollinator projects**

PLATEAU herbicide
QUALITY TAKES TIME.

BASF
We create chemistry

Benefits of an Integrated Vegetation Management Program

- **Reduce Cost**
  - **50% to 70% reduction**
- **Increase Productivity**
  - **50% increase**
- **Improve Safety**

PLATEAU herbicide
QUALITY TAKES TIME.

BASF
We create chemistry

Benefits of an Integrated Vegetation Management Program

Case Study – Hillsborough County, FL

- **2005 – 6 mowing cycles, no PGR at a cost of $2.3 million**
- **2007 – 2 mowing cycles ($780,000) and 2 PGR applications of 3 oz. Plateau + 3.5 oz. Milestone + 16 oz. Garlon 3A ($455,000) for a total of $1.2 million**
- **Annual cost savings: $1.1 million**

PLATEAU herbicide
QUALITY TAKES TIME.

BASF
We create chemistry

Benefits of an Integrated Vegetation Management Program

2013 INDOT Study

- **One mowing costs $64 per mile and can cover 18.5 miles per day**
- **Average PGR costs $36 per mile and can cover 60 miles per day**
- **PGR programs are less expensive and more productive than mowing**

PLATEAU herbicide
QUALITY TAKES TIME.

BASF
We create chemistry

Benefits of an Integrated Vegetation Management Program

Other Benefits

- Less wear on equipment allows for longer replacement cycles
- Fewer mowers required
- More can be accomplished with fewer people (no temporary help)
- Additional maintenance projects can be completed
  - Drainage structure repairs
  - Culvert and storm sewer replacement
  - Ditch cleaning
  - And more!

PLATEAU herbicide
QUALITY TAKES TIME.

BASF
We create chemistry

Mowing is Dangerous

BASF
We create chemistry

Mowing

Cool Season Grass

- Early mowing results in only 2 weeks of height control
- Mid-summer mowing results in 4 to 8 weeks height control
- Skip mowing until summer
- Better for pollinator species

Warm Season Grass

- Seedhead growth is not reduced by mowing
- Mowing too low can scalp the grass and increase stress

East and Midwest

- **High rainfall**
- **Short spray season**
- **Invasive weeds**

PLATEAU herbicide
QUALITY TAKES TIME.

BASF
We create chemistry

East and Midwest Problems

- **Cool season grass injury with wrong rates**
- **Native grass tolerance to Plateau**
- **Canada thistle, Teasel, Japanese knotweed and Phragmites**

PLATEAU herbicide
QUALITY TAKES TIME.

BASF
We create chemistry

2019 OH DOT Tank-mix

3 oz. Plateau + 7 oz. Milestone + 0.3 oz. Escort XP

PLATEAU herbicide
QUALITY TAKES TIME.

BASF
We create chemistry

Products

- **Plateau**
  - **Provides grass growth regulation and seedhead suppression at low rates**
- **Milestone**
  - **Provides long-term broad spectrum broadleaf weed control**
- **Escort XP**
  - **Provides seedhead suppression and vine control at low rates**

All products have CAUTION labels!

BASF
We create chemistry

Equipment

BASF
We create chemistry

Equipment

BASF
We create chemistry

Custom Blend in 15 Gallon Returnable Drums

BASF
We create chemistry

Calibration

- Uniform application at the desired rates is critical
- Minimize overlap but prevent unsprayed strips

BASF
We create chemistry

2019 OH DOT Results

3 oz. Plateau + 7 oz. Milestone + 0.3 oz. Escort XP

1 WAT

PLATEAU herbicide
QUALITY TAKES TIME.

BASF
We create chemistry

2019 OH DOT Results

3 oz. Plateau + 7 oz. Milestone + 0.3 oz. Escort XP

1 MAT

PLATEAU herbicide
QUALITY TAKES TIME.

BASF
We create chemistry

2019 OH DOT Results

3 oz. Plateau + 7 oz. Milestone + 0.3 oz. Escort XP

1 MAT

PLATEAU herbicide
QUALITY TAKES TIME.

BASF
We create chemistry

2019 OH DOT Results

3 oz. Plateau + 7 oz. Milestone + 0.3 oz. Escort XP

1 MAT

PLATEAU herbicide
QUALITY TAKES TIME.

BASF
We create chemistry

2019 OH DOT Results

3 oz. Plateau + 7 oz. Milestone + 0.3 oz. Escort XP

1 MAT

PLATEAU herbicide
QUALITY TAKES TIME.

BASF
We create chemistry

2019 OH DOT Results

3 oz. Plateau + 7 oz. Milestone + 0.3 oz. Escort XP

2 MAT

PLATEAU herbicide
QUALITY TAKES TIME.

BASF
We create chemistry

2019 OH DOT Results

3 oz. Plateau + 7 oz. Milestone + 0.3 oz. Escort XP

2 MAT

PLATEAU herbicide
QUALITY TAKES TIME.

BASF
We create chemistry

2019 OH DOT Results

3 oz. Plateau + 7 oz. Milestone + 0.3 oz. Escort XP

6 MAT

PLATEAU herbicide
QUALITY TAKES TIME.

BASF
We create chemistry

Results

- One application held from late April until mid-summer
  - Even with the extremely wet spring
- No more than one mowing was required
  - In many areas no mowing was needed
- Spraying without mowing improved efficiency
  - Resulted in no rutting of median or shoulders
- A cleanup mowing in fall was optional
- Many extra maintenance projects were completed with existing personnel

PLATEAU herbicide
QUALITY TAKES TIME.

BASF
We create chemistry

Lessons

BASF
We create chemistry

Lessons

BASF
We create chemistry

Lessons

Use a wider swath width to prevent median unsprayed strips!

BASF
We create chemistry

Lessons

Adjust swath width to maintain proper rate!

Northern U.S. Timing

- **Without Mowing - Recommended**
  - Start spraying just as grass begins to grow (end of April)
  - Spray vegetation before it becomes uneven in height
  - Results in no rutting
- **After Mowing**
  - Spraying starts in mid May
  - Wait 7 days after mowing before you spray
  - Mowing starts vegetation even in height

Southern U.S. Timing

- **Without Mowing - Recommended**
  - Start spraying after full grass green-up (early April)
  - Spray vegetation before it becomes uneven in height
  - Results in no rutting
- **After Mowing**
  - Spraying starts after full grass green-up (end of April)
  - Wait 7 days after mowing before you spray
  - Mowing starts vegetation at an even height

Broadleaf Products to Compliment a PGR Program

- **Detail**
  - **Provides post-emergent control of difficult broadleaf weeds like kochia, Russian thistle, pigweeds and marestail at low rates**
- **Method**
  - **Provides long-term broad spectrum broadleaf weed control**
- **Overdrive**
  - **Provides broad spectrum broadleaf weed control**

All products have CAUTION labels!

BASF
We create chemistry

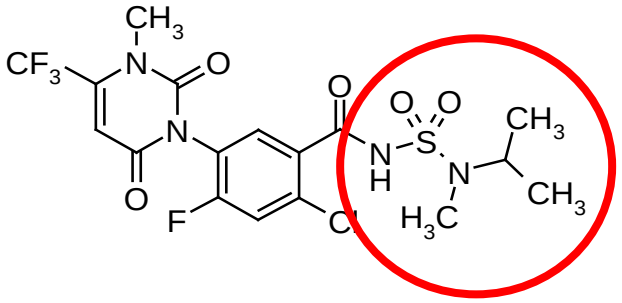
Tank-Mix Options

3 oz. Plateau + 5 oz. Milestone + 1 oz. Detail

- Drop the Escort XP will reduce potential for cool season grass injury
- Reducing the Milestone rate prevents exceeding maximum use rate
- Detail adds to control of tough weeds like marestail and pigweeds

Detail Review

- **Active ingredient: Saflufenacil**
- **Controls many difficult to control broadleaf weeds**
  - **Kochia, Russian thistle, marestail and pigweed**
- **Enhances browning**
- **Limited soil activity**
- **Non volatile**
- **Caution label**



DETAIL™ POWERED BY KIXOR® HERBICIDE

Detail Review

Before

After

1 oz. Detail for Marestail control

BASF
We create chemistry

Southeast

- **Best fit for PGR due to number of mowing cycles**
  - **$27 million dollars for NCDOT mowing each year**
- **GADOT has historically been the largest PGR program**
  - **NC, MS, SC, TN have had large programs**
- **Seedhead suppression is very important - Bahiagrass**
  - **8 to 16 weeks seedhead suppression with Plateau**

BASF
We create chemistry

Southeast Problems

- Bahiagrass seedheads
- Johnsongrass – Outrider
- Dallisgrass – Plateau / Clethodim?
- Smutgrass - Velpar
- Marestail and pigweed – Detail
- ALS resistant Vaseygrass – Fall Clethodim?
- Repeated applications of Plateau can release Broomsedge – MSMA
  - Rotate your chemistry!

Southeast

NCDOT PGR/Broadleaf RESULTS on Fescue
Western Divisions

BASF
We create chemistry

Great Plains and the West

- **Native grass tolerance to Plateau**
- **Low rainfall - PGR harder to justify**
- **Invasive weeds - fire**

BASF
We create chemistry

Great Plains and the West Problems

- **Kochia and Russian thistle – Detail**
- **Cheatgrass – 6 oz. Plateau minimum**
- **Leafy spurge – Overdrive or Plateau or Plateau + Detail**

BASF
We create chemistry

Southwest

- Low rainfall - PGR harder to justify
- Focus on mowed areas
- Higher elevations are good targets
- Invasive weeds
- Woody brush

BASF
We create chemistry

Southwest Problems

- **Mesquite - Method**
- **Kochia and Russian thistle – Detail**
- **Cheatgrass – 6 oz. Plateau minimum**

BASF
We create chemistry

PNW – West side

- **High rainfall**
- **Short spray season**
- **Invasive weeds**

BASF
We create chemistry

PNW Problems – West side

- **Crabgrass, nutsedge, foxtail, Johnsongrass, field bindweed - Plateau**
- **Marestail – Detail**

BASF
We create chemistry

Improving Pollinator Habitat

- **Mowing is harmful to pollinator habitat**
- **Create locations with no mowing or reduced mowing**
- **Change or drop the broadleaf weed component**
- **Change mowing timing**

PLATEAU herbicide
QUALITY TAKES TIME.

BASF
We create chemistry

Improving Pollinator Habitat

- **3 - 4 oz. Plateau + 1 oz. Detail + .5 oz. Escort XP**
- **Shorter-term broadleaf weed control allows for pollinator germination the following spring**
- **Don’t mow. Wait to see what comes back naturally**
- **Plateau + Pendulum AquaCap is labeled for wildflower establishment – use species on label**

PLATEAU herbicide
QUALITY TAKES TIME.

BASF
We create chemistry

Improving Pollinator Habitat

3 oz. Plateau + 1 oz. Detail + .5 oz. Escort XP
Sprayed 3 years in a row then delayed mowing

BASF
We create chemistry

Options

- **When managing for pollinator habitat**
  - **Drop the broadleaf component to release existing seed**
  - **Use Plateau + Pendulum AquaCap for wildflower establishment**
  - **Use Plateau tolerant seed mixes to aid in maintenance**

3 oz. Plateau + 1 oz. Detail + .5 oz. Escort XP
Sprayed 3 years in a row then delayed mowing

BASF
We create chemistry

Native Grasses

- **Plateau is labeled for native grass establishment and maintenance**
- **Big bluestem, Little bluestem and Indiangrass are tolerant up to 12 oz. Plateau**
- **I recommend establishing native grasses first then introduce wildflowers as desired**

PLATEAU herbicide
QUALITY TAKES TIME.

BASF
We create chemistry

General Recommendations

Northeast, Midwest, Southwest and PNW

- Use 3 oz. Plateau + 1 oz. Detail + 0.3 oz. Escort XP on Fescue and Bluegrass after full grass green-up
  - Substitute 5 oz. Milestone or 4 oz. Method for the (Detail + Escort) for longer broadleaf residual control
- Use 4 - 8 oz. Plateau + 1 oz. Detail + 0.5 oz. Escort XP on Smooth Bromegrass after full green-up
  - Substitute 5 oz. Milestone or 4 oz. Method for the (Detail + Escort) for longer broadleaf residual control

BASF
We create chemistry

General Recommendations

Southeast

- Use 4 – 6 oz. Plateau + 5 oz. Milestone or 4 oz. Method on Bermudagrass after full grass green-up
  - Add Detail where marestail or pigweed control is required
    - Use 1 oz. Detail only where temporary injury (leaf tip burning) to Bermudagrass is acceptable.
- Use 3 oz. Plateau + 5 oz. Milestone or 4 oz. Method on Bahiagrass or unimproved Centipede after full grass green-up
  - Use no more than 2 oz. per acre of Plateau applied at seeding of Centipede
  - Do not use Detail on actively growing Bahiagrass
- Rotate to MSMA to prevent broomsedge release

BASF
We create chemistry

Summary

- We want to help improve roadside vegetation management
- Webinars available upon request
- Please share pictures
- Greg Armel is an excellent resource
- Let us know how we can help

BASF
We create chemistry

Questions?

Greg Armel
Gregory.armel@basf.com
919-491-9655

Jim Bean
James.bean@basf.com
901-496-2443

Visit our website at www.bettervm.basf.us

BASF
We create chemistry