Management of Brunswickgrass in Bahiagrass Seed Production Fields

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Outline

• Brunswickgrass history
• Brunswickgrass ID
• Preliminary herbicide evidence
• 2018 field research
• Management study

History

• Brunswickgrass (Paspalum nicorae Parodi)
  • “Brown-seed” paspalum
  • Perennial warm season grass
  • Native to S. Brazil, N. Argentina, Paraguay, and Uruguay
  • Adapted to a variety of soil types
    • Well-drained, sandy, and acid soils
    • Loamy to medium clay
  • Introduced into the U.S. for soil conservation
    • PI202044 – Americus, GA; Arcadia, FL; Coffeeville, MS – not released
    • PI310131 – Americus, GA, released 1993
Agronomics/Biology

- Thick sod and aggressive root system
- Competitive and tolerates overgrazing
- Production season similar to Pensacola bahiagrass
- Tetraploid like Argentine bahiagrass
- Intolerant to residue buildup
- Production:
  - 4-5 ton DM/acre
  - TDN: 50-55%
  - CP: 7-11%

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Problem

- Increased reports of Brunswick grass in Pensacola pastures and hayfields
- Low palatability
- Contaminate of seed – seed separation

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Brunswickgrass ID

Characteristics

<table>
<thead>
<tr>
<th>Brunswickgrass</th>
<th>Pensacola Dallisgrass</th>
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<tbody>
<tr>
<td>Growing season</td>
<td>April to October</td>
</tr>
<tr>
<td>Flowering</td>
<td>July to September</td>
</tr>
<tr>
<td>Height</td>
<td>8–28 in</td>
</tr>
<tr>
<td>Leaf shape</td>
<td>Linear, lanceolate, white mid-rib</td>
</tr>
<tr>
<td>Leaf size</td>
<td>8–14 in long, 0.25 in wide, but highly variable</td>
</tr>
<tr>
<td>Leaf pubescence</td>
<td>Generally smooth, but can be hairy</td>
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<tr>
<td>Seed head</td>
<td>3 to 4 alternate racemes</td>
</tr>
<tr>
<td>Seeds</td>
<td>Brown-coated, conical, hairy glumes when present</td>
</tr>
<tr>
<td>Seed weight</td>
<td>Estimated 200,000 seeds/lb</td>
</tr>
<tr>
<td>Root system</td>
<td>Long, thin rhizomes</td>
</tr>
</tbody>
</table>

Slide: Marcelo Wallau

Seedhead

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Pasture herbicides that affect diploids but not tetraploids:
- Escort, others (metsulfuron)
- Pastora (nicosulfuron + metsulfuron)
- Chaparral (metsulfuron + aminopyralid)
- Impose/Plateau/Panoramic (imazapic)
- With Brunswickgrass being tetraploid, these may not be an option.
In general, diploids (Pensacola, etc.) more sensitive than tetraploids (Argentine, etc.)

- Pensacola
  - 0.3 oz/A metsulfuron
  - 60 DAT

- Argentine
  - 0.3 oz/A metsulfuron
  - 60 DAT

- Velpar/Tide Hexazinone/Velossa (hexazinone)
  - Used primarily for smutgrass management in pastures
  - Bahiagrass
  - Bermudagrass
  - 3-4 pt/acre
  - Mode of action – inhibits photosynthesis
  - Uptake both foliar and soil
    - Primarily soil uptake by smutgrass - rainfall

Hexazinone – Grower Observations

Brunswickgrass Control?
Hexazinone Study

- 4 locations
  - Wildwood (July)
  - Lecanto (July & August)
  - Brooksville (August)
- Tide Hexazinone (0 to 4 pints/acre)
  - 30 GPA
- Brunswick assessment
  - Pre & Post treatment counts

Brunswickgrass Control

- Bar graph showing Brunswickgrass control (percent) vs. Hexazinone rate (pints/acre)

Hexazinone @ 2 pt/acre; 3 WAT
Hexazinone @ 3 pt/acre; 3 WAT

Hexazinone @ 4 pt/acre; 3 WAT

Hexazinone @ 3 pt/acre; 1 WAT
Brunswick Management Study

- 2017
- Conventional tillage vs. no-tillage
- Cropping systems
  - Bahiagrass (check)
  - RR Soybean fb RR alfalfa
  - Millet fb ryegrass
  - Cowpea fb RR alfalfa
- Glyphosate
  - 4 qt/A in July, 2017; planted August 2017
  - 2 qt/A in December, 2017; planted ryegrass in December, Alfalfa in January 2018
  - 2 qt/A in May, 2018

Brunswickgrass Counts

- We still have a lot to learn
  - April applications (commercial) – significant regrowth
  - Seedling recruitment the year after application?
  - Seed germination characteristics/longevity
- What is the best timing
- How does rainfall affect activity (short and long-term)?
- Will crop rotation help?
Cooperators

- Clay Cooper
- Ed Jennings
- Marcelo Wallau
- Ann Blount
- Rooks Family
- John Thomas/Leon McClellan (M&B Dairy)
- John Massaro (Cigar City Cattle Co.)
- Jim Fenton
- Barthle Bros.
- Johnny Melton (Jack Melton Family, Inc.)

FYI

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- Next Webinar
  - February 12
  - John Arthington