Johnsongrass
The Good, The Bad
and The Ugly

Tim Schnakenberg
Regional Agronomy
Specialist
Galena, MO
**Johnsongrass**

*Sorghum halepense*

- Perennial that grows 6-8 ft tall
- Warm season grass
- Prolific rhizome producer
- Introduced as a forage from Turkey into S. Carolina about 1830
  - William Johnson – Farmer propagated it in Alabama about 1840
CLINT EASTWOOD

FIRST...“A FISTFUL OF DOLLARS”
THEN...“FOR A FEW DOLLARS MORE”
THIS TIME THE JACKPOT’S
A COOL 200,000 DOLLARS
...FIVE OF THE WEST’S FASTEST GUNS
SAY-COME AND GET IT!

“THE GOOD, THE BAD & THE UGLY”

TECHNISCOPE  TECHNICOLOR

LEE VAN CLEEF  ALDO GIUFFRE  MARIO Brega  ELI WALLACH
in the role of Tuco

SERGIO LEONE

Music by ENNIO MORRICONE  Produced by ALBERTO GRIMALDI for P.E.A—Produzioni Europee Associato, Roma
### The Good

<table>
<thead>
<tr>
<th>Forage</th>
<th>Yield Range Ton/Acre</th>
<th>Crude Protein %</th>
<th>TDN %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Johnsongrass</td>
<td>2-5</td>
<td>10-14</td>
<td>55-60</td>
</tr>
<tr>
<td>Pearl Millet</td>
<td>2-6</td>
<td>8-12</td>
<td>50-58</td>
</tr>
<tr>
<td>Tall Fescue</td>
<td>2-5</td>
<td>10-15</td>
<td>55-60</td>
</tr>
<tr>
<td>Hybrid Bermuda</td>
<td>5-8</td>
<td>10-14</td>
<td>55-60</td>
</tr>
</tbody>
</table>

Source: Ball et al., 2007 Southern Forages, 4th Edition

- Quality
- Tonnage
- Persistence
- Drought Tolerance
Palatability of Johnsongrass
Noble Foundation

• Palatability Study (1999-2001)
  – Averaged 11.6% Crude Protein; 58% TDN
  – Among 16 grasses studied, Johnsongrass ranked 1\textsuperscript{st} for CP and 2\textsuperscript{nd} for TDN, slightly lower than bermudagrass

• Grazing Preference During AM Grazing (2007)
  – Yearling steers had access to 14 species
  – 1\textsuperscript{st} Place - 9,200 bites from Alamo Switchgrass
  – 2\textsuperscript{nd} Place - 6,000 bites from Johnsongrass
Johnsongrass Paper?

• Mimi Aumann – Silver Dollar City paper maker

  “Johnsongrass makes a great green paper that rattles, making it strong and long-lasting”

• Next….kudzu paper
The Bad

**Johnsongrass**  
*Sorghum halepense*

- Reproduces from seed and rhizomes
- Rhizomes have been found 5 ft deep
- Rhizomes can develop within 19 days of seedling emergence
- 275 ft of rhizomes from one plant
- 80,000 seeds from one plant that can remain viable for 10 years.
- Robs desirable species of light, nutrients and water
White Sugarcane Aphid Host
Feeding Hay
Johnsongrass and Missouri State Law

- Noxious status in Missouri
- Prohibitive status in Missouri for seed
- Some counties have special rules
  - e.g. Pettis, Morgan
- Upon petition of 100 landowners and approval by a county-wide election, the county may form a weed control board. The board may levy a property tax to help conduct a Johnsongrass eradication program.
The Ugly

- Prussic Acid
- Nitrate Toxicity
- Sorghum Cystitis
Prussic Acid Poisoning

- Caused by cyanide in immature or frost damaged leaves
- Avoid grazing until plant reaches 24”, especially during dry weather
- Avoid for 14 days after killing frost

- Present only in johnsongrass and some sorghum lines.
- No problem for pearl millet.
- Not an issue in cured hay.
Nitrate Poisoning

- Accumulates in lower stalks during dry weather
- Avoid high rates of nitrates
- Test for grazing safety if a concern arises

- Present mainly in sorghums, millets and Johnsongrass
- Remains toxic in hay; Dissipates around 50% in silage
Sorghum Cystitis

- A problem with horses, though only a small percentage are affected
- A loss of control of the rear legs and bladder resulting from permanent damage to the spinal cord
- The agent that causes the condition is unknown
Controlling Johnsongrass
Mowing – Seed Distribution
Chemical Control

- Poast Plus, Assure II, Select max, Assure & Fusilade in Soybeans
- Accent Q, Steadfast Q, Option, Halex GT & Beacon in Corn
- Roundup-Ready in Corn, Soybeans and Alfalfa
  - When will resistance hit Missouri?
- Glufosinate on Liberty-Link Corn (2 applns)
  - Weaker than glyphosate
- No options for Grain Sorghum
- Select in Conventional Alfalfa
Control Options in Forages

• Heavy Grazing / Low Mowing
  – Reduced seed production
  – Depletes carbohydrates in rootstocks; The growing point sits 4-8” above ground; Rhizome development reduced if plant height is kept below 12-15”

• Weed Wiper, Spot Treatment or Full Renovation using Glyphosate or Glyphosate/Select Combination
  – Effective but will not eliminate it with one pass.

• Herbicide (expect stunting)
  – Outrider (sulfosulfuron)-Bermudagrass, Native Grass, Fescue
  – Pastora (nicosulfuron)-Bermudagrass
  – Panoramic / Impose (imazapic)–Bermudagrass, Native Grass
Outrider

• Sulfosulfuron active ingredient; Now sold by Valent
• Works well on Johnsongrass, nutsedge, cheat and downy brome
• Most effective with first growth Johnsongrass prior to seedhead development
• Can be injurious to fescue and other cool season grasses; Calibration is imperative
• Apply 0.75-1.0 oz/acre. Use a non-ionic surfactant (90% ai) at 1-2 qt/100 gallons of spray solution
• There is no grazing restriction but it’s recommended to not mow or graze for 2 weeks before or after application
Glyphosate
Rotation / Renovation

- Rotation to Roundup-Ready crops or crops with registered herbicides
- Renovation out of infested fescue
  - Spray-Smother-Spray
“When life gives you lemons, make lemonade”

- Grazing Management
  - Graze at 12-18” (higher if in a drought)
  - Pull off at 6-8”
  - Good grazing or an occasional clipping can keep seed from developing

- Hay Management
  - Be cautious of nitrate rates (40-50 lbs max.)
  - Harvest in the boot stage or before
  - A hay conditioner is necessary
Comments / Questions?

Tim Schnakenberg
Regional Agronomy Specialist
Galena, MO
417-357-6812
schnakenbergc@missouri.edu