Weed Control in Pastures
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What is a weed?
- a plant out of place and not intentionally sown
- a plant growing where it is not wanted
- a plant whose virtues have not yet been discovered
- plants that are competitive, persistent, pernicious, and interfere negatively with human activity

Albany
Fix Points Prior to Application (7/8-7/29)
- Treated – 53% (250 fixes)
- Untreated – 47% (225 fixes)

Albany
Fix Points for All 4 Months After Application
- Treated – 72% (2,718 fixes)
- Untreated – 28% (969 fixes)

Grazing Interference

Grazing Interference
Grazing Interference

Methods to Weed Management
- Preventative
- Cultural
- Chemical
- Biological
- Mechanical

Control of Annual Weeds

Control of Perennial Weeds

Impact of Mowing on Weeds-Annuals
- Broadleaf weeds
  - Releases apical dominance – lateral shoot production
  - Regrowth depends on clipping height
Coffee Weed Example

- 4,000 A ranch in Dade City
- Client observed calves losing weight August & September
- Chemical rep informed producer of creeping indigo
- Creeping indigo not found, but coffee weeds prevalent
  - Mow pastures 3 to 4 times/year
  - Plants <8 inches had seed pods
- Advice in this case
  - Park the mower
  - Use GrazonNext HL
    - 24 oz/A
    - 16 oz/A/ft 16 oz/A

Impact of Mowing – Annual Weeds

- Grasses
  - Generally results in increased tillers
  - Clipping height doesn’t always matter (changes growth pattern)

Impact of Mowing - Perennials

- One mowing is typically not enough, BUT may be species & timing dependent
- Timed appropriately, will reduce seed production for the year
- Simple vs creeping perennials
- Several times to reduce carbohydrate reserves

Impact of Mowing - Dogfennel

- Prevent seed production by mowing August or later, but before flowering
- New moon vs. full moon?

Impact of Mowing-Small Smutgrass

- Graphs showing number of plants and their reduction with mowing frequency.

Impact of Mowing-Small Smutgrass

- Graphs showing plant width reduction with mowing frequency.
Smutgrass Forage Quality

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FORAGE QUALITY UNDER ROTATIONAL GRAZING

PERCENT

DATE

Bahiagrass CP
Smutgrass CP
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Cogongrass CP after burning

<table>
<thead>
<tr>
<th>Weeks after burning</th>
<th>Crude protein (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
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<tr>
<td>6</td>
<td>6</td>
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<tr>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>10</td>
<td>4</td>
</tr>
</tbody>
</table>

Benefits of Mowing

- Increase forage quality of rank grass
  - Bahiagrass
  - Smutgrass
  - Cogongrass

<table>
<thead>
<tr>
<th>Days of Bahia Regrowth</th>
<th>Crude Protein (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>17</td>
</tr>
<tr>
<td>28</td>
<td>10</td>
</tr>
<tr>
<td>42</td>
<td>7</td>
</tr>
<tr>
<td>56</td>
<td>6</td>
</tr>
</tbody>
</table>

- Decrease grazing patterns

Grazing Patterns

Disadvantages of Mowing

- Annuals — seed spread, purely cosmetic
- Can impact grass persistence (except bahiagrass)
- Potential weed shifts
  - Shift from mowing-susceptible to mowing-tolerant species
- Cost
Costs

- Batwing, 125 hp tractor = $22.50/A

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Cost for Total Acres 75 HP 25 ft 8Y Series</th>
<th>Cost for Total Acres 75 HP 40 ft 8Y Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grazin Next</td>
<td>$13.55</td>
<td>$13.32</td>
</tr>
<tr>
<td>2,4-D</td>
<td>$11.50</td>
<td>$11.27</td>
</tr>
<tr>
<td>Milestone</td>
<td>$13.35</td>
<td>$13.32</td>
</tr>
<tr>
<td>Banvel</td>
<td>$20.05</td>
<td>$19.82</td>
</tr>
<tr>
<td>PastureGuard</td>
<td>$21.55</td>
<td>$21.32</td>
</tr>
<tr>
<td>Remedy Ultra</td>
<td>$23.55</td>
<td>$23.32</td>
</tr>
<tr>
<td>RoundUp</td>
<td>$5.13</td>
<td>$4.90</td>
</tr>
<tr>
<td>Velocity</td>
<td>$40.30</td>
<td>$40.07</td>
</tr>
<tr>
<td>WeedMamter</td>
<td>$13.55</td>
<td>$13.32</td>
</tr>
</tbody>
</table>

How Does This Affect Bahia Yield?

Monthly Bahia Yield

[Bar graph showing monthly bahia yield]

Blackberry Species in Florida

- Highbush blackberry (Rubus arcticus)
- Sand blackberry (Rubus cuneifolius)

Thistle Growth Stages

- Rosette
- Bolting

Flattop Goldenrod
Tropical Soda Apple

Goatweed

Teaweed

White Head Broom

Hand Sprayers

Hand Sprayers - Example

- Calibration area = 18.5 x 18.5 ft
- Spray area uniformly with clean water and record time
- Spray water into clean bucket for the amount of time it took to spray calibration plot
- Measure the amount of water in the bucket in ounces; this equals sprayer output in gallons per acre
- Determine tank volume (gallons)
- Divide tank volume by output = number of acres treated per tank
- Multiply herbicide application rate times number of acres treated per tank

https://edis.ifas.ufl.edu/ag217
### Table

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Measure a calibration plot that is exactly 16.5 feet by 18.5 feet.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Spray the calibration plot uniformly with water. Repeat 3 times and record the average number of ounces sprayed per second.</td>
<td>Time Required: ___ seconds</td>
</tr>
<tr>
<td>3</td>
<td>Spray into a steel bucket for the amount of time recorded in Step 2.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Measure the number of ounces of water in the bucket.</td>
<td>Volume Sprayed: ___ Ounces</td>
</tr>
<tr>
<td>5</td>
<td>The number of ounces collected from the bucket is equal to the number of gallons per acre the sprayer is delivering.</td>
<td>Output Volume: ___ Gallons/Acre</td>
</tr>
<tr>
<td>6</td>
<td>Determine the volume of the sprayer tank.</td>
<td>Tank Volume: ___ Gallons</td>
</tr>
<tr>
<td>7</td>
<td>Divide tank volume (Step 6) by output volume (Step 5).</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Multiply herbicide rate by number of acres per tank to obtain amount of herbicide to be added to tank.</td>
<td>Amount of herbicide to be added to tank: ___</td>
</tr>
</tbody>
</table>

### 1/128th Acre Method

- Based on 128 fl oz/gallon
- 1/128th of an acre = 340 ft²
- Determine how long (seconds) it takes one nozzle to cover 1/128th of an acre
- The number of ounces from a nozzle in that number of seconds = gallons per acre!
- Almost no math!!!!

### 1/128th Acre Method

- Example: 20 inch nozzle spacing
- 20 inches = 1.67 ft
- DISTANCE (ft) = 340 ft²/nozzle spacing (ft)
- 340 ft²/1.67 ft = 204 ft
- So, one nozzle covers 1/128th of an acre in 204 ft

### Boomless Sprayers

- Same principles involved
- Measure output of all nozzles
- Measure swath width; I usually subtract about 5 feet from total spray swath to have some overlap
- Measure time it takes to travel a desired distance (usually 100 ft or so)
**Boomless sprayers**

- Swatch width = 30 ft
- Distance traveled = 100 ft
  - $3,000 \text{ ft}^2/43,560 \text{ ft}^2 = 0.07 \text{ Acres}$
- 50 seconds to travel 100 ft
- Collected 224 oz of water in 50 seconds from all nozzles
  - $224 \text{ oz}/128 \text{ oz} = 1.75 \text{ gallons}$
  - $1.75 \text{ gallons}/0.07 \text{ Acres} = 25 \text{ GPA}$
- Tank volume/GPA = # of acres/tank

**Pasture Management**

- Check soil pH
  - Bahiagrass = 5.5
  - Bermudagrass = 6.5
- Fertility
  - Soil test
  - Tissue test (bahiagrass)
- Grazing Management

**Grazing Management**

- 1,000 lb horse consumes 1.5-2.5% of its weight/day
- 1 horse per 2 – 2½ acres
  - Depends on supplementation
  - Rotational grazing: Give pastures a rest
    - Try to keep stubble height at a minimum of 3”

**More Information**

- weedext.ifas.ufl.edu (uflweed.com)
- sellersb@ufl.edu

Source: edis.ifas.ufl.edu/aa216