Annual Forage Choices

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Annual Warm-Season Grasses

- Cool Season Grass
- Sudangrass
- Pearl Millet
- Crabgrass
Summer Annuals

- Sorghum Sudan
- Pearl Millet
- Teff
- Crabgrass
Good crabgrass stands start with light tillage in early May
# Livestock Performance on Crabgrass Pastures

<table>
<thead>
<tr>
<th>Crop</th>
<th>ADG</th>
<th>Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tall Fescue</td>
<td>1.1</td>
<td>76</td>
</tr>
<tr>
<td>Crabgrass</td>
<td>1.8</td>
<td>264</td>
</tr>
</tbody>
</table>
Crabgrass

- High quality summer annual
- July / August grazing
- 3-4 tons feed/acre during summer
- Improved varieties now available
- Must reseed annually
Crabgrass

- Medium yield potential
- Good persistence if reseeding is managed properly
- Good tolerance to:
  - Heat stress
  - Poor drainage
  - Poor soil fertility
- Fair tolerance to:
  - Drought
- Forage quality good if managed
Winter Forage Crops

- Wheat
- Cereal Rye
- Titicale
- Annual Ryegrass
- Stockpiled Tall Fescue
Wheat, triticale and rye most common

Vegetative growth from planting until mid-March

If planted early, grazing can begin in November
Higher Yield Potential with Cereal Rye

Yield (lb./acre)

- Wheat
- Rye

Dec-01  Jan-01  Feb-01  Mar-01
Wheat & Rye Maintain High Quality During the Fall and Winter
## Animal Performance on Wheat and Rye Pasture

<table>
<thead>
<tr>
<th>Type</th>
<th>ADG (lb/d)</th>
<th>Total Gain (lb/acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>1.8</td>
<td>180</td>
</tr>
<tr>
<td>Rye</td>
<td>1.6</td>
<td>336</td>
</tr>
</tbody>
</table>

Horn et al., 1981
Annual Ryegrass

- Easily established
- Rapid fall growth
- Remains vegetative into early May
- High quality
Annual Ryegrass Retains Green Tissue All Winter
Animal Performance on Annual Ryegrass Pasture

<table>
<thead>
<tr>
<th>Grazing Days</th>
<th>ADG (lb/d)</th>
<th>Total Gain (lb/acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Missouri</td>
<td>88</td>
<td>2.0</td>
</tr>
<tr>
<td>Experiment 2</td>
<td>112</td>
<td>1.2</td>
</tr>
<tr>
<td>Experiment 3</td>
<td>132</td>
<td>2.7</td>
</tr>
</tbody>
</table>
Stockpiled Tall Fescue

- Almost entirely leaf
- Grows rapidly from early September until November – 1 to 2 tons per acre with good management
- More fall growth than other CSG’s
- Waxy layer on leaves slows deterioration
Hay & Supplement Costs - $.80/cow/day
Stockpiled Fescue - $.42/cow/day
E+ Stockpiled Tall Fescue
Small Grain Winter Forages

- Wheat, triticale and rye most common
- Vegetative growth from planting until mid-March
- If planted early, grazing can begin in November
Forage Brassicas

- DM range – 1550–3000 lbs/a in <60 days
- CP – 18–33%
- TDN – 72–89%
Brassica Forage in Winter
Rotational grazing allows roots and shoots to recover

Increases forage utilization
# Steer Performance on Wheat-Rye Grass Pasture in the Spring (2-yr Ave.)

<table>
<thead>
<tr>
<th>Grazing Treatment</th>
<th>Stocking Rate Lbs body wt / A</th>
<th>ADG Lbs</th>
<th>Gain / Acre Lbs / A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous</td>
<td>1461</td>
<td>2.07</td>
<td>428</td>
</tr>
<tr>
<td>Rotational – 3 Paddocks</td>
<td>1878</td>
<td>2.36</td>
<td>599</td>
</tr>
<tr>
<td>Rotational – 11 Paddocks</td>
<td>2028</td>
<td>2.21</td>
<td>618</td>
</tr>
</tbody>
</table>

Boonville, AR 1993, 1994

Source: Stockpiling for Fall and Winter Pasture (AGR-162) Univ. of KY
<table>
<thead>
<tr>
<th>Spring</th>
<th>Summer</th>
<th>Fall</th>
<th>Winter</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 days</td>
<td>100 days</td>
<td>100 days</td>
<td>65 days</td>
</tr>
</tbody>
</table>

Know when your forages should grow and plan ahead to make that happen.
A Balanced Forage System

- CS Perennial
- Clover
- WS Annual or Perennial
- CS Annual

Forage Yield vs. Time:
- Feb
- Apr
- Jun
- Aug
- Oct
- Dec
Plant Maturity

The diagram illustrates the changes in dry weight and composition of organic materials in plants as they mature. Key stages include:

- **Leafy**: Young, actively growing plants with a high proportion of leaves.
- **Boot**: Transition stage with an increase in dry matter and a decrease in nonstructural carbohydrates.
- **Heading**: Peak dry matter, high protein content.
- **Bloom**: Mature stage with high lignin content.

Graphs show the trends in:

- **Dry Matter**: Increases throughout maturity.
- **Fiber (Cellulose)**: Increases as plants mature.
- **Nonstructural Carbohydrates**: Decreases from leafy to heading stages, then remains constant.
- **Protein**: Increases from leafy to heading stages, then decreases.
- **Lignin**: Increases from leafy to bloom stages.

The diagram helps in understanding the nutritional content and developmental stages of plants during their growth cycle.
Rotational Grazing

- Grazing followed by rest
  - Allows plant to recover completely after grazing
    - Recovery of shoots and roots
  - Allows for plant and stand persistence
Rotational Grazing

High Tensile Electric Fence

Temp Fence

Temp Fence

Water Source
Final Thoughts

1. Match livestock needs to forages.
2. Know what forages you have.
3. Determine what gaps are in your forage system and plant forages accordingly.
4. Strive for a balanced forage system to meet the nutrient needs of the livestock year round.
5. Improve grazing management to increase forage utilization and persistence.
Questions?