Finding Pasture in a Drought

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Use your Imagination!

• Look for opportunities to inexpensively graze/feed livestock
  – Corn stalks and other crop residues
  – Winter annual forages on crop fields
  – Rental land – a growth opportunity near cities

• Utilize the pasture you have more efficiently
Corn Stalks for Pasture

- 1/2 of the dry matter in a mature corn plant
  - 120 bu / acre = 6700 lb of residue / acre
- Conversion of corn crop residues to hay savings
  - About 15% of the residue is available for grazing
  - 6,700 of residue / acre x 15% = 1/2 ton hay saved/ac = 33 cow-days/ac
- Watch nitrates
## Hay Fed to Dry, Pregnant Beef Cows

<table>
<thead>
<tr>
<th>Year</th>
<th>Corn Stalks</th>
<th>Dry Lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998-1999</td>
<td>1344</td>
<td>3183</td>
</tr>
<tr>
<td>1999-2000</td>
<td>306</td>
<td>3217</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>825</strong></td>
<td><strong>3200</strong></td>
</tr>
</tbody>
</table>

ISU data. Study conducted over 126 days. Corn stalks stocked at 0.6 acres per cow per mo.
Corn Stalk Forage Quality

![Cows grazing in a corn stalk field](image)

![Graph showing CP (%) over months](chart)

- **On Offer**
- **Consumed**

![Graph legend](legend)

- **CP (%)**
- **Sep** | **Oct** | **Nov** | **Dec** | **Jan**
Protein Supplementation

- Any source of degradable protein is acceptable for cattle grazing corn residue.
- Choice of protein supplement should be based on price and availability.
Grazing Management

- 20 to 60 cow days per acre depending on year
- Strip grazing nearly doubles utilization
- Fence to be moved every 3 or 4 days
- Grass waterways increase available forage
Recommendations for Grazing Corn Stalks

• Can provide 20 to 60 cow days per acre
  – Typically, about 15% of the total available forage is consumed
  – More grazing days possible from high yielding corn and from improperly adjusted combines

• Forage quality low for most livestock and declines over winter
  – 5% crude protein and 50% or higher ADF

• Graze as quickly as possible in autumn

• Supplementation necessary, especially late in the year
Small Grain Pasture

- Wheat, oats and rye most common
- Vegetative growth from planting until mid-March
- If planted early, grazing can begin in November
- Can work well in combination with some warm-season grasses
Rye produces more winter pasture than wheat
Wheat & rye are great quality in autumn 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
When Should Grazing Begin?

- Grazing should start when forage reaches 8 inches
When Should Grazing Stop?

- Livestock should be rotated when forage ht. is less than 3 inches.
- Winter-kill increases when over grazed.
Livestock must be removed before jointing if grain is desired.
Small Grain Recommendations

• Plant in early-September at 100 to 130 lb./acre for dedicated plantings
• 50 to 75 lb./acre N at seeding for dedicated plantings – 50 lb. more in spring if needed
• If planting into bermudagrass or crabgrass, plant in mid-Sept and wait to apply starter N until 1 October
• Do not graze to a height of less than 3 inches
• Graze rye heavily in the spring to maintain vegetative growth
Strip Grazing

Perimeter Fence

Temp Fence

Winter Water
Stockpile Tall Fescue
POST-grazed Appearance
Pasture Utilization and Cow Average Daily Gain

Summarized from Curtis et al., 2008, J. Anim. Sci. 86:780-789
## Conception Rate of Cows

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Conception Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.25</td>
<td>93</td>
</tr>
<tr>
<td>3.00</td>
<td>91</td>
</tr>
<tr>
<td>3.75</td>
<td>94</td>
</tr>
<tr>
<td>4.50</td>
<td>92</td>
</tr>
<tr>
<td>Hay</td>
<td>92</td>
</tr>
</tbody>
</table>

Summarized from Curtis et al., 2008, J. Anim. Sci. 86:780-789
## Cow Condition the Following July

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Year 1</th>
<th>Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.25</td>
<td>6.6</td>
<td>7.3</td>
</tr>
<tr>
<td>3.00</td>
<td>6.7</td>
<td>7.1</td>
</tr>
<tr>
<td>3.75</td>
<td>6.7</td>
<td>6.9</td>
</tr>
<tr>
<td>4.50</td>
<td>6.6</td>
<td>7.3</td>
</tr>
<tr>
<td>Hay</td>
<td>7.0</td>
<td>7.0</td>
</tr>
<tr>
<td>LSD (0.05)</td>
<td>NS</td>
<td>NS</td>
</tr>
</tbody>
</table>

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*Body Condition Score*
# Calf Average Daily Gain

<table>
<thead>
<tr>
<th>Treatment</th>
<th>ADG</th>
<th>Gain per acre</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>--------</td>
<td>---------------</td>
</tr>
<tr>
<td></td>
<td>lb/day</td>
<td>lb/a</td>
</tr>
<tr>
<td>2.25</td>
<td>1.4ᵇ</td>
<td>138ᵃ</td>
</tr>
<tr>
<td>3.00</td>
<td>1.6ᵃ</td>
<td>118ᵇ</td>
</tr>
<tr>
<td>3.75</td>
<td>1.6ᵃ</td>
<td>96ᶜ</td>
</tr>
<tr>
<td>4.50</td>
<td>1.8ᵃ</td>
<td>87ᶜ</td>
</tr>
<tr>
<td>Hay</td>
<td>1.7ᵃ</td>
<td>-</td>
</tr>
<tr>
<td>SE</td>
<td>0.1</td>
<td>8</td>
</tr>
</tbody>
</table>
Recommendations

• Clip or graze pastures to a 3 inch ht. in August
• Apply 40 to 80 lb. of N fertilizer per acre in mid-Aug
• Manage cow weight...no point in having fat cows going into spring
• Toxicity declines more rapidly than does forage yield or quality
• Endophyte-free or novel endophyte best for stocker or dairy cows
• Rotational or strip grazing nearly doubles utilization