Supplementing with Alfalfa

Thursday Ranchers Lunchtime Series

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What Supplement Options are Locally Available?
Using Hay?

Test, Test, Test!
Protein & Energy
~$14

Samples can be sent off from all OSU County Extension Offices
It’s a different type of Supplement...

• Premium feeding value is in the leaves
• Stems have a nutrient content similar to grass hay
• Consider feeding conditions that affect delivered quality
• Equipment
• Vary location of feeding to spread out grazing distribution and inert matter/weeds
Round Bale Anatomy

6-foot bale:
Outer 2 inches: 11%

6-foot bale:
Outer 4 inches: 21%
Smart Bale Storage

• Well drained, slight slope
• N-S Direction in tight rows
• 3-4 ft. between rows
• Not stacked
• Exposed to sun at all angles
• No Shade
Hay Analysis

Knowledge of bale weights essential

Each cutting will have different characteristics

How hay rolls off will be different each time

Each lot of hay should be treated differently

Estimation and weights should be taken when starting to feed each lot of hay

Ex: Feed a group and then weigh at coop or at nearest scale

The Reality of Round Bales

6-foot bale or 5-foot bale?
Alfalfa – A tale of two forages...

**GRINDING ALFALFA**
less than 18% CP

**SUPPLEMENTAL ALFALFA**
18% CP +

**DRY COW:**
8% protein, 54% TDN minimum

**LACTATING COW:**
10% protein, 58% TDN minimum

<table>
<thead>
<tr>
<th>Alfalfa #10</th>
<th>1&lt;sup&gt;st&lt;/sup&gt; cutting Round Bales</th>
<th>CP</th>
<th>ADF</th>
<th>TDN</th>
<th>$/ton</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>15.4</td>
<td>32.4</td>
<td>63.7</td>
<td>$130-140</td>
</tr>
<tr>
<td>Alfalfa #2</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; cutting Big Squares, stacked inside</td>
<td>15.0</td>
<td>44.3</td>
<td>54.4</td>
<td>$130-140</td>
</tr>
<tr>
<td>Alfalfa #4</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; Cutting, Round Bales</td>
<td>19.6</td>
<td>32.9</td>
<td>63.3</td>
<td>$180</td>
</tr>
<tr>
<td>Alfalfa #9</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; Cutting Small Squares</td>
<td>22.9</td>
<td>25.4</td>
<td>69.1</td>
<td>$180+</td>
</tr>
</tbody>
</table>
Considering Vitamin A in Alfalfa

Important for:
- Bone formation, growth, energy metabolism, skin and hoof tissue maintenance, eye health

Deficiency associated with:
- Night blindness, reproductive failure, skeletal deformation, skin lesions

Sources of Vitamin A:
- Beta Carotene - Green growing forages
- High Quality, new crop hays
- Mineral Supplement

Winter/drought requires supplementation of Vit. A

https://extension.okstate.edu/fact-sheets/supplementing-vitamin-a-to-beef-cattle.html
## Vitamin A in Alfalfa

<table>
<thead>
<tr>
<th></th>
<th>Growing Steers and Heifers*</th>
<th>Stressed Steers and Heifers*</th>
<th>Gestating Cows*</th>
<th>Lactating Cows*</th>
<th>Alfalfa, Early Bloom</th>
<th>Locally sourced 20% Cubes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vitamin A, IU/lb. of feed DM</strong></td>
<td>1000</td>
<td>2250</td>
<td>1300</td>
<td>1800</td>
<td>1300</td>
<td>10,000</td>
</tr>
<tr>
<td><strong>Vitamin A, IU per day</strong></td>
<td>12500</td>
<td>15000</td>
<td>34000</td>
<td>54000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Daily requirements are calculated based on 500-pound growing or stressed calves and 1,200-pound cows.


Table adapted from OSU Factsheet Supplementing Vitamin A to Beef Cattle. 2018. Brian Freking and Dave Lalman. https://extension.okstate.edu/fact-sheets-supplementing-vitamin-a-to-beef-cattle.html
Research
Performance and forage utilization by cows receiving increasing amounts of alfalfa as a supplement
KSU Study, Vanzant and Cochran 1994

Cows (1100 lbs.) on dormant range supplemented with Alfalfa

• Alfalfa Quality : 19.4% CP and 47.9% ADF

• Alfalfa hay supplemented daily from one of 3 levels

• Alfalfa Supplementation - 5.28, 7.92, or 10.56 lbs.
Conclusions:

• Conception rate unaffected by level of alfalfa supplementation
• Interval to conception was reduced with higher alfalfa levels
• Weaning weights of calves' greatest from cows receiving most Alfalfa

Cows in good condition → 7.92 lbs. or 0.72% BW
Cows needing to gain weight: → 10.56 lbs. or 0.96% BW
Things to Consider with Supplemental Alfalfa

KSU Study, Vanzant and Cochran 1994

- Level of supplemental alfalfa might interact with the stage of gestation

- 2nd and 3rd stages of gestation – less room in rumen due to fetus

- When alfalfa is used to supplement there is less room for other forages which causes a substitution effect

- Later stages of Gestation - Grazing decreased with increasing Alfalfa supplementation
Things to Consider with Supplemental Alfalfa

NW OK Producers

• Decreased grazing defect is less noticeable with alternative or every 3rd day supplement

• Think about balance of distance, forage, cow needs

• Reality: Some producers supplement high quality alfalfa 30 lbs. per head every 3rd day and don’t see an effect on grazing – “spoiled cow syndrome”
What is the Supplemental Need?

Animal Nutrient Requirements

Subtract Value of forage/hay

= Nutrient Excess or Deficiency

Supplemental Need of the Cow Herd
## Alfalfa Supplementation Example

### Dry Cow (1300 lbs.) to (Feb. Calving) on Native Range

32 lb. Consumption Rate (DMI)

<table>
<thead>
<tr>
<th>Requirement of 1300 lb. Cow</th>
<th>CP (lbs.)</th>
<th>TDN (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutrient Quality of Dormant Native Range</td>
<td>2.3</td>
<td>16</td>
</tr>
<tr>
<td>Deficiency</td>
<td>1.0</td>
<td>13</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Supplement</th>
<th>Description</th>
<th>CP</th>
<th>ADF</th>
<th>TDN</th>
<th>$/ton</th>
</tr>
</thead>
<tbody>
<tr>
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<td>2\textsuperscript{nd} Cutting, Round Bales</td>
<td>19.6</td>
<td>32.9</td>
<td>63.3</td>
<td>$180</td>
</tr>
<tr>
<td>20% Cubes</td>
<td>¾ Cube</td>
<td>20</td>
<td></td>
<td></td>
<td>$313</td>
</tr>
</tbody>
</table>
### Cost per lb. based on Cost of Protein

#### The comparison...

<table>
<thead>
<tr>
<th>19.6% Alfalfa</th>
<th>20% Cubes</th>
</tr>
</thead>
<tbody>
<tr>
<td>19.6% Protein</td>
<td>20% Protein</td>
</tr>
<tr>
<td>$180/ton</td>
<td>$313/ton</td>
</tr>
<tr>
<td>392 lbs. CP/ton</td>
<td>400 lbs. CP/ton</td>
</tr>
</tbody>
</table>

**$0.45 per lb. CP**

($180/392 lb.)

**$0.78 per lb. CP**

($313/400 lb.)
Cost per lb. based on Protein Requirement

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<td>1.0</td>
<td>13</td>
</tr>
<tr>
<td>Deficiency</td>
<td>1.3 lbs.</td>
<td>3 lbs.</td>
</tr>
</tbody>
</table>

19.6% CP Alfalfa
6.6 lbs. Alfalfa/day
(1.3/.196)
$0.60 per day
($0.09 x 6.6)

20% CP Cubes
6.5 lbs. cubes/day
(1.3/.20)
$1.04 per day
($0.16 x 6.5)

Which would you choose?
Take Home

1. Protein supplements don’t necessarily need to come from a sack or feed bin.

2. Feeding accuracy take a little extra time but can be achieved.

3. Thinking outside the box regarding supplements can reduce cost.

4. Know your grass and your cows! A blanket plan may not always be successful.
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