HOW GOOD IS WHEAT PASTURE FOR WINTER GRAZING LIGHT WEIGHT CALVES?

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INTRODUCTION

Michael Jordan is to basketball what wheat pasture is to stocker cattle. There is none better. Gains in excess of two pounds per day have been realized when grazing lightweight calves on wheat pasture. The grazing period can extend from November through May. Feed costs will range from thirty-five to forty cents per pound of gain. This high performance coupled with low cost of gain is an attractive alternative for northeastern Nevada cattlemen to consider.

This paper discusses the nutrient content of wheat forage, how it fits stocker cattle requirements and how other feeds compare. Companion papers discuss the Economics and Performance of Lightweight Northeastern Nevada Calves Grazing Texas Wheat Pasture: a Marketing Alternative Case Study: Selecting and Preparing Cattle for Wheat Pasture Grazing; How to Find and Secure Wheat Pasture for Grazing; and Agronomic, Cultural and Livestock Management Practices of Wheat Pasture Grazing.

NUTRIENT CONTENT OF WHEAT PASTURE

Table 1 shows the dry matter, protein, energy and mineral content of common feeds in comparison to wheat pasture. While the moisture content of wheat pasture may exceed 75 percent, the protein content on a dry matter basis will exceed 20 percent. While alfalfa hay may come close to matching the protein content, energy is higher in wheat pasture. Energy content of wheat pasture may exceed 73 percent on a dry matter basis.

Table 1. Protein and energy content of wheat pasture and comparable processed feeds on a dry matter basis.

<table>
<thead>
<tr>
<th>Feed</th>
<th>Dry Matter</th>
<th>Crude Protein %</th>
<th>TDN %</th>
<th>Ca %</th>
<th>P %</th>
<th>Mg %</th>
<th>K %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat pasture</td>
<td>25</td>
<td>20</td>
<td>73</td>
<td>.15-.40</td>
<td>.25-.35</td>
<td>.15</td>
<td>3-5</td>
</tr>
<tr>
<td>Alfalfa hay</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>early bloom</td>
<td>90</td>
<td>18</td>
<td>60</td>
<td>1.41</td>
<td>.22</td>
<td>.33</td>
<td>2.52</td>
</tr>
<tr>
<td>mid bloom</td>
<td>90</td>
<td>17</td>
<td>58</td>
<td>1.41</td>
<td>.24</td>
<td>.31</td>
<td>1.71</td>
</tr>
<tr>
<td>Nevada grass hay early cut</td>
<td>90</td>
<td>8.9</td>
<td>53.2</td>
<td>.61</td>
<td>.18</td>
<td>.15</td>
<td>1.6</td>
</tr>
<tr>
<td>Corn #2 whole</td>
<td>88</td>
<td>10.1</td>
<td>90</td>
<td>.02</td>
<td>.35</td>
<td>.13</td>
<td>.37</td>
</tr>
<tr>
<td>Requirements of 300 lb. steer to gain 2.0 lb./day</td>
<td>9 lbs.</td>
<td>14.8</td>
<td>67.5</td>
<td>.72</td>
<td>.32</td>
<td>.1</td>
<td>.7</td>
</tr>
</tbody>
</table>

EXPECTED WEIGHT GAINS ON WHEAT PASTURE

Note from Table 2 that wheat pasture has excess protein and sufficient energy to produce average daily gains up to two and one-half pounds. Energy is the limiting nutrient for gains higher than two and one-half pounds per day. Several studies have shown that energy supplementation with an ionophore added could boost those gains to 3 lbs./day provided superior genetic cattle are grazed and those cattle have been implanted and dewormed.
Also note in Table 1 that calcium mineral supplementation is required. Calcium deficiency could reduce gains and some studies suggest low calcium levels may be implicated in wheat pasture bloat. Phosphorous and magnesium levels in wheat pasture are usually adequate while potassium is well above the requirements of the grazing animal. The elevated potassium levels pose no known problems.

Calves on wheat pasture do not always gain to the forages potential. Gains of one and one-half pounds are normal for graze-out wheat pastures. The most common reason is a lack of dry matter quantity not forage quality. Wheat pastures are often stocked for season-long grazing. These season-long stocking rates may be too high during the mid-winter months of November through February, when cooler temperatures restrict plant growth. Conversely, stocking rates may be too low during March and April when rapid plant growth is taking place. The higher season-long stocking rates may reduce the average daily gain on a per animal basis while total pounds of beef produced per acre may be optimized.

Also affecting cattle weight gains on wheat pasture are the increased energy requirements that are associated with cold stress. Wind, rain and mud often compound cold stress. They all contribute to increased body heat loss. Many wheat pastures have no natural or synthetic windbreaks or dry areas for cattle to lay down. Wind and rain are more severe in certain regions of wheat producing country than others and some soils are more prone to mud. Providing cattle a natural or synthetic windbreak and the opportunity to lay down in a dry area or dry bedding will increase gains.

Feeding a mineral supplement that contains an ionophore and grazing only good genetic cattle that have been implanted and dewormed all contribute to superior weight gains. Also, as mentioned earlier, the addition of an energy supplement during wet, windy and muddy times will increase gains.

**GRAZE-OUT VERSUS HARVEST WHEAT PASTURE**

The growth stage of the plant stretches from November to the first of May. Most plant growth occurs during the months of March and April during the warmer days and nights. Those acres intended to be harvested for wheat grain are grazed up to the first of March at which time cattle are removed. This allows the wheat plants to mature and make grain for June harvest.

Plant and animal production is higher and more predictable on irrigated wheat pasture in comparison to dry land pasture. Times of reduced or no natural moisture can be compensated with irrigation.

Those acres not harvested for wheat grain are termed “graze-out wheat.” Cattle grazing on graze-out acres continue through mid-May. Oftentimes graze-out wheat pasture is double stocked during March and April. Double stocking is done in an effort to “find a home” for the many cattle that are displaced between the wheat harvest and the next crop season.

### Table 2. Comparison of wheat pasture’s nutrient content with the protein and energy requirements of stocker calves at various body weights for average daily gains of 1.5, 2.0, 2.5 and 3.0 lbs./day.

<table>
<thead>
<tr>
<th></th>
<th>Average Daily Gain</th>
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<tbody>
<tr>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td><strong>Wheat content</strong></td>
<td><em>20.0/73%</em></td>
</tr>
<tr>
<td>300 lbs. Steer wt.</td>
<td>13.2/63%</td>
</tr>
<tr>
<td>400 lbs. Steer wt</td>
<td>11.5/63%</td>
</tr>
<tr>
<td>500 lbs. Steer wt</td>
<td>10.5/63%</td>
</tr>
</tbody>
</table>

* Crude protein/total digestible nutrients, expressed as percent of diet.
** Numbers displayed in bold and underlined, exceed the nutrient supply of wheat pasture.
by the harvest wheat grain acreage and to utilize the additional plant growth brought on by the warmer March and April temperatures. Overstocking of graze-out wheat can reduce average daily gains.

SUMMARY

Wheat pasture is one of the highest quality forages in existence. The primary problem associated with grazing wheat pasture is available forage quantity, not quality. Energy supplementation may economically increase weight gains when stocking rates are high. In addition to conservative stocking rates, the use of an ionophore and grazing superior genetic implanted cattle will economically increase weight gains. The only major mineral problem with wheat pasture is calcium deficiency.

References


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