GRAZING ALFALFA IN TENNESSEE: 
*Experiences and Opportunities*

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INTRODUCTION

Animal agriculture in the southeastern U.S. is based on forages. This area has the advantage over all other sections of the nation in forage production. From Kentucky to south Florida, with a little planning forage can be grown almost 12 months a year. Forage programs in Tennessee and Kentucky are based primarily around cool-season grasses such as tall fescue and orchardgrass. These grasses grow over a long portion of the year. In fact, producers have to deal with excess forage production during the spring and fall (Fig. 1). The quality and quantity of forage during these times of the year are not a problem. Research has shown that clover/grass pastures can produce gains of 1.5 to 2 pounds a day gain on stocker calves.

![Figure 1. Growth curve for cool-season grasses.](image)

Ball and co-workers. 1996. Southern Forages

Difficulties arise during the summer, however. High temperatures, sometimes coupled with drought result in poor production from pastures. The poor quality and production result in reduced animal performance during the summer months.

RESEARCH EXPERIENCE

In the past, alfalfa has not been seriously considered for grazing. The potential for alfalfa to provide high quality forage during the summer has never been questioned. The problem was the survival of alfalfa stands used for pasture. The poor persistence of alfalfa under grazing made it impractical to use, even though animal performance was shown to be outstanding. Work at the

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University of Georgia was initiated to develop a variety of alfalfa that was grazing-tolerant, but still had high yield potential. This work led to the release of 'Alfagraze' in 1991. Small plot work indicated that Alfagraze was more persistent under continuous grazing than standard hay-type varieties (Table 1).

<table>
<thead>
<tr>
<th>Variety</th>
<th>Plants/ft²</th>
<th>Stems/ft²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alfagraze</td>
<td>6</td>
<td>54</td>
</tr>
<tr>
<td>Apollo</td>
<td>6</td>
<td>9</td>
</tr>
</tbody>
</table>


A grazing trial was begun to determine if the persistence of Alfagraze in small plot research would translate over to a large scale trial. Thirty acres were used to compare the animal performance and persistence of Alfagraze and Apollo. Three different levels of forage were maintained to find out what affect management would have on persistence and performance. A high level of forage (12-15 inches), a medium level (8 inches) and low level of forage (2-3 inches) were maintained throughout the grazing season for 3 years. Results from this work were the same as for the small plot research. Animal performance results showed that excellent gains could be expected through grazing alfalfa (Tables 2 & 3).

<table>
<thead>
<tr>
<th>Variety</th>
<th>Plants/ft² at LOW forage level</th>
<th>Plants/ft² at HIGH forage level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alfagraze</td>
<td>5.5</td>
<td>6.4</td>
</tr>
<tr>
<td>Apollo</td>
<td>1.5</td>
<td>3.1</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Measurement</th>
<th>LOW forage level</th>
<th>HIGH forage level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average daily gain (lb)</td>
<td>1.42</td>
<td>2.19</td>
</tr>
<tr>
<td>Stocking rate (head/acre)</td>
<td>2.63</td>
<td>1.06</td>
</tr>
<tr>
<td>Gain per acre (lb)</td>
<td>424</td>
<td>264</td>
</tr>
</tbody>
</table>

Alfalfa could now be practical for producers in the southeast. This research showed that management was still a major factor influencing plant persistence and animal performance, but a quality forage was available for the summer.

**ON-FARM EXPERIENCES**

The greatest impact of alfalfa grazing in Tennessee has been on dairy farms. The high cost of feed has forced many producers to utilize pasture as a feed source, helping them reduce expenses. A dairy producer in southeast Tennessee has been able to replace 20-30 percent of his ration with alfalfa through grazing. This saved 42 cents per cow each day, or 52 dollars a day for his herd. When establishment and maintenance expenses were subtracted from the total savings from grazing alfalfa, the average profit per acre was $484. A dairy producer in middle Tennessee was able to save 50 cents per cow each day by grazing alfalfa. His profit per acre averaged $330.

**OPPORTUNITIES**

Dairy operations are the most obvious places where grazing alfalfa can have a positive impact. The high quality required by a dairy cow matches the nutrients provided by alfalfa. But there is also potential on beef cattle farms for alfalfa.

First, producers that background cattle can utilize alfalfa. Research has shown that gains are excellent during the summer on alfalfa. Producers can get extra gain on backgrounded calves by grazing alfalfa instead of having to use annual forages such as pearl millet.

Creep grazing is another potential use for alfalfa. A 4 or 5 acre field can be used to creep graze spring calves. The cows may not necessarily need the high quality of alfalfa, but an extra 40 or 50 pounds might be added to a weaned calf.

Demonstrations are beginning in Tennessee to investigate these areas of alfalfa utilization. To profitably use alfalfa, several points need to be kept in mind.

1. **The nutrient requirements of the animal to be fed should always be remembered.** Every class of livestock on the farm does not need forage as high in nutrients as alfalfa. Alfalfa should be utilized by high producing or growing animals first.

2. **Management is still important.** Factors such as fertility, insect control and weed control are still important in influencing the productivity and persistence of an alfalfa stand.

3. **Controlled grazing is essential.** Even though an alfalfa variety has been bred for grazing-tolerance, it is still alfalfa. Grazing management should
be such that the paddock should be grazed down in 3-4 days, followed by a rest period of 3-4 weeks to allow regrowth.

The ability to graze alfalfa has provided many opportunities in Tennessee, Kentucky and the southeast. Its usefulness depends on fitting it into a forage program that includes cool-season grasses. Alfalfa is not a replacement for tall fescue and orchardgrass, but an important supplement to them.