Alfalfa

Alfalfa is a popular legume due to its high quality, yield, and summer growth. However, alfalfa requires better soils and management to capture its benefits.

- Perennial legume
- Erect with leafy stems from large crowns at the soil surface
- Generally used for hay and silage but increasing use in pastures
- Withstands drought better than other legumes due to a deep taproot
- Grows well with orchardgrass
- In pure stands can cause bloat
- Prone to a number of disease and insect problems
- Should only be used on well drained fertile soils

Characteristics of alfalfa – note increased stemminess close to the ground

Generalized growth curve for alfalfa – varies with location

Source for graphics and photos: A Guide to the Common Forages and Weeds of Pastures, MU Extension, University of Missouri - Columbia

Grazing Guide Sheet # 6

January 2005
Establishment: Must pay attention to detail

**pH:** 6.5-7.0  
**Soil:** deep, well drained, fertile soils  
**Fertility at planting:** No N; P and K per soil test  
**Inoculation:** essential – use commercial inoculants  
**Date:** 30-60 days < first killing frost in fall or 30 days < last killing frost in spring  
**Rate:** 15-25 lbs/A for pure stands; 10-20 lbs/A with 3-5 lbs/A of orchardgrass  
**Method:** 6-8” rows; cultipacker-seeder is the best planter in prepared seedbeds  
**Conventional seeding:** seed 1/4-1/2” deep preferably with a cultipacker  
A firm and compact seedbed is essential  
**No-till seeding:** graze or mow the sod short; kill all vegetative competition with a herbicide, use insecticide, plant 1/4-1/2” deep with no till  
Not suited for frost seeding due to weak seedling vigor

Management: requires a high level of management to capture benefits

**Hay:** 4 to 7 cuttings per year (depends on location and management)  
Harvest at early bloom stage for compromise between quality and yield  
**Fertility:** use a soil test to replace nutrients removed with hay; maintain pH  
**Grazing:** rotationally graze for 1-7 days at a time; rest for 25-40 days at a time;  
Use grazing tolerant varieties  

**IMPORTANT:** Avoid bloat by  
- seeding with grass  
- turning cattle into new paddock only after forage is dry (no dew)  
- not allowing cattle to get hungry prior to turn in

**Approximate yield:** 3-6 tons when well managed and adapted to location  
**Stand life:** 3-5 yrs, up to 8 yrs with good management and adapted to location  
In coastal plain, shorter stand life (2 to 4 yrs)

### Relationship between the stage of alfalfa maturity at harvest to total digestible nutrients (TDN), crude protein (CP), and acid detergent fiber (ADF) on a dry matter basis

<table>
<thead>
<tr>
<th>Maturity</th>
<th>TDN%</th>
<th>CP%</th>
<th>ADF%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-bud</td>
<td>65</td>
<td>21.7</td>
<td>28</td>
</tr>
<tr>
<td>Bud</td>
<td>62</td>
<td>19.9</td>
<td>31</td>
</tr>
<tr>
<td>1/10 bloom</td>
<td>58</td>
<td>17.2</td>
<td>34</td>
</tr>
<tr>
<td>½ bloom</td>
<td>56</td>
<td>16.0</td>
<td>38</td>
</tr>
<tr>
<td>Full bloom</td>
<td>54</td>
<td>15.0</td>
<td>40</td>
</tr>
<tr>
<td>Mature</td>
<td>52</td>
<td>13.6</td>
<td>42</td>
</tr>
</tbody>
</table>

*From Alfalfa in the South Source: Nutrient Requirements of Dairy Cattle, 1978, National Academy of Science, Publ. 1349*