GOATS AND FORAGE
Forage Base

Browse

Grass

Forbs
Feeding Preferences

- Goats
- Sheep
- Cattle

Types of Plants:
- Browse
- Grass
- Forbs
GRAZING HEIGHT, FROM SOIL SURFACE

LOWER ....TO HIGHER

Horse > Sheep > Cattle > Goat
COW-HORSE-SHEEP-GOAT
Nutrition

- Cornerstone of herd health program
- Physical appearance indicator
  - Body Condition Score
- Observe grazing/feeding behavior
Grazing behavior

- Browsing preferred
- Eat fence lines before moving into pasture
- Prefer steep, hilly areas to flat areas
- Eat from top down
- Highly selective
- Quit grazing when dry matter level falls
Goats appear to stop grazing at a post-grazing mass of around 900 lbs/ac

200 pounds/acre-inch = 4.5 inches
300 pounds/acre-inch = 3 inches
Scenario

- Goats are on overgrazed pasture
- No browse
- Feeding varying amounts of purchased supplements
- Goats look good

- Is the producer making any money?????
# FEED COSTS

$ per lb

<table>
<thead>
<tr>
<th>Type</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PASTURES</strong></td>
<td></td>
</tr>
<tr>
<td>Permanent</td>
<td>.01-.02</td>
</tr>
<tr>
<td>Annual</td>
<td>.03-.04</td>
</tr>
<tr>
<td><strong>STORED FORAGES</strong></td>
<td></td>
</tr>
<tr>
<td>Hay</td>
<td>.04-.05</td>
</tr>
<tr>
<td>Silage</td>
<td>.04-.05</td>
</tr>
<tr>
<td><strong>CONCENTRATES and/or BYPRODUCTS</strong></td>
<td>.14-.20+</td>
</tr>
</tbody>
</table>
Forage Quality & Goat Requirements

TDN

80
70
60
50
40
30

Pasture Veget.  Pasture Mature  Pasture Dead

Dry & Early Pregnant
Does
Yearling
Does in Early Lactation
Weanling
“grass” farmer first, livestock producer second
A Strategy for Pasture Use

- Group animals into categories according to nutritional needs.

- Goats with highest nutritional needs: does in early lactation, yearlings and weanlings, should have access to the best pasture. This pasture should be maintained in a vegetative state. If not, supplementation may be necessary.

- Dry does, bucks, pregnant does not nursing can meet nutrient requirements on mature pasture.
<table>
<thead>
<tr>
<th>Diet Preference Animal Species</th>
<th>Type of Diet</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grasses</td>
</tr>
<tr>
<td>Cattle</td>
<td>65 – 75</td>
</tr>
<tr>
<td>Horses</td>
<td>70 – 80</td>
</tr>
<tr>
<td>Sheep</td>
<td>45 – 55</td>
</tr>
<tr>
<td>Goats</td>
<td>20 – 30</td>
</tr>
<tr>
<td>White-tail deer</td>
<td>10 – 30</td>
</tr>
<tr>
<td>Elk, red, and fallow deer</td>
<td>30 – 60</td>
</tr>
</tbody>
</table>

¹ Shrubs or trees.

Basic Grazing/Browsing Management for Goats

- Strive to keep grazing height above 5”
- Minimum of 3 paddocks, 5+ is best
- Manage for maximum leaf production to maximize forage quality
- Longer rest and recovery for browse than improved pasture
- Growing points of browse are from buds rather than the base of the plant with herbaceous plants
Animal Husbandry - Relative to Grazing/Browsing

- Goats are more selective foragers than cattle
- Goats tend to prefer taller vegetation
- Don't browse vegetation at all growth stages
- Ideally fence woods separate from pasture
- Best to rotate off paddocks before goats graze re-growth
- To avoid impacting cattle grazing stock 1 doe per cow
- Concentrated tannins are natural de-wormers "medicinal pasture"
Browsing

“Browsing can stimulate growth of leaves and sprouts to more than normal size but continued heavy use results in small and weak leaves and stems”

Range and Pasture Handbook, NRCS
Grazing Preference dependent on forages available, animals experience, stock density and timing

Desirable (Preferred)

- Multiflora rose
- Briars
- Ragweed
- Lambsquarter
- Sericea
- Honeysuckle
- Kudzu
- Privet

Note: some of these plants are invasive so planting may not be a good option
Grazing Preference dependent on forages available, animals experience, stock density and timing

- Intermediate
  - Ironweed
  - Spiny amaranth
  - Pigweed
  - Buckbrush
  - Curly dock
  - Pokeweed
  - Buttercup
  - White clover
  - Thistle
  - Wingstem
Grazing Preference dependent on forages available, animals experience, stock density and timing

- Undesirable
  - Horsenettle
  - Perilla mint
Monitoring general trend concerning browse

- **Key species**
  - Key species to monitor in determining upward or downward trend of browse condition
  - Intermediate browsed species are good key species

- **Age class of browse**
  - One age class indicates downward trend in browse

- **Hedging**
  - Indicator of heavy recent browse
  - 2+ yr of growth above hedge line indicates trend toward lighter browsing

- **Browse lines**
  - Forage is beyond reach of animals

- **Abundance of low preference forage species**
  - Indicates key species is not competing with lower preference species.
Score 1:
- Spinous process—prominent and sharp
- No fat cover
- Transverse process protrudes
- Fingers press under with ease

Score 2:
- Spinous process—prominent but smooth
- Slight fat cover
- Transverse process rounded
- Fingers go under with pressure

Score 3:
- Spinous process—rounded but smooth
- Muscle development full
- Transverse process round but smooth
- Need hard finger pressure to find transverse process end

Score 5:
- Spinous process not detectable
- Transverse process not detectable
The manager controls:

- Where goats graze
- How many graze per unit area
- For how long
- Stubble height
Stocking Rate

- Rule of thumb
  - 5 animals per one cow

- Works for sheep

- Goats
  - Brush control
  - Maintain browse 1-2 goats per cow
Average availability: 1960 lb DM/a
Tall fescue seedheads
Feeding Goats, End of Pasture Season

- Consider supplementing with a small grains pasture
- Stockpiled fescue
- Use of brassicas?
- Use controlled grazing principles
  - Restrict animals in small area (1-2 days grazing max.)
Use of Hay

- Offer grass hay ad lib. If hay is 10-11% CP, feed 1 pound of 16% CP feed. May need higher CP% or higher energy feed if hay is lower quality.

- A higher quality hay (12-13%CP) will allow use of corn at ½ to 1 lb/hd/day.
Stocking Rates

“Set by parasite load more than forage”

- 6 mature goats = 1 cow on improved pasture
- 10 mature goats = 1 cow on early succession areas (browse) or good wheat or alfalfa pasture
- 1-2 goats = 1 cow for sustained management of browse
Ideal Graze and Rest Period

- <21 day grazing or browsing to avoid worms
- Rest 3 months in summer
- Rest 6 months in winter
- Rest 12 months prior to kidding
Goat Nutrition Summary

- During the growing season do a good job of pasture management to allow nutrient needs to be met. Provide a good goat mineral mix, including magnesium to prevent grass tetany and copper.

- In the late fall/winter, extend the grazing season by using annual crops and/or stockpiling fescue. Provide a good goat mineral mix.
Goat Nutrition Summary

- When feeding hay, know the nutrient content. With good quality hay, 14% protein and up, any additional supplementation will be for energy and can be met with corn.
- Hay protein levels below 12% may require supplementing both protein and energy. Will need a pre-mixed feed or a mix of corn and SBM, or whole cottonseed.
- Feed a good quality goat mineral
And finally, don’t forget about…

**WATER!** All production, growth and animal performance will be affected if insufficient or poor quality water is available.

Body condition: The best way to monitor your nutritional program is to watch your goats and what is happening with their body condition.
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