Managing Natural Animal Grazing Behavior

*For Improved Pasture Sustainability*

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Managed Grazing Goals

• Increased Yields of High Quality Forage to Reduce Feed Costs
• Maintain Pasture Stands for Long Periods - Sustainable Pastures
• Meet a Large Portion of the Nutritional Needs of Livestock From Forage – Reduce Purchased and Stored Feed Needs

Meeting These Goals Requires an Understanding of Animal Behavior and Controlled Animal Feeding Habits
Preferred Grazing Height From Soil Surface

- Lower to Higher

Horse > Sheep > Cattle > Goat
Dry Matter Intake Estimates*

- Beef cows = 2 - 3.0% bodyweight
- Stockers = 2 - 4%
- Dairy = 3 – 4.5%
- Sheep = 2 – 5%
- Goats = 3 – 5.5%
- Horses = 2 – 3%

*Influenced by Quality
Mature Horses:

- Generally Consume 2-3% of Body Wt. As Forage DM
- Efficient Grazing Height – 2-4 Inches
- Upper & Lower Incisors that Permit Closer Grazing
- Treading and Hoof Action May Damage Forages
Sheep Behavior

- Sheep Graze 6-10 Hours/day
  This is Broken up into 5-6 grazing periods
  Influenced by weather

- Efficient Grazing Heights
  Sheep 2-6 Inches
Cattle Behavior & Efficiency

- Cattle Graze (8-12 Hours / Day) 5-6 periods
- Efficient Grazing Heights For Cattle (4-10”)
- Leave 3-4 inches residue for Max. intake
Goats

- Can Be Very Useful Where Regrowth of Brush is not Desirable - Renovators
- Goats Will Actively Select Major Weeds at Particular Stages of Growth
- Affective Control of Unwanted Vegetation Can Be Accomplished in Two Years (Multiflora Rose, Black Locust, Brambles)
Goats

- Eat Grasses, Legumes, & Browse
- Prefer Browsing Over Grazing
- Browse Morning / Graze Afternoon
- Select Grass Over Clover
- Active Grazers – Cover a Wide Area
- Graze Along Fences Before Center of Pasture
- Inquisitive & Tolerant to Bitter Material
- Seek Shelter: Less tolerant to Wet & Cold Than Sheep or Cattle
Goats

• Narrower Muzzle than Sheep w/ Split Upper Lip – Adapted for Selecting Plant Parts
• Prefer Rough & Steep Land
• Top Down Forage Grazers
• Tall Feeds – Weed Seed Heads
• Do Not Graze Into Forage Canopy
Different Grazing Habits

- Smaller animal species generally graze shorter vegetation. Since **cattle prefer longer, higher vegetation**, cattle pastures tend to have less tillering. A cattle-grazed pasture will have considerable ungrazed material near *dung piles and urine spots*.

- Sheep tend to graze much of this material
Different Forage Preference

- **Sheep graze many common "weeds"** even when high quality forages are available.
- **Goats prefer brush**, including berry and multiflora rose plants.
- **Cattle prefer more coarse, longer forage**, whereas sheep prefer fine material.
Mixed Species Grazing

- Can Often Improve Pasture Utilization
- Control Problem Weeds & Brush w/o chemicals
- By Understanding Grazing Behavior We Can Make Production & Management Decisions To Improve Animal Performance
General Benefits

Studies analyzing the benefits of mixing grazing have demonstrated some advantages:

1) different grazing habits
2) different forage species preferences
3) reduced parasite loads
4) predator control for smaller species
5) market diversity for economic stability
6) more livestock pounds produced per acre.
General Species Comparison

In A Good Pasture System
6-8 Goats Consume As Much As 1 Cow
• 5-6 Sheep Eat As Much As 1 Cow

In A Good Brush-Browse System
• 9-11 Goats = 6-7 Sheep = 1 Cow
Multi-Species Grazing:
1 or 2 Goats / Cow
Mixed Animal Species

Objective:
Make use of different feeding habits to manage pasture and optimize animal production!
Additional Costs

- Equipment & Knowledge required for diversification of the herd:
  1) adaptation of fencing
  2) buildings/ Shelter
  3) handling equipment
  4) management Know-how
Impacts of Multi-Species Grazing

• **Positive Environmental Impact**
  Proper management of vegetation.
  Well balanced pressure on vegetation.
  Protective and productive use of natural resources.

• **Negative Environmental Impact**
  The opposite of the objective in case of under-utilization or overgrazing.

• **Livestock Productivity Impact**
  Feed quality improvement
In All Management Systems

- The *Grass Producer* must monitor:
  - Forage Utilization
  - Residue / Stubble Management
  - Forage Rest Periods
- Manage Animals Accordingly
Why Commingle?

- Increase potential income per acre
- Better utilization of forages
- Decrease parasite loads
- Decrease predation of small ruminants
- Decrease fuel for fires
- Decrease chemical use to control undesirable weeds
Why NOT commingle?

- Increased costs of operation
- Increased Management
- Transfer of some diseases?
- Bully animals
- Lambing, kidding, calving – may want to separate
- Minerals
- Labor
Grazing Experiment:
4 grazing seasons (1996 – 1999)

Information provided by Dr. Beth Walker – Missouri State University
Experimental site after four years of grazing

Cattle alone

Control

Goats + Cattle

Rosa multiflora Thumb. bushes

No bush left
Recommendation: 1 to 2 goats per head of cattle