

Rangeland Animal Nutrition Note Guide

Animal Requirements

- _____
- _____
- _____
- _____
- _____
- _____

Maintenance

= _____ + _____ + _____

On a yearly basis, requires greatest amount of energy by the animal.

Maintenance requirements depends on:

- Size: Larger animals have lower basal metabolic rate (as a % of body size) than smaller animals
- Age: Young > Old
 - For example, basal metabolic rate of sheep:
 - birth = 132 kcal / m³
 - 5 weeks = 68 kcal / m³
 - 6 years = 52 kcal / m³
 - Young animals (under 6 months) can be permanently stunted if subjected to _____.
- Domestic vs Native: Most wildlife species have _____ basal metabolism and the ability to vary their basal metabolic rate with season.

Growth - important energy demand in young animals & gestating females

- _____ increased requirements above maintenance in last trimester

Lactation - greatest energy requirement above maintenance for mature females

- Requires _____ greater energy supply than maintenance

Reproduction –

- Last trimester of pregnancy for females
- During breeding season for males

Environmental conditions –

- _____ require more energy for maintenance.
- _____ require more water for perspiration.

Level of activity:

- 15% greater energy required for standing compared to lying down.
- 40-46% more energy needed for range animals than stall-fed animals.

How to Meet Demand?

Timing – greatest animal demand coincides with greatest _____

- Type of forage
- Winter forage?
- Follow the Green
- Animals moving up in elevation as season progresses?
- Type of operation
- Stocking steers during growing season vs year-round cow/calf?
- Birth in spring when forage is of greatest quality
- Native animals already do this through natural selection

Stock Conservatively – set demand well below supply

- More forage for animals to choose from:
- Each animal can select most nutritious foods for diet.
- _____ results in improved diet quality.
- Also reduces energy required to find adequate diet.

Manipulate vegetation to meet animal needs.

- Plant introduced pastures
- Manage for palatable shrubs
- Manage for plant diversity
- _____
 - Hay
 - Grains & energy supplements
 - Liquid protein & energy
 - Protein important if range forage < 6% protein

How do wildlife cope with seasons of low quality?

- Build up _____ when forage quality is high
- Grazing animals with good fat reserves can survive 30-60 days with little or no food
 - Mule deer does with high levels of fat reserves can survived complete starvation up to 64 days.
- Fat supplies _____ and _____ which is stored in fat.
- Native animals lower their metabolic rate and consequently lower energy requirements.
- Nitrogen recycling in ruminants
 - Some of the nitrogen that gets absorbed out of the rumen is put in saliva where it goes back into the digestive system, for possible absorption, instead of being lost in urine.
- _____ – can play a critical role in permitting ruminants to meet critical mineral needs.