Feeding, watering and sheltering systems for rotatational grazing

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Components of a rotational grazing system

- Forage supply
- Fencing
- Watering
- Sheltering
- Feeding

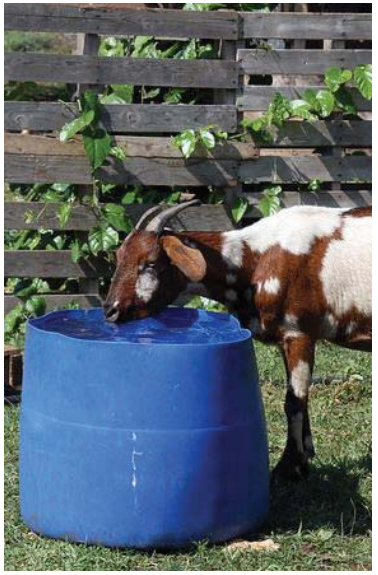
What is rotational grazing?

- The practice of moving grazing livestock between pastures (often called paddocks) as needed or on a regular basis.
- Systems range from 2 to more than 30 paddocks.

Watering

Water is the single most important nutrient.

Water quality



- Water should be clean and fresh.
- Animals perform better with better quality water.
- Sheep and goats require better quality water than cattle.
- Potable water is preferred.

Water requirements

- Vary by size and class of animal, 0.5-4 gal per head per day.
- Lactating females require more water than dry animals.
- Environmental stress increases water requirements.
- Lush pasture decreases the amount of water that needs to supplied.

Water location

- The more accessible the better.
- Is better to move water to animals rather than move animals to water.
- Movement to and from water is unproductive time.
- Ideally within 900 feet so animals will drink individually and more frequently.

Ideally, water in every paddock

- More uniform pasture utilization
- Better livestock performance
- Health benefits
- Better manure distribution
- Better water quality.
- Tank size can be smaller.

Components of a watering system

- Water supply
- Water vessel
- Method of distributing water
  - Water lines
  - Valves
  - Fittings
- Method of moving water (energy or pressure)
  - Pumps
  - Gravity flow
- Other
  Hydrants can add flexibility to system

Watering system considerations

- Temporary, season, or full year water needs.
- Type and location of water sources.
- Number and type of livestock.
- Be prepared for extreme circumstances.
- You may use different watering systems for different times of the year and/or different pastures.

Water supply

- Well ***
- Public (city) water
- Streams
- Ponds
- Springs
- Portable water

Water vessels

- Rubber tanks
- Metal troughs
- Concrete troughs
- Bathtubs
- Recycled barrels
- Tire waterers
- Drinking bowls
- Automatic waterers

Enough water

Individual drinking

< 900 feet away

- Smaller tank
- Slower flow rate
- Allow 2-4% of animals to drink at one time.
- Flow rate that provides total daily needs in 4 hours or less.

Group drinking

> 900 feet away

- Large tank
- High flow rate
- Allow 5-10% of animals to drink at one time.
- Hold at least ¼ of daily requirement.

Water lines

Above ground

- Surface
- Portable
- Simplicity
- Flexibility
- Expansion

Below ground

- Buried
- Permanent
- Protected
- Cooler water
- Cold weather

Sheltering

Do grazing livestock need shade or shelter?

Pros

- Animal welfare: livestock will choose shade, if it is available.
- There is some data to suggest that livestock perform better, if they have access to shade.

Cons

- Livestock congregate in/around shelter, which results in excessive manure accumulation and increases risk of parasite transmission.
- It can be challenging (and costly) to provide shelter in all paddocks in a rotational grazing system.

Special considerations for goats

- Goats don't like to get wet.
- Goats have less fat and hide thickness than other livestock.
- Goats have a higher critical temperature than either cattle or sheep.
- Goats evolved in hot, dry climates.

Is there a difference between shade and shelter?

Shade

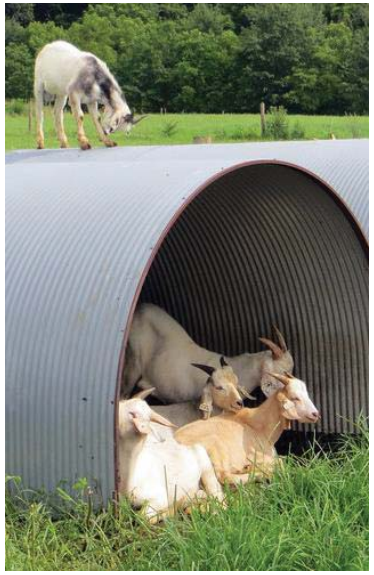
- Shade provides relief from direct sunlight.
- Shade is desirable for most grazing animals.
- Standing or lying down room only.

- **Shelter**
- Shelter provides protection from any inclement weather.
- Sheltering is desirable for lambing and kidding.
- More space generally provided.

Special considerations for sheep

- Wool acts as an insulator and provides protection against direct sunlight.
- Hair sheep are more adapted to hot weather.
- Recently shorn sheep have a higher critical temperature and should have protection from inclement weather.

Shade Shelter considerations



- Shade vs. shelter
- Number and size of animals
- Provisions for lambing and kidding
- Permanent or movable
- In every paddock?
- Cost
- Labor to move

Take **advantage** of natural shade and shelter

Take **advantage** of **natural** shade and shelter

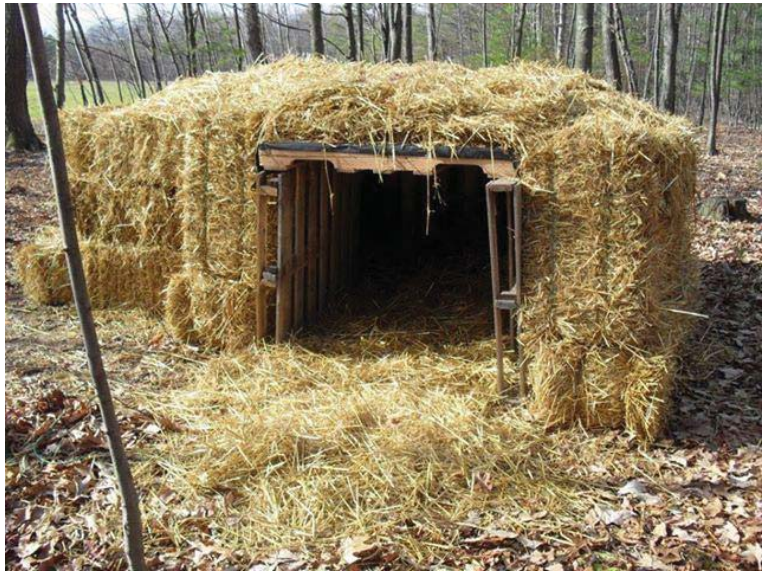
Build inexpensive shelters

"Pallet Palace"

Fabric **structures**

Think **simple**

Be **creative**



Use what you have

Consider popular options

Calf hutch

Consider popular options

Port-a-huts

Consider popular options

Polydome

Consider popular options

Carport

Three sided shed

Shade cloth

Make it movable

Make an **investment**

Shade Haven structure

http://shadehaven.net/agricu

Sheep + solar

Provide grazing for solar arrays or add

Why feed animals on pasture?

- Improve milk production
- Improve body condition
- Improve growth performance
- Increase parasite resistance and resilience
- Delivery system for feed additives such as coccidiostats and BioWorma®
- Stretch pasture resource
- More easily monitor animal health.

Feeding

Always supplement the most deficient nutrient.

Energy supplementation

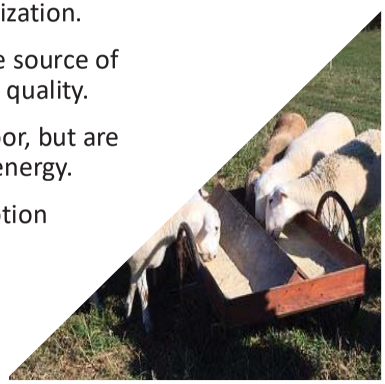
- Energy (TDN) is the nutrient most likely to be deficient in pasture diets.
- Can test feces to determine quality of diet being consumed by grazing animals
- Energy supplementation improves resilience to parasites.

Protein supplementation

- Poor quality pasture can be deficient in protein.
- Goats, especially kids, have higher protein requirements than sheep.
- Protein supplementation, especially by-pass protein, improves resistance (FEC) to internal parasites.

Energy sources

- Cereal grains are the most dense source of energy and usually the most economical (varies).
- High fibrous feeds such as soybean hulls improve forage utilization.
- Hay is a low to moderate source of energy, depending upon quality.
- Nutritional tubs save labor, but are an expensive source of energy.
- Choose the least cost option (energy cost + labor)



Mineral and vitamin supplementation

- Is customary to provide free choice minerals (at least salt) to grazing livestock.
- Livestock have a dietary requirement and natural craving for salt.
- Additional minerals and vitamins are recommended as needed (what's likely to be deficient?)
- Minerals can be used to deliver coccidiostats and other additives.
- Many product options.

Feeding minerals to sheep and goats.

- Loose is preferred to blocks.
- Use feeders that protect product from weather.
- Occasionally measure consumption to determine if animals are consuming recommended amounts of product.
- Occasionally have mineral profiles done on livers to determine mineral status.

Feeding livestock on pasture

Hand feeding

- Limit feeding; control amount of feed that is consumed.
- No sorting of feed ingredients.
- Labor to feed
- More feeder space required.
- Good way to monitor animal health.

Self-feeding

- Free choice feeding
- Maximum consumption
- Maximum gain
- Should feed a pellet to prevent sorting.
- Less labor
- Less feeder space
- Feeding not supplementing.

Feeding livestock on pasture

Supplement

- When fed at 0.5% of body weight or less, it is supplemental feeding; does not affect pasture utilization.

Substitution

- Above ~0.5% of body weight, animals start substituting feed for pasture.
- Desirable if you want to stretch pasture resource.
- Undesirable if you want to maximize pasture utilization.

Feeding hay on pasture

- Feed when dry forage is desired.
- Feed when forage quality and/or quantity are lacking.
- Feed when it is most economical supplemental feed choice (nutrient cost + labor)
- Feed in properly designed feeders.
- Move feeders, as necessary.

Feeders

Considerations

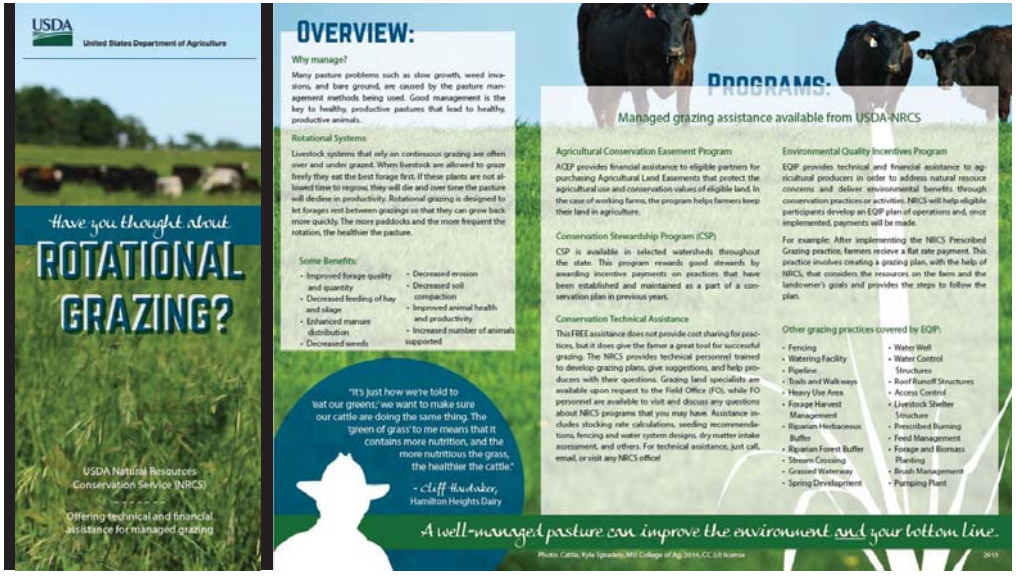
- Type of feed being fed
- Method of feeding
- Number and type of animals
- Potential for feed wastage
- Cost

Financial assistance

Kinds of feeders on pasture

- Mineral
- Creep
- Self feeders for grain or similar feed
- Grain feeders
- Hay
- Tubs

- Many designs



EQIP

Environmental Quality Incentives Program

National and state priorities
- Grazing management
- Nutrient management
- Pest management
- Erosion control
- Wildlife habitat
- Forestland management
- Energy conservation

- Fencing
- Stock water systems
- Pasture planting
- Prescribed grazing plans

https://www.nrcs.usda.gov/wps/portal/nrcs/main/ky/programs/fi

Thanks!

Any questions?

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