

Feeding, watering and sheltering systems for rotational grazing

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Components of a rotational grazing system

- Forage supply
- Fencing
- Watering
- Sheltering
- Feeding



What is
rotational
grazing?

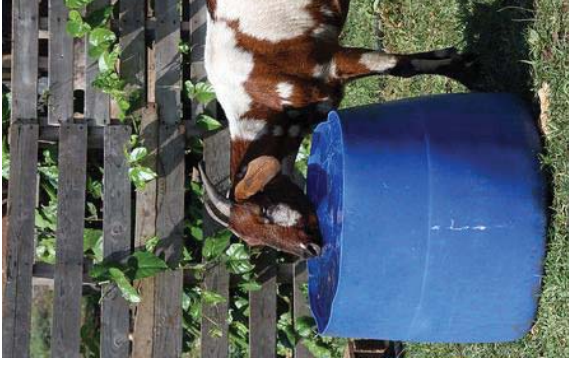


- The practice of moving grazing livestock between pastures (often called paddocks) as needed or on a regular basis.
- Systems range from 2 to more than 30 paddocks.

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 be supplied.



- ⊙ 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.

Water location



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.

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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”

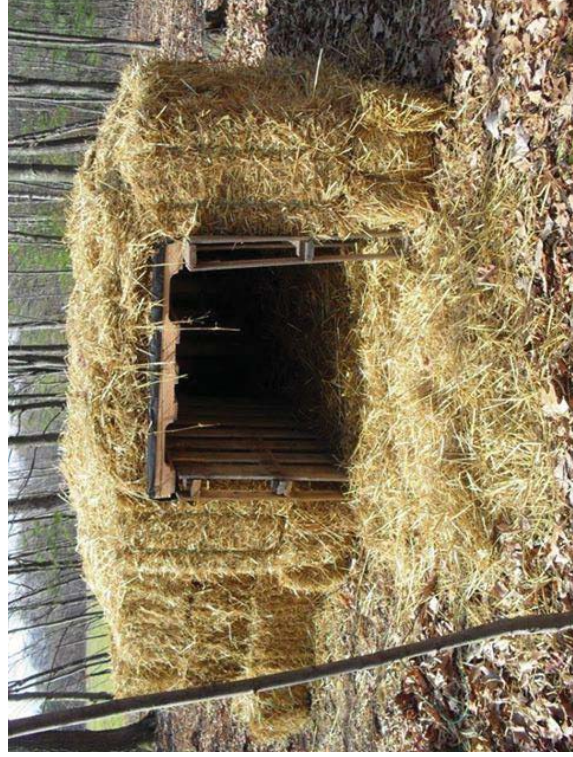
Fabric structures



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



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

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

Considerations



Kinds of feeders on pasture

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



Financial assistance



Have you thought about **ROTATIONAL GRAZING?**

USDA Natural Resources Conservation Service (NRCS) offering technical and financial assistance for managed grazing.

OVERVIEW:

Why manage? Many pasture problems such as slow growth, weed invasion, and soil erosion can be avoided by using rotational grazing management methods being used. Good management is the key to healthy, productive pastures that lead to healthy, productive animals.

Rotational Systems Livestock systems that rotate pastures using grazing are often more productive than those that use continuous grazing. Healthy pastures that are managed properly will produce more feed for the animals. If pastures are not allowed to rest, they will die and over time the pasture will become unusable. Rotational grazing systems allow pastures to rest and recover so that they can grow back more quickly. The more pastures and the more frequent the rotation, the healthier the pasture.

Some benefits:

- Improved forage quality
- Increased soil fertility
- Decreased feeding of hay
- Enhanced pasture distribution
- Decreased weeds
- Decreased erosion and soil loss
- Increased animal health and productivity
- Increased number of animals supported

“It’s just how much feed to our cattle are doing the same thing. The green of grass to me means that it contains more nutrition, and the more nutrition, the more feed the healthier the cattle.”

— Cliff Heister, University of Missouri

PROGRAMS:

Managed grazing assistance available from USDA NRCS

Environmental Quality Incentives Program (EQIP) provides technical and financial assistance to help producers in order to address natural resource concerns and address environmental benefits through conservation practices. EQIP also provides financial assistance through grants and cost-share agreements to help producers implement practices on EQIP plans of operations and, once implemented, payments will be made.

For example, after implementing the NRCS Prescribed Grazing practice, farmers receive a flat rate payment. The NRCS also provides technical assistance to help producers implement the NRCS plan, that considers the resources on the farm and the landowner's goals and provides the steps to follow the plan.

Other grazing practices covered by EQIP:

- Fencing
- Pasture Quality
- Structures
- Soil and Waterways
- Grazing Management
- Livestock Shelter
- Structures
- Pasture Improvement
- Pasture Management
- Pasture Development
- Pasture Planting

Agricultural Conservation Easement Program (ACEP) provides financial assistance to help producers purchase Agricultural Land Easements that protect the agricultural use and conservation value of eligible land in rural areas. The program helps farmers keep their land in agriculture.

Conservation Stewardship Program (CSP) is available in selected watersheds throughout the United States. CSP provides technical and financial assistance to help producers better establish and maintain a part of a conservation plan in previous years.

Conservation Technical Assistance (CTA) provides technical assistance to help producers develop grazing plans, give suggestions, and help producers with their operations. Grazing land specialists are available to visit and discuss any questions about NRCS programs that you may have. Assistance is available to help you develop a grazing plan, create a grazing plan, develop and make system design, dry matter intake assessment, and others. For technical assistance, just call, email, or visit any NRCS office.

A well-managed pasture can improve the environment and your bottom line.

Photo: Corbin, Utah Statewide NRCS College of Agriculture

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

Thanks!

Any questions?

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www.wormx.info



<https://www.nrcs.usda.gov/wps/portal/nrcs/main/ky/programs/eqip>

EQIP

Environmental Quality Incentives Program

