

— November 14, 2019 —

Practical Tips for Multispecies Grazing

— Presented by —

Lee Rinehart

NCAT/ATTRA

— Hosted by —



ATTRA
SUSTAINABLE AGRICULTURE

FACT
Food Animal Concerns Trust

Introductions

- **Food Animal Concerns Trust (FACT)** is a national nonprofit organization that advocates for the safe and humane production of meat, milk, and eggs.
- **Larissa McKenna**
Humane Farming Program Director
Email: lmckenna@foodanimalconcerns.org
Website: foodanimalconcernstrust.org/farmer
- **FACT's services** for livestock and poultry farmers include:
 - Fund-a-Farmer Grants
 - Conference scholarships
 - Free webinars
 - Humane Farming Mentorship Program



Introductions

- **National Center for Appropriate Technology (NCAT)** is a national nonprofit organization that advocates for small-scale, local, and sustainable solutions to reduce poverty, promote healthy communities, and protect natural resources.
- **Lee Rinehart**
Agriculture Specialist
Email: lee@ncat.org
Website: www.attra.ncat.org
- **NCAT manages** the ATTRA information service for farmers:
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Our Presenter



Lee Rinehart
NCAT/ATTR
Keene, New Hampshire

Introduction

- Benefits
- Positive impacts on ecology
- Grazing dynamics (synergetic aspects)
- Fencing and working facilities
- Predators
- Mineral supplementation
- Parasites
- Vegetation management
- Stocking-rate decisions


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Multispecies Grazing: A Primer on Diversity

By Lee Rinehart, NCAT Agriculture Specialist
Published September 2018 ©NCAT
IP570

This publication discusses the principles and practices of grazing multiple species of livestock on pastures. Here, you'll find a discourse on the benefits of multispecies grazing on productivity and profitability, including its positive impacts on pasture diversity and health. Also covered are grazing dynamics (how diverse animal species use grazing resources), the types and kinds of fencing and working facilities, needed by various animals, and how to deal with predators, mineral supplementation, and parasites. Finally, it covers vegetation management and how to make stocking-rate decisions. References and further resources are included.

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Cattle and sheep are natural complementary grazers. Photo: Linda Coffey, NCAT

Introduction

The sacred is unique, wholesome, interconnected...
—Suzanne Karreman

Suzanne Karreman spoke about diversity as she flipped through pictures of her farm. She was giving a talk with her husband Hue at the 2018 Grassworks Conference in Wisconsin Dells, Wisconsin. As multispecies grazers, they extend the concept of diversity to all walks of their life together, and with their community, on the farm. Diversity, for Suzanne, is the antithesis of the separateness and scarcity that define our market-driven world, with its focus on economies of scale and cheap products. Instead, she speaks of a sacred economy... one that binds people together and integrates local ecologies with all aspects of human life. All life is unique, wholesome, and integrated. Thus, extending this concept to the pastures she manages is a natural farm application of her life philosophy.

Resilient farms are based on diversity of life, and while much of the focus of agricultural sustainability of late has been on diversity of crops, forages, and soil microbial populations, not much has been said about the diversity of grazing species. "The presence of multiple species of large herbivores is the typical condition of grassland and savanna ecosystems," says John Walker, a range ecologist who wrote on the subject over two

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Why Multispecies Grazing?

To achieve biological efficiency of the grazing resource

- (1) exploiting the selective grazing habits of different species
- (2) increase carrying capacity
- (3) ecological resiliency and better pasture health
- (5) vegetation management
- (6) parasite control
- (7) predator control
- (8) diversity of enterprises and income



Grazing Dynamics

“The presence of multiple species of large herbivores is the typical condition of grassland and savanna ecosystems” (John Walker, 1994)

- Competition
- Dissimilar grazing habits
- Dietary overlap



Grazing Dynamics

Cattle: 70% grass – 15% forbs – 15% browse

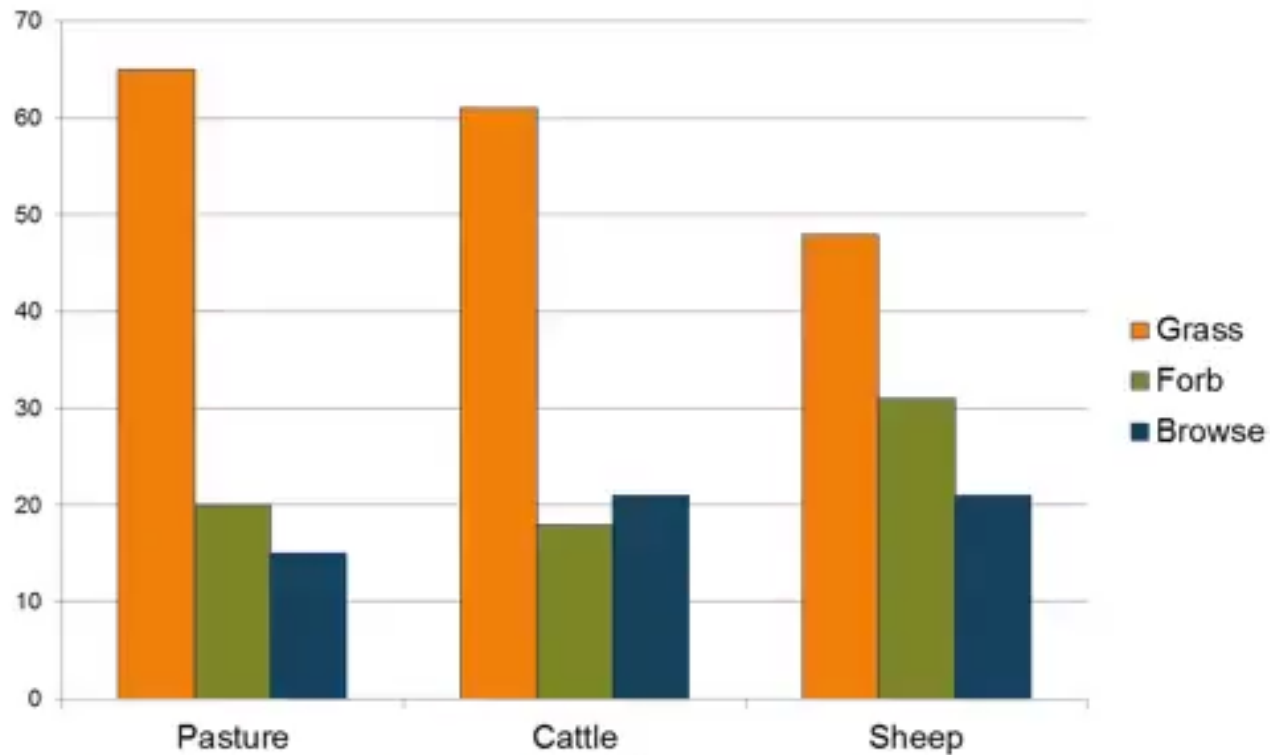
Sheep: 50% grass – 30% forbs – 20% browse

Goats: 30% grass – 10% forbs – 60% browse

Select animal combinations based on plant species present



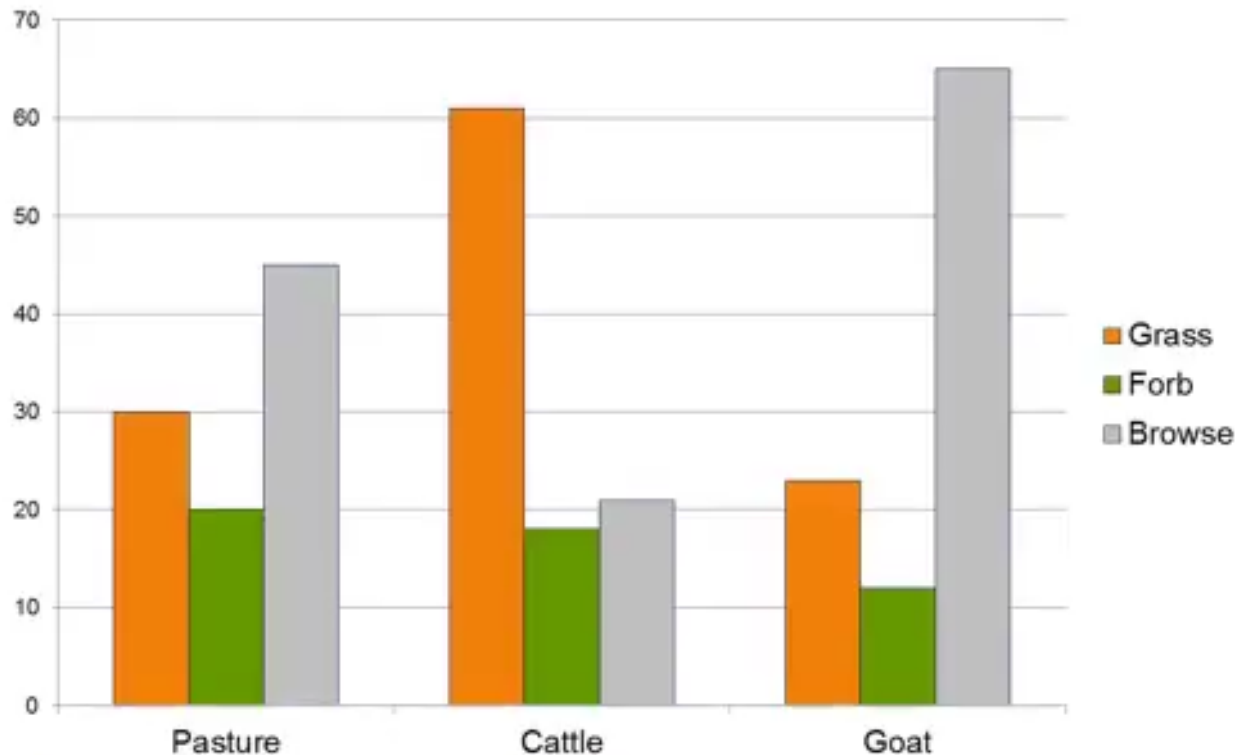
Example 1 - Grassy Pasture



- Similarity between **pasture** and **cattle** diet = 94%
- Similarity between **pasture** and **sheep** diet = 83%



Example 2 – Shrubby Pasture



- Similarity between **pasture** and **cattle** diet = 69%
- Similarity between **pasture** and **goat** diet = 80%





Fencing

- Perimeter
- Paddock subdivisions
- Cattle: barbed wire, high tensile, polywire
- Sheep: woven wire, high tensile, polywire
- Goats: woven wire with electric wire offset and top
- Pigs: woven wire, hog panel, electric wire (3)
- Poultry: poultry netting, mesh wire

3 wire polywire or polytape
for cows, sheep, goats

What else?



Fencing





Working Facilities

- Holding pens, chutes or alleys, loading ramps, head gates or restraints: sorting facilities
- Handling: use natural animal behavior (follow the leader, flight zone, etc.)
- Sheep and Goats: solid sides, 48" high, 12" chute for larger flocks
- Cattle: 60" high, chute 22-26" wide
- Pigs: pig boards and handling crate, 30" chutes
- Poultry: yeah right...



Predators

- Coyotes, mountain lions, wolves, bears, neighborhood dogs
- Fencing
 - Low predator pressure: woven fix-knotted wire fence
 - High predator pressure: fix-knotted high-tensile woven-wire fence with fiberglass posts with a 30- to 50-joule charger

Predators

- Bonding
 - Sheep and goats to cattle; also llamas, donkeys
- Guardian dogs



Guardian Dogs

- Breeds
- Dog behavior: trustworthiness, attentiveness, and protectiveness
- Bond with livestock: natural protective instincts



Mineral Supplementation

- Copper toxicity in sheep; sheep < goats < cattle
- Feed sheep mineral to all species
 - Provide Cu to cattle during 3rd trimester
- Cattle feeder 30” high
- Creep feeder for sheep
- Cu boluses for sheep and goats (copper oxide)
- Poultry litter and swine manure



Mineral Supplementation



Parasites

- Graze cattle before or with small ruminants
 - Larval incompatibility
- Graze small ruminants before cattle
 - Larvae within 4 inches of soil surface
- Use a 40 day recovery period
- Use a grazing period less than 4 days
- Maintain a six inch residual
- Tannin producing plants
 - * Observe grazing behavior *



Managing refugia and susceptibility

- FAMACHA
- Fecal counts
- Five point check

Table 2. Five Point Check

Point	What to check	Parasite possibility
1 Eye	Anemia (FAMACHA score)	Barber pole worm
2 Back	Body Condition Score	All
3 Rear	Dag Score	Brown stomach worm
4 Jaw	Bottle jaw	Barber pole worm
5* Nose	Nasal discharge	Nasal bots
5* Coat	Coat condition	Barber pole worm

*This system was developed for sheep. Goats are not affected by nasal bots, so the coat condition checkpoint is used instead.

Source: Adapted from Susan Schoenian www.sheep101.info/201/parasite.html and www.slideshare.net/schoenian (The Five Point Check).



Photo: American Consortium for Small Ruminant Parasite Control

Stocking Rate Decisions

Biological
Efficiency

Grazing
Dynamics

Minerals

Fencing and
Facilities

Predators

Parasites

Stocking Rate Decisions

Goal:

To find a stocking rate/replacement ratio that will produce more total gain with multiple species than single species grazing, while maintaining the integrity of the pasture ecology



Stocking Considerations

- Temperature
- Rainfall
- Pasture composition
- Animal growth rates
- Additional animals

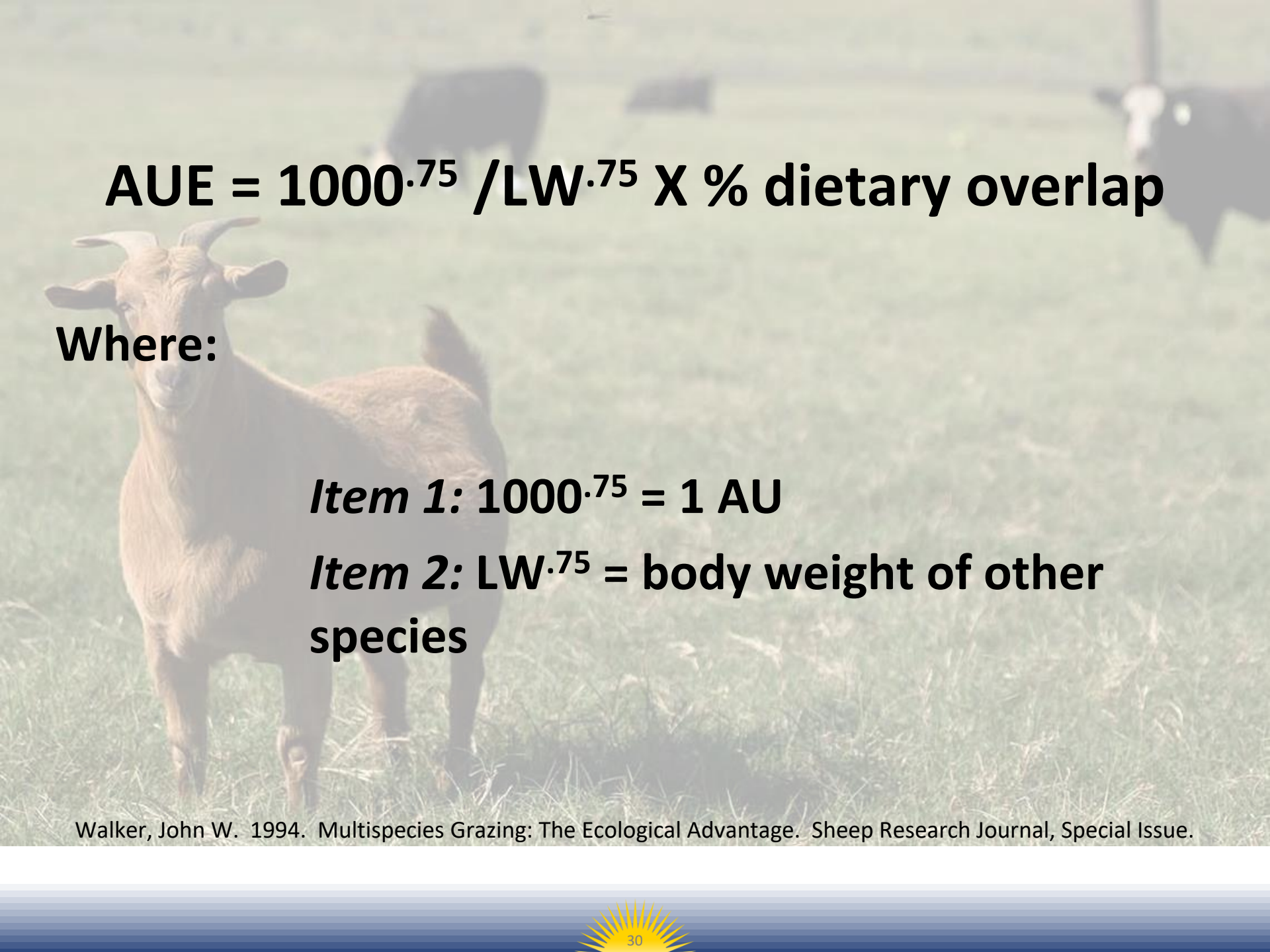
Remember...

- Competition is greater between species than among interspecies
- Competition has led animals to occupy different dietary niches and develop complementary forage preferences and grazing and dietary habits - reduces competition for forage and distributes defoliation more uniformly

Some observations...

- 1 cow to 1 sheep/goat initial stocking
- Dietary overlap reduces competition
- As available forage decreases, dietary overlap between sheep and cattle tends to decrease
- Cattle shift to lower quality forage, sheep keep their preferred diet




$$\text{AUE} = 1000^{.75} / \text{LW}^{.75} \times \% \text{ dietary overlap}$$

Where:

Item 1: $1000^{.75} = 1 \text{ AU}$

Item 2: $\text{LW}^{.75} = \text{body weight of other species}$

Walker, John W. 1994. Multispecies Grazing: The Ecological Advantage. Sheep Research Journal, Special Issue.



Example

- Cow: 1 AU = 1000 lb
- Sheep: 1 AUE = 150 lb
- Assume 50% dietary overlap

$$\begin{aligned} & 1000^{.75} / (150^{.75} \times .5) \\ & = \\ & 177.8 / (42.8 \times .5) = 8.3 \end{aligned}$$

Business planning and marketing

NCAT Marketing Tip Sheet Series

This publication contains 13 tip sheets, each of which describes a particular marketing channel and notes some of the considerations associated with that approach to marketing. Each tip sheet also provides additional resources about that marketing channel. These tip sheets are available to download from the ATTRA website as a packet, or individually.



— Contents —

1. Tips for Selling with Agritourism and "Pick-Your-Own"
2. Tips for Selling through CSAs Community Supported Agriculture
3. Tips for Selling at Farmers Markets
4. Tips for Selling at Roadside Stands
5. Tips for Selling on The Internet
6. Tips for Selling to Restaurants
7. Tips for Selling to Grocery Stores
8. Tips for Selling to Institutional Markets
9. Tips for Selling to Aggregators/Grower Marketing Coops
10. Tips for Selling to Produce Brokers
11. Tips for Selling to Produce Distributors
12. Tips for Selling to Produce Packing Houses
13. Tips for Selling to Wholesale Buyers at Terminal Markets

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Parent organization of the ATTRA Project, www.attra.net.org



Tips for Marketing Sheep and Goat Products:

Meat

Selling meat may be another option for marketing your sheep and goats. If you are interested in selling meat—whole or half animals or cuts of meat—then you will need to find a processor.

NCAT Marketing Tip Sheet Series



Photo: Clipart.co

Market Options	Advantages	Considerations
Whole or Half Animal A good option (if your customer wants an entire animal) is to sell the animal live, transport it to the butcher (custom processor) for your client, and have the client pick it up and pay processing fees.	Sell whole animal. Can set your own price and can charge more for the service of delivering to a processor.	Not all customers will be comfortable dealing with the processor.
Meat CSA, Buyers Club With a buyers club or CSA, you will pre-sell your animal, usually a whole or half animal. You will work with the processor to meet the customer's cut preferences. You will then deliver the cut and wrapped lamb to the customer.	You sell a whole or half animal. This works well if you have customers who want lamb or goat on a regular basis.	You must use a state or federally inspected processing facility. Takes a great deal of planning to schedule processing, customer orders, and delivery. You will need adequate freezer space to store product and may need a refrigerated truck to deliver.
Restaurants/Stores Restaurant and grocery store sales can be good, reliable sources of income.	Having your farm product featured in a restaurant or store can be great advertising.	You must use a state or federally inspected processing facility. Restaurants and stores require a consistent, high-quality product year-round. They likely won't want to purchase all cuts of meat, so you will have to have another market to sell the cuts they don't buy.

Processing

There are different levels of processing, and access to them will affect how you can market your animals.

Federal or USDA Inspected Plants—Federal plants can process meat for nationwide sale.

State Inspected Plants—Only about half of the states have a State Inspection Program. State inspected plants can process any meat, but it is stamped for sale only within that state.

Custom Exempt Plants—A custom plant processes for individual use. The meat must be stamped "not for sale."

On-Farm Slaughter (exempt from inspection)—Animals are processed by the owner for individual use (regulations vary by state).



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Planning for Profit in Sustainable Farming

By Jeff Schaeckel
NCAT Agricultural Economist
Published October 2011
© NCAT IP419

Achieving and maintaining profitability is a challenge for all agriculture businesses. This introductory publication discusses some basic questions that will help you plan for profitability. Understanding your financial capability, your costs of production, and the potential profitability of alternative ways to market products are examined. A list of additional resources is included for further study.



Careful planning is essential for profitable farming. Photo: NCAT

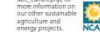
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Introduction

A failure to plan is a plan to fail. While the basic concept of profit is very simple, assuring profitability in a sustainable farming business requires careful planning. Simply put, profit is a situation where income is greater than expenses over time. While careful planning will not absolutely assure that you will operate at a profit in your farming business, it certainly increases your chances. This publication provides an introduction to assessing and planning for farm profitability and includes additional resources that can provide further assistance. While this publication is primarily directed toward active beginning farmers, it should be helpful to anyone considering starting a farming business.

In this publication, there will be little discussion of how to improve farming production techniques even though such improvements can certainly improve profitability. While a discussion of the importance of knowing a farm's production costs is included, specific products and production techniques are not covered.

The topic of obtaining farm land—even though the cost of land is one of the most important costs impacting profitability—is not covered in this publication. (See the ATTRA publication *Finding Land to Farm: Six Ways to Secure Farm-Land for more information.*)

Finally, since this publication is intended for beginning farmers and those considering farming, it will assess the advantages and limitations of different approaches to profitably marketing

A word on Pigs and Poultry



Summary

- Match animals to landscape
- Fencing and working facilities
- Parasites and predation
- Mineral supplementation
- Determine a replacement ratio
- Observe, adapt, adjust



ATTRA Publication

<https://attra.ncat.org/livestock-and-pasture/>



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Cattle and sheep are natural complimentary grazers. Photo: Linda Coffey, NCAT

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Questions & Answers



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- Upcoming webinars
 - **December 4:** Improve Quality of Life on Your Profitable Farm
 - **December 10:** Humane Farming Mentorship Info Session
 - **January 14:** Planning Ahead for Farm Camps for Kids
 - **January 28:** Hosting a Farm School for Adults
- Grants, Scholarships, Mentorship & More!
 - Grant applications due December 2
 - Mentorship applications due December 31
 - Scholarship applications accepted on an on-going basis



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