National Sustainable Agriculture Information Service
ATTRA A project of the National Center for Appropriate Technology NCAT 1-800-346-9140 • www.attra.ncat.org

Small Ruminant Sustainability Checksheet

By Linda Coffey, Jana Reynolds and Margo Hale, NCAT Agriculture Specialists

Updated by Linda Coffey, Margo Hale and Hannah Lewis, NCAT Agriculture Specialists
© 2010 NCAT

This checksheet is designed to stimulate critical thinking when evaluating a farm that produces sheep or goats. The sustainability of a farm depends on many factors involving farm management, use of resources, and quality of life. The questions in this checksheet are intended to stimulate awareness rather than to rate management practices. Use this guide to define areas in your farm management that might be improved, as well as to identify areas of strength.

Suggestions on how to use the checksheet

This checksheet is designed to help educators assist producers in whole-farm planning. For a producer, working with an educator (Cooperative Extension agent, Young Farmer advisor, or NRCS specialist) to complete this checksheet will be beneficial, but is not essential. The checksheet is quite long, and it can be challenging to both educators and producers. Having evaluated the use of the checksheet on several farms, the authors make the following suggestions.

- Send the checksheet to the producer before your first meeting. Allow one to two weeks for the producer to work through it.
- Review the questions beforehand and be flexible. The producer and educator should be comfortable working through the process. Remember that the checksheet is simply a guide to planning new enterprises or to assess an existing operation's strengths and weaknesses.
- The questions have been worded so that "yes" answers indicate a strength or good understanding of management or marketing techniques, while "no" answers show areas where improvements or more information may be needed. The number of "yes" and "no" answers for each section should be entered into the Farm Action Plan, which serves as a summary of the checksheet and will help the farmer prioritize areas to improve.
- The Quick Start option is intended for producers who may not need to work through the entire checksheet. The Quick Start provides an easy assessment tool to show quickly what areas need attention. Producers can then focus on the sections of the checksheet that address the weaker areas of their operation.
- Enterprise and financial records will be essential to the completion of this checksheet. Having aerial photos, soil maps, and topographic maps on hand during the assessment is also useful.
- Since the time needed to work completely through the checksheet (about 2 ½ hours) may be longer than available for a single farm visit, two or more visits may be in order. The checksheet is useful in making the producer aware of management alternatives. Therefore, defining the items for which he or she needs more information is most important.
- Support materials to refer to during the assessment are available from ATTRA.
- Ideally, producers will use the checksheet each year to track their progress and to continually refine their farm plans.

The National Sustainable Agriculture Information Service, ATTRA *(www.attra.ncat.org)*, was developed and is managed by the National Center for Appropriate Technology (NCAT). The project is funded through a cooperative agreement with the United States Department of Agriculture's Rural Business-Cooperative Service. Visit the NCAT website (*www.ncat.org/sarc_current.php*) for more information on our other sustainable agriculture and energy projects.

NCAT

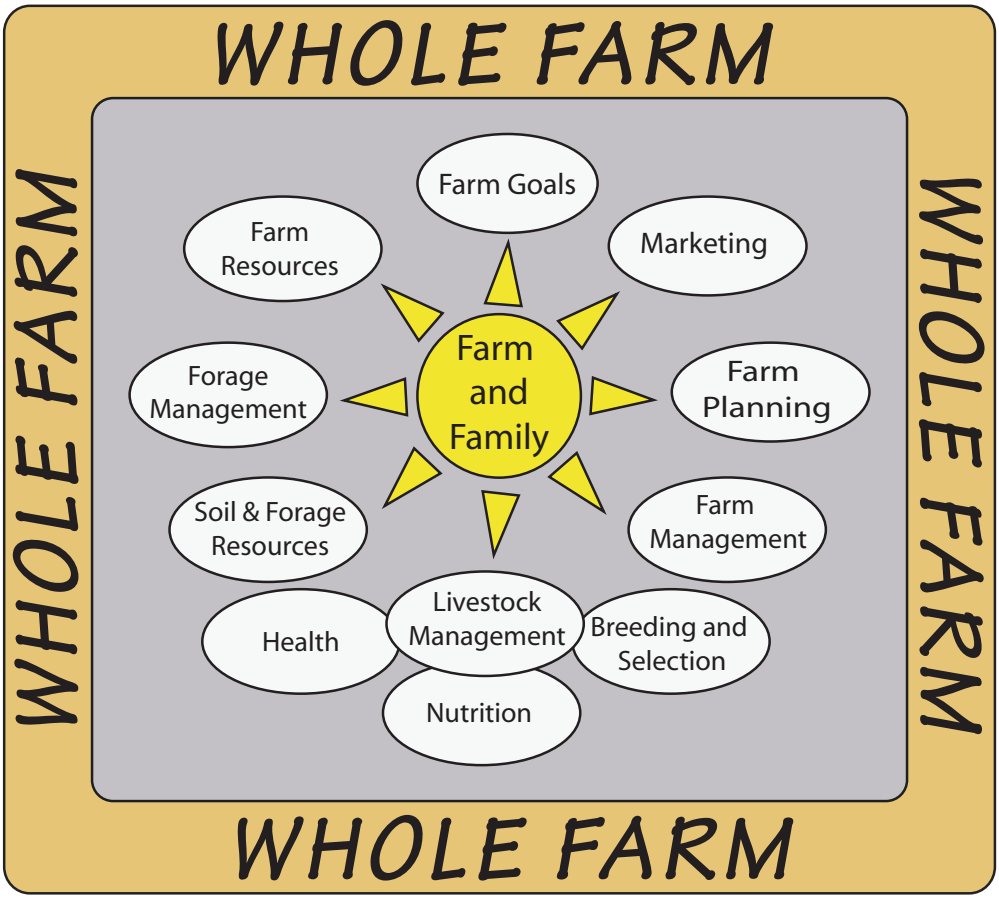


Table of Contents

Quick Start 3
I. Introduction 5
II. Farm Resources Inventory 6
III. Farm Planning 7
IV. Farm Management 7
A. Forages 8
1. Inventory 8
2. Utilization 9
B. Livestock 11
1. Nutrition 11
2. Health 14
a. Observation of Animals 15
b. Parasites 16
c. Sanitation 17
d. Predator Control 18
e. Reproduction 19
3. Breeding and Selection 20
C. Marketing 22
D. Records 24
E. Economics 25
F. Quality of Life 30
G. Areas to Improve 31
V. Systems Management 31
A. Timing 31
B. Coordinating Enterprises 33
VI. Conclusion 35
Farm Action Plan 36
Appendix A: About Organic Production 37
Appendix B: Diseases in Flock or Herd 39
Appendix C: Resource Assessments 40
Appendix D: Small Ruminant Resources 43

Quick Start

These questions are bottom-line questions about components of your farm. If your answer to a question is "yes," proceed to the following question. If the answer is "no," mark the question and investigate options for strengthening that component by turning to the relevant section of the *Small Ruminant Sustainability Checksheet*, which is found on the page listed in parentheses.

Forages

YES NO

1. Inventory (page 8)

❑ ❑ ➤ Do you have a grazing system plan that ensures you are grazing in the most efficient manner possible?

2. Utilization (page 9)

❑ ❑ ➤ Do you have the right number of animals on your farm?

❑ ❑ ➤ Do you have adequate forage year-round?

❑ ❑ ➤ Are you making full use of your available forage?

Livestock

1. Nutrition (page 11)

❑ ❑ ➤ Do your animals appear to be lively, healthy, and vigorous?

❑ ❑ ➤ Do your animals have appropriate condition (fat cover) for the stage of production they are in?

2. Observation (page 15)

❑ ❑ ➤ Do you check your animals daily?

❑ ❑ ➤ Do you know the look and behavior of a healthy animal?

❑ ❑ ➤ Do you act promptly when you observe an animal that is not acting "right"?

3. Parasites (page 16)

❑ ❑ ➤ Are parasites kept at a level that does not affect animal performance?

❑ ❑ ➤ Do you use a variety of practices to reduce and/or avoid resistant parasites?

4. Sanitation (page 17)

❑ ❑ ➤ Is sanitation generally good?

❑ ❑ ➤ Do you use preventative measures toward all disease on your farm?

5. Predator Control (page 18)

❑ ❑ ➤ Are your animals safe from predators?

6. Reproduction (page 19)

❑ ❑ ➤ Are you satisfied with your lambing or kidding percentage?

❑ ❑ ➤ Does your farm depend on a high level of reproduction?

7. Breeding and Selection (page 20)

➤ Are you satisfied with the performance of your current breeding animals in the following areas?

- Number of kids or lambs weaned
- Weaning weights
- Milk production
- Health and longevity

❑ ❑ ➤ Are your animals suited to your management and your market?

Marketing (page 22)

❑ ❑ ➤ Are you selling your products for the best possible price?

❑ ❑ ➤ Are you timing production to ensure the best price?

YES NO

❑ ❑ ➤ Are you selling all the products from your farm?

Records (page 24)

❑ ❑ ➤ Do you use records for management decisions and future planning?

Economics (page 25)

❑ ❑ ➤ Can you make a good profit after feed and other costs are paid?

❑ ❑ ➤ If you are selling a processed product, are you being compensated for the extra time you have invested?

Quality of Life (page 30)

❑ ❑ ➤ Is there enough labor available at all times of the year?

❑ ❑ ➤ Do the people involved in the care of the animals like to work with sheep or goats?

Systems Management

1. Timing (page 31)

❑ ❑ ➤ Are you timing lambing or kidding in order to make the best use of your resources and maximize profit?

2. Coordinating Enterprises (page 33)

❑ ❑ ➤ Do each of your enterprises bring benefits to your farm as a whole?

❑ ❑ ➤ Do your enterprises complement one another?

Conclusion (page 35)

❑ ❑ ➤ Have you identified the weak links of your whole farm?

I. Introduction

This checksheet is designed to help farmers think about individual aspects of their farms, as if each aspect were part of a puzzle, and then to consider how the pieces best fit together to form a whole farm. Other ATTRA checksheets have focused on beef, dairy cattle, and organic livestock production. This one looks at small ruminants, sheep and goats.

Sustainability in agriculture means being economically viable, maintaining or improving the environment (land, air, water), and providing an enjoyable life for the farming family. Each of these is essential to long-term viability, and management decisions will have an impact on at least one of these components, and frequently all three. For example, choosing to increase the size of a flock will change how much money flows in and out, place greater demands on the land and water, and can require more time and labor from the family.

Small ruminants fit into a sustainable farm in a variety of ways. First of all, their grazing preferences make them ideal animals to feed on weeds, brush, and other plants that cattle often won't eat. (Multiflora rose and pigweed are two notorious examples.) Because they are smaller than cattle, sheep and goats are less likely to cause pugging on wet soils, are easier to work with, cheaper to buy and maintain, and need less equipment. They are prolific and do well on forages. Their products are easy to market, once a market is found, and current prices for goats and lambs are very good. Also, because goats and sheep mature quickly and have a short gestation, farmers can have products to sell very quickly, improving their cash flow. And herd and flock sizes can be rapidly increased. Return on investment is usually better for small ruminant enterprises than for cattle. However, profitability depends on how a farm is managed.

In the rush of daily life, we often fail to take the time to look critically at our farms and the decisions we've made or to explore the many options available. By using this checksheet to examine your farm in detail, you and your family will be better equipped to evaluate and improve the sustainability of your farm. To meet that goal, it is best that you work through this checksheet together, marking questions that need to be explored further and making notes about ideas that occur as you talk about your farm. Further information is available from your local Cooperative Extension agent, Natural Resources Conservation Service (NRCS) agent, the ATTRA National Sustainable Agriculture Information Service, and many other sources. Some of those are referred to throughout the text, and more are included in the Resources at the end of the checksheet.

Keeping in mind the three components of sustainability—economic, environmental, and social—look at each aspect of your farm and evaluate how well it is currently working. If you need to make changes, plan carefully, implement, observe, and evaluate the results and their impacts on all three aspects of sustainability. Careful attention to these concepts can result in a farm that is more profitable, has healthier soil, water, animals, and air, and is enjoyable for the farm family.

II. Farm Resources Inventory

Your farm is unique, and the soils, topography, water, forages, climate, and location will enter into your decisions about what crops and livestock to raise. This section is meant to give a "snapshot" of your farm as it is now.

YES	NO		
		1.	What size is your farm? How many total acres? _____
		2.	How many acres are productive or currently being used? _____
		3.	What are the soils like? (deep loams, rocky, sandy, clay) _____
❑	❑	4.	Have you visited with your NRCS and/or local Extension agent about a soil survey or farm plan?
❑	❑	5.	Have you conducted soil tests in the past three years?
❑	❑	6.	Do you know how to read a soil test and use the results?
		7.	What are the nutrient levels in the soils? (Get this information for each field; write it on another page and attach it to this document for future reference and to observe changes over time.)
			Organic matter _____ pH _____ P _____ K _____
		8.	How and when do you fertilize your fields? _____
		9.	What is the topography of your farm? (flat, sloped, steep slopes, rugged, etc.) _____
❑	❑	10.	Do you have a plan to minimize erosion and maintain vegetation on your land?
		11.	What water sources are currently available? _____
		12.	What other water sources are potentially feasible? _____
		13.	How much land is dedicated to production for market? _____
		14.	What crops are grown on your farm? _____
		15.	What forages are grown on your farm? _____
❑	❑	16.	Do you practice rotational grazing?
		17.	If so, how many pastures are used in rotation? _____
❑	❑	18.	Does your farm include any brushy areas? _____
		19.	How many and what types of livestock do you currently raise? _____
		20.	What other species would you like to raise? (crops or livestock) _____
		21.	When are young stock born on your farm? (kids, lambs, or other animals) _____
		22.	How, where, and when do you market your crops or other farm products? _____
		23.	Write down any other pertinent information about your farm, its land, water, soil, climate and crops or products. _____ _____ _____

Total yes answers _____ Total no answers _____

Enter these numbers on the Farm Action Plan, pg. 36

III. Farm Planning

Whole Farm Planning is the important process of evaluating your farm, examining your goals, thinking about all your available resources, and then determining how best to use those resources to meet your goals. The enterprises chosen for the farm must be compatible with the resources available. Having thought about the individual features of your farm, you are now in position to assess how well the different areas are working together. Answering the following questions will help as you develop a plan for the future.

1.What are the top five strengths of your operation? _____

_____

_____

_____

2.What are the top five problems of your operation? _____

_____

_____

_____

_____

3.What are the top three goals for your operation?_____

_____

_____

_____

4.What resources do you have that can give you a competitive advantage over the average producer (to lower production costs or enhance marketing efforts, for example)?_____

_____

_____

IV. Farm Management

In this section, you are asked to look more closely at each component of your farm— livestock, forages, marketing, records, economics, and quality of life— and to look for areas to improve. Give special attention throughout to ways to improve sustainability.

Sustainability as applied to a sheep or goat farm might incorporate healthy, properly fed animals that breed easily, milk well, have a good rate of growth, and hardy constitutions. They should be well suited to the climate and to the feed available. Productive, nutritious pastures with good forage cover and, therefore, minimal erosion, healthy soil with good organic matter and fertility, and fences and facilities that function well are all further indicators of a sustainable farm. This farm should be attractive and managed by farmers who are in general happy, healthy, and in agreement with family members. Products sold from a sustainable farm should be in high demand, sell for a consistently profitable price (including labor cost), and be of consistently high quality to ensure continued demand.

Debt should not be crushing. Costs must be kept in line, and new ideas to increase profitability should be explored. Marketing must be a constant activity, and someone reliable must be in charge of this crucial area. The farm must be in compliance with laws and regulations, and the whole operation should work harmoniously.

Keys to sustainable sheep and goat production:

- Pastures must be managed to optimize nutritious, low-cost feed for the animals.
- Pastures must be managed to leave adequate residue (two to four inches minimum) of stubble, so that soils are protected and plants do not die out. (Ask a local agronomist about appropriate stubble height for the plants your animals are grazing.)

- Brush used as a feed source must be rested just as grassy pastures are rested, to avoid eradicating the brush. It may need to be rested a full year. If the objective is to kill the brush so that more grass can be grown, then the brush could be grazed more frequently.
- Animals must be kept healthy. Prevention is much cheaper and more effective than treatment; good management and good nutrition will do far more than drugs and be more economical and satisfying.
- Animals must be protected from predators.
- Animals must be productive in their environment. Selecting for twinning, milking, and mothering ability, fiber production, rate of gain, parasite resistance, good disposition, longevity—or whatever meets your goals—will lead to consistently better animals in your flock or herd over time.
- All products should be sold at a fair price; meat, fiber, milk, hides, manure, and grazing services are all potential products. More than one option should be feasible. Greater diversity of products can help reduce economic risk, but that diversity may also reduce critical time for marketing and require more equipment.
- If time and markets permit, value-added products are a way to increase income. For example, direct-marketing meat may return more profit than selling live animals at the sale barn; selling cheese may be more profitable than selling fluid milk. Careful research and budgeting are necessary before undertaking a new enterprise, and you must comply with federal, state, and local regulations.
- Producing certified organic products might be a way to increase income, but it is important to assess carefully the additional costs involved in running a certified organic operation. These include higher prices for feed, fewer options for processing meat, more record-keeping, and annual certification fees. In this checksheet, we have included a few fundamental questions to help you assess whether organic production is feasible and advantageous for you. These questions represent the "tip of the iceberg," and you are encouraged to read carefully the resources listed at the end of the publication to get a fuller picture of what's involved. *NCAT's Organic Livestock Workbook* will be especially helpful and will be referred to often in the sections about organic production.

A problem in any of these areas (animals, forages, marketing, economics) will have a negative impact on the enterprise. The following questions are to help you explore the specific areas of your farm that might be improved to increase your farm profitability.

A. Forages

1. Inventory

YES NO

1. What types of forages are available on your farm? _____

❑ ❑ 2. Do you have a variety of different forage species available? How many? _____

3. How many acres of the following types of forage do you have on your farm? (See your NRCS agent for help with this—aerial photos can help you quantify.) _____
   - Predominately cool season forages
   - Predominately warm season forages
   - Mixture of warm and cool season forages

4. Do you have pastures with: (estimate percentage of your farm in each category)

   _____Legumes _____Cool season annuals _____Warm season annuals

   _____Brush and weeds _____Crop residue

   _____Pastures that can be stockpiled (held) for late fall/winter grazing

❑ ❑ 5. Do you use a rotational grazing system? If so, how intensively do you manage the grazing?

   _____

❑ ❑ 6. Do you use cross fences to improve pasture use?

YES NO

7. How many days do your animals get most of their nutrition from grazing? _____
   How could that be increased?_____
8. When do you typically start grazing in the spring? _____
9. When do you usually stop grazing in the fall/winter?_____
10. When would you like to begin and end your grazing season?_____

❑ ❑ 11. Are you grazing enough to minimize feed costs?

❑ ❑ 12. Could you use crop residue?

13. When do you have the most forage available? _____

❑ ❑ 14. Does that coincide with lambing or kidding?

15. When is your best quality forage ready to graze? _____

❑ ❑ 16. Could you graze a neighbor's land?

17. What do you consider to be a weed on your farm?_____
    Could it be a resource for you?_____

For organic farmers, or those transitioning to organic:

❑ ❑ 18. Do you have enough acres of organically managed land to provide 100% organic feed for your livestock? See *NCAT's Organic Livestock Workbook* for more details, especially Units 1 and 2.

❑ ❑ 19. Do you have enough forages to provide at least 30% of the dry matter intake for your sheep and goats for the grazing season?

❑ ❑ 20. Is your grazing season at least 120 days long?

❑ ❑ 21. Do you have a plan for maintaining soil fertility without using chemical fertilizers?

❑ ❑ 22. Do you keep records, including soil maps, manure applications, harvest or grazing dates, soil and water test reports, seed tags, verification of organic status of seeds and sprigs purchased, and farm maps showing use of your fields and adjoining land? See *NCAT's Organic Livestock Workbook*, especially Units 2 and 4.

Total yes answers _____ Total no answers _____

Enter these numbers on the Farm Action Plan, pg. 36

2. Utilization

18. List the numbers and kinds of animals you usually graze.

_____	_____	_____	_____	_____	_____
animal	number	animal	number	animal	number

19. What is your stocking rate? Looking at the year, are you under-stocked, over-stocked, or close to right? _____

20. What are the limiting factors in your grazing season/ system?
    __ Drought
    __ Rainfall distribution
    __ Soil fertility or type
    __ Availability of drinking water
    __ Poor stands of forage or low productivity of forage
    __ Lack of proper fencing
    __Other(s) _____

YES NO

❑ ❑ 21. Do you know how to recognize characteristics of an overgrazed pasture?

__ Forages grazed shorter than two inches (some forages are overgrazed at six inches)
__ Very slow re-growth of forages
__ Animals do not stay in their pasture
__ Animals appear hungry
__ Bare patches or areas that do not recover from grazing
__ Weed invasion where grasses have been suppressed
__ Reduced longevity of pasture stands
__ Increased erosion due to more exposed soil

❑ ❑ 22. Do you have a strategy for dealing with a shortage of forage?

__ Access to other pastures
__ Reduce animal numbers by marketing
__ Offer supplemental feed
__ Other_____

❑ ❑ 23. Do you know how to recognize characteristics of underutilized pastures?

__ Patches of over-mature forage and seed heads
__ Forage wasted due to trampling
__ Loss of low-growing plants due to shading
__ Spot-grazing
__ Increase in less-palatable forages due to overgrazing of preferred forages
__ Reduction in quality of forage due to maturation
__ Excessive dead material, which suppresses new growth

❑ ❑ 24. Do you have a strategy for dealing with excess forage?

__ Harvest hay
__ Increase animal numbers
__ Lease extra pastures to other livestock producers
__ Mow to keep pastures vegetative

❑ ❑ 25. How many days do you have to supply supplemental feed? _____

26. What is your winter feeding program?_____

❑ ❑ 27. Are you grazing year-round?

28. What can you do to extend your grazing season? _____

If you are organic or transitioning to organic, please see *NCAT's Organic Livestock Workbook*, Section 2, for extensive questions to assess this aspect of your farm. In order to comply with the National Organic Program, you must apply good management practices, as outlined above. You must also provide 100% organic feed, and at least 120 days of grazing, during which at least 30% of dry matter intake comes from pasture. For more information about the pasture rule, see *www.nodpa.com/pasture_rule.shtml* (especially the Resources section, which includes record forms to assist farmers in collecting information about pasture use).

For more information about the standards relating to organic pasture, *NCAT's Organic Livestock Workbook* and *Highlights* (both available from ATTRA, 800-346-9140) will be useful.

YES	NO	
❑	❑	29. Are you managing your pastures in a way that protects soil and water quality?
❑	❑	30. Are you managing your pastures so that they contribute to biodiversity? (e.g., encourage beneficial insects, offer diverse forages, have field edges that encourage birds and insects and wildlife. See *www.wildfarmalliance.org/resources/BD%20Guide%20Organic%20Farmers%20.pdf* for many more ideas. See also the Wild Farm Alliance page at *www.wildfarmalliance.org/resources/organic_BD.htm* for a compliance checklist on this aspect of organic production.)
❑	❑	31. Do you maintain the fertility of your land without using chemical fertilizers?
❑	❑	32. Do you control weeds or insects (if necessary) without using chemical herbicides or pesticides?

** Review the above section and make any notes about potential improvements, problems to solve, limitations to overcome. _____

_____

_____

Total yes answers _____ Total no answers _____

Enter these numbers on the Farm Action Plan, pg. 36

B. Livestock

1. Nutrition

Proper nutrition is crucial to the health and productivity of your animals. Attention to their body condition and behavior while grazing helps assess the condition of the pasture. Remember that for sheep and goats, having enough quality forage is important. Overgrazing an area forces animals to consume more parasite larvae. Goats will do well on browse, whereas sheep are better at using grasses, clovers, and weeds. Cattle prefer to graze grasses. The feed resources available on your farm will help determine which animals you can raise most profitably, because an ample supply of forage will greatly reduce the cost of raising ruminant livestock. If your farm offers a mixture of forage types, then grazing multiple species will ensure the best use of the available feed and will help maintain your farm. Cattle will eat over-mature forage and make pastures better for sheep; sheep will graze weeds, and goats will eat brushy plants so that pastures are better for cattle. Cattle also help break internal parasite cycles, so sheep and goats grazed with cattle may be healthier and gain weight more easily.

Sheep and goats can be raised entirely on forage in many areas, though their performance will be improved by offering some supplemental feed at certain times of the year— just before and during breeding season (flushing), during the last month of pregnancy, and during the first weeks of lactation for sheep or meat goats. Dairy goats require more supplemental feed to sustain a long, high-yielding lactation. The need will be greatly reduced if excellent pasture and browse are available. Supplemental mineral needs will vary by location.

To be sustainable, nutrition programs must not only meet the animal's needs but do so economically. Generally speaking, commercial rations will be expensive, and generous feeding of concentrates (grain) and of top-quality hay may lead to animals that are too fat, unproductive, and unprofitable. Allowing the animals to graze and browse will be better for the land, as manure will enrich the soil and help build organic matter; better for the animals, as they will get plenty of exercise and lots of forage, which is what they are designed to eat; and better for the bank account, as letting the animals graze and browse is the cheapest way to feed them.

Besides providing plenty of growing or stockpiled forages, a good stockman will be sure to offer lots of clean water and free-choice mineral mix. Sheep and goats differ in their tolerance to copper, with goats needing more and sheep suffering toxicity if dietary levels are more than 25 parts per million. Because copper is present in forage, and is higher in forage that has been fertilized with poultry litter, it is important to test forage mineral levels and choose a mineral supplement accordingly. Goat and cattle minerals contain varying levels of copper, whereas sheep mineral supplements usually do not contain copper. Be sure to check labels. It is also important to know the relative availability of mineral sources—that is, how much of the mineral an animal can metabolize and use. Some forms are more available than others. For example, the copper in copper oxide is only about 10% available (or less), whereas copper sulfate is highly available.

For organic producers, as well as for everyone else, good nutrition is essential for animal health and productivity. Organic producers have to provide a diet that is 100% organic, with access to pasture, at least 120-day grazing season, and enough pasture to provide at least 30% of the dry matter intake of all the ruminant animals during the grazing season. You must use only organically approved supplements. Because all feed must be certified organic, it is important to have a backup plan in case a supplier has problems meeting your needs; you must save all feed tags and records, keep rations for all classes of livestock on your farm, and keep harvest and grazing records.

YES	NO	
❑	❑	1. Do your animals appear to be lively, healthy, and vigorous?
❑	❑	2. Is the manure a proper consistency (pellets, except when on lush spring pastures)?
❑	❑	3. Do your animals reach market weight or breeding weight at appropriate ages?
		4. If some animals are not growing well, is it due to a health problem? Lack of quantity or quality of feed? Poor milking mothers? _____ _____
❑	❑	5. Do you know how to check your animals' body condition score (1-5)? (see *www.luresext.edu/goats/research/bcshowto.html*)
❑	❑	6. Do you routinely check your animals' body condition (thin, average, fat)?
❑	❑	7. Do your animals have appropriate condition (fat cover) for the stage of production they are in?
❑	❑	8. Do you know how to bring your animals into proper condition for their stage of growth, pregnancy, or lactation?
❑	❑	9. If they are too fat, can you adjust their condition by putting them in an area of lower quality forage?

** Review the questions above and note any adjustments that can be made or information needed.

_____

_____

_____

_____

YES NO

- ❑ ❑ 10. Do you balance rations for your livestock?
- ❑ ❑ 11. Are you feeding an appropriate amount of concentrates? What do your sheep or goats eat year-round? Record here your usual feeding plan.

  _____

  _____

  _____

  _____

  12. What is your cost per head for supplemental feed? _____
  13. What minerals are deficient or excessive in your area? _____
- ❑ ❑ 14. Does your mineral supplementation program adequately address these excesses or deficiencies?
- ❑ ❑ 15. Do you offer creep feed to nursing animals?
- ❑ ❑ 16. If so, is it profitable to creep feed your animals?

  17. When do you feed hay? _____
  18. What type of hay do you feed? _____
- ❑ ❑ 19. Have you tested your hay for protein and digestibility?
- ❑ ❑ 20. Is your hay good enough to meet protein, energy, and mineral requirements?
- ❑ ❑ 21. Do you use forage analysis results in balancing rations?
- ❑ ❑ 22. Is your hay of sufficient quality for the stage and level of production of your animals?

  __ Is the color of the hay good?

  __ Is the hay leafy?

  __ Is the hay free of mold?

  __ Was the hay harvested before maturity? (no seedheads present)

  __ Was the hay baled in ideal conditions? (not rained on)

  __ Was the hay properly handled and stored?

  __ Is the hay digestible? (Refer to your forage test.)

  __ Do the animals readily eat the hay?

Stocking rate has an impact on nutrition (availability of quantity and quality of forage), sanitation, and parasite load of animals.

Based on the evaluation of your forages, and considering the year as a whole,

- ❑ ❑ 23. Is your farm carrying the right number of animals?
  - not overgrazed
  - not undergrazed
  - animals are healthy and well-nourished
  - hay expenditures are minimal
- ❑ ❑ 24. Are you providing your pastures enough rest? (This helps with pasture longevity and with breaking internal parasite cycles.)
- ❑ ❑ 25. Do you have a drought plan?

Total yes answers _____ Total no answers _____

Enter these numbers on the Farm Action Plan, pg. 36

Organic producers: see *NCAT's Organic Livestock Workbook* for many questions regarding pasture, feeding, protecting the soil and water, and livestock living conditions.

2. Health

Under good management (with good nutrition, careful handling, and attention to necessary duties and vaccinations, in a low-stress environment) and with good genetic makeup, sheep and goats are remarkably trouble-free, healthy, and hardy.

However, sheep and goats do not generally live in perfect conditions. Stress caused by over-crowding, mixing stock from multiple locations, unbalanced rations, and poor sanitation, for instance, may cause disease, and then small ruminants are unfairly judged with such comments as "a sick sheep is a dead sheep."

Producers of small ruminants generally agree that one of their major challenges is to minimize the negative effects of internal parasites. Because of their ability to graze close to the ground, sheep and goats may easily consume the worm larvae that are deposited (as eggs) in manure. Some animals have a natural resistance to parasites and can inhibit parasite growth and reproduction. Other animals manage to carry heavy parasite loads and yet appear healthy. Still others, particularly young, lactating, or stressed animals, or those with little previous exposure, are highly susceptible to parasite infection and may become so damaged that they will never recover.

Because of this individual variation among animals, it is possible to make progress on your farm by selecting the individuals who resist internal parasites. It is estimated that 20% of the animals carry 80% of the worms and are, therefore, responsible for spreading the eggs on the pasture and infecting the rest of the herd or flock. If you can identify those main offenders and cull them, the whole farm benefits. You can identify the animals that are better able to handle internal parasites by checking for anemia (only for barberpole worm, *Haemonchus contortus*), doing fecal egg counts, and observing the animals—and in all those cases, by keeping and reviewing careful records.

Resting and rotating pastures and using cattle or horses to break the parasite cycle will help a great deal with internal parasite management. However, rotating back to an infected pasture just when the eggs are hatching will multiply problems. Resting pastures six weeks in warm weather will reduce contamination, and in hot, dry weather, resting only two weeks will help. Not grazing pasture shorter than three inches will also help, because the larvae crawl up the grass blades only a short distance (so most larvae are found near the soil surface). Cutting a pasture for hay and then allowing it to regrow will also reduce contamination.

For more information about managing internal parasites, see *Managing Internal Parasites in Sheep and Goats* (*www.attra.org/attra-pub/parasitesheep.html*) and also *www.scsrpc.org*, the website for the Southern Consortium for Small Ruminant Parasite Control.

Very few anthelmintics are approved for goats, and many parasites have developed resistance to anthelmintics. It is important to minimize the use of anthelmintics in order to delay the development of anthelmintic-resistant parasites. In some cases, drugs will need to be administered in ways that are not FDA approved (extra-label use) in order to manage a parasite problem. This requires a producer to have a working relationship with a veterinarian, preferably one with small ruminant experience.

In many areas, however, there are few veterinarians who are experienced with small ruminants. It is important to find a veterinarian who is compatible with you and with your management style, and one who is willing to learn about small ruminants. With time and patience, your veterinarian can become competent in the diagnosis and treatment of small ruminants. You may locate a veterinarian who wants to practice on small ruminants by contacting the American Association of Small Ruminant Practitioners at *www.aasrp.org* or by calling 334-517-1233.

Your veterinarian can help you set up a vaccination program that will protect your flock or herd from some diseases that are problems in your area. Animals are usually vaccinated at least against enterotoxemia and tetanus.

Purchasing new animals or exhibiting at fairs are two ways of introducing diseases into your flock or herd. Isolation of new animals or of those that have been exposed to animals from other farms is a good way to lessen the risk. While they are isolated, pay special attention to the animals and to their behavior. They should be kept separate from the rest for two to three weeks, ideally, and only released when you are confident they are in good health. There are two crucial questions to address before turning them out: have they been effectively de-wormed, and are their feet in good shape? Fecal egg counts before and after treatment will

help verify that you are not releasing a new population of parasites onto your pastures. Your veterinarian can conduct fecal egg counts, and there are courses that provide instruction on conducting these tests (including Web-based courses, such as the one at *www.luresext.edu/goats/library/fec.html*). Limping may indicate foot rot, which you certainly do not want to spread to your other animals. Examine a limping animal carefully. If it has foot rot, you can try to treat it by trimming, disinfecting, and using copper sulphate or zinc sulphate footbaths. Some individuals will be very difficult to cure, and it would be better to cull them rather than risk spreading the problem.

See **Appendix B** for a list of other diseases to be aware of, and check with your veterinarian to learn which ones are likely to be a problem in your area. To learn more about diseases that affect small ruminants, you may want to explore some of the resources listed at the end of this document and contact your veterinarian.

Selecting animals that have proven to be healthy, hardy, resistant to parasites, docile, and good mothers is a sustainable way of building a herd or flock that does not require much veterinary attention. Some breeds are considered more resistant to disease, and some individuals within a breed, herd, or flock will show greater resistance. Encourage this hardiness in your flock or herd by culling the problem animals.

For organic producers, there are a few important differences in health care. You must, of course, provide good nutrition and good living conditions, and you also should give appropriate vaccinations as part of preventative care. You must have a plan to foster good health, including raising hardy animals that are well-adapted to your environment, encouraging biodiversity, using appropriate stocking rates, and providing adequate shelter and 100% organic bedding. You may perform physical alterations (disbudding, docking tails, castration) if they are needed to promote the animal's welfare and if they are done in a way that minimizes pain and stress. Your certifier has the last word on whether you have a strong enough reason and a humane enough method to perform alterations; you must say in your organic system plan what you plan to do, when, how, and why.

When your animals get sick, you must take action to help them get well. This might include good supportive care and extra nutrition, including probiotics and vitamin therapy. It might include homeopathy or herbal remedies or other alternative therapies. But if those means are not sufficient, then conventional methods, such as antibiotics, should be used—but the animal loses organic status and must be marked and later marketed as conventionally raised. You must keep good records to show what health problems each animal had, what means were used to treat the problem, and what the results were. Records will include purchase receipts and labels of all health-care products, documentation of all procedures and treatments, and accurate records of the organic status of each animal.

For organically raised sheep and goats, a significant consideration is that you may not use conventional dewormers, with the slight exception of emergency use of Ivermectin for breeding stock that are not lactating and are not in the last trimester of pregnancy. This is a small window and is usually during a phase when adult stock won't have much trouble with internal parasites. Ivermectin is not effective for many herds and flocks. And it may not be used for lambs or kids, or they lose organic status.

Therefore, organic producers are especially encouraged to use all possible management techniques to prevent illnesses including internal parasitism.

a. Observation of Animals

The first skill that needs to be developed by a producer is that of careful observation.

YES	NO		
❑	❑	1.	Do you check your animals every day?
❑	❑	2.	Do you know the look and behavior of a healthy animal?
		3.	How do you recognize an animal that is not healthy? _____
❑	❑	4.	Have you developed a relationship with a veterinarian who has small ruminant experience? _____
❑	❑	5.	Do you know what the reportable diseases are for your state? (Contact your state veterinarian.)

YES NO

6. If animals are overly thin, is it due to
   - __ Lack of forage?
   - __ Lack of quality forage?
   - __ A health problem, such as internal parasites or pneumonia?
   - __ Heavy milk production for an extended period of time?
   - __ Poor teeth?

❑ ❑ 7. Do you know how to bring your animals into proper condition for the stage of growth, pregnancy, or lactation?

❑ ❑ 8. Do you routinely check your animals' body condition score?

❑ ❑ 9. Are most of your animals in proper condition for their stage of production?

10. What is the percentage of death loss in your herd/flock?
    Young animals (between kidding and weaning) _____
    Adult animals _____

❑ ❑ 11. Is your death loss acceptable?

❑ ❑ 12. Do you know the causes of death for most of your losses? What are the main causes on your farm in the past two years?_____

❑ ❑ 13. If the death loss was preventable, have you corrected the situation or management practice that contributed to the loss?

❑ ❑ 14. Are you in compliance with state laws regarding disposal of dead animals?

❑ ❑ 15. If it is legal in your state, do you properly compost dead animals?

Make notes here regarding actions to prevent further losses, or areas where you need more information.

_____

_____

_____

Total yes answers _____ Total no answers _____

Enter these numbers on the Farm Action Plan, pg. 36

b. Parasites

YES NO

❑ ❑ 1. Are parasites kept at a level that does not affect animal performance?
How do you know? _____
How do you monitor the parasite load in your animals?_____

2. What practices do you use to reduce parasite problems and avoid the use of anthelmintics?
   - __ Cull animals that get dewormed the most
   - __ Use cleaner pastures (rest pastures, cut for hay, graze cattle)
   - __ Graze diverse pastures
   - __ Reduce stocking rate
   - __ Avoid grazing pastures shorter than 3 inches
   - __ Use browse and/or forages with high tannin content
   - __ Graze cattle or horses with goats or sheep
   - __ Separate classes of susceptible animals
   - __ Raise breeds and individuals with resistance to parasites
   - __ Select rams or bucks with parasite resistance

3. What parasite control program do you use to reduce the use of anthelmintics and manage parasite loads? (Please see *www.scsrpc.org* for information about these techniques.)
   - __ Visual observation to detect animals with parasite problems
   - __ Use FAMACHA© (see *www.scsrpc.org*)
   - __ Check fecal egg counts prior to and following treatment to monitor loads and check effectiveness of anthelmintics
   - __ Change class of anthelmintic once resistance is noticed
   - __ Use herbal dewormers (caution: not all are effective)
   - __ Strategic deworming just before kidding or lambing
   - __ Deworm all new animals (and check 7 to 10 days later to be sure there are no eggs in the feces)
   - __ Use Smart Drenching (see *www.scsrpc.org*)
   - __ Deworm only those animals that need it
   - __ Cull animals that need frequent deworming (more than three treatments per season for adults)
   - __ Other: list here_____

Total yes answers _____ Total no answers _____

Enter these numbers on the Farm Action Plan, pg. 36

c. Sanitation

Good sanitation is another crucial element of good management. This is of particular importance if your business is producing milk; sanitation as part of the milking routine will result in healthier udders and cleaner milk that tastes better and keeps longer. Animals that are on pasture will usually be clean, but animals that are kept in confinement will need extra care and attention to keep their environment healthful.

During kidding or lambing season, if you use small pens (sometimes called "jugs") to hold the new mother and her babies for a day or two, it is important to disinfect the newborns' navels with iodine and keep the pen as clean and well-bedded as possible. If animals are lying in manure or urine-soaked bedding, the chances of mastitis greatly increase. Plenty of bedding can help keep the animals more comfortable and clean. For organic producers, the bedding must be 100% organic.

Good manure-handling practices will also allow for composting of manure, which will be a valuable addition to your fields or garden or may be sold for added income. Information on composting is available from your Cooperative Extension Service. Organic producers are required to have and follow a plan to handle manure in a way that improves the soil and does not harm air, water, or soil quality. Records of manure applications (date and rate) must be kept for five years.

General

YES	NO		
❑	❑	1.	If you have manure accumulation such as in a confined or semi-confined system, do you have a manure management plan? (If not, contact your NRCS agent to develop a plan.)
		2.	How do you fix muddy areas? _____
❑	❑	3.	Do you have fly control measures in place, if necessary?
❑	❑	4.	Are your young animals free of coccidiosis?
❑	❑	5.	Is sanitation generally good?

Dairy Farmers

YES NO

6. Describe the milking routine, including teat washing and dipping. _____

_____

_____

7. What is the average count in your milk for the past six months?

   Somatic Cell Count _____

   Total plate count _____

   Coliform count _____

❑ ❑ 8. Are these counts acceptable for your market?

❑ ❑ 9. Is your herd or flock free of mastitis? If not, how do you treat mastitis? (Organic producers may not use antibiotics and retain organic status on the animal, but they must treat if the animal doesn't respond to alternative measures and supportive care.)_____

_____

10. What measures do you take to prevent mastitis in your herd or flock?

   __ Dry treat (not allowed for organic production)

   __ Teat dip

   __ Reduce mud

   __ Improve sanitation

   __ Milk young animals first

   __ Milk animals with problems last

   __ Frequent equipment checks and maintenance

   __ Gentle hand-milking

   __ Other_____

❑ ❑ 11. If you raise dairy goats, do you use CAE-prevention strategies?

In addition to lessening risk of disease in your animals, good sanitation practices are necessary to protect the health of the farmer. Hand washing will help; using rubber gloves or an A.I. sleeve when helping with birthing is also wise. Some diseases carried by sheep or goats will also affect humans, and as always, prevention is better than treatment.

❑ ❑ 12. Do you and all your farm workers make a habit of washing hands and arms after handling sheep and goats?

❑ ❑ 13. Do you use disposable gloves when handling infectious material, such as an aborted fetus or placenta, drainage from abscesses, or sore mouth lesions?

❑ ❑ 14. Do you have a plan to deal with animal mortalities?

❑ ❑ 15. Do you know about (and comply with) the laws in your state regarding proper disposal of dead animals?

Total yes answers _____ Total no answers _____

Enter these numbers on the Farm Action Plan, pg. 36

d. Predator Control

Although not strictly a "health" problem, one of the causes of loss in a sheep or goat operation may be predation. Coyotes or domestic dogs can devastate a herd or flock if no measures are taken; fencing, penning at night near the house, and guarding the flock or herd using guardian dogs, donkeys, or llamas are all strategies that have proven effective in protecting a flock or herd. (Resources about predator control are listed in **Appendix D, Small Ruminant Resources**.)

YES NO

❑ ❑ 1. Do you have a predator control program in place?

2. How many animals have you lost to predators in a year? _____

3. What measures do you take to protect your animals? (It is best to have more than one.)

__ Fence

__ Guardian animals

__ Penning at night

__ Other

4. What types of predators are causing livestock losses in your area? _____

❑ ❑ 5. Is your predator control program effective?

Total yes answers _____ Total no answers _____

Enter these numbers on the Farm Action Plan, pg. 36

e. Reproduction

Regular reproduction is one of the keys to profitability and is, therefore, a main goal of a livestock enterprise. It's obvious that reproductive failure will put a dent in the profits. Reproductive inefficiencies will also decrease profits, but they are more difficult to quantify. Getting all of your ewes or does bred and being prepared for lambing or kidding have to be important parts of your enterprise.

Understanding the seasonal mating patterns of sheep and goats will help you manage reproduction and your marketing plans. The gestation length is 145 to 151 days, with sheep averaging close to 148 days and goats near 150 days. Breeding season for most sheep will run from September to early December. Breeding season for goats will run from September to January, with October to December being the peak time for breeding. Some breeds of sheep and goats will be less seasonal and hold the possibility of mating during other seasons of the year. Ovulation rates are higher in October; fewer twins are born when breeding is out of season.

Multiple births (twins and triplets) are common in sheep and goats and are a function of both management and genetics. A minimum of 150% lamb/kid crop weaned is a reasonable goal and will enhance your potential profitability. Do your homework to find the breeds and types that fit best with your management and marketing goals.

YES NO

1. What is your lambing or kidding percentage?
(Total number of lambs or kids/total of exposed ewes or does x 100) = _____ %

❑ ❑ 2. Does your herd or flock have minimal or no fertility problems?

3. a) What do you do to determine whether or not your animals are fertile? _____

_____

b) What is your system for identifying and culling animals that do not breed and/or kid?

_____

❑ ❑ 4. Have you done a breeding soundness exam on your ram or buck?

❑ ❑ 5. Do you know what the body condition of ewes and does should be before breeding?

❑ ❑ 6. Do you flush your females? (That is, do you provide a higher level of nutrition for two weeks prior to breeding season, continuing for two weeks after breeding, to improve ovulation and conception rates?)

❑ ❑ 7. Do you isolate your ram or buck from females for a period of time before the breeding season in order to synchronize breeding?

❑ ❑ 8. Do you provide shade during breeding season?

YES NO

- ❑ ❑ 9. Do you use a defined breeding season? Why do you breed/lamb/kid when you do?_____
  _____
- 10. When do you begin your breeding season?_____
- 11. How long does breeding season last? _____
- ❑ ❑ 12. Do you record breeding dates?
- ❑ ❑ 13. Do you use a marking system on your ram or buck to monitor activity? (more commonly used with sheep)
- ❑ ❑ 14. Do most of your ewes or does settle (conceive) during the first three weeks of your breeding season?
- ❑ ❑ 15. Are you satisfied with your lambing or kidding percentage?

Total yes answers _____ Total no answers _____

Enter these numbers on the Farm Action Plan, pg. 36

The timing of breeding (and therefore kidding or lambing), type of management, and growth rate of animals all factor into the end product and when you will have products ready to market.

Summary

Look back over the year and record the number of losses of baby animals, weaned animals, and adults, and the amount spent on treatment. Aim to have those numbers decrease each year by improving your management, culling animals that do not fit your environment and management, and preventing rather than treating illness. Losses in the past year and reasons _____
_____
_____

See **Appendix B** for a chart to summarize the health problems in your herd or flock.

3. Breeding and Selection

If you own a stocker enterprise, you may skip this section; otherwise, breeding and selection is a critical part of your farm and has a very large impact on its sustainability. To evaluate your breeding and selection program, you must first consider the goals of your livestock enterprise and whether you are currently able to meet those goals.

1. What type of enterprise is your focus?
   _Meat
   __ Show
   __ Breeding stock
   __ Commercial dairy
   __ Fiber
   __ Land management (brush and weed control)
   __ Hobby
2. Who or what are your intended markets?_____
   _____

YES NO

3. Considering your enterprise, what are the market requirements for your product? (For example, a meat producer might need to produce 60-pound animals for a specialty market.) _____

_____

_____

4. Considering your enterprise and market requirements, what are your goals for your animals? (Produce animals that weigh 60 pounds at 90 days of age, etc.) _____

_____

_____

❑ ❑ 5. Are you currently able to meet your production and economic goals?

6. If not, do you need to change your management or your genetics or both? _____

❑ ❑ 7. Do your animals fit your goals? (For example, are your animals capable of rapid growth? Do the does and ewes milk well? Does your flock provide wool that is consistent in color, length, and quality?)

❑ ❑ 8. If you are able to meet your current production goals, is it profitable to do so?

9. Consider the overall appearance of your herd or flock and note your impressions here. _____

_____

_____

❑ ❑ 10. Do your animals prosper in your current system?

11. Looking at your whole herd or flock (physically and on paper, by assessing records), do you see individuals that are very different from the rest? (Is your herd/flock uniform, or do you have animals that are superior or inferior to the rest of your animals? Which animals should be retained for breeding?) _____

_____

_____

_____

12. What are your criteria for selection (or retention) of breeding animals? (Check the appropriate categories, and list your specific standards for each category.)

__ Productivity (a combination of several traits) _____

__ Fertility _____

__ Hardiness_____

__ Milk production _____

__ Disposition _____

__ Mothering ability_____

__ Body type _____

__ Growth rate _____

__ Ability to thrive on forage alone_____

__ Internal parasite resistance _____

__ Fiber quality _____

__ Other: _____

❑ ❑ 13. Do you have objective ways to evaluate the quality of your livestock and their products?

__ Milk quality testing

__ Milk production testing

__ Meat tests—grades, yield, tenderness, juiciness, taste, and quality

__ Weight records

__ Fiber testing—fineness, strength, yield

__ Fiber grading

YES NO

❑ ❑ 14. Are you satisfied with the performance of your current breeding animals?

15. List here any areas that need particular improvement. Ranking the concerns in order of importance may help as you decide which traits are most important. _____

_____

_____

❑ ❑ 16. Do you keep and review adequate records so that you can decide which animals to keep and which to cull?

Areas to Improve

17. List here anything regarding your livestock that you would like to improve or upgrade.

_____

_____

Total yes answers _____ Total no answers _____

Enter these numbers on the Farm Action Plan, pg. 36

C. Marketing

Making a living on the farm depends on three essentials:

1) producing something of value
2) selling it for a profit
3) selling enough of it.

The preceding sections focused more on the first part of the equation, production. This section is meant to trigger thinking about selling what your farm produces. For example, a sheep farmer produces lamb meat, replacement stock, skins, wool, manure or compost, and perhaps provides weed control. Lambs can be sold as breeding stock, show lambs, feeder lambs, fat lambs, or as freezer lambs. If USDA inspected, the meat can be sold as cuts to individuals, stores, or restaurants. Wool could be processed into yarn, roving, batts, or further processed into woven, knitted, felted, or crocheted items. Farmers may choose to sell what they are raising for "commodity" prices, seek out a niche market, or use a combination of strategies. For example, sheep farmers can sell freezer lambs directly to customers and sell extra lambs at a sale barn. They may choose to hold back a few fleeces for hand spinners, a few more for further processing into yarn or woven blankets, sell some wool to a wool cooperative, and use the dirty parts of all fleeces as mulch in a garden or orchard.

The possibilities are limited only by the producer's imagination, time, and energy. Time and energy spent in marketing tends to have a large financial return. For example, selling two of the best fleeces to hand spinners may net more income than selling 20 fleeces to the wool cooperative, and with very little effort.

Having multiple items to sell and multiple markets for those items can strengthen the economic health of the farm. However, each additional item and market will require additional time and effort.

Making effective use of the Internet, including free directories such as *www.localharvest.org* and other tools, will improve the odds of a customer finding you and your farm. There are many other ways to increase visibility and attract more buyers.

Marketing is the main part of your business and deserves more attention than this document can give. One book that may be helpful is *Marketing Farm Products: And How to Thrive Beyond the Sidewalk*, by Ellie Winslow (see **Appendix D: Small Ruminant Resources**). This book focuses on the four "P's" of marketing: product, price, place, and promotion. It will help you recognize many ways of finding and pleasing customers, increasing sales, and improving profitability by paying attention to this critical area.

See the business planning resources listed in the **Small Ruminant Resources** for other books and Web sites that will be useful as you learn.

YES NO

1. What is it that you produce? List all of the products that you could produce, even if you are not currently selling them. (Don't forget the wool.) _____

   _____

2. What product(s) do you sell? _____

❑ ❑ Considering all the products you do or could produce on your farm, are you selling as much of that variety as you wish to?

3. How do you sell your product(s)? List the product to the right.
   - __ Direct market (such as farmers' market, or to restaurants) _____
   - __ On-farm sales_____
   - __ Contract _____
   - __ Wool pool _____
   - __ Spinners guild _____
   - __ Niche users—craftspeople _____
   - __ Sale barn _____
   - __ Web site _____
   - __ Other_____

❑ ❑ 4. Are you satisfied with the markets you are currently using?

❑ ❑ 5. Have you identified other existing marketing channels/options that might expand your opportunities? _____

❑ ❑ 6. Do you have a plan for entering new marketing channels?

❑ ❑ 7. Is the market increasing?

❑ ❑ 8. Are the markets for your products stable throughout the year?

❑ ❑ 9. Are you selling your products for the best possible prices?

❑ ❑ 10. Is the price sufficient for you to make a profit on the enterprise?

❑ ❑ 11. Are you timing production to get the best price?
   - __ Freshening does or ewes to accommodate your milk market
   - __ Kidding or lambing to accommodate your meat market
   - __ Shearing at optimal time to obtain best quality fleece

❑ ❑ 12. Are you able to produce at the right time for your customers? (for example, to match ethnic holiday demands for meat)

❑ ❑ 13. Are your products of consistently high quality?
   - __ Uncontaminated milk with consistently good flavor
   - __ High yielding carcasses, tender meat
   - __ Clean, strong fleeces, free of vegetable matter and properly skirted
   - __ (list your product and quality attributes) _____

   _____

❑ ❑ 14. Are you in compliance with all regulations?

❑ ❑ 15. Do you have a processor for your raw products? (milk, meat, fiber, hides)

16. What other possibilities can you think of for selling your product(s)? (Consider value-added products, new outlets, new promotion ideas, etc.) _____

    _____

    _____

❑ ❑ 17. Is there one person on your farm who takes responsibility for the marketing?

YES NO

18. How much time is currently spent on marketing activities, such as advertising, contacting buyers, checking prices, hauling products to market, or other related activities?

_____

_____

❑ ❑ 19. Is the time currently spent on marketing having satisfactory results?

❑ ❑ 20. Is the time currently spent on marketing affordable? (Think about results for the time spent, physical energy, fuel, and other duties of the marketing person.)

Note here any improvements in marketing or processing that you can think of and note those on the Farm Action Plan as well (page 36) _____

_____

_____

_____

_____

Total yes answers _____ Total no answers _____

Enter these numbers on the Farm Action Plan, pg. 36

D. Records

Businesses must have records to comply with laws, file accurate tax returns, and to have reliable data for making assessments and determining profitability. Farm businesses with livestock need to have records about individual animals in order to make good selection decisions. Organic livestock producers must have and keep (for five years) extensive records to document land use, pasture rotation, anything applied to the land or used for health care in the animals, feed rations (and tags), origin of livestock, organic certificates for all feed used and stock bought, breeding, health, and sales records, and more. These records must be organized well enough that an inspector making his yearly visit can determine where all feed fed on the farm was grown or purchased, what manure applications were made (date and rate), what the length of the grazing season was, and how much of the sheep or goats' ration was forages during the grazing season—and more. Soil tests, forage analyses, maps, water tests, and other evidence may be needed to show that farm practices are improving the soil and not compromising water or soil quality. It is not for the faint of heart.

However, keeping such extensive records can help the producer learn much more than simple observation can teach. Regularly reviewing soil tests will help the producer understand the impact his or her management is having on the land. Examining financial records closely can show what parts of the farm are paying their way and what parts need to be improved or dropped. Using livestock records as a basis for decision-making can improve a herd or flock dramatically.

Consider what records are needed for your farm business and whether you are using those records as effectively as you could.

1. What types of records do you currently keep? (Check all that apply.)

   __ Premises ID _____

   __ Permanent Individual Identification (other than premises ID) _____

   __ Health _____

   __ Breeding _____

   __ Production (milk, offspring born and raised) _____

   __ Financial _____

   __ Labor _____

YES NO

__ Growth rates _____
__ Sale records of your main products_____
__ Cull or death records_____
__ Pasture or forage records—rotational grazing_____
__Whole farm plans_____
__FAMACHA© scores and fecal egg counts_____
__ Other_____

❑ ❑ 2. Are records recorded and updated frequently?
❑ ❑ 3. Do you process your records, calculate averages, and/or identify inferior animals?
❑ ❑ 4. Is there a designated person who updates and monitors records?
❑ ❑ 5. Are your record systems adequate? (paper or software)
❑ ❑ 6. Do you use records for management decisions and future planning?
❑ ❑ 7. Do your records show that you have improved your farm over time?
8. When was the last time you reviewed your records? Write the approximate date beside the type of record listed in question #1 above.
❑ ❑ 9. Is the time spent on records sufficient?

❑ ❑ 10. For organic farmers: are your records sufficient to prove compliance with the National Organic Program regulation and your Organic System Plan (OSP)?

Total yes answers _____ Total no answers _____

Enter these numbers on the Farm Action Plan, pg. 36

E. Economics

How do you measure the economic health of your enterprise, farm, and household? Do you know what it costs you to raise a lamb/kid to market weight? Maintain a ewe/doe over the winter? Produce milk, meat, or fiber? By careful cost accounting, you can determine the break-even prices for your products.

Besides "out of pocket" costs, you need to account for family labor. There is an "opportunity cost" associated with any use of your time—that is, taking advantage of one opportunity prevents you from taking advantage of another — and to decide whether an enterprise is truly profitable, you must be honest about the time spent producing your product. On the other hand, a sustainable sheep or goat farm may make excellent use of labor that would not otherwise be employed—children, retired persons, or farmers who keep their regular job and raise sheep or goats in their "off" hours. A few things to consider are profitability, cash flow, debt load, risk, financing expansion, taxes, reducing cost of production, and increasing return by some further processing.

This section is to help you identify gaps in your knowledge of actual costs of production and good financial management practices. Keep in mind your farm goals, family interests, and the production and marketing aspects you've already considered, and see whether you can recognize opportunities to improve the financial picture.

Many of the questions asked in this section will be answered when you work on Schedule F for your federal tax return. You might want to refer to the past two or three years when answering these questions for the first time, and aim to make next year's numbers an improvement on the past's. It is helpful to work this section at the end of each year or at tax time. Looking at feed costs from the start of one grazing season to the start of the next is very useful as well.

YES NO

❑ ❑ 1. Is your sheep or goat operation currently profitable? If yes, what is the annual net return per ewe or doe? $ _____

❑ ❑ 2. Have you developed an enterprise budget for your goat or sheep enterprise?

❑ ❑ 3. Have you identified all areas of your enterprise in which you spend money? (Note approximate yearly amounts.)

Feed	$ _____
Hay	$ _____
Health care	$ _____
Deworming	$ _____
Vet bills	$ _____
Replacement/expansion animals	$ _____
Fencing	$ _____
Equipment	$ _____
Fuel	$ _____
Labor	$ _____
Hired services	
Shearing	$ _____
Tractor work	$ _____
Custom work	$ _____
Marketing expenses	
Processing	$ _____
Advertising	$ _____
Delivery/distribution	$ _____
Predator control	$ _____
Land	$ _____
Taxes	$ _____
Supplies	$ _____

❑ ❑ 4. Have you performed a break-even analysis?

5. What does it cost per animal to feed your breeding sheep or goats for a year (total hay and grain costs)? $_____ (If the number of breeding animals changed during the year, you may arrive at costs for portions of the year.)

What are some ways to reduce that feed cost? _____

❑ ❑ 6. Can you make a good profit after feed and other costs are paid?

❑ ❑ 7. Do you know what it costs to raise a lamb or kid to market weight? $_____

❑ ❑ 8. Do you know what it costs to put on a pound of gain or to produce a pound of milk? $ _____

9. What are your three biggest expenses? (Refer to question #3) _____

_____

10. Can you identify ways to reduce your biggest expenses? List some here._____

_____

_____

_____

You have looked at some cost categories and have a better idea of your production and marketing expenses. Now examine your income from your enterprise.

11. What products do you get income from? (Note estimated number of animals and income for each category.)

Live animals		
Breeding stock	_____	$ _____
Slaughter stock	_____	$ _____
Weaned animals	_____	$ _____
Show stock	_____	$ _____
Meat		
Cuts	_____	$ _____
Whole processed animals	_____	$ _____
Value-added products, such as jerky or sausage	_____	$ _____
Milk		
Fluid milk	_____	$ _____
Value-added dairy products	_____	$ _____
Fleece		
Raw fleece	_____	$ _____
Value-added fiber products	_____	$ _____
Services		
Grazing services	_____	$ _____
Buck/ram rental	_____	$ _____
Agritourism	_____	$ _____
Educational classes (spinning, for example)	_____	$ _____
Manure	_____	$ _____

YES	NO	
❑	❑	12. Do you set the price on products you sell?
❑	❑	13. Are you satisfied with the prices you receive in your current markets?

If not, how might you improve the price you receive?_____

_____

❑	❑	14. Do you have enough product(s) to sell to make a profit?
❑	❑	15. Are your ewes or does productive enough that you can sell their progeny for a profit after all costs are paid?

16. If your main product is meat, how many kids or lambs do you need to sell annually per doe or ewe to cover expenses? _____

❑	❑	17. Is your enterprise the right size for your farm? (Sometimes expanding your operation may improve profitability and, conversely, sometimes downsizing helps improve profitability.)

18. Could you increase profitability by any of the following: (Check all that are possible.)

_ Changing the way that you market

_ Changing the mix of products you sell (changing emphasis)

_ Adding value to products through increased processing (wool to yarn, lamb to packages of chops, milk to cheese)

_ Reducing production costs by grazing more and/or by cutting back on inputs (such as grain)

_ Diversifying with a complementary enterprise such as hunting, pastured poultry, hogs, stocker cattle, or other

__ Selling all the products possible
__ Cooperating with other producers (to improve prices, gain access to new markets, cut marketing costs, diversify products offered)
__ Reducing wastes (grain, hay, etc.)
__ Reducing labor costs
__ Increasing production through improved genetics or management
__ Improving health care, including parasite management
__ Raising prices (if you sell direct) or selling at favorable times
__ Changing the time of year (or month) of lambing or kidding
__ Improving pasture management by using more cross-fencing
__ Taking advantage of cost-share and other government programs (See your NRCS agent.)
__ Other_____

Labor is a cost, although when you use family labor, it is less apparent.

YES	NO	
❑	❑	19. Do you know how much time is invested in each of your products?
❑	❑	20. If you are selling a processed product, are you being compensated for the extra time you have invested?
❑	❑	21. Does the daily routine run smoothly and easily? If not, what can be changed to streamline the work? _____ _____
❑	❑	22. Think of the yearly cycle of tasks. Are these tasks accomplished as efficiently as possible? If not, what should be changed? _____ _____
		23. If you hired outside labor in the past year, how much did it cost? $_____
❑	❑	24. Was the expense a justified cost?
❑	❑	25. Do you have access to an adequate farm labor supply?
❑	❑	26. Are you able to effectively manage and compensate workers (including hired and family labor)?
❑	❑	27. Does your current labor force have all the skills necessary to effectively operate your farm or value-added business?
❑	❑	28. Do you have access to adequate training opportunities?
❑	❑	29. Do you know the legal regulations regarding hired labor?
❑	❑	30. Are your labor records accurate and up to date?
❑	❑	31. Are you a good boss?

Taxes

❑	❑	32. Do you know the IRS guidelines for farm businesses?
❑	❑	33. Are you keeping thorough records of all expenses, including mileage for farm vehicles?
❑	❑	34. Do you keep all pertinent invoices and other documentation of expenses and receipts?
❑	❑	35. Are your financial records well organized?
❑	❑	36. Do you have a good farm tax accountant?

Legal (See National Ag Law Center, *www.nationalaglawcenter.org.*)

❑	❑	37. Do you have a legal consultant or representative?

YES NO

❑ ❑ 38. Are you aware of the various legal entities and areas of potential legal risk? Consider how you can protect yourself in these areas.
- General personal and business liability
- Health codes
- Zoning regulations
- Labor laws
- Land and other large purchases
- Environmental regulations
- Food safety
- Processing and marketing regulations

Equipment

❑ ❑ 39. Are all your equipment expenses justifiable?

❑ ❑ 40. Do you do regular maintenance to keep equipment in good repair?

❑ ❑ 41. Is your current equipment adequate for your farm?

❑ ❑ 42. If not, have you budgeted for new or replacement equipment?

❑ ❑ 43. Do you have excess or unused equipment that should be sold?

❑ ❑ 44. Do you have the skills necessary to maintain equipment (or know someone reliable and affordable)?

Farm Financial Analysis

Debt is a tool that can be helpful or harmful, depending on how you manage it. With wise use of debt, you can expand a profitable enterprise and make purchases when the time is right. However, excessive debt can cripple a business. It is important to understand finances beyond what may be required for the Schedule F on your 1040 form. With a small investment of time, you can generate meaningful financial information, improve your management skills, and provide more detail about the status of your farm. Improved financial information may not be meaningful the first year, but the power of financial information comes over time. Developing a history to refer to gives you crucial information to guide future decisions.

Understanding the 16 standard farm financial ratios and measurements for farms can help you see opportunities for improvements in your business. For detailed, technical information about farm financial indicators and ratios, see the "Farm Financial Standards Council Guidelines" at *www.ffsc.org*. Another useful site for farm financial information and analysis is *www.agecon.purdue.edu/extension/programs/fbm21/Ec712entry.htm*. This information from Purdue Extension offers worksheets and concise, user-friendly instructions and explanations. Using these and similar tools to understand the financial workings of your farm is crucial to sustainability.

The business planning resources in the **Resource List** will be good references as you learn more about managing the finances of your farm.

Debt Load

YES NO

45. How much was spent on interest payments for the farm last year? $_____

❑ ❑ 46. Do you have a good standing with your lender (bank, Farm Credit, etc.)?

❑ ❑ 47. Is the farm debt manageable?

❑ ❑ 48. Is the financial picture improving?

Total yes answers _____ Total no answers _____

Enter these numbers on the Farm Action Plan, pg. 36

F. Quality of Life

No farm is sustainable if the farmers are not enjoying their work. Sometimes rearranging the workload can improve the satisfaction of everyone concerned, as well as improving the productivity of the farm. This is because those who are well suited to a task will pay more attention to it, be more efficient, and take more pride and care in their work. Forming relationships with your local 4-H clubs and FFA chapters may be beneficial. It is a way to introduce young people to small ruminant production, and you can make contacts with youths who may be willing to help on your farm. They may also be potential customers for your replacement or show stock.

The following questions are to help determine the best division of work for your farm.

YES NO

1. Who does most of the management of the sheep or goat enterprise? _____
2. What other responsibilities does this person have? _____

   _____
3. What times of the year demand the most labor? _____

   _____

❑ ❑ 4. Is there enough labor available at all times of the year? If not, can you think of a way to relieve the pressure?_____

   _____
5. What would make the enterprise or the whole farm more labor-efficient?

   _____

   _____

❑ ❑ 6. Do the persons involved in the care of the animals like to work with them?

7. List the strengths of each person involved in the farm work. (for example, "John is great with machinery and grazing management, Ken likes to build fence, Jim knows and loves all the animals.")_____

   _____

   _____

❑ ❑ 8. Are the people assigned to the tasks best suited for the job?

❑ ❑ 9. Can all tasks be performed safely?

10. Have each person involved in the farm write down his or her favorite tasks or season (for example, lambing season) and also his or her least favorite (perhaps cleaning out the barn). In some cases, a shift in responsibilities may be called for so that people can work in areas they enjoy. Fitting the person to the work is one way to improve morale and efficiency, and may ensure better work and, therefore, a better-kept farm.

    Favorite Job: _____

    _____

    _____

    Most Disliked Job: _____

    _____

    _____

    Notes on possible adjustments to job assignments:_____

    _____

    _____

11. If your minor children are part of your labor force, consider whether their responsibilities should be increased or decreased. How could this influence your operation in the next five or ten years? _____

    _____

❑ ❑ 12. Do you know the farm labor laws in your state?

❑ ❑ 13. Do you have a farm liability policy? (Talk with your insurance agent to be sure.)

❑ ❑ 14. Do you have a plan for vacation care or other necessary absences? _____

_____

_____

15. List at least one teenager or college student who could be hired to help with physically demanding work such as foot trimming, manure handling, or shearing. _____

_____

16. List at least one teenager or college student who could be hired to help at peak labor times such as lambing or kidding. _____

_____

❑ ❑ 17. Does your work force (family and hired labor) feel free to contribute ideas about the farm?

❑ ❑ 18. Does your work force communicate well with you and with each other?

❑ ❑ 19. Is the main manager open to ideas about changes and innovations?

❑ ❑ 20. Does everyone in the work force have the opportunity for time off?

Total yes answers _____ Total no answers _____

Enter these numbers on the Farm Action Plan, pg. 36

G. Areas to Improve

List here any aspects of husbandry, forages, marketing, records, or enjoyment of life that need to be improved. Which of these are most important in increasing the sustainability of your farm? What additional information do you need to make improvements?

_____

_____

See the Farm Action Plan, page 36, for help in prioritizing and in finding resources.

V. Systems Management

A. Timing

By changing the time of lambing or kidding, you change the demands on the system. Moving the lambing or kidding date one month later (say, from February to March) will reduce the amount of purchased feed needed and change the stocking rate for the whole summer, but it may also result in a lower price received for market stock. All these factors, and more, must be weighed in order to make a decision about the best time to have animals born.

1. How do you decide when to begin lambing or kidding? (Check all that apply.)

__ Weather at time of lambing or kidding

__ Pasture availability

__ Time of specialty markets

__ Expected price at marketing time

__ Cost and/or availability of hay and grain

__ Animal growth needed for target market-weight

__ Minimizing internal parasite problems for young stock

__ Buck or ram decides

2. List the approximate dates when you typically do the following:

a) Increase nutrition prior to breeding; flushing (not necessary unless animals are thin; improves ovulation if they are thin) _____

b) Begin breeding _____

c) Increase nutrition prior to lambing or kidding _____

d) Begin lambing or kidding _____

e) Wean stock _____

f) Sell young stock _____

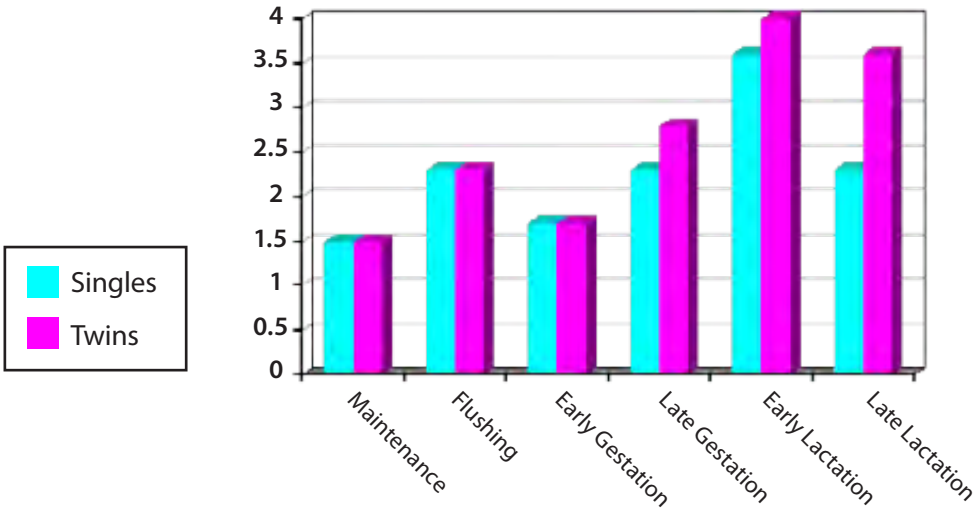
g) Reseed pastures _____

h) Fertilize _____

i) Lime pastures _____

Here is a graph showing the energy requirements for a ewe throughout the year; the pattern is the same for a doe. The bar on the left is pounds of dry matter, from the National Research Council tables. The ewe's or doe's requirements increase dramatically just before lambing or kidding, and continue through peak lactation; then at weaning, the nutritional demands are low for the female (but then it's time to have your best forages for the weaned lambs and kids). Note the effect of twins on the mother; this is why some producers separate into groups and supply extra feed to the ewes or does raising twins.

Energy Requirements (154 pound ewe)



***Source: Kott, Rodney. 2006. Montana Farm Flock Sheep Production Handbook. Animal and Range Sciences Extension Service. Montana State University. Nutrition: Part 1* . www.animalrangeextension.montana.edu/articles/sheep/Flock%20 Handbook/Nutrition-1.htm.**

Combining these guidelines with the previous information, you may work out a rough calendar showing the times of greatest feed requirements. This calendar can then be used in conjunction with forage availability data to work out changes to improve the "match" between forage availability and animal needs.

Current Plan												
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
FN												
FA												
$ In												
$ Out												

KEY: FN= forage needed (consider number of mature animals, number of young, stage of production)
FA= forage availability (high, medium, low)
$ In= months when animals are sold; may estimate receipts
$ Out= months when feed must be purchased; may estimate cost

A quick way to get a picture of this is to use colors and shade the FN boxes during the months when you NEED the most forage; then shade the FA boxes during the months when you HAVE the most forage. Then think through how this works out. Do you make hay during months of high forage availability? Is that enough to feed your animals all winter? How much money do you need to spend on supplemental feed with your current system? How much money do you make on products sold with your current system? Do you consider when to reseed and fertilize in order to get timely forage production?

Now, imagine changing your lambing or kidding season by moving it six or eight weeks later (or earlier), and do the same exercise. Which season fits your forage resources better? Which one results in the higher expected profitability?

Potential Plan												
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
FN												
FA												
$ In												
$ Out												

Figure the approximate cost of supplemental feed and note which months you'll need to purchase feed. Then figure the price you expect to get per pound of milk or meat, multiplied by the number of pounds you expect to sell, and write in those figures for the months when you plan to sell products. Time spent in thinking through various scenarios of timing and marketing may be the most profitable time you spend in managing your sheep or goat farm.

B. Coordinating Enterprises

What other enterprises do you run on your farm? Sheep and goats can fit well with many other enterprises, including beef cattle, field crops, and vegetables. Diverse enterprises can improve cash flow and stability, make better use of land and labor, and increase profitability. The trick is to keep the farm manageable and labor costs in line with how much each enterprise contributes to farm income. That is, more profitable enterprises should get more of the manager's attention and time. Allowing a minor enterprise to detract from a major one can reduce farm sustainability, unless the minor one has the potential to return enough profit to pay for the labor. Even if sheep or goats are the sole enterprise, you may diversify your farm by selling more products (especially value-added items) from the sheep or goats. Use these questions to explore your whole farm operation while planning the future use of your resources.

YES NO

❑ ❑ 1. Do your enterprises and management style match your stated goals? (see pg. 7)

2. What enterprises are you currently managing? _____

3. What products are sold from your farm? _____

_____

4. Checking your financial records, which enterprise or which products have proved most profitable in the past? _____

5. Which have the most potential for growth? _____

6. Which are most demanding in terms of labor? _____

7. Which require the most capital throughout the year? _____

_____

8. Which require the most land? _____

9. Considering all the above, which enterprise do you feel should get the most management attention? _____

10. Which enterprises are most enjoyable? _____

What benefits does each of your enterprises bring to the farm as a whole? (Think about forage use, one enterprise using waste from another, better use of labor, marketing advantages, cash flow, balancing risks, and any other ways in which each enterprise complements the farm.) _____

_____

_____

_____

_____

** Note here any ideas about improvements to the whole farm, particularly about ways to make better use of the farm resources. _____

_____

_____

_____

_____

VI. Conclusion

After answering the preceding questions, you should have a good idea of improvements that you need to make to be more sustainable. Use the Farm Action Plan on the following page to tabulate the number of "yes" and "no" answers in each section and then to rank the categories by priority. Which area needs attention first? Another way to think of this is to ask, "what is the 'weak link' in our farm?" A large number of "no" answers in a particular section should point to the weak link for you.

However, the questions are not weighted; some "no" answers are of relatively minor importance, and some open-ended questions may have pointed to areas of greater concern. Therefore, the Action Ranking column is for prioritizing. You may want to highlight several lines with a large proportion of "no" answers, then decide which is the weakest link, and number it "1." The Action Plan column in the table provides a small space for notes or to write the first step in improving a troublesome area. It is useful to transfer plans to your calendar, with deadlines, to encourage action in solving problems.

Remember the SMART acronym for goals: make them Specific, Measurable, Attainable, Realistic, and Timely.

Finally, the Information Resources column will list a few numbers corresponding to resources listed in **Appendix D**. These resources may be helpful as you take steps toward improving the sustainability of your farm. You may call the ATTRA toll-free number, 800-346-9140, if you need further assistance.

This document was developed in 2004 by Linda Coffey, technical specialist with the National Center for Appropriate Technology's National Sustainable Agriculture Information Service, and Jana Reynolds and Margo Hale, interns with the National Center for Appropriate Technology. The project was funded by a Southern SARE-PDP grant. Thanks to all of the contributors: NCAT technical specialists Alice Beetz, Tim Johnson, Dr. Ron Morrow, and Dr. Ann Wells; sheep and goat producers Linc Abney, Jack Black, Ken Hargis, Jim Morgan, Debbie Taylor, and Delane and Linda Wright; representatives of USDA - NRCS Rhonda Foster and Claire Whiteside; Extension agents Johnny Gunsaulis, Carey Wall, and Dr. Jodie Pennington of the University of Arkansas Cooperative Extension Service, and Steve Morgan of the University of Georgia Cooperative Extension Service; researchers Dr. Ken Coffey of the University of Arkansas, and Dr. Will R. Getz, Fort Valley State University, Georgia; Dr. Steve Hart, Langston University, Oklahoma; Dr. Dianne Hellwig, Berea College, Kentucky; and Dr. Jean-Marie Luginbuhl, North Carolina State University.

Updated 2010 thanks to a grant from Southern SARE-PDP.

Farm Action Plan

1.) Count and record the number of "yes" and "no" answers in each category.
2.) Rank the areas that need improvement in the order of importance (1 being most important).
3.) See numbered references in the Resources section for information. The resources listed are suggested places to start to find information on these topics. Please call ATTRA at 800-346-9140 if you need further assistance and to request ATTRA publications.

Subject Area	Totals		Action Ranking	Action Plan	Information Resources
	Yes	No			
A. Forages					3, 67-94
1. Inventory					8, 48, 76, 80,81,86,87
2. Utilization					3, 48, 58, 68-79, 82-94
B. Livestock					1-66 for general resources
1. Nutrition					8, 48, 54, 50, 74-76, 12, 13, 14, 20, 26, 33-35
2. Health					8, 48, 32, 54, 65, 58, 95-119
a. observation					1-3, 13-15, 30, 33-39, 58
b. parasites					95-97, 114, 118
c. sanitation					48, 106
d. predator control					98, 103, 104, 8, 48
e. reproduction					8, 14, 17, 42, 48, 53, 32, 65
3. Breeding & Selection					1, 8, 56, 3, 14, 20, 26, 27, 32-48, 52-53, 57
C. Marketing					120-138, 3, 8, 13, 14, 51, 126, 48, 57
D. Records					3, 8, 58, 48, 126-128, 135
E. Economics					3, 8, 48, 126-138
F. Quality of Life					2, 3, 126-128, 132-138

Appendix A: About Organic Production

If you are interested in alternative production and marketing methods, you may want to consider organic. "Organic" means, among other things, raising crops or livestock in a way that builds the soil and enhances biodiversity and ecological balance. The term "organic" may not be used except under a production system that meets all the requirements of the National Organic Program Regulations, as defined in 7 CFR Part 205 (see *www.ams.usda.gov/AMSv1.0/nop*).

Some producers choose to farm organically because they believe in the principles of organic agriculture, that organic systems build the health of soils, plants, animals, and people. Others do so because they want to sell products for a premium price to people who support organic principles and believe organic food is better for their health.

Depending on your production and marketing methods and customers, it may be to your advantage to raise and sell organic kids or lamb or wool. This section highlights what is involved in producing goats or sheep organically, and it will help you decide whether transitioning to organic is worthwhile for your operation.

What are the basic requirements of organic certification? (This is not a complete list.)

- Feed 100% certified organic feed (including pasture).
- Animals must graze on pasture at least 120 days per year, and animals must have a minimum of 30% dry matter intake from grazing pasture during the grazing season.
- Use of most synthetic medicines and/or hormones is prohibited (see the National List for materials and the purposes for which they may be used).
- Maintain organic stock under organic management from at least the last trimester before birth (i.e., does and ewes must be managed organically for more than 50 days before organic kids and lambs are born).
- Meat must be processed in a certified organic facility and must not be irradiated.

For more information about the requirements for organic livestock production, see ATTRA's *Organic Standards for Livestock Production: Highlights of the USDA's National Organic Program Regulations* (summary of relevant verbatim standards) and *NCAT's Organic Livestock Workbook* (longer workbook format to guide the producer in looking at all components of a production system as they relate to organic standards and practices).

There are also important record-keeping requirements and certification tasks, including the following.

- An organic system (farm) plan approved by a certifying agent
- Up-to-date farm records for at least five years
- Annual inspection of the farm, including records and premises

For some farms, current production practices are already very close to organic standards. Some farms keep extensive records. But for most, changes will be necessary in both production and record-keeping in order to comply with organic regulations. Will those changes be worth it? Consider the following questions.

- What price do you currently receive for your product?
- Is there local demand for organic products? (If not, you will need to develop a local market or develop one at a distance, and ship your product. Remember, market development costs time, energy, and money.)
- What price could you receive for organic goat meat, lamb, or wool? (Check the Internet for some idea of prices being asked.)
- What do you currently pay for hay or grain to supplement your animals?
- What would you have to pay for organic hay or grain? How dependable is the local supply? Can you offset the increase in the price for organic feed with sales of certified organic animals or products? (Remember, using homegrown feeds, especially pasture, will help greatly.)
- How important is organic certification to your customers? Is it sufficient for them to know you as the producer and understand that you use humane and sustainable practices, or do they need to see verification of organic standards?

Now for the next hurdle: if you are selling meat,

- Is there a certified organic processor in your area? This is necessary if you are selling organic meat.

- If there is not currently an organic processor, can you persuade a local processor to do the paperwork and follow the regulations?
- What extra processing costs will be charged for organic processing?

For information about organic meat processing, see *www.extension.org/pages/Certified_organic* and *www.mosesorganic.org/attachments/broadcaster/livestock14.6meatprocess.html*.

If you are selling a live animal,

- Who is your buyer? It's best to have more than one option.
- What is the demand? How many animals can you sell a year, and is it a steady market?

If production costs will be feasible and the market is not a problem, then consider whether you can you raise your animals under organic health management practices.

Organic health care is based on prevention of illness through good management.

- Animals adapted to the environment
- Appropriate vaccinations
- Good nutrition
- Low-stress handling
- Good sanitation
- Access to well-managed pasture, fresh air, and sunshine
- Low stocking rates
- Adequate shelter
- Good preventive care (regular foot trimming, for example)

All the above practices should be followed by producers whether they are certified organic or not, as they are simply good management practices. These practices will prevent many illnesses, assuming there is a closed flock. However, when illnesses do arise, you must remember that conventional treatments such as antibiotics are not approved for organic production. You will have to find alternative treatments. If those are not effective, then you must use the conventional treatment for humane reasons, and remove the treated animal from organic status. In humid climates, goats and sheep may have serious trouble with internal parasites. Internal parasites can be devastating to the health of the animal, causing loss of productivity and sometimes death. Under the National Organic Program regulations, use of chemical dewormers is restricted for breeding and milking stock (they may not be used on lactating does or ewes, or does and ewes in the last trimester of pregnancy, or on any animals routinely) and is prohibited for organic slaughter stock. If infection is severe, you should use the most effective treatment, including chemical dewormers if necessary. Animals treated with chemical dewormers are no longer certified organic and must be removed from the organic herd or flock. Organic production is probably not a viable option for producers who raise goats or sheep in climates that are extremely conducive to internal parasite infections.

See *Managing Internal Parasites in Sheep and Goats* for more information about this important topic. See also *NCAT's Organic Livestock Workbook* to get a fuller picture of what is involved in organic livestock production. ATTRA has many other publications that deal with organic certification as well.

Related ATTRA Publications

NCAT's Organic Livestock Workbook
Organic Farm Certification and the National Organic Program
Organic Standards for All Organic Operations
Organic Standards for Livestock Production
Organic Certification Process
Organic Livestock Documentation Forms

For additional information on organic goat or sheep production, see the MOSES article *Transitioning to Organic Sheep or Goat Meat Production*
www.mosesorganic.org/attachments/productioninfo/fstransgsmeat.html

A good, concise article about organic goat production is: *Organic Meat Goat Production* (Langston University)
www.luresext.edu/goats/training/organic.html

Appendix B: Diseases in Flock or Herd

What are the main health problems and diseases in your herd or flock? Get advice from your veterinarian to prevent them as much as possible. See **Appendix D** for resources to help you learn more about nutrition and about how to improve the health of your flock or herd.

Nutritional

- ❑ Acidosis
- ❑ Bloat
- ❑ Ketosis
- ❑ Milk fever
- ❑ Listeriosis
- ❑ Polio
- ❑ Enterotoxemia Type C
- ❑ Enterotoxemia Type D (over-eating disease) Mineral Imbalance
- ❑ Copper (Cu)— Copper Toxicity (sheep) or Copper Deficiency (goats)
- ❑ Selenium (Se)—White Muscle Disease
- ❑ Zinc (Zn)
- ❑ Magnesium (Mg)— Grass Tetany
- ❑ Potassium (K)
- ❑ Calcium: Phosphorus (Ca:P) — Milk fever, urinary calculi

Parasites

- ❑ External
- ❑ Mange
- ❑ Keds
- ❑ Ticks
- ❑ Lice
- ❑ Wool Fungus
- ❑ Internal Parasites
- ❑ Coccidia
- ❑ Nematodes

Respiratory

- ❑ Pneumonia

Genetic

- ❑ Spider Syndrome (sheep)
- ❑ Over- or under-shot jaw
- ❑ Extra teats
- ❑ Deformities

Bacterial

- ❑ Foot rot
- ❑ Enterotoxemia—Type C or D
- ❑ Pinkeye
- ❑ Tetanus
- ❑ CL— Caseous Lymphadenitis
- ❑ Johne's

Viruses/Other

- ❑ OPP— Ovine Progressive Pneumonia (sheep)
- ❑ CAE—Caprine Arthritis Encephalitis (goats)
- ❑ CE— Contagious ecthyma (soremouth)
- ❑ Scrapie

Abortions

- ❑ Toxoplasma
- ❑ Campylobacter
- ❑ Chlamydia
- ❑ Leptospirosis
- ❑ Stress
- ❑ Physical or Mechanical Trauma
- ❑ Unknown

Reproductive

- ❑ Brucellosis
- ❑ Dystocia
- ❑ Prolapse (vaginal, uterine, rectal)
- ❑ Epididymitis

Other

_____

_____

_____

Appendix C: Resource Assessments

I. Assessment of Individual Pastures

Routine pasture assessment can be used effectively as a feed budgeting process as well as an evaluation of how well your grazing program is working and how individual pastures (paddocks) should be managed. Individual pastures should be evaluated regularly to make short-term management decisions such as grazing pressure, fertility needs, forage availability within a short time span, or potential for hay production. Pasture assessment can be as important to your operation as animal evaluation (and economically, may be more important). Each pasture should be assessed at various times of the year. Additionally, when assessing a pasture, evaluate how previous management and use has affected the pasture.

What are your pasture management goals?_____

_____

Do you need to make better-quality forage available, which might be accomplished with haying earlier or using better grazing practices? _____

Do you know how individual pastures rank in productivity? _____

Are there spots of bare ground within pastures? _____

Do you have any erosion problems? _____

What changes in plant species are occurring?_____

Are these changes desirable or undesirable? _____

Is the pasture grazed fairly uniformly, or are there areas of spot grazing? _____

Is there adequate but not excessive plant residue in the pasture?_____

Is the residue decomposing properly, or is it thick enough to contribute to lack of seedling development in other species such as clover? _____

Are the animals doing a good job of controlling the edible weeds, such as ragweed, when vegetative? _____

_____

Which weeds or brush are not being controlled by grazing?_____

Are there compaction or pugging problems?_____

Could a change in water/mineral feeder location or the shape of pasture affect the grazing pattern? _____

_____

Is wildlife habitat appropriate? _____

Is water runoff excessive, especially on slopes? _____

Do you need more forage, which might be gained through an application of fertilizer or a longer rest period?

_____

Are pastures resting long enough to allow proper plant re-growth and replenishment of root reserves? _____

_____

Are there areas of pastures that need fertilizer and other areas that don't? _____

Which field areas dry out first, second, and last under drought conditions? _____

_____

Do you plan for which pastures are used at different times of the year? _____

Do you drive on pastures, which may retard pasture growth and create compaction problems? _____

_____

II. Assessment of Soils

Soil is the natural-resource foundation of any farm. Proper management of the soil is the basis for managing the plant-animal interaction necessary for a sustainable livestock farm. Whole-farm planning includes an assessment of soil characteristics. First, study how everyday management influences nutrients, moisture levels, and tilth. This is the basis for decisions on fertilizing and grazing, activities that will affect species diversity and erosion. It is important to understand where your best soil is, as well as how to improve the quality of all your soil. A nutrient management plan can be used to determine sources of nutrients that can improve the farm's productivity at minimum costs.

_____ Do you have soil maps of your farm and understand the productivity index of each soil type? _____

_____ Do you have specific problems to address, such as fragipans, poor drainage, or compaction?_____

_____ What is the microbial activity in your soil? _____ What does the soil smell like? _____

_____ What is the tilth? _____ What does a handful feel like? _____

_____ Do you have a nutrient management plan for each pasture? _____

_____ When was your last soil test? _____

_____ What is soil pH, salinity and sodium (Na) saturation? _____

_____ Do you routinely use lime? _____

_____ What is the organic matter level in your pastures/fields? _____

_____ How deep is the dark surface layer? _____

_____ Is it less than the natural undisturbed soils in your area? _____

_____ How many days does it take grass or crops to exhibit drought stress?_____

_____ Are earthworms easy to find?_____

_____ Is there evidence of earthworm activity, such as castings on the surface? _____

_____ How fast do manure piles and forage thatch degrade? _____

_____ Are any plants yellow, spotty, or purple? _____

_____ Do you have any soil nutrient deficiencies or imbalances that impair forage and animal production?_____

_____ Do you have considerable variation of productivity levels and nutrient levels within pastures?_____

_____ Are soil fertility levels adequate to meet forage production targets? _____

_____ Are forage production targets too high, requiring inputs that are undesirable for environmental or economic reasons? _____

_____ Based on productivity of the soil, would a change in fencing allow better use of pastures?_____

_____ Are any erosion problems due to poor water flow control, inadequate cover, or soil compaction?

_____

_____ Do you have soil compaction problems in any fields?_____

_____ How long does it take for standing water to seep in? _____

_____ Do you regularly sample soil of individual fields or soil types?_____

III. Assessment of Watershed

Every farm is part of a watershed. Water flows onto the farm and leaves the farm. What happens in the process is the responsibility of the farm owner and can have an impact on both the water quality downstream and soil erosion problems on the farm. An understanding of the geological formations of the farm may assist in evaluating water flow and managing water quality.

_____ What are the water drainage patterns into and from your farm? _____

_____ Are there litter banks (debris piles, usually wood) present anywhere on your land? _____

_____ How efficient are you in retaining water on your farm and in your soils?_____

Riparian areas are the edges of streams, wet weather creeks, ditches, or anywhere water flows through at various times of the year. Management of these areas can have an impact on erosion and water quality.

_____ Do you have major riparian areas with flowing water in them most of the time?_____

_____ Do you have riparian areas with large amounts of water at limited times during the year?_____

_____ Do you have a management plan for your riparian areas? _____

_____ Does your plan allow livestock frequent, limited access to help manage the vegetation of riparian areas? _____

_____ Are riparian areas managed for wildlife habitat? _____

_____ Do you have buffer zones adjacent to the riparian areas? _____

_____ Are farm ponds full of algae?_____

_____ Considering your whole farm as a watershed, do nutrients that contribute to poor water quality leave your farm?_____

_____ Do you time your fertilizing or spreading of litter/manure to prevent runoff of nutrients?_____

_____ Do aquatic organisms downstream indicate good water quality? _____ Has this changed? _____

_____ Do you use pesticides/herbicides tactically for localized infestation? _____

_____ If using poultry litter or other manures, do you test soil to monitor nutrient levels of individual pastures? _____

_____ Does your soil absorb and retain rainfall? _____

_____ Is the vegetation adequate to allow water penetration into the soil and prevent excessive runoff? _____

_____ Are some areas overgrazed to the extent that runoff is excessive? _____

_____ Do you have an understanding of the nutrient flow on your farm (inputs and outputs) and know what percentage is retained on the farm? _____

Appendix D: Small Ruminant Resources

Following are many sources of information helpful to producers of small ruminants. Further resources may be available at your county Extension office, through your state land-grant university, or your local library.

Types of Resources

ATTRA Publications

ATTRA publications are available at no cost and may be requested by calling 800-346-9140. You may also download publications at our Web site: *www.attra.ncat.org*.

Books

The books listed offer useful information on a wide variety of production and marketing issues. These titles may be available at your local library or through inter-library loan. Most of these books will be worthwhile purchases for those new to sheep or goat production. Previewing the books at a library is the best way to select the titles that will be most useful to you.

Used copies may be available through on-line services or through other booksellers. Many suppliers of sheep and goat equipment also offer books in their catalogs, and titles are available from the publishers as well.

Web sites

This is not intended to be a comprehensive list, but these Web sites offer convenient access to a lot of information. Web sites frequently change; please let us know if a link does not work so we can keep this list current. Call 800-346-9140 to report any problems with this list.

Other resources

Included here are DVDs and other useful tools that do not fit into the above categories.

A sampling of magazines, organizations, suppliers, and publishers is listed at the end of the document. Listing does not imply endorsement.

Resources are numbered to help users of ATTRA's *Small Ruminant Sustainability Checksheet* locate relevant information for improving their farms. This list works in tandem with the Farm Action Plan included in that document.

I. General: Sheep and Goats

1) An Illustrated Guide to Sheep and Goat Production

This basic and heavily illustrated introduction to sheep and goat production discusses animal selection, feeding, breeding and young stock, equipment and handling, and marketing.

2) Small Ruminant Sustainability Checksheet

This checksheet is designed to stimulate critical thinking when evaluating a farm that produces sheep or goats. The sustainability of a farm depends on many factors involving farm management, use of resources, and quality of life. The questions in the checksheet are intended to stimulate awareness rather than to rate management practices. Use this guide to define areas in your farm management that might be improved, as well as to identify areas of strength.

3) Small-Scale Livestock Farming: A Grass Based Approach for Health, Sustainability, and Profit

Ekarius, Carol. 1999. Storey Books, Pownal, VT. 217 p.

Not specific to any species of livestock; contains farmer profiles and quite a bit of holistic planning and economic information. Very complete in treatment of rotational grazing.

4) Sheep Housing and Equipment Handbook

Hirning, Harvey J., Tim C. Faller, Karl J. Hoppe, Dan J. Nudell, and Gary E. Ricketts. 1994. MidWest Plan Service, Ames, IA. 90 p.

These plans are also useful for goats, and include a few plans specific to goats.

5) USDA

www.usda.gov

To go directly to the sheep and goat information, use this link: *http://riley.nal.usda.gov/nal_display/index.php?info_center=8&tax_level=2&tax_subject=10&topic_id=1735*

6) NRCS

www.nrcs.usda.gov

7) ATTRA—National Sustainable Agriculture Information Service

www.attra.ncat.org

8) Maryland Small Ruminant Page

www.sheepandgoat.com

Don't miss this site. It is the most comprehensive and easy-to-use site for sheep and goat producers, and links to many of the Web resources listed in this document. The site is so extensive that using the search function is recommended; otherwise, it might take several clicks to find what you are looking for. The home page alone contains a wealth of information, including links to PowerPoints and spreadsheets, the Sheep 101 and Sheep 201 courses, the Wild and Wooly Sheep and Goat Newsletter*, a reference list that includes many fine books and tabs to many useful articles covering every conceivable aspect of sheep and goat production. This portal is run by Susan Schoenian, University of Maryland Extension, and it is the first place to go if you have Web access. Her work is top-notch. The site includes numerous resources not contained in this ATTRA resource list.*

9) Kentucky Sheep and Goat Development Office

www.kysheepandgoat.org

10) Sheep and Goat Extension and Research, Texas A&M University

http://animalscience.tamu.edu/academics/sheep-goats/index.htm

11) Sheep and Goats, Virginia Polytechnic Institute and State University Extension

http://pubs.ext.vt.edu/category/sheep-goats.html

II. General: Sheep

12) Dairy Sheep

This publication offers additional information and resources and includes a quick overview of production considerations.

13) Sheep: Sustainable and Organic Production

This publication takes a look at breed selection, feeding, health management, and innovative marketing of meat and wool products.

14) Storey's Guide to Raising Sheep: Fourth Edition

Simmons, Paula and Carol Ekarius. 2009. Storey Publishing, LLC., Pownal, VT. 400 p.

This book is a very useful resource covering many aspects of raising and marketing sheep and their products. Enjoyable to read and helpful to both beginners and experienced producers.

15) Storey's Barn Guide to Sheep

Burns, Deborah, Sarah Guaro and Dale Perkins, editors. 2006. Storey Publishing, LLC. Pownal, VT. 96 p.

This spiral-bound book with large, heavy-duty pages is designed to accompany the farmer to the barn and is complete with step-by-step guides and many straightforward illustrations. A companion to Storey's Guide to Raising Sheep.

16) Practical Lambing and Lamb Care: Third Edition

Eales, Andrew, John Small and Colin Macaldowie. 3rd Edition. 2004. Blackwell Publishing, Ltd., Oxford, U.K. 272 p.

This book provides practical guidance on all aspects of lambing and lamb care, including preventing and dealing with health issues, and ewe care.

17) Managing Your Ewe

Lawson, Laura. 1997. LDF Publications, Culpeper, VA. 352 p.

Information on preparation for breeding,lambing, and aftercare.

18) Changes in the Sheep Industry

National Research Council. 2008. The National Academic Press, Washington, D.C. 347 p.

A comprehensive report covering the history and current state of the U.S. sheep industry. Also includes information on breeds, health issues, and marketing.

19) Sheep Success

Griffith, Nathan. 2000. Cobblemead Publications, Trout, WV. 204 p.

Long-established but not widely known strategies for breeding, growing, and selling sheep.

20) Sheep Production Handbook

This reference handbook, covering the basics of sheep production, is for beginning and experienced sheep producers alike.

American Sheep Industry Association
9785 Maroon Circle, Suite 360
Englewood, CO 80112
303-771-3500, ext. 32
www.sheepusa.org

21) American Sheep Industry Association

www.sheepusa.org

22) Hair Sheep Research and Information

www.sheepandgoat.com/HairSheepWorkshop/index.html

23) National Sheep Improvement Program

www.nsip.org

24) Oregon State University

http://ans.oregonstate.edu/extension/sheep/index.htm

25) Penn State Sheep Publications

http://pubs.cas.psu.edu/PubTitle.asp?varTitle=sheep&Submit=Go

26) Sheep Extension Program, Farm Flock Sheep Production Handbook, Montana State University

http://animalrangeextension.montana.edu/articles/sheep/handbook/handbook-TOC.htm

27) Sheep Information - Cornell University STAR System

www.ansci.cornell.edu/sheep/management/breeding/star/

28) University of Kentucky Sheep Publications

www.uky.edu/Ag/AnimalSciences/farm/sheeppub.htm

29) University of Minnesota Extension Sheep Publications

www.extension.umn.edu/listing.html?topic=8&subcat=79

30) University of Tennessee Sheep Extension

http://animalscience.ag.utk.edu/Sheep/Publications-Sheep.html

31) University of Wisconsin Sheep Extension

www.ansci.wisc.edu/Extension-New%20copy/sheep/index.html

32) Sheep Management Wheel

www.pipestonesheep.com/sheepmanagementwheel.html

To order a Pipestone Sheep Management Wheel, send $10 (checks payable to Minnesota West) to:
Pipestone Lamb and Wool Program
1314 North Hiawatha
P. O. Box 250
Pipestone, MN 56164
or contact at:
Phone: 507-825-6806

The Pipestone Sheep Management Wheel is designed to make ewe flock management decisions simple and easy. The wheel is basically a management calendar. It works by setting the date you lamb, and all the management tasks that you need to do for the ewe and her lambs for the entire year are indicated on the wheel.

III. General: Goats

33) Meat Goats: Sustainable Production

Offers information specific to meat goat production and should be read after the companion publication, Goats: Sustainable Production Overview. *This document discusses selection, breeds, marketing, feeding, profitability, and other topics. It includes sample budgets, case studies of farms in Montana and Missouri, and many further resources.*

34) Goats: Sustainable Production Overview

Discusses considerations of raising goats on pasture, including grazing, supplemental feeding, health concerns, reproduction, and management, as well as marketing and profitability.

35) Dairy Goats: Sustainable Production

This publication is intended for those interested in starting a commercial goat dairy. It discusses the five major considerations to be addressed in planning for dairy goat production: labor, sales and marketing, processing, regulations, and budgeting and economics. It includes production information specific to dairy goats, including choosing breeds and selecting stock.

36) Meat Goats: Their History, Management, and Diseases

Mitcham, Stephanie and Allison Mitcham. 2000. Crane Creek Publications, Sumner, IA. 264 p.

A well-written combination of the authors' personal experiences raising goats, veterinary knowledge (Stephanie Mitcham is a DVM), and a compilation of information from other experts in the field. Includes information about handling systems (hard to find elsewhere).

37) Storey's Guide to Raising Dairy Goats

(Revised and updated; originally called *Raising Milk Goats the Modern Way*)
Belanger, Jerry. 2001. Storey Books, Pownal, VT. 288 p.

Very good general information for producers of dairy goats.

38) Goats and Goatkeeping

Thear, Katie. 1988. Merehurst Press, London, U.K. 176 p.

Very interesting book for goat producers, geared for the small farm. Covers milk, meat, and fiber. Practical and concise, very similar to The New Goat Handbook*, but with added detail.*

39) The Goat Handbook

Judas, Ulrich and Seyedemehdi Mobini. 2006. Barron's Educational Series, Inc., Hauppauge, NY. 144 p.

The compact size of this book makes it easy to keep handy, and it is full of photographs, line drawings, and useful information. Includes basic information on care, housing, breeding, and upkeep in non-technical language.

40) Goat Husbandry: Fifth Edition, revised and edited by Ruth Goodwin

Mackenzie, David. 1993. Faber & Faber, London, U.K. 355 p.

British terminology, very good reading — a classic.

41) Angora Goats the Northern Way: Fourth Edition
Drummond, Susan Black. 1993. Stoney Lonesome Farm, Freeport, MI. 239 p.

42) Raising Goats for Milk and Meat: Third Edition
Sinn, Rosalee. 2008. Heifer International, Little Rock, AR. 218 p.
Written for producers with limited resources, this is a very practical book, much expanded over the previous version; don't miss the chapter on health, which includes emphasis on prevention. Educators will appreciate the format of this book, in which the 10 chapters are presented as learning guides and lessons. This is an ideal course for educators working with groups and for self-study.

43) Your Goats: A Kid's Guide to Raising and Showing
Damerow, Gail. 1993. Storey Books, Pownal, VT. 172 p.
Gail Damerow writes very good books; this one is easy to understand and very informative. Not just for kids.

44) Raising Meat Goats for Profit
Bowman, Gail. 1999. Bowman Communications, Inc., Twin Falls, ID. 256 p.
This "how-to" book is a wonderful resource for goat breeders. It includes information about the meat breeds, how to get started with meat goat production, feed ration tables, kidding and raising kids, how to sell your goats, and information on health and diseases, as well as recipes.

45) Storey's Guide to Raising Meat Goats
Sayer, Maggie. 2007. Storey Publishing, LLC., Pownal, VT. 320 p.

46) Simply Meat Goats
Solaiman, Sandra G. 2006. George Washington Carver Agricultural Experiment Station, Tuskegee University, Tuskegee, AL. 118 p.

47) Oklahoma Basic Meat Goat Manual
Oklahoma Cooperative Extension Service and Oklahoma State University. 2008. Oklahoma State Extension. 100 p.
To view online or order a copy, visit *http://meatgoat.okstate.edu* or contact JJ Jones at 580-332-7011.

48) Meat Goat Production Handbook
Gipson, T.A., R.C. Merkel, and S. Hart. 2008. American Institute for Goat Research, Langston, OK. 418 p.
Comprehensive and highly useful guide to meat goat production and marketing. See content online at www.luresext.edu/goats/training/qa.html *(Web-based Training and Certification Program for Meat Goat Producers). This spiral-bound book is a handy reference.*

To acquire a copy, write to
MGPH
Langston University
Box 730
Langston, OK 73050
or access the order form at *www.luresext.edu/goats/handbookorderform.pdf*. Current cost is $50, which includes shipping and handling in the U.S.

49) Goats: Small-scale Herding for Pleasure and Profit
Weaver, Sue. 2006. Bow Tie Press. 160 p.
This introductory book discusses choosing, breeding, and tending goats.

50) Nutrient Requirements of Small Ruminants: sheep, goats, cervids, and new world camelids
NRC. 2007. National Academy Press, Washington, DC.

51) A Compilation of the Wit and Wisdom of "The Goat Man"
Pinkerton, Frank. 2010. Published by Goat Rancher Magazine. 334 p.
Dr. Pinkerton has been involved in every aspect of the goat industry and he writes very well, managing to be educational and funny at the same time. This book deals with all aspects of goat production, but is

especially strong in the areas of marketing of meat goats, goat enterprise economics and production testing, vital areas that are often overlooked in goat production books.

52) Web-based Training and Certification Program for Meat Goat Producers
www.luresext.edu/goats/training/qa.html

53) Meat Goat Home Study Course, Penn State Extension
http://bedford.extension.psu.edu/agriculture/goat/Goat%20Lessons.htm

54) Langston University–E (Kika) de la Garza American Institute for Goat Research
www2.luresext.edu/goats/index.htm
This Web site is packed with solid information for goat producers, whether they raise meat, dairy, or fiber goats. From the home page, you can connect to the Web-based training course (see 52 above), the online manual for conducting fecal egg counts, nutrient requirements calculators (for balancing rations) and more. Use the search button to find information on many goat production topics.. The Web-based training course can be browsed and then read one chapter at a time; this is one of the best places to go for information on any aspect of meat goat production.

55) Nutrient Requirements of Goats (1981 edition)
www.nap.edu/openbook.php?record_id=30&page=1
This version is very accessible and useful, but be aware that there is an updated version. See entry above in the book listings.

56) North Carolina State University – Extension Animal Husbandry (see Meat Goat)
www.cals.ncsu.edu/an_sci/extension/animal/eahmain.html

57) Meat Goat Selection, Carcass Evaluation, and Fabrication Guide
www.lsuagcenter.com/en/crops_livestock/livestock/sheep_goats/Meat+Goat+Selection+Carcass+Evaulation+and+Fabrication.htm

58) Tennessee Grazing Planner
www.tn.nrcs.usda.gov/technical/grazing/docs/calendar%202008%20goats.pdf

59) Goat World
www.goatworld.com

60) Boer and Meat Goat Information
www.boergoats.com

61) Penn State Meat Goat Research and Publications
www.das.psu.edu/goats/research

62) American Dairy Goat Association
www.adga.org/

63) The Dairy Goat Journal
www.dairygoatjournal.com

64) Wisconsin Dairy Artisan Network
http://wisconsindairyartisan.org/goats.html

65) Meat Goat Management Wheel
http://extension.missouri.edu/publications/DisplayPub.aspx?P=MP913
The versatile, easy-to-use Meat Goat Management Wheel simplifies decisions about meat goat management and production. The wheel is a management calendar that helps you schedule tasks. It contains lots of general management information that can be adjusted for individual operations and different management styles.

Order from University of Missouri Extension Publications
http://extension.missouri.edu/publications/
573-882-7216

66) Meat Goat Production and Marketing DVD

www.ssawg.org/virtualfarm.html#goats

This video illustrates the story of Bill Legg's pastured meat goat operation, within the setting of his diverse Tennessee farm. The practical information includes goat breeds and breeding tips, pasture management, pest control, marketing, and more – as told by the farmer.

Southern Sustainable Agriculture Working Group (SSAWG) DVD series

Southern SAWG's video series titled Natural Farming Systems in the South provides an easy, economical way to take a virtual tour of some highly successful farming operations in the region. Compiled in partnership with the USDA's Risk Management Agency, these broadcast-quality videos feature farmers who detail in plain-spoken terms their whole farming systems and each component unique to their particular operations.

Videos in the series include Meat Goat Production and Marketing, Artisan Cheese Making, and more. Visit www.ssawg.org/virtualfarm.html *to order the videos, take virtual farm tours, download the Meat Goat Resource List, or watch short video clips. Call 479-251-8310 to order DVDs. Currently they are $15 each (plus shipping and handling).*

IV. Forages

67) Assessing the Pasture Soil Resource

How to take a soil sample and an easy way to assess soil biological activity and water infiltration. Assessment sheet included.

68) Multispecies Grazing

Brief overview of why multispecies grazing is beneficial, as well as considerations for management.

69) Paddock Design, Fencing, and Water Systems for Controlled Grazing

This publication covers some of the basics of paddock design and current fencing and water technology.

70) Rotational Grazing

How to manage pastures and grazing animals to make more profitable use of a farm's resources.

71) Pastures: Sustainable Management

This publication looks at managing fertility and pests, grazing systems, conserved forages, and maintaining productivity. It includes additional resources.

72) Pasture, Rangeland, and Grazing Management

This publication profiles the general types of pastures and rangelands and offers information about management and expected yields. Weed management strategies are also discussed, and tips are offered to rehabilitate depleted land. Issues in grazing management, such as paddock development, plant selection, drought and plant toxicosis, are also discussed. Resources and references are also included.

73) Pastures: Going Organic

This publication is an introduction to regulations related to organic pasture and rangeland in the United States. Fertility, weed, and insect pest management issues are briefly addressed. Organic integrity is discussed, including records required to demonstrate compliance with the National Organic Standards. References and resources follow the narrative.

74) Ruminant Nutrition for Graziers

This publication provides managers with tools and references to assess biological and climatological variables and make decisions that ensure the ecological and economic viability of a grass-based ruminant operation.

75) Small-Scale Livestock Farming: A Grass Based Approach for Health, Sustainability, and Profit

Ekarius, Carol. 1999. Storey Books, Pownal, VT. 217 p

Not specific to any species of livestock; contains farmer profiles and quite a bit of holistic planning and economic information. Very complete in treatment of rotational grazing.

76) Southern Forages

Ball, D.M., C. S. Holveland, and G.D. Lacefield. 2002. Potash & Phosphate Institute (PPI). Norcross, Georgia. 322 p.

This handy book includes color photos to help in forage identification, as well as very readable and useful treatments of forage programs, options in forages, establishing forages, managing grazing, minimizing stored feed requirements, dealing with poisonous plants, and much more. A chapter on forage quality is followed by a chapter on the nutrient requirements of livestock. All graziers in the South will benefit from reading and using this book. Printed on durable enameled paper, this book is compact and includes lots of tables, graphics and photos. Softcover. "From dashboards of trucks to libraries, this book will be dog-eared from regular use." (Dr. Jimmy Henning, University of Kentucky Extension Forage Specialist)

Order from:
Potash & Phosphate Institute (PPI)
655 Engineering Drive, Suite 110
Norcross, GA 30092-2837
Phone: 770-825-8082
E-mail: *circulation@ppi-far.org*

77) Comeback Farms: Rejuvenating Soils, Pastures and Profits with Livestock Grazing Management

Judy, Greg. 2008. Acres USA. Austin, TX. 278 p.

This book expands on the cattle operation and includes first-hand experience with high density multi-species grazing, specifically for sheep, goats, and pigs. Tips are included on how to work with nature without costly inputs and letting the animals be your labor force.

78) Targeted Grazing: A Natural Approach to Vegetation Management and Landscape Enhancement

National Sheep Industry Improvement Center and American Sheep Industry Association. 2006. American Sheep Industry Association, Centennial, CO. 199 p.

To view online or order a copy, visit *www.cnr.uidaho.edu/rx-grazing/Handbook.htm* or contact
American Sheep Industry Association
9785 Maroon Circle, Suite 360
Englewood, CO 80112
303-771-3500, ext. 32

79) More Sheep, More Grass, More Money

Schroedter, Peter. 1997. Ramshead Publishing, Ltd. Moosehorn, Manitoba. p.112

Personal experiences of the author emphasizing the need to make a profit with the sheep enterprise. It includes examples of how to cut costs and increase profits. Emphasis on grazing management. Very practical.

80) Tennessee Grazing/Browsing Calendar

www.tn.nrcs.usda.gov/technical/grazing/docs/calendar%202008%20goats.pdf
While the title indicates "2008," this calendar is useful every year as a reminder of good management practices for your pasture and goats. This tool is concise, informative, and loaded with tips to benefit your whole farm. Record sheets are included at the end of the 23-page document.

81) Intermountain Planting Guide

Jensen, Kevin, and Howard Horton, Ron Reed, and Ralph Whitesides. Utah State University. 106 p.

http://extension.usu.edu/files/publications/publication/pub__7717229.pdf

82) Extending Grazing and Reducing Stored Feed Needs

http://agebb.missouri.edu/mfgc/2009extgraz.pdf
This 20-page publication is ANR-1357 and is available at some Extension offices.

83) University of Wisconsin Extension Pasture Management and Grazing

www2.uwrf.edu/grazing

84) Livestock for Landscapes

www.livestockforlandscapes.com

85) BEHAVE- Behavioral Education for Human Animal Vegetation and Ecosystem Management
www.behave.net

86) Alberta Forage Manual
www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex16

87) Montana State University
http://www.msuextension.org/store/Departments/Agriculture-Topic-Categories/Range-Management.aspx

88) ARS Range Monitoring Manuals
http://usda-ars.nmsu.edu/monit_assess/index.html

89) Interpreting Indicators of Rangeland Health
ftp://ftp-fc.sc.egov.usda.gov/GLTI/technical/publications/IIRH_v4_8-15-05.pdf

90) USDA Pasture Condition Score System
http://ddr.nal.usda.gov/bitstream/10113/37920/1/IND44315660.pdf

91) Guide to NRCS Pasture Condition Scoring
ftp://ftp-fc.sc.egov.usda.gov/GLTI/technical/publications/pasture-score-guide.pdf

92) Pasture Condition Score Sheet
ftp://ftp-fc.sc.egov.usda.gov/GLTI/technical/publications/pasture-score-sheet.pdf

93) Multi-Species Grazing and Leafy Spurge CD
TEAM Leafy Spurge. 2002.
USDA-ARS Northern Plains
Agriculture Research Laboratory
1500 North Central Avenue
Sidney, MT 59270
406-433-2020
www.team.ars.usda.gov

T*his CD provides a variety of useful information about using grazing as an effective, affordable, and sustainable leafy spurge management tool. It contains economic reports, posters, photos, a PowerPoint presentation, extensive bibliography, and more. A great resource.*

94) GOATS! For Firesafe Homes in Wildland Areas CD
Kathy Voth
6850 West County Road 24
Loveland, CO 80538
www.livestockforlandscapes.com

This CD/Handbook is designed to provide fire managers, communities, and livestock owners information on using goats to reduce fire danger. It includes expected results, and the "hows" of managing animals, choosing treatment sites, developing contracts for services, estimating costs, and starting projects. This is a great CD with some excellent videos.

V. Animal Health

95) Managing Internal Parasites in Sheep and Goats
This publication discusses new techniques to manage parasites and to prolong the efficacy of dewormers. New management tools that remain under investigation are also discussed. A list of resources follows the narrative.

96) Tools for Managing Internal Parasites in Small Ruminants: Copper Wire Particles
The publication contains information on how to make boluses of copper wire oxide particles and reports results of studies on the effectiveness of this treatment.

97) Tools for Managing Internal Parasites in Small Ruminants: Sericea Lespedeza
This publication discusses tools that can be used to manage internal parasites of sheep and goats that are

becoming resistant to conventional wormers. One such tool is the forage sericea lespedeza, and the publication discusses how it can be used and presents the results of research on how it reduces parasites in small ruminants.

98) Predator Control for Sustainable and Organic Livestock Production

This publication focuses primarily on the control of coyotes and dogs, the main causes of livestock loss to predation, through management practices such as fencing and secure areas and the use of guard animals.

99) Integrated Parasite Management for Livestock

With parasites developing resistance to all dewormers, and more farmers producing livestock by "natural" methods, there is interest in looking for alternative ways to manage parasite problems. This publication offers a systems approach to assess and manage the soil, forages, and animals to decrease internal parasites and their effects.

100) Sheep and Goat Medicine

Pugh, D.G. 2002. W.B. Saunders Company, Philadelphia, PA. 468 p.

A great gift for a veterinarian. A wealth of information for producers and for veterinarians. Knowledge of veterinary terminology will be helpful in using this book.

101) A Veterinary Guide for Animal Owners: Second Edition

Spaulding, C.E and Jackie Clay. 2nd Edition. 2001. Rodale, Inc., Emmaus, PA. 432 p.

A very readable and practical book with chapters on cattle, horses, hogs, sheep, goats, dogs and cats.

102) Keeping Livestock Healthy: Fourth Edition

Haynes, N. Bruce. 2001. Storey Publishing, LLC., Pownal, VT. 352 p.

Covers cattle, horses, swine, sheep, and goats. A good book for learning about diseases in general, with emphasis on prevention. Most attention is given to large animals.

103) …May Safely Graze: Protecting Livestock Against Predators

Fytche, Eugene. 1998. Published by the author. 103 p.
Available from:
Eugene Fytche
R.R. #1
Almonte, Ontario. K0A 1A0.

This book explores how to identify and quantify the predator problem and includes information on many methods to control the predators, including guard animals, fencing, and management.

104) Livestock Guardians: Using Dogs, Donkeys, and Llamas to Protect your Herd

Dohner, Jan Vorwald. 2007. Storey Publishing, LLC., Pownal, VT. 256 p.

A comprehensive guide for farmers struggling to reduce predation of sheep, goats, and other livestock.

105) The Complete Herbal Handbook for Farm and Stable: Fourth Edition

Bairacli Levy, Juliette de. 1991. Faber & Faber, London, U.K. 471 p.

Very interesting book offering a different perspective on prevention of disease and production of healthy animals without using conventional medicine.

106) The Dairy Practices Council Small Ruminant Guidelines

Guidelines for the Dairy Industry Relating to Sanitation and Milk Quality for Small Ruminant Operations.
The Dairy Practices Council
51 East Front Street, Suite 2
Keyport, NJ 07735
732-264-2643
www.dairypc.org
Set: $70.00.

A set of 17 Guidelines relating to small ruminants; each may also be purchased separately. Very good technical information for commercial producers of dairy sheep and goats.

107) Humane Livestock Handling

Grandin, Temple. 2008. Storey Publishing. Pownal, VT. 227 p.

Learn how to improve the day-to-day operation as well as the profitability of your farm by raising healthier, more contented animals. Temple Grandin shares dozens of methods and detailed plans she has developed for low-stress ways to move livestock on pastures, paddocks, and feedlot pens.

108) Small Ruminant Production Medicine and Management Manual

Infovets.com
P.O. Box 494
Brigham City, UT 84302
877-424-7838

This reference manual contains video, flow charts, photos, and procedure descriptions that are a must for any sheep and goat owner. Find answers to those everyday questions on management, birthing problems, disease prevention/treatment, the proper use of various products, and much more.

109) Alternative Treatments for Ruminant Animals

Dettloff, Paul, DVM. 2004. Acres USA. Austin, TX. 246 p.

www.acresusa.com/books/closeup.asp?prodid=1236&catid=11&pcid=2

This book provides information on natural, organic, and sustainable approaches to animal health. Includes information for sheep and goats.

110) Natural Goat Care

Coleby, Pat. 2001. Acres USA. Austin, TX. 371 p.

Fascinating book; Australian author pays much attention to nutrition and to maintaining health organically. Call 1-800-355-5313.

111) Goat Medicine, Second Edition

Smith, Mary and David M. Sherman. 2009. Wiley-Blackwell, Baltimore, MD. 888 p.

This book is recommended as a useful gift for a veterinarian. Very scientific; some of the terminology will be understood only by a veterinarian, but a few chapters are very useful to producers.

112) Goat Health Handbook: A Field Guide for Producers with Limited Veterinary Service

Thedford, T.R. 1983. Printed in collaboration with the Agricultural Experimental Station, University of Arkansas. 123 p.

Available from:
International Winrock Publication Sales
P.O. Box 9363
Arlington, VA 22209-0363

113) Natural Sheep Care

Coleby, Pat. 2006. Acres USA, Austin, TX. 215 p.

This is a natural sheep care book with special attention devoted to breeding for finer wool and meat, land management, and treatment of diseases and other health problems

114) Living With Worms in Organic Sheep Production

Stockdale, Peter. 2008. Canadian Organic Growers, Inc., Ontario, Canada. 79 p

An excellent book that covers parasite life cycles, managing pastures and animals to prevent parasitism, and diagnosis and treatment of internal parasites.

115) The Sheep Keeper's Veterinary Handbook

Winter, Agnes and Judith Charnley. 2007. The Crowood Press, Ltd., Ramsbury, Marlborough, U.K. 208 p.

Covers the basics of keeping sheep and common health issues. Focuses on identifying healthy sheep and preventing disease.

116) American Association of Small Ruminant Practitioners

www.aasrp.org

117) National Scrapie Education Initiative
www.eradicatescrapie.org

118) Southern Consortium for Small Ruminant Parasite Control
www.scsrpc.org

119) Pipestone Veterinary Supply
www.pipevet.com

VI. Marketing and Business

120) Direct Marketing
This publication on direct marketing alternatives—with emphasis on niche, specialty, and value–added products—features many farm case studies, as well as information on enterprise budgets and promotion/publicity. A new section discusses implications of Internet marketing and e–commerce for agriculture.

121) Evaluating a Rural Enterprise
This publication is for people who already live in rural areas and want to add new enterprises to their operations. Its sections guide the reader in evaluating resources, assessing finances, gathering information, and marketing. It also discusses choosing an "alternative" enterprise and offers further resources.

122) Holistic Management
Introduction to holistic management. Holistic management is a decision-making framework that assists farmers and others in establishing a long-term goal, a detailed financial plan, a biological plan for the landscape, and a monitoring program to assess progress toward the goal. Holistic Management helps managers ask the right questions and guides them in setting priorities.

123) Keys to Success in Value-Added Agriculture
This publication presents, largely in the words of fourteen farmers, important lessons they learned in adding value to farm products and marketing directly to consumers.

124) Overview: Adding Value to Farm Products
This publication introduces the concept of value-added farm products, explains a few of the nuts and bolts for starting a food processing business, and provides resources for additional information.

125) Value-Added Dairy Options
Considerations for those who want to increase profitability by bottling milk, making cheese or yogurt, or doing some other processing of their milk. This publication discusses regulations and organic milk certification and offers resources for further information.

126) Building a Sustainable Business: A Guide to Developing a Business Plan for Farms and Rural Business
DiGiacomo, Gigi, Robert King, and Dale Nordquist. 2003. Minnesota Institute for Sustainable Agriculture, Saint Paul, MN, and the Sustainable Agriculture Network, Beltsville, MD. 280 p.
Business planning is an important part of owning and managing a farm. Business plans help farmers demonstrate that they have fully researched their proposed enterprises; they know how to produce their products, how to sell what they produce, and how to manage financial risks. This comprehensive workbook will guide farmers through every step of the process in creating a business plan. Includes many examples from existing farms. This workbook is a bargain. Available for $14.00 + $3.95 S/H by calling 802-656-0484 or 800-909-6472. Publication can also be viewed and downloaded at www.misa.umn.edu/vd/bizplan.html.

127) Small-Scale Livestock Farming: A Grass Based Approach for Health, Sustainability, and Profit
Ekarius, Carol. 1999. Storey Books, Pownal, VT. 217 p.
Not specific to any species of livestock; contains farmer profiles and quite a bit of holistic planning and economic information. Very complete in treatment of rotational grazing.

128) Making Money with Goats

Winslow, Ellie. 2005. Freefall Press. 193 p.

This book covers many ways to make money with goats, including information on general production, goat milk, meat, skins, fiber, and business planning.

129) Turning Wool into a Cottage Industry

Simmons, Paula. 1991. Storey Books, Pownal, VT. 188 p.

This book is a big help to those who want to use fiber.

130) Changes in the Sheep Industry

National Research Council. 2008. The National Academic Press, Washington, D.C. 347 p.

A comprehensive report covering the history and current state of the U.S. sheep industry. Also includes information on breeds, health issues, and marketing.

131) Marketing out of the Mainstream: A producers' guide to direct marketing of lamb and wool

Kirkpatrick, Tamra and James Bell. 1995. Sheep Industry Development Program. Englewood, CO. 57 p.

Available as a PDF from the American Sheep Industry Web site. See www.sheepusa.org/Publications.
This site also includes up-to-date reports about marketing, and the Sheep Care Guide.

132) Holistic Management: A New Framework for Decision Making

Savory, Allan, and Jody Butterfield. 1999. Island Press, Washington, D.C. 616 p.

This is an in-depth look at how to assess your situation, form a mission statement, set goal,s and make plans to reach them in light of social, economic, and environmental concerns. While it is very long and introduces some difficult concepts and unfamiliar terminology, this book includes pictures, graphics, examples, and clear explanations. Understanding and applying the concepts of holistic management will lead to making better decisions for your land and your family.

133) Whole Farm Planning: Ecological Imperatives, Personal Values and Economics

Henderson, Elizabeth, and Karl North. 2004. Northeast Organic Farming Association Interstate Council. Barre, MA. 92 p.

www.nofa.org
Concise, simplified, unintimidating look at whole farm planning, packed with examples. This is a great place to start learning about holistic management.

134) Sheep and Goat Marketing Information

http://sheepgoatmarketing.info

135) Measuring and Analyzing Farm Financial Performance, Purdue Extension

www.agecon.purdue.edu/extension/programs/fbm21/Ec712entry.htm

136) A PRIMER for Selecting New Enterprises for Your Farm, University of Kentucky Extension

www.uky.edu/Ag/AgEcon/pubs/ext_aec/ext2000-13.pdf

137) Holistic Management

http://holisticmanagement.org

138) Whole Farm Planning With Holistic Management

www.umass.edu/umext/jgerber/hmpage/hmpage2/mainpage6.htm

VII. Organic Production

139) NCAT's Organic Livestock Workbook

This workbook has been created to help organic and transitional producers with livestock or mixed crop and livestock operations understand the range of practices and materials allowed under the National Organic Program Regulations. Particular emphasis is placed on farming strategies and practices that promote sustainability.

140) Pastures: Going Organic

This publication is an introduction to regulations related to organic pasture and rangeland in the United States. Fertility, weed, and insect pest management issues are briefly addressed. Organic integrity is discussed, including records required to demonstrate compliance with the National Organic Standards. References and resources follow the narrative.

141) Organic Standards for All Organic Operations: Highlights of the USDA's National Organic Program Regulations

This collection of excerpts from the USDA's National Organic Program (NOP) Final Rule provides the reader with key standards relevant to all certified organic operations.

142) Organic Standards for Livestock Production: Highlights of the USDA's National Organic Program Regulations

This collection of excerpts from the U.S. Department of Agriculture's National Organic Program (NOP) provides the reader with key standards relevant to organic livestock producers.

143) Organic Certification Process

This guide is designed to help organic producers and handlers understand, prepare for, and get the most from the process of organic certification to USDA National Organic Standards.

144) Organic Farm Certification and the National Organic Program

Farmers planning to market their products as "organic" must become certified. This guide outlines the considerations involved in "going organic" and the basic steps to organic certification.

145) Organic System Plans: Livestock Production

If you want to certify your livestock operation(s) as organic, you will need to complete an application form. This guide was developed to assist you in completing that application by explaining just what information certifiers want and why it is required.

146) Organic Livestock Documentation Forms

In order to become certified organic, livestock producers must demonstrate to an accredited certifier that their operations comply with National Organic Program regulations. The 32 forms in this package are provided as tools that livestock producers can use for documenting practices, inputs, and activities that demonstrate compliance with regulations or that assist in other aspects of farm record keeping.

147) Organic Livestock Feed Suppliers Database

One of the challenges of organic livestock production is locating the 100% organic feed required. This self-listing database helps producers locate sources of feed. Only available online at http://attra.ncat.org/attra-pub/livestock_feed/.

148) Alternative Treatments for Ruminant Animals

Dettloff, Paul, DVM. 2004. Acres USA. Austin, TX. 246 p.

www.acresusa.com/books/closeup.asp?prodid=1236&catid=11&pcid=2

This book provides information on natural, organic, and sustainable approaches to animal health. Includes information for sheep and goats.

149) Living With Worms in Organic Sheep Production

Stockdale, Peter. 2008. Canadian Organic Growers, Inc., Ontario, Canada. 79 p.

An excellent book that covers parasite life cycles, managing pastures and animals to prevent parasitism, diagnosis and treatment of internal parasites.

150) Transitioning to Organic Sheep or Goat Meat Production

http://mosesorganic.org/attachments/productioninfo/fstransgsmeat.html

151) Transitioning to Organic Sheep or Goat Dairy Production

http://mosesorganic.org/attachments/productioninfo/fstransgsdairy.html

152) National Organic Program

Home page: www.ams.usda.gov/AMSv1.0/nop

Link to standards: http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=89916dd414d154b401d29376f730a9b7&rgn=div5&view=text&node=7:3.1.1.9.32&idno=7

List of certifiers: www.ams.usda.gov/AMSv1.0/getfile?dDocName=STELPRDC507448

153) New Farm (Rodale)

Home page: www.rodaleinstitute.org/new_farm

Certifier directory: www.rodaleinstitute.org/certifier_directory

154) Organic Trade Association Organic Pages Online

www.theorganicpages.com/topo/index.html

Vendors: Magazines

Goat Rancher
Terry Hankins, editor and publisher
731 Sandy Branch Road
Sarah, MS 38665
888-562-9529
www.goatrancher.com
$29 per year (12 issues)

Sheep! Magazine
W11564 Hwy. 64
Withee, WI 54498
www.sheepmagazine.com
$21 per year (6 issues)

The Shepherd
5696 Johnston
New Washington, OH 44854-9736
419-492-2364
$30 per year (12 issues)

Meat Goat Monthly
Ranch Publishing
P.O. Box 2678
San Angelo, TX 76902
915-655-4434
www.ranchmagazine.com/mgn.html
$27 per year (12 issues)

The Stockman Grass Farmer
P.O. Box 2300
Ridgeland, MS 39158-2300
601-853-1861
www.stockmangrassfarmer.net
$32 per year (12 issues)

Hobby Farms
P.O. Box 8237
Lexington, KY 40533
888-245-3699 (toll free)
www.hobbyfarms.com/publications.aspx
$15 per year (6 issues)

Small Farm Today
3903 W. Ridge Trail Road
Clark, MO 65243-9525
800-633-2535 (toll-free)
www.smallfarmtoday.com
$24 per year (6 issues)

Spin Off
Interweave Press
201 E. Fourth Street
Loveland, CO 80537-5655
www.interweave.com
$26 per year (4 issues)

Dairy Goat Journal
W11564 Hwy 64
Withee, WI 54498
www.dairygoatjournal.com
$21 per year (6 issues); $35.00 for 2 years

Countryside & Small Stock Journal
W11564 Hwy 64
Withee, WI 54489
800-551-5691
www.countrysidemag.com
$18 per year (6 issues)

United Caprine News
P.O. Box 328
Crowley, TX 76036
817-297-3411
www.unitedcaprinenews.com
$22.50 per year (12 issues)

Graze
P.O. Box 48
Belleville, WI 53508
608-455-3311
www.grazeonline.com
$30 per year (10 issues)

Wild Fibers Magazine
P.O. Box 1752
Rockland, ME 04841
207-594-9455
www.wildfibersmagazine.com
$30 per year (4 issues)

Organizations

Dairy Sheep Association of North America (DSANA)
President, Claire M. Sandrock
University of Wisconsin-Madison
1675 Observatory Drive
Madison, WI 53706
608-332-2889
mikolayunas@wisc.edu
www.dsana.org

American Dairy Goat Association
209 West Main Street
P.O. Box 865
Spindale, NC 28160
828-286-3801
www.adga.org

International Goat Association
HPI/IGA
1 World Avenue
Little Rock, AR 72202
501-454-1641
goats@heifer.org
www.iga-goatworld.org

American Sheep Industry Association
6911 S. Yosemite St.
Englewood, CO 80112-1414
303-771-3500
www.sheepusa.org

National Sheep Improvement Program
James Morgan, PhD.
479-444-6075
info@nsip.org
www.nsip.org

American Sheep and Goat Center
Box 646
Rockland, ME 04841
800-971-1373
www.sheepandgoatsusa.org

American Goat Federation
www.americangoatfederation.org
801-376-4685 or 502-352-2434

Vendors: Suppliers

Caprine Supply
P.O. Box Y
3301 W. 83rd Street
DeSoto, KS 66018
913-585-1191
800-646-7736 (toll-free)
www.caprinesupply.com

Hoegger Supply Company
160 Providence Road
Fayetteville, GA 30215
800-221-4628 (toll-free)
www.hoeggergoatsupply.com

Sydell
46935 SD Hwy. 50
Burbank, SD 57010-9605
605-624-4538
800-842-1369 (toll-free)
605-624-3233 (FAX)
www.sydell.com

Hamby Dairy Supply
2402 SW Water Street
Maysville, MO 64469-9102
800-306-8937 (toll-free)
www.hambydairysource.com

Tarter Farm and Ranch Equipment
P.O. Box 10
Dunnville, KY 42528
www.tartergate.com

NASCO
901 Janesville Avenue
P.O. Box 901
Fort Atkinson, WI 53538-0901
800-558-9595 (toll-free)
www.enasco.com

Jeffers Livestock Supply
P.O. Box 100
Dothan, AL 36302
800-JEFFERS or 800-533-3377 (toll free)
334-793-6257
334-793-5179 FAX
www.jefferslivestock.com
customerservice@jefferspet.com

Premier
800-282-6631 (toll-free)
www.premier1supplies.com

Pipestone Veterinary Supply
P.O. Box 188
1300 Hwy 75 S.
Pipestone, MN 56164
800-658-2523 (toll-free)
www.pipevet.com

Ketcham's Sheep Equipment ("Red Stuff")
6471 Miller Drive
Edwardsville, IL 62025
618-656-5388
www.ketchamssheepequipment.com

Ketchum Manufacturing Inc.
1245 California Ave.
Brockville, ON, Canada
K6V 7N5
613-342-8455
613-342-7550 (FAX)
ketchum@sympatico.ca
www.ketchum.ca

Gallagher Animal Management Systems
Gallagher Power Fence, Inc.
130 W. 23rd Ave.
P.O. Box 7506
North Kansas City, MO 64116
800-531-5908 (toll-free)
816-421-2005
816-421-2009 (FAX)
www.gallagherusa.com

Registers Sheep and Goat Supplies
3398 Gabe Smith Road
Wade, NC 28395
1-888-310-9606
www.goatsupplies.netfirms.com

Sheepman Supply Co.
8102 Liberty Road
Frederick, MD 21701
301-662-4197
www.sheepman.com

Publishers

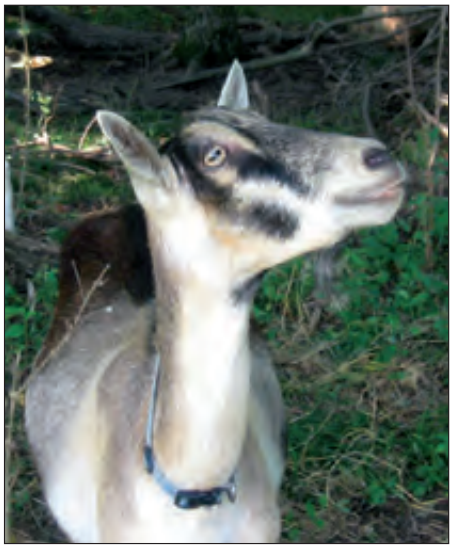
Books are available at your bookstore, farm store, or directly from the publishing company.

Storey Publishing
MoCA Way
North Adams, MA 01247
413-346-2100
413-346-2199 (FAX)
webmaster@storey.com
consumer orders:
800-441-5700
www.storey.com

Barron's Books
250 Wireless Blvd
Hauppauge, NY 11788
800-645-3476
www.barronseduc.com

Back 40 Books
Nature's Pace Sanctuary
Hartshorn, MO 65479
CustomerService@Back40Books.com
www.back40books.com

Acres USA
P.O. Box 91299
Austin, TX 78709
800-355-5313
www.acresusa.com



Small Ruminant Sustainability Checksheet
By Linda Coffey, Jana Reynolds and Margo Hale, NCAT Agriculture Specialists

Updated by Linda Coffey, Margo Hale and Hannah Lewis, NCAT Agriculture Specialists
© 2010 NCAT

Paul Williams, Editor
Robyn Metzger, Production

This publication is available on the Web at:
www.attra.ncat.org/attra-pub/ruminantcheck.html
or
www.attra.ncat.org/attra-pub/PDF/ruminantcheck.pdf

IP254
Slot 255
Version 090910