



## Raising Sheep and Goats for Profit: Small-Scale Ruminant Production<sup>1</sup>

For those considering small-scale ruminant production, there are many factors involved in being successful! Small-scale production refers to raising a small flock of animals, typically fewer than 100, for commercial purposes. As of 2007, USDA reported that 52% of all goat farms had fewer than 10 goats (nearly half of which were meat animals). A 2011 USDA study showed that 7.5% of all agricultural operations had goats and 4.3% had sheep.<sup>2</sup> The average inventory was 28 goats and 78 sheep for small-scale operations.

Given that smaller or more diversified operations may be trying to maintain a greater number of enterprises on one farm or operation, it may be more difficult for those producers to stay on top of good management practices, as well as any requirements necessary to remain in good standing with local government and marketing partners. For example, these small-scale livestock operations may be maintained on a limited number of acres, thus requiring very careful land and animal management. Additionally, many smaller-scale operations are located in areas where agriculture is not the primary land use. Such operations may be in the urban-rural interface, the suburbs, or even in towns or cities. This fact sheet will provide a basic overview of production, management and marketing considerations for smaller-scale livestock enterprises raising goats or sheep, and discuss the relationship between resource stewardship and long-term business viability.

### Develop Viable Markets for Your Products

Good resource stewardship results in practices that you can market to your customers through your promotional information. This is important since small-scale livestock producers will most likely be marketing their products through direct to consumer markets, as opposed to conventional marketing with wholesalers and grocers. Today's consumers are increasingly interested in how livestock and poultry are raised, handled and processed. They may look for specific practices or management techniques that demonstrate their concerns are addressed throughout the production process. Second- and third-party certification programs assure retailers and consumers that the products they are buying come from animals raised according to a specific set of treatment and diet standards. Among the more prominent certification programs are:

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<sup>2</sup> "An In-depth Study of Small-scale U.S. Livestock Operations", 2011, February 2012. USDA, Animal and Plant Health Inspection Service, Veterinary Services, #618.0212..

- Animal Welfare Approved
- Humane Farm Animal Care (HFAC) Certified Humane
- USDA Certified Organic
- Global Animal Partnership
- Food Alliance
- American Humane Certified
- American Grassfed Association (AGA)
- Certified Naturally Grown

In addition, there are emerging opportunities in ethnic markets such as those designated as kosher (processed and prepared according to the customs and beliefs of the Jewish faith) and halal (processed and prepared according to the customs and beliefs of the Muslim faith). However, the demand for kosher and halal livestock products is often not aligned with the typical livestock production calendar of later fall breeding (see this ethnic holiday calendar at <http://www.sheepandgoat.com/articles/ethnicalendar.html>). Therefore, producing kids or lambs for spring holidays is easier than producing them for the winter holidays when you would be breeding your animals in the late spring for a fall birth rather than in the late fall for winter birth (based on a five-month gestation period). Targeting this market then implies appropriate housing for newborn kids and lambs that is warm and draft-free for fall and winter births—investments that may be worthwhile depending on the strength of those markets. In any case, market research is essential to ensuring that you have buyers for your products at the times they are ready for sale, and at the prices you anticipate, especially when considering specialty markets. For more information on conducting your own market research, see: <http://ag.arizona.edu/arec/wemc/nichemarkets/07conductingmarketresearch.pdf>.

There are several issues livestock producers should consider when deciding whether to seek certification, including:

- Benefits—Certification may offer producers opportunities to enter new markets (e.g. specialty food stores and restaurants) that require that their animal products be sourced from humanely raised animals. Producers may also enjoy greater customer interest and loyalty or a premium price at farmers’ markets and CSAs.
- Goals—A producer should seek certification from a program whose goals and philosophy align with his/hers and will provide a benefit to the business. Retrofitting an operation or changing a business plan in a manner that is far from the current mission may cause unneeded stress and result in a “bad fit” in the long-run. The producer also should evaluate the feasibility of meeting the scope and stringency of certification program standards.
- Animals—Some programs, such as USDA Certified Organic, offer certification for virtually all domestic livestock, while others, such as Global Animal Partnership, have developed standards for a more limited range of species.
- Standards—Certification program standards generally address animals’ living conditions, healthcare requirements, nutrition and water, access to the outdoors/pasture, prohibitions on

animal alterations and animal transport and slaughter. However, not all areas are covered explicitly by all programs, and the stringency of standards can vary considerably across programs.

- Certification Process—Generally, achieving certification includes the following steps:
  1. Reviewing program standards and fees and determining the feasibility of implementation of any required changes,
  2. Completing a formal application for certification,
  3. Audit of production practices by the certifying organization or a contracted third-party agency,
  4. Reviewing audit results by the certifying organization (in the case of a third-party audit),
  5. If necessary, altering production practices deemed necessary post-audit.
  
- Fee Structure—Most certifications require a combination of application, audit and annual certification fees. Some fees may prove prohibitively expensive for small-scale producers, although reduced pricing is available for some programs. Through the USDA’s Organic Cost Share Program, for example, any certified producer or handler can apply for assistance and receive a maximum of \$750 per year and be reimbursed for up to 75% of annual certification costs. Although Animal Welfare Approved is a free program, it maintains stringent animal welfare standards which will require additional management time to meet.
  
- Timeline—From the time of application, certification typically takes several weeks for most programs. However, the timeline may be extended significantly if changes to production practices are required or, in the case of the USDA Organic Program, if a farm has not been employing organic practices for three years.
  
- Production Costs—Producers may incur increases in production costs as a result of complying with animal welfare standards. Some of the more common sources of increased costs include:
  - a. Larger pasture acreage requirement per animal
  - b. Increased non-pasture feed costs
  - c. Alterations or additions to animal facilities
  - d. Changes to animal health care practices
  - e. More extensive record-keeping regarding animal history and production practices

For more information on animal certification programs, see:

[http://create.extension.org/sites/default/files/Animal%20Certification%20Programs\\_final\\_0.pdf](http://create.extension.org/sites/default/files/Animal%20Certification%20Programs_final_0.pdf). A final consideration in planning for meat or milk production is identifying how you will process the product for direct to consumer markets. Such markets may include farmers’ markets, retail and wholesale buyers, restaurants and institutional buyers. Each buyer will have specific tastes and preferences for the product they want to purchase, and milk and meats must be processed according to federal and state regulations. Packaged meats must be processed in federally inspected facilities, and it is often

challenging for small-scale producers to find a processor who can work with a smaller volume of product. For assistance in locating a meat processor, see <http://www.nichemeatprocessing.org>.

### **Plan for Your Production and Your Markets**

Before marketing your product you should carefully research the small ruminant breeds available, and know how you will raise and manage those animals.

There are over 40 different sheep breeds in the U.S., so you need to determine which breed will best meet your marketing goals, production schedule, and climatic conditions for your production location. There are six basic sheep breed groups: fine wool, medium wool, long wool, meat breeds, dairy breeds, and hair breeds. To research sheep breeds, consult the American Sheep Industry Association web site: <http://www.sheepusa.org/> and <http://www.sheepandgoat.com/breeds.html>.

Although there are many breeds of goat, a few are particularly well-suited to meat production. See <http://www.extension.purdue.edu/extmedia/AS/AS-590-W.pdf> for information on selecting, housing and managing meat breeds. To research goat breeds appropriate for dairy or fiber production, in addition to meat, see: <http://www.extension.org/pages/19282/goat-breeds>.

Appropriate nutrition, housing and veterinary care are key to raising healthy animals with marketable products. For information on sheep nutrition, see: <http://pubs.ext.vt.edu/410/410-853/410-853.html#L1>. For information on sheep breeding, flock management, and health management see: <http://extension.oregonstate.edu/catalog/pdf/em/em8916-e.pdf>. For meat sheep and goat production see: <http://www.sheepandgoat.com/meat.html>, and <https://attra.ncat.org/attra-pub/summaries/summary.php?pub=214> by ATTRA.

Remember to manage your animals carefully for their productive use, and feed them according to the nutritional requirements of their productive stage (gestation, lactation, maintenance). Skimping on feed not only impacts the productivity of your herd, but it also leads to costly herd health problems. As such, much of your feeding may be purchased hay, grains and supplements if grazing densities are low in your geographic area. For example, one can strategically prepare for wool or fiber quality and volume through breeding, nutrition and careful shearing (<http://www.sheepandgoat.com/fiber.html>).

The demand for dairy products made from goat or sheep milk is growing, especially among those who are allergic to cows' milk. However, commercial production of small ruminant dairy products requires proper nutrition and milking procedures, as well as appropriate processing capacity, knowledge of state and local regulations, and a marketing plan. Marketing options include sales to processors of fluid milk or milk products (cheese and yogurt for example), or selling your products directly to individuals. Many states do not permit direct sales of milk to individuals (raw or pasteurized), but you may sell aged cheeses made from raw milk, or fresh cheeses made from pasteurized milk if you have a licensed Grade A dairy and a commercial kitchen. For additional dairy sheep information, see: [http://www.ansci.wisc.edu/Extension-New%20copy/sheep/Publications\\_and\\_Proceedings/Principles%20of%20Sheep%20Dairying%20in%20N](http://www.ansci.wisc.edu/Extension-New%20copy/sheep/Publications_and_Proceedings/Principles%20of%20Sheep%20Dairying%20in%20N).

[%20America%20U.WI%20156%20pages.pdf](#). For dairy goat information, consult the ATTRA publication, <https://attra.ncat.org/attra-pub/summaries/summary.php?pub=213>.

You must have housing that meets the needs of the species you are raising (goat versus sheep), as well as any certification program to which you may belong. This includes constructing strong fencing to contain rams, especially if you have more than one, and choosing an appropriate height of fencing to contain goats. See

[http://create.extension.org/sites/default/files/Animal%20Certification%20Programs\\_final\\_0.pdf](http://create.extension.org/sites/default/files/Animal%20Certification%20Programs_final_0.pdf) for specific housing requirements pertaining to each profiled animal welfare certification program. For recommendations on housing and handling facilities for goats, see <http://www.ca.uky.edu/anr/Agent%20Resources/pdf/WV%20goat%20pub.pdf>, and <http://www.sheepandgoat.com/fencing.html> for sheep and goat fencing guidelines. For additional information on housing, bedding and feed storage, see <http://www.sheepandgoat.com/housing.html>.

To keep your herd safe and healthy you need to understand the regulations for predator control in your area (as well as what is acceptable to your neighbors), and the types of predators you are likely to encounter. Both aerial and ground predators present the potential for livestock injury or death, culminating in significant financial losses for your business. A combination of fencing and guard animals will likely protect your flock but, especially in the case of guard animals, you must be prepared to manage and care for your guard animals also (which may include guard dogs, llamas or donkeys). For additional information on predator control for goats, see: <http://www.extension.org/pages/27119/goat-predator-control>, and for sheep see: <http://www.sheep101.info/201/predatorcontrol.html>.

### **Plan for Sound Resource Management**

Your ability to produce a healthy, marketable product from your animals depends on how you manage your land, water and livestock. Consider that good resource stewardship results in a cleaner, healthier production operation which, in turn, makes for more compatible land use with neighboring businesses and residences. There are several key issues that require intensive management: manure produced by the animals you raise on your land, pasture or grazing areas for your livestock, water sources on or draining off of your property, and disposal of any mortalities from your herd.

Manure is a byproduct from your operation that must be proactively managed, either by composting it on-site or disposing of it responsibly off-site. Properly managed, manure or litter resources may be a source of nutrients and organic soil amendment. When manure is not properly managed it can create insect, rodent, dust and odor problems, as well as water quality issues. For information on managing manure from your livestock operation, see: <http://create.extension.org/node/91463> and <http://www.extension.org/pages/17213/storing-manure-on-small-farms-:-good-management-practices>.

Maintaining good water quality in surrounding surface water and wells (a groundwater source), is an important responsibility. Nutrients, such as nitrogen and phosphorus, pathogens, and organic matter in runoff from manure can result in poor water quality. Also, overgrazed pasture can result in soil erosion

which can be washed into streams and ponds, potentially contaminating both animal and human drinking water sources. Understanding the species of grasses your livestock will consume, as well as the carrying capacity of your grazing land, will help you manage your pasture for appropriate grazing intensity. When pastures are properly grazed, water is better able to infiltrate the soil and is less likely to become runoff that causes erosion. In addition to actively managing potential sources of contamination, regular water quality testing of impacted water sources is key to understanding how well your management plan is being implemented. For information on managing water quality impacted by your livestock operation, see: <http://create.extension.org/node/91463>. For pasture management information, see: <http://www.extension.org/pages/8894/pasture-management-on-small-farms>. For information on water testing and finding an analytical laboratory to assist you in water quality monitoring, see: <http://www.ext.colostate.edu/pubs/crops/00520.html/> (note that this publication also covers soil and manure testing).

Mortalities (livestock deaths) are an inevitable part of raising livestock, and it is important to know how you will manage both small-scale and larger-scale (or catastrophic) mortalities among your animals. This means removing the carcasses of your deceased animals and disposing of them according to state and local regulations. Improperly managed carcasses can result in diseases transmitted to the healthy herd, water and soil contamination, and human health hazards. The most common methods for carcass disposal include:

- on-farm composting (<http://poultrywaste.okstate.edu/fact-sheets/files/BAE1749%20On-Farm%20Mortality.pdf>),
- rendering,
- on-farm burial, and
- off-site burial/disposal in a landfill.

However, in the case of goats and sheep, on-farm composting should only be considered for scrapie-free herds and flocks. Scrapie is a prion disease that infects sheep and goats. For more information on this disease, visit: [http://www.aphis.usda.gov/animal\\_health/animal\\_diseases/scrapie/](http://www.aphis.usda.gov/animal_health/animal_diseases/scrapie/). For more information on livestock mortality management, see: <http://www.extension.org/pages/19942/managing-livestock-and-poultry-mortalities>.

Biosecurity—taking measures to reduce the probability that an infectious disease or other contamination either deliberately or accidentally affects your operation—is an important issue for any scale of livestock business. For additional information on protecting your animals, your property and your employees, see: [http://www.agrosecurity.uga.edu/annexes/Annex03\\_Procedures.pdf](http://www.agrosecurity.uga.edu/annexes/Annex03_Procedures.pdf) and [http://livestock.colostate.edu/documents/sheep/Sheep\\_Biosecurity.pdf](http://livestock.colostate.edu/documents/sheep/Sheep_Biosecurity.pdf).

Lastly, consider developing an environmental vision for your operation (<http://create.extension.org/sites/default/files/EPS%20packet%20worksheets%20and%20handouts.pdf>) that can help you plan for, document and communicate your stewardship practices to your business partners, your buyers and your neighbors.

## **Ensure Safe Production and Processing to Grow Your Markets**

Careful resource management results in safer production, processing and marketing practices for your livestock business, all of which may be documented and certified for your buyers. Increasingly, buyers (especially for institutional purchases such as farm-to-school and care facilities) are choosing to purchase products from farms with certification in Good Agricultural Practices (GAPs), or other safe food handling protocols. Following Good Agricultural Practices in managing your livestock, feed and any byproducts (including wastes) reduces the risk of illness among your animals, keeps your employees safe, and reduces potential contamination of any food products produced and handled within your operation. Example best practices include:

- Keeping livestock and manure storage areas away from wells and other water sources
- Documenting the source of any compost you use or generate, as well as the composition, and the process by which it was produced
- Storing manure 150 to 200 feet away from crops meant for human consumption or crop handling areas
- Preventing cross-contamination between raw and finished compost by using separate equipment for handling and/or application
- Transporting livestock to sale or processing facilities in clean vehicles
- Keeping all meat and dairy products at correct temperatures during transportation, handling and storage
- Training any employees in safe handling practices such as hand washing, tool/equipment cleaning and sanitizing, animal management, and food production and storage

For more information on GAPs consult the National GAPs program at <http://www.gaps.cornell.edu/>. Goat meat handling ([http://www.fsis.usda.gov/Fact\\_Sheets/Goat\\_from\\_Farm\\_to\\_Table/index.asp](http://www.fsis.usda.gov/Fact_Sheets/Goat_from_Farm_to_Table/index.asp)), and sheep meat handling information ([http://www.fsis.usda.gov/Fact\\_Sheets/Lamb\\_from\\_Farm\\_to\\_Table/index.asp](http://www.fsis.usda.gov/Fact_Sheets/Lamb_from_Farm_to_Table/index.asp)) are available through USDA. For safe handling guidelines for milk and dairy products, see <http://www.fda.gov/Food/FoodSafety/Product-SpecificInformation/MilkSafety/default.htm> and [http://www.clemson.edu/extension/hgic/food/food\\_safety/handling/hgic3510.html](http://www.clemson.edu/extension/hgic/food/food_safety/handling/hgic3510.html).

## **Understand the Business Environment**

Certain regulations and conditions impact the viability of your business from the start. For example, local land use regulations, commonly known as zoning, can dictate where you may, and may not, operate a livestock business. In areas of low population density (where neighbors may be less impacted by each other's choices) land use regulations may be less stringent in terms of animal agriculture but, in more densely populated areas, local land use codes may influence:

- the number of animals per acre,
- the species of animal permissible,
- restrictions on animal housing, and
- restrictions on animal slaughter.

Always present any plans for a commercial livestock enterprise to your local planning and zoning board **early** because they may influence your long-term plans. In fact, their input may be valuable to you before purchasing any animals and making any other business investments such as animal housing or promotional materials (for example, roadside signs). You may need to obtain a permit to operate your livestock business in your zoning district, and that may entail an annual or one-time fee payment.

In addition, before beginning your business, it is wise to introduce yourself to neighboring landowners since dust, noise, odor, and insects are potential impacts from your poultry operation that may affect your neighbors. Having a plan for managing these potential impacts, and maintaining open friendly communication will help keep good neighbors. For example, covering your composting manure pile with chopped straw, maintaining proper moisture, and turning it only on non-windy days are strategies to help mitigate spillover effects of odor, dust and flies. Lastly, if you are within a homeowners' association, verify that the association allows commercial agriculture to take place on your property.

There are also some activities that are required of any small business. Before attempting to sell your meat, dairy, fiber or hide product, register your business with your state's secretary of state, and ensure that you have obtained any required licenses to operate your business. These may include a state and/or local sales tax license, income tax withholding account and, if you have employees, contributing to your workers' compensation fund and paying unemployment insurance. See <http://www.sba.gov/content/learn-about-your-state-and-local-tax-obligations> to investigate any tax or licensing requirements in your state. Some states and local governments require additional business licenses (for example, the state of Colorado requires that you obtain a Grade A Dairy Farm License from the Colorado Department of Public Health and Environment before you receive, sell, buy or handle milk or cream in commercial transactions).

Thorough research on regulatory and licensing requirements at the federal, state and local levels pertinent to your new business—before you launch it—protects you from making costly mistakes that may delay or prevent you from starting your small-scale livestock operation. Lastly, consider creating a plan to guide your business development. As one example, AgPlan ([www.agplan.umn.edu](http://www.agplan.umn.edu)) offers a free business planning template, complete with examples, to guide you through the process.

Lastly, several states have produced business guides or references for those involved in direct marketing of their products or interested in researching potential opportunities. See, for example:

**Colorado:** [www.cofarntomarket.com](http://www.cofarntomarket.com)

**Idaho:** <http://www.ruralroots.org/Resources/directmarketing/handbook/41066-%20Rural%20Roots%20Booklet%20Table%20of%20Contents.pdf>



**Illinois:** <http://www.ilstewards.org/legal-guide-for-direct-farm-marketing>

**Nebraska:** <http://food.unl.edu/web/localfoods/selling-to-consumers>

**New Mexico:** [http://farmersmarketsnm.org/Farmers\\_and\\_Vendors/index.html](http://farmersmarketsnm.org/Farmers_and_Vendors/index.html)

**New York:**

<http://www.nyfarmersmarket.com/publications/ResourceGuideDirectMarketingMeatPoultry.pdf>

**Tennessee:** <http://agmarketing.extension.psu.edu/Retail/PDFs/PB1711.pdf>

**Washington:** <http://agr.wa.gov/marketing/smallfarm/directmarketinghandbook.aspx>