



Raising Lambs

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Introduction

New York State has traditionally been a large lamb feeding state. With market infrastructure decline and loss of the wool incentive, lamb feeding fell out of favor. In recent years sheep numbers have increased as more small farms have cropped up to serve the growing demand for lamb from the diverse ethnic populations in urban areas.

Lambs meeting specified criteria can be sold at just about any size to various markets depending upon the time of year and religious holidays. A valuable guideline can be found at: <http://www.sheepgoatmarketing.info>.

Hot House Lambs are young lambs weighing from 25 to 50 pounds live, often sought after during Easter time. Lambs 50 to 90 pounds are sold either as market lambs to various ethnic groups or as feeder lambs continuing on feed for traditional markets. Freezer and restaurant lambs are often 90 to 150 pounds live weight. Currently, the most desirable lambs with a carcass that will grade Choice, and have a Yield Grade 2-3. Yield Grades provide an estimate of retail cuts and range 1 to 5 with 1 having the most retail cuts and 5 having the fewest. Most wholesalers and retailers prefer leaner animals with good conformation. Ewes and rams that are no longer useful for production are sold as cull animals.

Breeds

There are many different sheep breeds. Breed selection is based upon personal preference, regional marketing opportunities and sheep production goals. The most important traits for commercial production in the Northeast are

aseasonality (ability to breed out of season) and prolificacy (multiple offspring per lambing).

Breeds that exhibit aseasonality and can be purchased in New York are Dorset and Rambouillet. Other breeds that are commonly used for cross-breeding programs are Finnsheep for prolificacy and Hampshire and Suffolk for growth. Other breeds that are selected for their fine wool characteristics are Merino and Rambouillet. Presently there are 47 breeds of sheep listed by the American Sheep Industry Association.



Photo of Cornell University flock

Dorset x Finn ewes behind poly wire



Hampshire ram

Photo provided by Oklahoma State Extension

Feed Requirements

The amount of energy, protein, minerals, vitamins, and water required by sheep vary according to mature size, weight, body condition, stage of production, level of production and age. For a table of nutrient requirements of sheep, contact:

<http://www.sheep.cornell.edu/sheep/management/feeding/nrctable.html>

A sheep's nutritional requirements can be met by feeding a variety of feedstuffs. Small ruminant feeding programs should take into account animal requirements, feed availability, and costs of nutrients. Forages usually offer the least cost and will be the largest share of the ration.

Pasture tends to be high in energy and protein when it is in a vegetative state. However, it can have high moisture content, and sometimes it may be difficult for high-producing animals to eat enough grass to meet their nutrient requirements. As pasture plants mature, palatability and digestibility decline.

Hay is the primary source of nutrients during the winter or non-grazing season. Hay varies tremendously in quality, and the only way to know the nutritional content is to have the hay analyzed by a forage testing laboratory. Hay tends to be a moderate source of protein and energy for sheep. Legume hays – alfalfa, clover – tend to be higher in protein, vitamins and minerals, especially calcium, than grass hays. The energy, as well as protein content of hay depends upon the maturity of the forage when it was harvested. The fiber in grass hay is generally more digestible than the fiber in alfalfa.

It is often necessary to feed grain to provide the nutrients that forage alone cannot provide. This is particularly true during periods of high nutrient demand, such as lactation. There are also times and situations where concentrates are a more economical source of nutrients. Creep feeding and supplemental feeding of lambs increases growth rate, and preserves forage for a larger ewe flock. Concentrate feeds should always contain a source of highly fermentable fiber, like soy hulls. One problem with feeding an excess of cereal grains is that they are high in phosphorus content, but low in calcium. Feeding a diet that is high in phosphorus and low in calcium can cause urinary calculi (kidney stones) in male lambs, but inexpensive limestone can be used to add calcium to concentrate diets.

Water requirements vary with the stage of production in sheep. Non-lactating ewes on pasture often ignore fresh water because they consume all they need from the grass. Lactating ewes should have free access to clean, fresh water at all times. A mature animal will consume between $\frac{3}{4}$ to $1\frac{1}{2}$ gallons of water per day. Water requirements and intake are higher during late gestation and lactation and in the summer.

Facilities

Good fencing of the land is essential in sheep production. Producers can opt for tightly woven wire with a strand of barbed wire above the woven wire and at ground level, or for electrified high-tensile fencing. Five-strand high-tensile fence is effective with sheep. Both of these options can be costly. A more economical way to pasture sheep is with electrified netting. Electrified netting, a prefabricated lightweight mesh fence, can be used for short term grazing periods and easily moved to rotate animals around the farm.

Producers should devise chute and alley systems with flock size in mind—the larger the flock, the more elaborate the handling facilities will generally be. A catch pen should be incorporated in the system for sorting and handling animals and to serve as a station for deworming, hoof trimming, and vaccinations. Producers who plan to offer on-farm slaughter to customers should provide a dressing station equipped with working surfaces, hooks and ropes, and running water.

Handling and Labor Requirements

I. Health

The sheep flock should be vaccinated against enterotoxemia (overeating disease). Pregnant ewes should be vaccinated two to four weeks before the start of lambing season, so that immunity is transferred through the colostrum to the lambs. If a ewe has not been vaccinated previously, she will need two shots given two to four weeks apart. Those lambs not sold before 12 weeks of age should be vaccinated against enterotoxemia at 14, and boosted 2-3

weeks later. Consult your veterinarian for vaccination protocols.

Sheep are very susceptible to parasites and a control program should be developed with the help of a veterinarian. The meningeal worm is an internal parasite (*Paralaphostrongylus tenuis*) that usually completes its life cycle in white tail deer, without harm. Sheep and goats can also be infested with *P. tenuis* when grazing pastures frequented by high population of deer. However, for sheep and goats this parasite travels into the brain and / or spinal cord and causes neurological problems that can be fatal. Llamas and alpacas are even more susceptible to meningeal worm infection than sheep or goats. For more information on this and other parasites, see your local extension office.

Ewe gestation averages 146 days. Breeding occurs in the fall (Sept through Jan) for spring lambing. Some breeds also are able to conceive and lamb in the fall to meet market demand when there is a shortage of lambs. Ewes come into estrus, or heat, every 17 days during the breeding season. Generally, one mature ram services 40 ewes. Producers should expect to be busier in the springtime when ewes start lambing. A normal healthy sheep has a rectal temperature of 102 to 103 F, 10 to 20 breaths per minute, and a heart rate of 70 to 90 beats per minute.

II. Management

The principle factor affecting reproductive activity in adult ewes is season, with most ewes showing greatest reproductive activity in the fall. As the total hours of sunlight decrease in the fall, reproductive activity increases for the ewe, hence sheep are called "short-day breeders." Some breeds of sheep such as Dorset, Merino and Rambouillet have longer breeding seasons. By crossbreeding with these breeds, lambing can occur throughout the year. However, most beginning sheep producers choose to stay with fall breeding and spring lambing. With more experience, producers can learn how to manage for multiple lambing

seasons each year. Breeding season should be limited to 45 days or less to prevent farmer burnout during lambing season.

Pregnancy determination most often is performed by checking the ewe for udder development shortly before lambing is scheduled to begin. It may take some experience to recognize the difference between pregnant and non-pregnant (open) ewes.

Typically ewes will give birth to between one and three offspring. With adequate nutrition and milk production, ewes can easily take care of twins and often triplets. The two biggest causes of death for newborn lambs are diarrhea (scours) and starvation. Close observation of newborns is essential to ensure they are nursing, alert and active.

There is little market discrimination in the Northeast against ram lambs less than six months of age. Ram lambs should be separated from ewe lambs before puberty, which can be as young as four months, to prevent breeding or they should be castrated prior to two weeks of age. Castration can be done by using an elastrator (heavy rubber rings) on the scrotum, by using a Burdizzo clamp above the testicles, or by manual removal of testicles with a disinfected sharp knife.

Tail docking should be performed on all lambs being kept as replacements and those sold into markets as feeder lambs. Tail docking equipment and procedures are similar to castration. Tetanus can be a problem with any of these procedures. It is important to protect the lamb from tetanus infection through sanitation, disinfection and vaccination. Consult with your veterinarian or attend a Cornell field day to learn proper sheep management.

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Reproductive Statistics for Sheep	
FEMALE	
Age of puberty	6 to 8 months
Breeding weight	65 to 70% of adult weight
Estrous cycle	
Length	14 to 19 days
Duration	Variable averaging 24 to 36 hours
Signs	Tail wagging, standing for ram
Ovulation	Approx. 28 hrs from onset of estrous
Gestation length	144 to 150 days
Breeding season	September – February Some breeds year around
Seasonal anestrous	April - August
MALE	
Age of puberty	6 to 10 months
Breeding age	8 to 10 months
Breeding season	All year
Breeding ratio	1 ram : 40 ewes

Level of Skill

Pros:

- Steady demand from urban areas
- Lower initial investment than larger livestock species
- Easy to handle, small size
- Flexible labor
- Returns from investment in breeding stock come quicker than larger livestock

Cons:

- Requires better fencing than cattle
- Susceptible to parasites
- Susceptible to predators

Animal Source

To locate lamb and sheep suppliers in NY State go to: **Sheep and Goat Marketing Program**
<http://www.sheepgoatmarketing.info/>

Small Ruminant Marketing Listserve, SRMARKETING-L. To subscribe, send a message to listproc@cornell.edu, with the subject line blank. In the body of the message put "subscribe smarketing-L Firstname Lastname", where "Firstname Lastname" is your real name.

Market Availability

Lamb can be marketed right off the farm directly to consumers, through established auction barns or through pooled animal sales. Each market has pros and cons. Talk with other local sheep producers to find the best markets for your area.

Budget

(Note: a detailed spreadsheet can be found at <http://www.sheep.cornell.edu/sheep/management/economics/cspsoftware/budget/index.html>)

Income	amount/ewe	General estimate	Your estimate
Lambs sold per ewe			
❖ 1.35 lambs @ 90 lbs x \$1.00/lb		\$121.50	_____
Cull ewes (15% flock/yr)			
❖ 155 lbs x \$0.40/lb x .15/yr/ewe		\$ 9.30	_____
Wool, approx 7 pounds x \$0.50/lb		\$ 3.50	_____
	Gross income/ewe	\$134.30	_____
Expenses			
❖ Hay (700 lbs x \$80/ton)		\$28.00	_____
❖ Concentrate Feed (175 lbs x \$140/ton)		\$12.25	_____
(includes feed for ewe & lambs)			
❖ Salt and minerals, 11 lbs x \$0.12/lb		\$1.32	_____
❖ Veterinary & medications*		\$2.25	_____
❖ Buildings and fences		\$10.00	_____
❖ Marketing and hauling		\$2.50	_____
❖ Vehicle, fuel, utilities, etc		\$10.00	_____
❖ Shearing / ewe		\$ 3.00	_____
	Operating cost/ewe	\$69.32	_____
	Net receipts/ewe	\$64.98	_____

*(labor not included)

For More Information

Small Farms Program
135c Plant Science Building
Cornell University, Ithaca, NY 14853
www.smallfarms.cornell.edu

Cornell Sheep Program
www.sheep.cornell.edu

Sheep and Goat Marketing Program
<http://www.sheepgoatmarketing.info/>

ATTRA
Appropriate Technology Transfer for Rural Areas, P.O.
Box 3657, Fayetteville, AR 72702
<http://www.attra.org/livestock.html>

Maryland Small Ruminant Page
www.sheepandgoat.com

Garden State Sheep Breeders
<http://www.quintillion.com/gssb/links.html>

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

Forage Livestock Systems at Cornell
<http://www.css.cornell.edu/forage/forage.html>

Cornell Forage Selection Tool
<http://www.forages.org/>

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