

# Sheep & Goat Feeds



Sheep and goats have been some of the longest domesticated animals that man has managed. The United States has seen a recent resurgence of both smaller producers providing products for their family use, and commercial operations as well. Although sheep and goats are often discussed together since they are both smaller ruminants, they have very real differences in nutrient requirements, and their feeds are not interchangeable.

## Multiple Protein Sources

Along with other protein sources, all Prince Sheep and Goat Feeds have a high alfalfa meal concentration which provides a good source of not only protein, but also is a good source of organic trace minerals and calcium.

## Locked Formulas

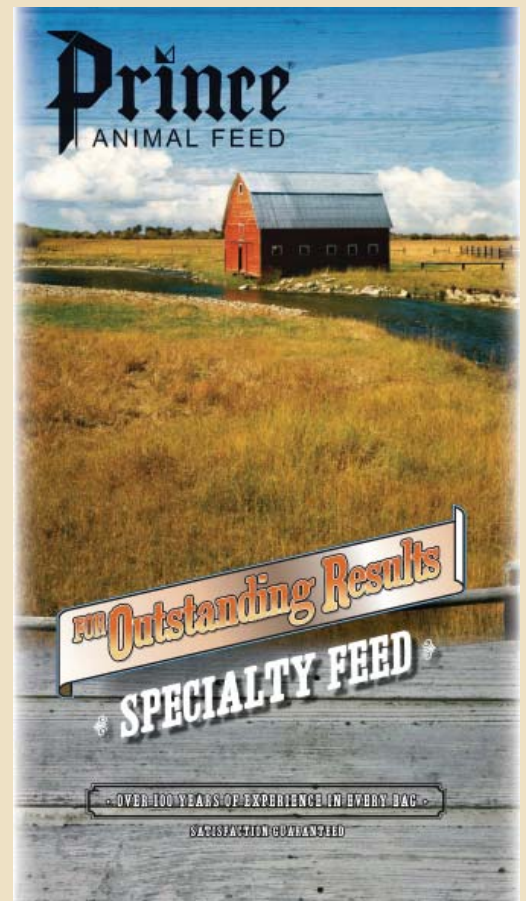
Prince does not vary its formulations based on least cost formulation. Beyond that, we only purchase ingredients from sources with a history of providing consistent high quality products. By providing consistent high quality feed ingredients we encourage good feed consumption and steady animal production.

## Manufacturing Technique

Prince operates its' pelleting equipment at temperatures that have been shown to maximize digestibility of pellets verses those products manufactured at either cooler or warmer temperatures. By improving digestibility, along with the correct nutrient content, we can maximize production and reduce waste.

### Fun Fact:

*President Woodrow Wilson grazed sheep on the White House lawn. The wool from the sheep was sold to raise money for the Red Cross during World War I. The flock included "Old Ike," a tobacco chewing ram.*



# SHEEP FEEDS

Sheep are ruminants that can utilize roughages for the production of meat, wool and milk. There are a wide variety of management schemes used for any given flock based upon the production goals. As much smaller ruminants than cattle, sheep may not be able to utilize poor forages to the extent cattle can.

The single greatest concern in feeding sheep is that they are unique among our domesticated species with a much greater sensitivity to copper toxicity. Most forages will contain enough copper to meet the needs of sheep consuming pasture or hay diets. Sheep consuming concentrates as a significant portion of their diet should receive *some* supplemental copper. Sheep should consume diets that contain 7-11 ppm of copper, but below 15. It is important that sheep consume adequate copper. Copper availability can be compromised by Molybdenum and additional sulfur in the diet. Producers raising sheep should only use feeds developed specifically labeled for use in sheep.



Finishing lambs are susceptible to urinary calculi, calcium-based deposits that can form in kidney tubules and the urethra. Sheep can also be susceptible to “White Muscle Disease.” This is a result of a deficiency of Selenium and Vitamin E in the diet. Prince sheep feeds are designed to provide Calcium and Phosphorus levels that are less conducive to this problem, and also contain ammonium chloride which helps to adjust pH and reduce the potential for calculi to develop.

We recommend that all growing sheep be vaccinated for Enterotoxaemia. Lambs are prone to consuming too much concentrate if given the opportunity. This can result in the proliferation and growth of detrimental bacteria in the gut, and for resulting toxins to affect the sheep.

Prince offers three feeds for use in sheep operations, including Sheep Developer, a pelleted concentrate for growing lambs; Sheep Concentrate, protein supplement used to make multiple sheep rations; and Sheep Mineral, used with sheep consuming pasture or forage-based diets.

- **Sheep Developer** - is designed to provide all of the “concentrate” of the ration. This product can be fed to (weaned) lambs of all ages. This product can also be fed to older sheep, although we recommend developing a ewe ration using Prince’s 33% Sheep Concentrate. Sheep developer is available in both a non-medicated form or with Lascalocid. Lascalocid is commonly known under the trade name of Bovatec. This “coccidiostat” is not absorbed but acts in the gut to reduce coccidiosis and can improve feed efficiency and average daily gain.

Nutrient	15% Sheep Developer
Crude Protein (min) %	15.0
Crude Fat (min) %	3.0
Crude Fiber (max) %	5.00
Calcium %	0.9 to 1.3
Phosphorus %	0.4
Salt %	0.50 to 0.75
Selenium (ppm)	0.5
Vitamin A (IU/lb)	3000
Vitamin D (IU/lb)	1000
Vitamin E (IU/lb)	8
Zinc (ppm)	99
Copper (ppm)	8
Form	Pellet
Medication	None or Lasalocid at 30mg/lb for the prevention of coccidiosis. No draw period required.
Feeding Directions	Feed in addition to free choice hay or pasture. Feed between 0.5 and 2.5 lbs. per 100 lbs. of body weight

**Fun Fact:** Sheep max. life expectancy is 19-20 yrs.

**Fun Fact:**

*It is hard to sneak up on sheep...they can see 270 degrees around (three quarters of a circle) without turning their heads!*

- **33% Sheep Concentrate** - is a pelleted feed that is used for the manufacturing of both growing rations and rations to support lambing ewes. Sheep concentrate is available either with or without Chlortetracycline (CTC), used to improve feed efficiency and growth rate. [No withdraw period is required for CTC.]

Producers can improve profitability of raising lambs by adjusting nutrient needs to match growth requirement of lambs. Sheep concentrate can be used to produce three different lamb formulations.

#### Lamb growing & ewe diets using Prince Sheep Concentrate

	Lamb Ration 1	Lamb Ration 2	Lamb Ration 3	Ewe Ration
Alfalfa Meal or Hay	300	300	200	---
Oats	300	100	---	600
Molasses	50	50	50	50
Shelled Corn	950	1200	1500	1000
Sheep Concentrate	400	350	250	350
<b>NUTRIENT CONTENT*</b>				
Crude Protein (min) %	15.1	14.2	12.3	13.6
Crude Fat (min) %	3.2	3.2	3.3	3.4
Crude Fiber (max) %	7.4	6.5	5.0	5.3
Calcium %	0.9	0.8	0.6	0.6
Phosphorus %	0.4	0.4	0.3	0.4
Zinc (ppm)	85	74	56	80
Copper (ppm)	7	7	5	6
Salt %	0.4	0.3	0.2	0.3
Selenium (ppm)	0.5	0.45	0.30	0.45

*\*Nutrient values are based upon generally accepted values. In the examples above the alfalfa meal was of marginal quality and only 16% crude protein. Most alfalfa hays will provide an additional 0.5 to 1.0 percent CP to the diets listed above. Actual nutrient content will vary with actual nutrient content of various ingredients used.*

**LAMB FEEDING DIRECTIONS** - Start lambs on feed gradually by hand feeding 1/2 to 3/4 lbs. of ration #1 or #2 (lambs weighing less than 60 lbs. should be started on ration #1). Gradually increase feeding levels until lambs are consuming 2 lbs. per head daily, then the ration may be self-fed or bunk-fed.



At approximately 85 lbs., lambs may be switched to ration #3 and kept on it until market weight. Ration changes should be gradually taking between 5 and 10 days to convert animals to new ration.

Free choice Prince Sheep Mineral w/ Selenium should be offered to lambs consuming ration #3 with additional forages [Selenium content of the total diet (Ration #3 + Prince Mineral + forage) should not be over 0.3 ppm].

## ewe FEEDING DIRECTIONS -



Feed 1/2 - 1 lb. of the ewe ration listed on previous page starting 3-4 weeks prior to lambing along with 3-4 lbs. of good quality forage. The ration may continue to be fed after lambing and may be increased to 1 1/2 lbs. per 100 lbs. of body weight of the ewe for ewes during lactation.

### Fun Fact:

*Sheep breeds developed for their milk productions are primarily the fat-tailed breeds, so called because of the stored fat in their tails and rump area.*

- **Sheep Mineral** - Since sheep are extremely susceptible to copper toxicity, they should never be fed minerals designed for cattle, goats or other species. Trace mineral nutrition is important for sheep. In addition to amino acid quality, trace minerals are important for the quality (crimp) of wool production in addition to the amount of wool produced.

Prince Sheep minerals contain salt to stimulate and regulate intake. However, free choice salt *should* be available.

Nutrient	Prince Sheep Mineral
Calcium %	16.0 to 19.0
Phosphorus %	9.0
Salt %	8.5 to 10.0
Selenium (ppm)	50
Vitamin A (IU/lb)	300,000
Vitamin D (IU/lb)	100,000
Vitamin E (IU/lb)	850
Zinc (ppm)	6400
Copper (ppm) max	10*
Form	Loose Mineral

Prince Sheep Mineral is formulated to provide 0.7 mg of Selenium per head per day when fed at a rate of 1/2 oz. per ewe. It may be mixed into the complete ration at a rate of 10 lbs. per ton to supply 0.25 ppm. If the concentrate portion of the diet is only 50% of the total diet, 20 lbs. of Prince Sheep mineral may be added per ton of sheep concentrate feed. [At no time should the amount of selenium of the TOTAL diet be greater than 0.3 ppm].

*\*Copper at this level and feeding rate does not significantly increase the copper content of the ration.*

## GOAT FEEDS

Goats were some of man's first domesticated species. Goats are primarily raised for their milk and meat production; however there is also a market for mohair from Angora goats.

Goats are "browsers" as opposed to grazers, such as cattle and sheep. Unlike their popular image, goats are in fact "fairly picky" eaters; however because of their browsing behavior and curious nature, they may appear to be investigating unusual feed stuffs. Goats are ruminants and should be fed a primarily forage based diet. Prince manufactures 16% goat feed, which will both support growing kids as well as match most forages to meet the protein and energy requirements for lactating goats.

### Fun Fact:

*The pupil in a goat's eye is rectangular in shape instead of being round like those of other animals. It is believed that goats have excellent night vision & will often browse at night.*

**Fun Fact:**

*The fat molecules in goat milk are 5 times smaller than the fat molecules in cow milk. Goat milk is broken down in the stomach in 20 minutes; it takes 1 hour for the stomach to break down cow milk.*



Nutrient	Prince Goat Feed
Crude Protein (min) %	16.0
Crude Fat (min) %	3.0
Crude Fiber (max) %	5.00
Calcium %	0.9 to 1.3
Phosphorus %	0.5
Salt %	0.50 to 0.75
Selenium (ppm)	0.5
Vitamin A (IU/lb)	4500
Vitamin D (IU/lb)	1200
Vitamin E (IU/lb)	18
Zinc (ppm)	116
Copper (ppm)	27
Form	Pellet

• **Growing & Maintenance Goats** - Feed 1-2 lbs. per head per day based upon desired body condition score, desired growth rate and forages available.

• **Milking Goats** - Feed 1 lb. for every 3 lbs. of milk produced. Adjust to slightly more or less based upon maintaining proper body condition, and to adjust to the quality of forage fed. Milking diet should maintain a protein content of 16-18%. Therefore hay fed to lactating cows should have protein content of a minimum of 16-20% crude protein. Alfalfa hays of high protein content will not be detrimental but may represent feeding excess nutrient, and being less cost effective.

Lactating goats should have free choice forage, salt and minerals available at all times. If feeding primarily 100% alfalfa or clover hays, consider using a 1:1 mineral to help balance out Ca:Phos ratios.



For additional information on raising sheep and goats...

we recommend the following websites which provide extensive information on all aspects of sheep and goat operations:

#### SHEEP

<http://www.umext.maine.edu/onlinepubs/htmpubs/2186.htm>

<http://www.extension.umn.edu/distribution/livestocksystems/DI0730.html>

#### GOAT

<http://attra.ncat.org/attra-pub/dairygoats.html>

<http://www.farminfo.org/livestock/goats.htm>

<http://extension.missouri.edu/explore/agguides/dairy/g03990.htm>