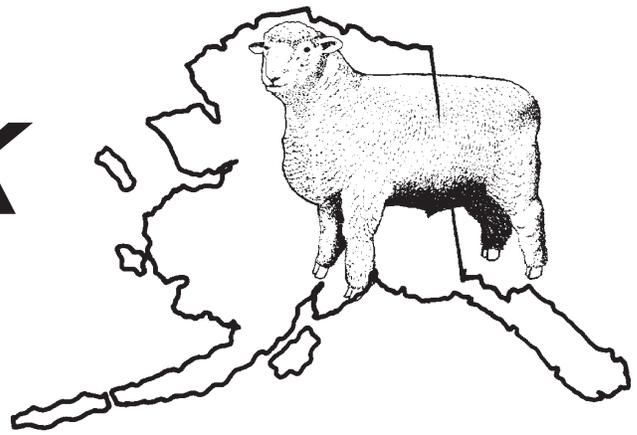


ALASKA LIVESTOCK SERIES



LPM-00740

Feeding Alaskan Sheep

Because sheep are able to utilize many types of feed, they are often kept to “clean up” waste feeds around the farm. Weeds and grain crop residues may constitute major portions of the diet. Such feeds substantially reduce the cost of raising sheep and, so long as the animal’s nutrient needs are met, higher quality feeds are not necessary.

Many sheep are raised on small acreages where it is not practical to produce feed in the quantities needed. In these cases, owners are forced to purchase feeds which can constitute up to 75% of the cost of producing a finished lamb.

Regardless of what sheep are fed, it is important that their nutrient needs are satisfied as economically as possible. To do this one must keep in mind the cost and nutritional qualities of the feeds being considered. Producers should insist that purchased feeds be analyzed by an unbiased laboratory and the results of that analysis be made available to them. If home grown feeds are fed, they too should be analyzed to determine their nutrient content. Only after nutrient values have been determined can balanced diets be formulated.

Feeds can be analyzed at the University laboratory in Palmer or at any one of the numerous laboratories in other states. The University of Alaska Fairbanks Cooperative Extension Service also offers a free computer ration balancing service once feeds have been analyzed.

When analyses cannot be obtained, one must rely on “book values” to estimate the nutrient content of feeds. Although this can result in rather inaccurate ration formulations, adequate diet combinations can be calculated if one can make reasonable judgements about the quality of the feeds being used.

MANAGEMENT

An old axiom says “the eye of the master fattens the calf.” It is no less true for sheep. All the books in the world cannot teach a person as much about feeding livestock as experience. Rations can be formulated to perfection, but if they are fed incorrectly or the feeder fails to recognize the subtle signs shown by sheep, poor or even drastic results can occur. There is no substitute for “sitting

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on the fence” for a minimum of 20 minutes a day doing nothing more than observing your animals. It is only through such practice that one can see problems before they develop.

Any change in the diet of a sheep should be made slowly and carefully. This applies not only to the type of feed, but also to amounts being fed. Abrupt changes can result in animals going off feed, foundering, developing acidosis, coccidiosis or any number of equally disastrous disorders. Most dietary changes can be made over a three day to two week period, depending on the nature of the change. It is always better to be too cautious rather than too bold when making dietary changes. This is true even when turning sheep out on pasture. Blend new feeds into existing rations a little at a time. In the case of pasture, fill sheep up on dry hay before turning them out on grass, and then allow them to graze for lengthening periods each day, beginning with about an hour. In about three days they should be well adapted.

It is common for fecal consistency to change when diets are altered. Soft stools are normal for two to three days after a dietary change and should not cause undue concern. However, if severe diarrhea occurs and persists for

several days, or if the feces change color or become foul smelling, consult with your veterinarian or another experienced producer.

Feeds should be as fresh and as free of dust and mold as possible. They should be stored in a cool dry area not accessible to rodents and birds. Sheep like fine short plants either as fresh pasture or hay. Producers should hold back their best hay for ewes with new lambs, young lambs and sheep that are sick. Never feed grain that has been treated with a pesticide without knowing exactly what the product was and then only after you have carefully read the label. Most materials used to treat grain used as seed have a bright color and are easily detected. Other pesticides are not visible and may not be detectable by smell. Always ask if pesticides have been used before you buy.

Research done at a number of University Experiment Stations over the years has shown that while processing grain for sheep may improve performance slightly, the advantage is not enough to offset the cost. In the case of creep rations for very young lambs, cracked or ground grain may be more palatable to them and cause them to begin eating sooner.



This producer is discussing sheep pasture management with his local extension agent and a veterinarian. The dark staining of the crotch of the ewe (lower, center, left) could be due to internal parasites, a high protein diet, or a digestive upset.

There are conflicting opinions on the practice of routinely feeding low levels of antibiotics. The advantages seem to be that it helps prevent disease, soothes digestive disorders and, in some cases, increases rate of gain. The disadvantages are that low-level antibiotics allow bacteria to develop immunity to the drugs being fed and increases the cost of the ration. Antibiotics in the ration can be very beneficial during times of high stress, such as when lambs first come into the feedlot or when treating a widespread outbreak of such things as coccidiosis or soremouth. However, once the stress is gone, the likelihood of immunity and, consequently, the later ineffectiveness of the drug may outweigh the possible advantages of continued feeding of antibiotics at low

levels. In either case, all drugs have legally specified withdrawal times. Producers who violate this law run the risk of contaminating the carcasses of the lambs they sell and subjecting themselves to serious liability.

RATIONS

The following sheep rations, utilizing mostly Alaskan feeds, are reasonably economical and will meet the nutrient needs of the animals for which they are formulated. The rations were formulated using Alaskan brome hay and light- to medium-weight barley having nutrient contents shown in TABLE 1. Light- to medium-weight barley was used because it is often available at a reduced price and offers adequate nutrients for all the rations.

**TABLE 1
AVERAGE NUTRIENT CONTENTS OF ALASKAN
BROME HAY AND COVERED BARLEY
(All values are on a 100% dry basis)**

FEED	DM*	TDN**	CRUDE PROTEIN (CP)	CALCIUM (Ca)	PHOSPHORUS (P)
Brome Hay	83.1%	59.0%	11.07%	.33%	.22%
Barley	84.5%	76.9%	10.20%	.04%	.31%

*DRY MATTER

**TOTAL DIGESTIBLE NUTRIENTS-(Roughly equivalent to IVDMD as reported on feed analyses from the University of Alaska Lab.)

Both feeds are considered to be current year’s production, free of mold and substantial foreign matter and not damaged by heat or water. The barley is assumed to have a bushel test weight of 40 to 44 pounds. It should be noted that most of Alaska’s barley is heavier than 44 pounds. Heavier barleys are normally higher in energy; however, because heavy barley usually is more expensive, the cost of the ration may be higher than if lighter grain is used. One should always compare feeds according to their nutrient content in relation to their costs. The following formula may be used to determine the “nutrient” cost of a feed:

$$\frac{\text{(cost per lb of feed)}}{\text{(\% of the nutrient as a decimal)}} = \text{(Cost per lb. of nutrient)}$$



Sheep fed in wet areas gain and produce less and usually have a higher incidence of internal parasites, foot scald, and foot rot.



Sheep utilize mounds in the feed yard to stay dry. Notice the feed trough has been turned upside down to keep it dry and clean.

EXAMPLE: To determine the cost of a pound of energy (TDN) from the barley used in these rations (assuming the grain cost \$.065 per pound) the figures are as follows:

$$\frac{$.065}{.769} = .085 \text{ per pound of TDN}$$

Assuming the brome hay cost \$.10 per pound, the energy would cost:

$$\frac{$.10}{.59} = $.17 \text{ per pound of TDN}$$

One can easily see that in this example, the barley is a more economical source of energy than brome hay.

The sheep for which these rations are formulated are assumed to be reasonably free of disease and parasites and sheltered from chilling rains.

The requirements are those recommended by the National Research Council, 1985. Cold dry weather will slow gains somewhat and, in prolonged periods of temperatures of -30° F and lower, feed amounts may need to be increased by as much as 30%. One should note that ration changes for cold weather need only be in the amount fed and not in ration formulation.

TABLE 2
RATIONS FOR VARIOUS CLASSES OF SHEEP*
(All values are expressed as a percent of the total ration)

Ingredient	Maintenance Mature Rams & Ewes Including First 15 Weeks Gestation	Last 6 Weeks Gestation & Last 8 Weeks Nursing Singles	First 8 Weeks Nursing Singles & Nursing Twins	First 8 Weeks Nursing Twins	Creep Ration
Straw	43.64	33.56	0	0	0
Barley	0	0	6.36	6.32	22.84
Corn (Ground)	0	0	0	0	59.12
Brome Hay	55.87	66.01	92.85	92.87	FC*
Soybean Meal	0	0	0	0	16.99
Dicalcium Phosphate	.20	.06	.49	.54	0
Ground Limestone	0	0	0	0	.75
Trace Mineral Salt**	.29	.37	.30	.27	.30
TOTAL	100.00	100.00	100.00	100.00	100.00

* To be fed free Choice

**TM salt may be fed free choice rather than blended in the ration

Many Alaskan feeds are deficient in Selenium; as a result, diets should be supplemented with not more than 0.1 parts per million (ppm) which is equivalent to .00001 %. This is a very small amount which dictates it be included in the ration as part of the salt mixture or a premixed supplement. It may also be administered as an injectable. Be cautious not to over supplement with Selenium as it is toxic at levels of 3.0 ppm and above.

Vitamins A and D must also be supplemented in the diets of sheep. They can be mixed into the ration as a premix with other supplements, fed with TM salt or given as an injectable. Vitamin A requirements range from about 1400 to 6800 International Units (IU) per pound of feed, while those for Vitamin D range from 250 to 750 IU's per pound of feed. Commercially prepared supplements and injections are formulated to supply the needed amounts of both these vitamins without causing a toxic condition. Both Vitamins A and D can be fed in amounts considerably higher than required without harming sheep. Vitamin E is usually included with Vitamins A and D. While Alaskan sheep are seldom deficient in Vitamin E, it can act as a substitute for Selenium to a large degree and thus is valuable in the ration. Like Vitamins A and D, E is not toxic at reasonable levels above the requirement.

BREEDING SHEEP

Breeding rams should be fed 0.5 to 1.0 pounds of barley in addition to hay two weeks prior to and during the breeding season. Rams should be observed closely and the feed amounts altered if they become too thin or overly fat during this time.

Flushing ewes prior to, during and after the breeding season is a management practice which has shown to increase conception rates and number of offspring. It is most effective during the early part of the breeding season and becomes less effective as the season progresses. Flushing can be done by turning ewes on to high quality pasture or by increasing the nutrients they receive through supplemental feeds such as grain or high quality hay. Usually the addition of 0.25 to 0.5 pound of grain to the diet is sufficient to bring about the desired results. One should be careful not to allow the ewes to become too fat as a result of flushing. One common mistake is to lower the level of nutrition immediately after the ewes are bred. This can result in the death of the fertilized egg. It is advisable to continue the higher levels of feed for about two weeks after conception.

Table 2 indicates the change in dietary needs as the ewes go through the various stages of production. As one might suspect, their needs are lowest when they are not pregnant or nursing lambs, and highest when they are providing milk for more than one lamb immediately after birth.

No mention is made of growing ram and ewe lambs in Table 2. These sheep can be fed as feedlot lambs to about 85 pounds for most of the larger breeds of sheep. At that point producers usually reduce the ration's energy content by reducing the grain and increasing the roughage to help insure breeding replacement do not become overly fat. It is important to allow as much frame and muscle development as possible in young breeding stock if they are to reach their full genetic growth and reproductive potential.

SUCKLING LAMBS

Suckling lambs should be started on creep feed within a week after birth. Don't expect them to eat much until they are a few weeks old. Australian research shows clearly that lambs allowed to mimic their mothers during feeding times learn to eat grain much sooner. Quality commercial lamb creep feeds supply all of the nutrients required at a cost generally competitive with rations which can be mixed at home; however, producers can mix their own creep rations and are likely to achieve the same results. The mixture shown in Table 2 is a highly palatable ration supplying all the nutrients needed by the suckling lamb. As lambs approach 30 pounds the ration can be slowly changed to a finishing or growing ration, thus reducing the cost.



This lamb tells us that he would like some salt and mineral but his owner has placed it out of his reach.



These lambs can certainly get to the feed, but are wasting much of it and are contaminating it with mud, manure and urine.

FEEDLOT LAMBS

Rations for feedlot lambs are not shown in Table 2. Alaskan feeding trials have shown no significant differences in the performances of various test weight barleys when fed to finishing lambs. In addition, no differences were found when Thual, a hullless barley, was compared to two covered (hulled) varieties. In these trials, the lambs had access to as

much whole barley as they wanted around the clock. Chopped straw was added to the ration at the rate of 10% by weight, however, the lambs sorted out much of the straw once they were on full feed. The lambs seemed to prefer the covered barley over the hullless variety. Fewer digestive problems are likely to occur if the more fibrous, covered varieties are fed. In the feeding trials, covered barley

weighing 37 pounds per bushel performed as well as the other weights and varieties and was much more economical. Table 3 shows a recommended ration for Alaskan feedlot lambs.

Following normal management practices for receiving and settling feedlot lambs, they should be filled up on good quality grass hay and started on grain slowly if they have not been on a creep ration. Straw can be substituted for grass hay and fed free choice at this point. Increase feed amounts, feeding twice daily, until they are eating well and not cleaning up all the grain they are given. Care must be taken not to push them on to full feed too quickly as serious digestive disorders can result. Once the lambs are on full feed, they should have free access to grain 24 hours a day. If, for any reason, they run out of feed

for several hours, care should be taken that they do not over eat when they again have the opportunity. The feed containers and grain should be kept free of dirt, manure and other contaminants.

**TABLE 3
RECOMMENDED RATION FOR
ALASKAN FEEDLOT LAMBS
WEIGHING 45 TO 120 POUNDS**

Whole Barley	Free choice
Straw (long)	Free choice
Trace Mineralized Salt and Ground Limestone (mixed 50-50 by weight)	Free choice

WATER

Without question the most important nutrient of any sheep ration is water. All classes of sheep, including nursing lambs, should have convenient access to clean fresh water at all times. Alaskan winters pose a problem in keeping water available to sheep in liquid form. Insulated containers and supplemental heat are used to keep water thawed. Producers should at least make sure that sheep have fresh water twice daily and that all individuals have an opportunity to drink their fill.

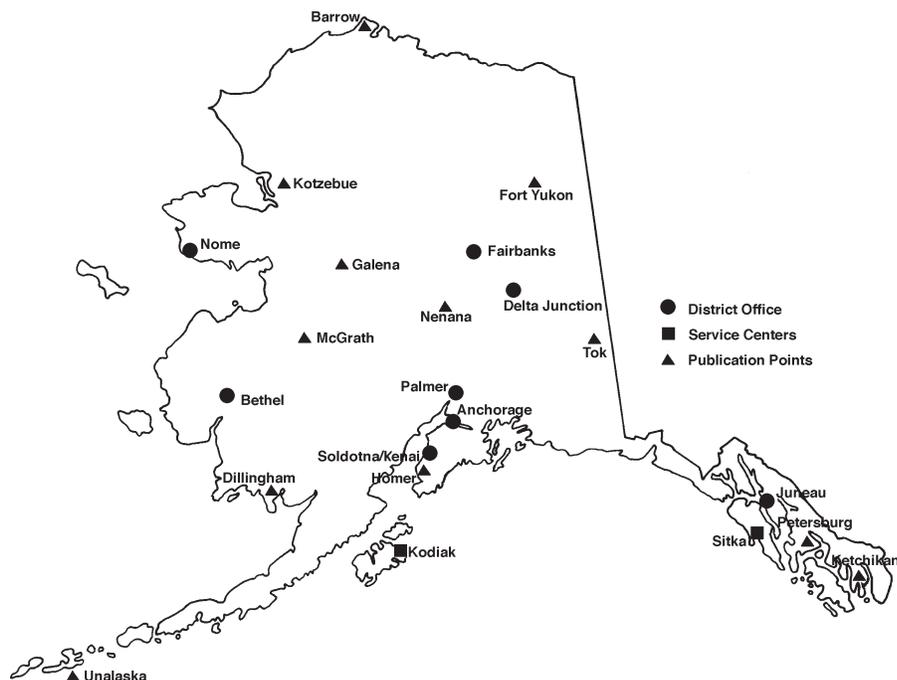


Young lambs should have access to fresh water at three days of age. This bucket should be located so that it cannot be contaminated by mature sheep.

*This publication originally authored by Joe B. Johnson,
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Edited for Alaska by Ken Krieg, Professor of Extension, Emeritus, University of Alaska Fairbanks.*

Cooperative Extension Service

Information and Resource Locations



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 Anchorage, AK 99508-4143

Delta Junction District (907) 895-4215
 P.O. Box 349/Jarvis Bldg. fax 895-4210
 Delta Junction, AK 99737

Fairbanks State Office (907) 474-7246
 University of Alaska Fairbanks fax 474-6971
 P.O. Box 756180
 Fairbanks, AK 99775-6180

Fairbanks—Tanana District (907) 474-2450
 University Park Bldg, Room 138 fax 474-6885
 P.O. Box 758155
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Juneau District (907) 465-8749
 3032 Vintage Blvd., Suite 104 fax 465-8742
 Juneau, AK 99801

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 Box 400/Northwest Campus fax 443-2150
 Nome, AK 99762

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 533 East Fireweed Avenue fax 745-5479
 Palmer, AK 99645

Soldotna—Kenai Peninsula District (907) 262-5824
 43961 K-Beach Road, Suite A fax 262-3939
 Soldotna, AK 99669-9728

Tanana Chiefs Conference 1-800-478-6822
 122 1st Avenue, Suite 600 phone (907) 452-8251
 Fairbanks, AK 99701 fax 459-3936

Eielson Air Force Base (907) 377-5191
 354 MDOS/SGOHF fax: 377-3690
 3349 Central Ave., Suite 107
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Other Important Cooperative Extension Service Phone Numbers

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