PUBLICATION 872

APRIL 1954
REPRINT

FEEDING FOR MARKET LAMB PRODUCTION

By

S. B. WILLIAMS

Prime lamb carcasses, the result of good feeding coupled with sound breeding and management practices.

DEPARTMENT OF AGRICULTURE
OTTAWA - CANADA

[—18759—4:54

FEEDING FOR MARKET LAMB PRODUCTION

S. B. Williams*
Animal Husbandry Division
Central Experimental Farm
Ottawa

Proper feeding is the most important single factor contributing to the success of a sheep enterprise. Well-fed ewes produce more living lambs and shear heavier fleeces than do those receiving an inadequate diet. The lambs from ewes on an ample, well-balanced diet make rapid gains during their first weeks and, if good pasture is provided, the lambs can be marketed early and on the most favourable market. Under a good feeding regime mortalities in both ewes and lambs are kept at a minimum.

The sheep is a ruminant, or cud-chewing animal, which means that its digestive system is designed to make efficient use of roughages. Any feeding program should be planned to make the maximum use of roughages and succulents while grain and concentrate feeding should be reserved for periods such as late pregnancy or nursing when feed requirements are high. The object should be to keep the ewes in good, healthy, thrifty condition. Having them too fat is not only wasteful but may result in weak lambs. The wise shepherd knows that only by handling the individuals in the flock can he judge the condition of the sheep and he increases or decreases the feed depending on the condition of the ewes.

Sheep feeding in this country is divided into two phases, the winter feeding period of approximately five months when the sheep must be housed and fed, and the pasture period, when herbage, sometimes supplemented with certain crops, constitutes the entire diet. The winter feeding period is of great importance since it is more often neglected, and neglect during this time can do the most harm.

WINTER FEEDING

The winter feeding period is a critical time

In the yearly cycle the winter feeding period is the most critical time. The pregnant ewe must not only be given enough feed to maintain her own body but also sufficient for the developing lamb or lambs. If this is not done the lambs at birth may be small and weak and the milk production of the ewe may be insufficient to adequately nourish the lambs. High mortality rates and slow gains will result.

On too many farms the feeding of the sheep flock receives little or no consideration. While the dairy cattle ration may be carefully compounded and balanced often the sole feed given to the sheep in low quality roughage.

Good quality legume roughage is best

Trials have been conducted by the Experimental Farms Service to study the relative value of various roughages. These tests have shown that good quality, fine, well-cured legume hay was the best feed for sheep as measured by maintenance of ewe body weight, lamb birth weights, and lamb vigour at birth. Timothy or non-legume hay gave relatively unsatisfactory results while mixed hay was intermediate. Further trials have shown that a non-legume hay ration can be

* Now Superintendent, Experimental Farm, Nappan, N.S.

improved greatly by the addition of one-half pound of linseed oilmeal or one-half to one pound of oats per ewe per day. On the other hand the supplementation of a non-legume hay with vitamin A did not increase its usefulness. If only a limited amount of top quality hay is available it should be saved for feeding during the latter half of pregnancy, since experimental work at Ottawa proved that relatively low quality hay can be fed during the first half of pregnancy with no ill effects, provided an adequate diet is given during the latter half.

Little grain is necessary with good hay

If the ewes start the winter in good condition and high quality legume hay is fed, grain feeding may be unnecessary. On the other hand, if the ewes are in poor flesh or if the hay is not of good quality then grain should be fed. In general this grain feeding need not be started until approximately six to eight weeks before lambing and usually one-half to one pound of oats or a mixture of equal parts of oats and bran per head per day is sufficient. During late pregnancy care must be taken to ensure that the ewes do not receive a set-back of any kind. If anything is done at this time to affect adversely the appetite of the ewes, pregnancy toxaemia, or pregnancy disease may result. At this stage it is essential that the ewes be kept in good condition.

Lambs from ewes fed good quality legume hay make rapid gains.

Succulents add to the ration

Succulent feeds, such as silage and turnips, make a valuable addition to the diet of the flock. Sheep relish all types of silage although if they have never been fed certain kinds of grass silage it may take a short time to accustom them to this feed. While the use of succulent feeds in the ration is not essential they appear to have an appetite-stimulating effect that is of particular value if the roughage

is coarse and of relatively low quality. Mature ewes may be fed two to three pounds of silage or chopped turnips daily. The feeding of silage should be discontinued about one month before lambing since it is thought that excessive silage feeding at this time may result in a certain percentage of large, soft lambs.

Salt and minerals are necessary

Salt and mineral should be available at all times during the winter feeding period. A mixture of equal parts of iodized salt and feeding bonemeal will prove adequate in most cases although in certain areas where specific deficiencies are known to exist, or are suspected, the missing mineral may be added to this basic mixture. The salt-mineral mixture can best be fed in open boxes securely attached to the wall and protected from the weather.

Water should not be neglected

The problem of providing adequate drinking water is often a difficult one but for best results the ewes should have water available at all times. Ewes on dry winter feed will each drink approximately one gallon a day and after lambing their requirement will rise to a gallon and a half or more. In areas where freezing of the drinking water is a problem and electricity is available, the use of an immersion heater in a tank with a false bottom will give satisfactory frost protection.

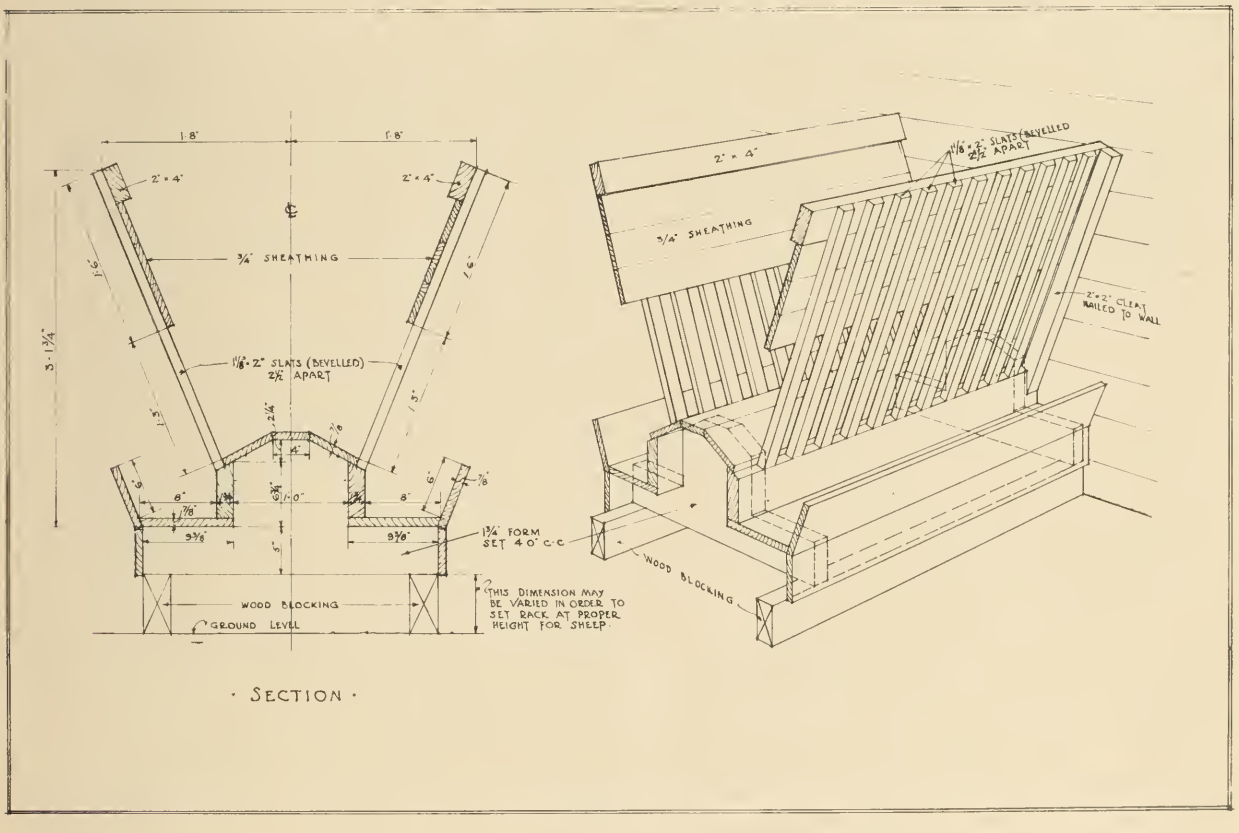


FIGURE 1.—Sheep feeding rack. The hay is eaten from the slatted portion and the side trough can be used for silage or grain feeding.

Feed racks should keep vegetable matter out of the fleece

Many types of feed racks can be used for feeding hay and grain to sheep. The hay rack should be constructed so as to keep wastage at a minimum and at the same time keep leaves, dust etc., from falling on the neck and head of the

sheep since vegetable matter in the fleece sharply lowers its market value. The rack shown in Figure I has been found to give very satisfactory results. The trough at the bottom can be used for grain and silage feeding and serves the additional purpose of catching the leaves and short pieces of hay that break off when the hay is pulled from the rack by the sheep. These leaves and pieces are thus kept clean and are later eaten. The three-quarter-inch sheathing shown at the top of the rack helps to keep the fleece clean by ensuring that hay does not fall on the sheep's head, neck, and shoulders. This type of rack can be made movable and can be used to subdivide the sheep barn into areas of varying size as required at different times of the year.

Grinding and chopping of feed is unnecessary

Except for very old ewes with broken mouths and for lambs up to six weeks of age there is no benefit from grinding or rolling grain for sheep. However, if the grain contains a large percentage of weed seeds it may be wise to have it ground or crushed to destroy the seeds. In general, tests have shown that when the hay is of good quality and a suitable feed rack is used, chopping is not necessary. When poor quality hay is to be fed, wastage can be reduced by chopping but this practice is a doubtful one since it forces the sheep to eat portions that are of little value to them and reduces their nutrient intake. If sufficient hay is available a better plan is to feed ample quantities and use the refused portion for bedding.

Suggested rations for wintering ewes

The following rations are suggestions only, in all cases the shepherd should use his judgment as to amounts and type of feed depending upon the age, condition, size, and breed of sheep. In each case the amount stated is the daily ration for one ewe. If silage is not available the hay allowance should be increased by approximately one pound.

(*a*) When ample good quality legume or mixed hay is available,
Legume or mixed hay.....—3 to 5 pounds
Silage .....—2 to 3 pounds
Grain .....—½ to 1 pound of a mixture of equal parts of oats and bran from one month before lambing.

(*b*) When only limited amounts of good quality legume or mixed hay are available,
(1) Until mid-pregnancy
Non-legume hay .....—4 to 6 pounds
Silage .....—2 to 3 pounds
(2) After mid-pregnancy
Legume or mixed hay ....—3 to 5 pounds
Silage .....—2 to 3 pounds
Grain .....—½ to 1 pound of a mixture of equal parts of oats and bran from one month before lambing.

(*c*) When legume or mixed hay is not available,
Non-legume hay .....—4 to 6 pounds
Silage .....—2 to 3 pounds
Grain .....—½ pound of a mixture of equal parts of oats and bran until mid-pregnancy then 1 to 1½ pounds OR ¼ pound of linseed oilmeal until mid-pregnancy and then ½ to ¾ pound.

Same ration can be fed after lambing

If the ewes lamb before going to pasture it is not necessary to make any alteration in the feed except that the grain ration may be increased as the lambs become bigger. A newly-lambed ewe usually will restrict her own ration until such time as she handle a full feed. In some cases, particularly with young ewes, the milk flow may be slow in starting, then a feed of warm bran mash may prove of value.

Creep feed early lambs

Early lambs will benefit by having access to a creep which may simply be a corner of the pen boarded up in such a manner as to exclude the ewes but permit the lambs to enter. In the creep a trough should be kept filled with a mixture of finely ground oats to which has been added ten per cent of linseed oilmeal. The lambs will start to eat such grain when two to three weeks of age and as their consumption increases barley can be added gradually to the mixture.

PASTURE

Sheep relish and thrive on relatively short, fine herbage and any pasture program must be aimed at providing a continuous supply of this type of pasture throughout the season. In almost all parts of Canada this presents several difficulties. The normal pattern of pasture growth is a sudden and rapid flush of growth in the spring, a period during mid-summer when there is almost no growth, followed by a certain renewal of growth in the early fall. Because of their liking for new, fresh herbage sheep tend to over-graze certain areas while other portions of the field are untouched. The grass in these latter areas becomes coarse and mature and is never grazed except perhaps under starvation conditions. If the farm is sufficiently fenced this difficulty can be controlled, at least partially, by stocking a small area at a relatively heavy rate for a short period and then moving the flock to a fresh pasture. Excess spring grass production can then be cut and saved either as hay or silage.

Fertilization increases carrying capacity

The value of pasture fertilization as a method of increasing the carrying capacity of a pasture has been demonstrated by a trial conducted at the Central Experimental Farm, Ottawa. One lot received light applications of complete fertilizer while the other lot was untreated. The average increase in carrying capacity on the fertilized field for the 21 years that this trial has been run is 59 per cent. This increase has been obtained on a soil of a relatively high level of fertility.

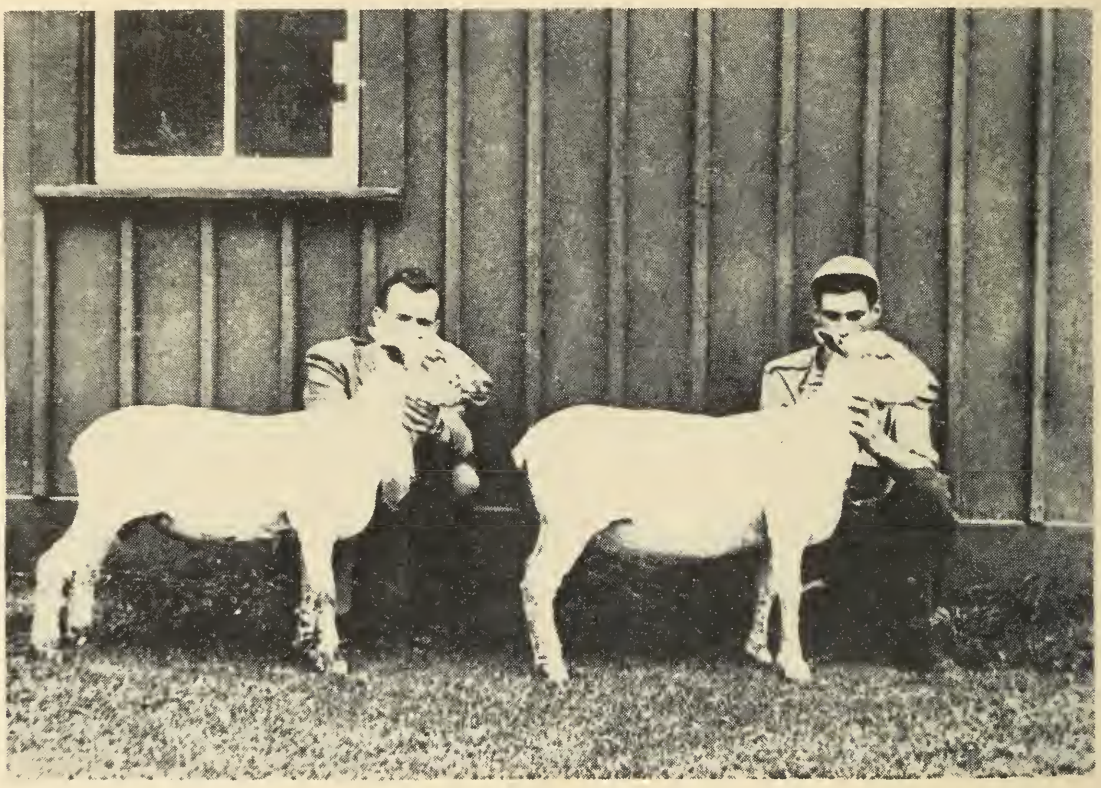
Special crops help to even out seasonal production

In order to solve the problem of the midsummer drop in pasture production, work has been done at Ottawa with special pastures for sheep. One flock of sheep was grazed on a fertilized permanent pasture while another was run on a series of pastures in a crop rotation. This latter was a four-year rotation involving oats and Sudan grass seeded down to a pasture mixture. In the fourth year rye for early and late grazing and rape for midsummer pasture entered the rotation. This rotation of crops has given on the average a 35 per cent increase in yield and the carrying capacity has been much more even throughout the season.

Mixed grazing gives good results

In many areas there is a prejudice against pasturing sheep with other classes of stock on the grounds that the close-grazing habit of the sheep renders the

pasture less valuable to the other animals. Trials at Ottawa showed that grazing with a mixed lot of sheep and steers increased the productivity of a field by 30 per cent and both classes of stock made good gains. Since the steers ate the longer and coarser grass and the sheep consumed the shorter, more tender herbage a much better utilization was made of the available grass. Care must be exercised in the proportion of sheep to steers. A ratio of four or five ewes and their lambs to each steer is considered correct.



Both these sheep weighed the same at the start of the pasture season. The animal on the left was on inadequate, the one on the right, on adequate grazing. The lot on adequate grazing averaged 23 pounds greater gain.

Flock requirements vary during season

In planning a pasture program it must be remembered that the requirements of the flock, in terms of grass, vary considerably during the summer season. In the spring, when the lambs are small, the requirements are relatively low but as the lambs grow so do their demands and provision must be made for increasing amounts of herbage. In late August the lambs should be weaned and put on excellent pasture, young aftermath is ideal, while the ewes should be run on poorer pasture until they become dry. They should then be moved to a good pasture to allow them to recover condition in preparation for the breeding season and to prepare them for the winter season, since ewes that enter their winter quarters in good flesh require little or no grain during the winter.

Pasture mixture used depends on soil and climate

No standard recommendation can be made as to the best mixture since different types are suited to different soils and climates. In general the mixture should contain both legumes and grasses, preferably not of a rank growing type. More complete recommendations can be found in Publication 809 "Better Pastures in Eastern Canada" published by the Department of Agriculture, Ottawa.

Salt, shelter, and water are important

Salt is necessary at all times for sheep on pasture. The use of iodized block salt is recommended because of its convenience. If the area grazed is large it is wise to distribute the salt in several locations as this will help toward a more even utilization of the pasture.

On hot days sheep may experience considerable discomfort if forced to lie out in the sun. Where natural shade is lacking it is wise to provide some type of shelter. This can easily be constructed using four posts and a few poles along with some brush. Such a shelter is more satisfactory in the summer than is a shed or barn, since it allows the breeze to enter from any direction.

Sheep fences must be good

An old shepherd's saying is that "You must either feed or fence your sheep". What is meant is that sheep having adequate pasture are not so likely to wander away as those on more scanty feed. Fences must not be neglected and the only completely satisfactory sheep fence is one of woven wire. Unfortunately electric fences are of little value for sheep because of their crawling and jumping habits and the insulating properties of their wool.

LAMB FATTENING

Fattening lambs must be well fed

Under domestic flock conditions the aim should be to produce fat lambs off grass without any supplementary feed. However, there are often a few lambs that are not sufficiently finished at the end of the pasture season. Such lambs can profitably be fattened on dry feed. Only feeds of the very best quality should be used and care must be exercised that the lambs do not go off feed. The lambs can be started on second-cut legume or mixed hay and a small allowance of a mixture of 90 per cent oats and 10 per cent oilmeal. Gradually the amount of grain can be increased and barley can be introduced into the ration until it forms about 50 per cent of the grain mixture. As the rate of grain feeding is increased the hay allowance should be reduced and when on full feed the lambs should eat only about one pound of hay per day.

Feeder lambs may be obtained from the range flocks of Western Canada. The fattening of such lambs is a highly specialized livestock enterprise and at present it is concentrated in irrigated areas where the lambs utilize the by-products of the vegetable canning industry.

MANAGEMENT

Sheep, like all domestic animals, respond to kind treatment. When handling sheep much less difficulty will be experienced if the job is done slowly and quietly rather than with shouting and haste. A practice should be made of inspecting the sheep flock daily when on pasture. A little care during the winter feeding period will result in an easily handled, tractable flock.

Well-bred animals give the best results

Irrespective of the care that is taken with the feeding of the flock, an intelligent breeding program must be followed if maximum returns are to be realized. Lack of a definite plan will result in a mongrel flock and lambs lacking in uniformity and with indifferent gaining ability and carcass quality.

Attention to details is essential

All lambs intended for market should be docked and male lambs should be castrated. These operations can best be done when the lambs are two to three weeks old. Two bloodless methods are now available that permit of these operations being done by any flock owner.

External and internal parasites must be controlled; the former through dipping, spraying, or dusting and the latter through the use of phenothiazine or other drugs and the provision of fresh clean pastures.

Attention to these matters coupled with an intelligent feeding and breeding program will result in a flock that will be a source of both profit and pride to the owner.

EDMOND CLOUTIER, C.M.G., O.A., D.S.P.
QUEEN'S PRINTER AND CONTROLLER OF STATIONERY
OTTAWA, 1954