Chapter 5 MANAGEMENT OF FATTENING

5.1 Lamb fattening from weaning to 35-40 kg liveweight

After weaning suckling lambs or artificially reared lambs are moved to the growing unit for fattening. The whole area and the facilities should be cleaned and disinfected. Lambs are vaccinated against enterotoxaemia at weaning. The limiting factor to performance is usually the level of feed intake. The diet available for early weaned lambs should supply the essential nutrients in suitable proportions, but it must also ensure maximum voluntary intake.

With the restriction of milk intake, during the last two weeks of weaning, solid feed intake increases and there is only a slight reduction in growth. Good quality hay (alfalfa or other leguminous hay) and a concentrate mixture, containing 16 percent crude protein (as fed) with barley grain and soyabean meal as basic ingredients should be offered from two weeks of age. The same concentrate mixture should be offered after weaning. Hay should be offered in hayracks or hay bunks (100 g daily) and the concentrate mixture in pelleted form in self-feeders. Feed should always be available in the self-feeders.

Automatic waterers should be used but lambs should be trained to drink from this type of waterer, before weaning. Feeding and watering facilities should be inspected daily and cleaned. Sheltered areas and open yards should be regularly cleaned and lime spread over the floor.

Adequate nitrogen intake in relation to energy intake is crucial on the optimum growth of lambs. It is therefore essential under intensive conditions of fattening where lambs are expected to reach marketable size quickly to feed lamb diets high in energy concentrates and a minimum amount of roughage to maintain the normal functioning of the digestive tract (8-10 percent of the total diet or 80-100 g daily). The protein concentrate of diets varies from 16 to 12 percent (as fed) according to the increasing liveweight (from 15 to 40 kg). However, in order to avoid frequent changes of the diet which may affect intake, two levels are used, i.e. 16 percent until 90 days of age and 14 percent from 90 days until slaughter (35-40 kg liveweight). Protein content for male lambs above 40 kg liveweight is reduced to 12 percent. The requirements of female lambs are about 2 percentage units lower.

The higher the feed intake by lambs, the higher the rate of gain and the efficiency of feed conversion. Maximum feed intake can be achieved with a balanced diet in terms of all nutrients (energy, protein, vitamins and trace elements) being present. Supplementation of the diets with a vitamin-trace-element mixture will improve performance considerably. Vitamin A (5 000 I.U./kg feed) is essential. The cost of supplementation is insignificant compared to the total cost of the ration. Because of the high level of phosphorus in grains and cakes, supplementation with limestone is also essential for a correct balance between calcium and phosphorus and protection against the incidence of urinary calculi.

Pelleting the concentrate mixtures (5 mm pellets) improves palatability, prevents the selection of feed ingredients and reduces wastage. The overall advantage of pelleting in the performance of lambs is about 7 percent and, if the cost of pelleting is lower than the achieved increase in performance, feeds should be pelleted. Otherwise grains should be offered coarsely ground or rolled together with oil cakes and the vitamin-mineral mixture.

Under intensive feeding and managerial practices sexes are separated after weaning. Female lambs are fed ad libitum with a concentrate mixture containing 16 percent crude protein until 2 months of age, changing to 14 percent thereafter until they reach 3 to 3 1/2 months of age. Should all female lambs be used as replacements or for selling as breeders, the lambs should be fed the amount of feed required to reach the desired weight at mating. If, for example, the liveweight at 3 to 3 1/2 months of age is 25 kg and the desired liveweight at mating
is 40 kg at the age of 12 months, then the expected total gain of 15 kg liveweight should be obtained in 260 days or about 60 g daily. When the energy content of the available feeds is known, together with the daily allowance of energy for maintenance and growth, then the daily amount of feed can be calculated. The diet is then balanced for other nutrients.

Female lambs available for fattening and slaughter will continue on diets containing 14 percent crude protein and will be slaughtered at an earlier age than males of the same breed. If males, for example, are slaughtered at 35 to 40 kg liveweight, females should be slaughtered between 28-33 kg liveweight.

5.2 Slaughter weight

The yield of usable meat increases with increasing slaughter weight because of increasing dressing percentage and decreasing bone content. Many of the costs of handling and processing lamb carcasses are related to the carcass as a unit and thus the cost per unit meat increases for small carcasses. In the earlier stages of growth the effect of spreading the overhead costs of the breeding flock or the initial price of lambs lead to marked decreases in cost per kg of carcass and, in spite of the deterioration in feed conversion efficiency, costs per kg of carcass begin to rise when the lamb carcass weight exceeds 25 kg. However, carcass fat increases with increasing slaughter weight. This factor limits the extent to which carcass weights can be increased in order to increase the yield of usable meat. The choice of genotype is crucial because of the effect on fatness at a given carcass weight.

Hygienic rules for disease prevention, proper housing and feeding and watering facilities, described in other chapters, together with proper nutrition will result in high feed intake, increased efficiency of feed conversion and generally high efficiency of meat production.

5.3 Fattening of older lambs

When lambs on the range are late weaned or older lambs are imported and have to be transported in fattening operations certain measures should be taken to avoid losses and better adaptation in the feedlot. Such lambs undergo considerable stress in the move to the feedlot. They are gathered, sorted, often stand for a long time without feed and water before being loaded or unloaded, and move in strange surroundings.

Whenever facilities are available preconditioning before moving the lambs to the feedlot would be very helpful in reducing death loss and loss of weight. This would involve starting on feed, vaccination, and drenching. The lambs should be rested and fed two to three hours before loading. Transportation to the fattening operations should be done as rapidly as possible. Before their arrival all yards, sheds and facilities should be cleaned and disinfected. On arrival the lambs should be kept separately from other animals. They should be allowed to rest and should be offered water and hay of medium quality for two-three days.

After a rest lambs are sorted according to size, sick and weak lambs being isolated. All lambs are treated for internal and external parasites and vaccinated against entero-toxaemia. Highly stressed lambs should not be drenched or vaccinated. The starter ration should contain a high proportion of hay and the concentrate mixture a high proportion of fibrous materials (wheat bran, cottonseed hulls or peanut hulls). There is a gradual adaptation to the rations and quantities are gradually increased so that the full ration is introduced in two to three weeks. The concentrate mixture should also contain an antibiotic (25-35 mg of aureomycin per kg feed) which can be removed at the final stage of fattening.

The rations used for fattening can be classified in three categories, starter, intermediate and finishing. The starter contains higher levels of roughage, 14 percent crude protein and antibiotic at the rate of 40 mg/kg feed.
The ration is hand-fed in order to control feed consumption and identify any sick animals or animals going off-feed. From the starter ration, which is fed for 1 week, the lambs are gradually changed to the intermediate ration containing a lesser proportion of roughage to the total ration, 13 percent crude protein and 30 mg of antibiotic per kilogramme of feed. The intermediate ration is hand-fed for one week. Trough space is about 25-30 cm for the starter and intermediate rations and total feed intake is about 1 kg daily. In one week lambs are gradually changed from the intermediate to the finishing ration, which contains even less roughage, with a protein content initially of 13 percent, declining to 12 percent when successful adjustment on the rations has been achieved. Finishing rations are self-fed. The finishing ration should contain about 10 percent roughage which is fed in a separate feeding trough, concentrates being self-fed. Chopped straw can be included in the concentrate mixture and self-fed.

Feeding and watering facilities and sheds should always be clean. Vaccination and parasite control programmes should be followed.

Urea can be used in the finishing rations to minimize production costs. The urea should be well mixed with the concentrate mixture. Urea utilization is improved with small supplements of alfalfa meal (5 percent). Heavy lambs must be finished more rapidly with a high concentrate ration, while lighter lambs can be fed rations containing more roughage. However, because forage is limited and costly, minimum roughage should be included in the rations. Cottonseed hulls, peanut hulls, wheat bran and chopped straw can be used in lamb rations to help prevent digestive disturbances.

Late weaned lambs taken off the range or imported should not exceed three months of age. Because there is an initial growth check of these lambs (transporation stress) full feed intake is delayed for three weeks and, when feed intake rises to promote high growth rates, feed conversion efficiency starts to decline. However, the prices of feeds and of lamb meat may be such that, despite the deterioration of the feed efficiency, fattening of older lambs will continue to be profitable.

An abundant supply of clean water is essential in intensive lamb fattening. Throughout the feeding period lambs that are able to drink frequently will consume more water, have less digestive disturbances, have a lower incidence of urinary calculi and will make better gains than lambs that are only offered water once or twice daily.
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