

the majority of the paddocks before the onset of hot, dry weather is avoided. These paddocks are allowed to develop a cover of grass and continue growing into summer much longer than do bare ones. Consequently more total feed is grown.

More Profitable Use of Available Feed

The main reason for retaining lambs with their mothers until a late date arises from the belief that the ewes are contributing worthwhile amounts of milk to their offspring. However, recent studies by L. J. Lambourne, Research Officer, Ruakura, on the feed intake of free-grazing ewes during suckling indicate the increasing cost of producing this milk as lactation advances.

December milk production of ewes lambing in early August amounts to less than one-tenth of the total yield. Yet six times the amount of feed is required to produce it compared with that needed to produce the same quantity of milk at the peak of production, 3 or 4 weeks after lambing. These studies have shown, too, that 4 months after lambing a ewe is producing only about 1lb. of milk per day.

The production of this milk is very costly. In the first place a ewe at this time eats about three times as much feed as a lamb, and much of this feed is used merely to maintain her in her existing condition. Some of the remainder is used for milk production, but a substantial proportion is used to put on unnecessary weight. In the second place the lamb still has to convert what milk it receives into meat and considerable losses are involved in this process. The original grass thus has to pass through two animals, each of which first levies a toll on the feed before any of it is used for meat production.

On the other hand, in the direct turnover of grass to meat by the lamb the maintenance requirement of only one much smaller animal has to be met, and all feed surplus to this is used for growth. For these reasons the feed available will be used much more profitably directly by the lamb than if fed indirectly through the ewe in the form of milk. Obviously the employment of a milk producer any longer than necessary is a most expensive way of obtaining lamb meat. If lambs are weaned at 3½ to 4 months of age, the feed normally consumed by their mothers after that time can be used not only to sustain further lamb growth but to promote more rapid gains by cattle.

Though on an efficiently run fat lamb farm cattle are secondary to sheep, it is important to fatten and sell cattle at the earliest possible date. This can be done only if they are well fed throughout summer, which is a rare occurrence on a fully stocked



Ewes competing with their lambs for available feed and putting on unnecessary weight.

farm practising late weaning. Some beasts may have to be carried for a further winter if they are inadequately fed in summer.

Feed surplus to the requirements of both lambs and cattle can be used to build up reserves for flushing the ewe flock later in the season.

Feed for Flushing

Dr. L. R. Wallace at Ruakura has shown that the practice of fully feeding sheep for 4 to 6 weeks just before and during the tupping season can increase the lambing percentage by 20 per cent. This is important if the maximum output of meat is the aim. Early weaning makes possible the provision of feed for this purpose. Indeed, in many districts flushing feed is very difficult to obtain in most years unless early weaning is practised.

Hill country lambs and cattle are quite often short of feed over summer and any extra feed is used by them to very good advantage. A feature of weaning 3½ to 4 months after lambing is the immediate easing of the feed supply. The chances of obtaining well-grown hoggets are then considerably enhanced and ultimately wintering difficulties are simplified.

Studies by E. A. Clarke on the Ruakura Hill Country Station have shown that well-grown hoggets clip considerably more wool and have, as 2-tooths, a much higher lambing percentage than poorly grown ones. An inadequate supply of feed in early summer is often a major cause of poor growth in hoggets, and early weaning does much to offset this.

Thrift of Weaned Lambs

Feed saved in summer through early weaning of lambs can be put to good use, but to secure this feed the lambs' milk ration is cut out completely. If early weaning is to be successful, weaned lambs must do as well by themselves as they would do if left with their mothers.

On the Ruakura Hill Country Station this has been shown to be the case with Romney lambs. In three different seasons 12-week-old lambs were weaned on to spelled pastures and comparable groups were left with their mothers on good pastures for another 5 weeks. Both groups were very similar in liveweight and rate of growth and no real differences in fleece weights, worm burden, or general health could be detected between them. Similar trials will be carried out under fat lamb conditions, but the experiences of many farmers and the research findings at Ruakura already referred to indicate that much the same sort of results would be obtained on the lowlands as on the hills.

In most seasons the feed situation in December is usually such that ewes are competing with their lambs for available feed. Lambs start eating some grass at 2 weeks of age, and when 4 months old they rely almost entirely on it for growth. Denying them 1lb. of milk per day is more than compensated for by the extra feed made available to them by early weaning.

However, the growth-rate of lambs depends on the quality as well as the