

**Table 1—Effect of Condition on Fleece Weight of Ewe Hoggets**

Group	16 March		1 June		26 September		28 September
	Body weight (pounds)	*Grade	Body weight (pounds)	*Grade	Body weight (pounds)	*Grade	Fleece weight (pounds)
1	53.1	6.5	53.8	6.7	71.7	5.8	4.8
2	52.4	6.6	58.7	5.3	78.0	4.9	6.6

\* 1 = fat, 10 = emaciated.

An extreme case of irregular growth rate is illustrated in Fig. 3. During 14 weeks of winter growth almost ceased, resulting in an extreme break, much shedding, and extreme coting. The coting is caused primarily by fine shed fibres becoming entangled among the growing fibres and the mass felting so tightly that it cannot be separated without much fibre breakage.

**Pre-lambing and Double Shearing**

Pre-lambing shearing results in a fleece of full 12 months' growth free from the pre-lambing break. Experiments at Canterbury Agricultural College, Lincoln, showed no increase in wool production from winter shearing, but the wool was cleaner, brighter, and free from breaks and cotts. Such wool might be expected to be more valuable, but in general it does not seem to have brought increased prices. That has been the experience of many South Island farmers.

Double shearing results in two short fleeces which total little more than the weight of the normal 1-year fleece. Experimental results indicate that the increased wool growth seldom exceeds a couple of ounces—insufficient to cover the extra cost of a second shearing. Furthermore, the short wool is of restricted usefulness and unsuited for specialty uses such as in paper felts, spinners, and preparing. It meets a much poorer demand and the price is usually disappointing.

Many farmers claim marked increases in wool production as a result of both pre-lambing shearing and double shearing, but wool production is very closely associated with seasonal conditions, and the average fleece weight of a flock can vary appreciably from season to season. Controlled experiments have shown that time and frequency of shearing have little effect on the wool yield.

**Condition and Fleece Weight**

The effect of level of nutrition on the growth rate, fatness, and wool production of two similar groups of ewe hoggets is shown in Table 1. These hoggets were shorn as lambs in late January and divided into two groups of about 200 each in March. Thereafter they were run separately until they were shorn. The striking feature of the figures is the big drop in fleece weight (about 27 per cent.) associated with a comparatively small drop in liveweight, which allowing for wool carried is only 4.5lb., or less than 6½ per cent. Had both groups been

heavier throughout, a difference in liveweight of this order might have produced little effect on fleece weight, but such information has yet to be obtained. The lower average fleece weight of the second group may also be associated with greater irregularities in the shape of the growth curve between weighings.

The effect of level of nutrition on the wool production of 5-year-old breeding ewes is shown in Table 2. In these mature animals, each of which reared a lamb, the effect of low-plane feeding on wool production, though substantial, was less marked than in the hoggets. The greatest effect of poor nutrition on wool growth of breeding ewes occurs during pregnancy rather than during lactation, but the effect on lamb growth is the reverse.

A ewe has remarkable powers of preserving the developing foetus and in times of lowered nutrition suffers heavy loss of body weight and greatly reduced wool production to produce a normal full-term lamb. A lowered level of nutrition during pregnancy of breeding ewes in the South Island was responsible for a reduction in fleece weight of the order of 1 to 1½lb., but a similar change after lambing caused a reduction of only ¼ to ½lb.

**Table 3—Effect of Nutrition on Fleece**

	High plane	Medium plane	Low plane
Average fleece weight (lb.)	9.0	8.9	8.5
Fleeces graded very good (%)	12.4	8.6	5.3
Fleeces graded good (%)	33.0	33.3	12.6
Fleeces graded medium and poor (%)	54.6	58.1	82.1
Fleeces with break (%)	6.2	8.6	31.2
Fleeces cotted (%)	2.1	3.2	8.3

The effect on wool growth of plane of nutrition in 5-year-old ewes for short periods beginning on the average about 50 days before lambing is shown in Table 3. The high-plane ewes gained at about 5.2lb. per week and the medium-plane ewes at 2.9lb.; the low-plane animals were maintained at a constant mean liveweight of 124lb.

The medium- and high-plane ewes differed little in either fleece weight or quality, but these two groups showed marked improvements over the ewes kept at constant body weight. This points to the desirability of maintaining an optimum liveweight increase rather than aiming at the maximum. The precise definition of this optimum is not yet possible, nor can the most economic feeding level be described.

**Table 2—Effect of Plane of Nutrition on Fleece Weight of Breeding Ewes**

Group	Liveweight (pounds)					*Fleece weight (pounds)	Yield (per cent.)
	Feb.	May	Aug.	Oct.	Dec.		
1	100.5	113.0	135.3	129.2	127.5	9.3	71.0
2	97.7	111.4	126.4	124.5	119.3	8.8	70.2
3	98.8	101.4	108.7	107.9	109.4	7.4	71.2

\* Excluding belly wool and locks.

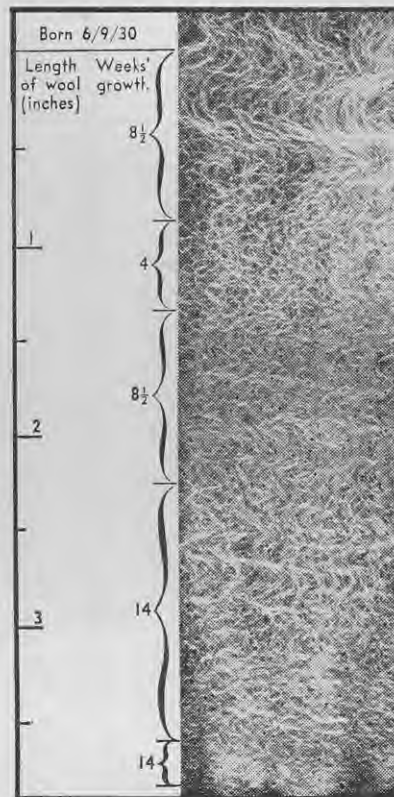


Fig. 3—The staple of a ram's wool showing extreme irregularity of growth. The last 14-week period was from 7 May to 13 August.

**Weight and Quality**

The fact that weight greatly overshadows quality in effect on wool returns has always been obvious. Crossbred wool is second in grade to Merino types in world trade and is used in articles in which quality in its broadest sense is less important. Such wool is often used only because better wools are more costly, but there is some premium for quality. The main quality considerations (within fineness grades) affecting the price per pound of fleece wool are as follows; originating from the days of wartime control, these types are now more or less generally recognised in the trade in New Zealand:—

**Good-super (A):** Good colour, well grown, sound, well skirted, free, may contain very slight fault, suitable spinner.

**Good (BB):** Good colour, well grown, well skirted, free from seed, may contain slight tender.

**Good-average (B):** Good topmaking, fair to good colour, skirted, may contain odd cott and/or very slight seed.

**Average (C):** Topmaking, fair colour, may contain few odd cotts, may be unskirted and/or bush stained and/or part seedy.

**Average-inferior (D):** Average to inferior topmaking, may be poor colour, may be cotty and/or seedy, unskirted and/or bush stained.