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Sheep - Cost of production

Farmers Report No. 174



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ECONOMIC ASPECTS OF
SHEEP PRODUCTION
IN TWO AREAS OF YORKSHIRE

A Report on a Survey
covering the years 1964-5 to 1965-6

by
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Foreword

In the course of its studies of farm enterprises in Yorkshire, the Agricultural Economics Section costed the 1965 and 1966 lamb crops on a selection of farms in the Ripon - Thirsk and Ripon - Leyburn districts. The results are contained in the following report written by Mr. N. B. LILWALL, who was also responsible for collecting the material on which it is based and for analysing it.

This study follows others made from time to time, the most recent one previously having covered the lamb crops of 1960 and 1961.

The University is grateful to the farmers who co-operated in the investigation on which this report is based. We hope they feel recompensed to some extent for the trouble they were put to in providing the basic information by the analysis they have already received of their own costs.

Since he completed the field work of this investigation, Mr. Lilwall has left this University in order to join the staff of the University of Minnesota. He insisted on taking the records he had collected here with him to U.S.A. so that he might write them up there in his own time. We are deeply grateful to him for the continued interest he has continued to show in this work, and for the outcome of his efforts, presented in the following pages.

W. HARWOOD LONG

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SUMMARY

1. This report gives the results of an economic survey of sheep production, carried out in Yorkshire over the two year period from October 1964 to September 1966.
2. Lowland ewe flocks gave average profits of £3 per head, and £10 per acre. Average gross margin per acre was £20.
3. Comparisons of results from each of two years of the survey showed that for these ewe flocks, a good performance one year was not necessarily repeated the following year. The main controllable factor influencing profit per acre appeared to be the stocking rates per acre.
4. Winter fattened sheep gave average losses of 4s. per head in 1964-5 and 9s. per head in 1965-6. The corresponding gross margins were 11s. and 8s. per head. (£13.8s. and £7.12s. per acre).
5. Upland ewe flocks gave average profits of 30s. per head and £3.10s. per acre, but these were cut by a third when the losses from holding lambs past the end of September, were included. The gross margin stayed just above £10 per acre.

INTRODUCTION

This survey, of sixty-five Yorkshire farms, covers two main areas. The first, containing about two-thirds of the farms, was in the cash root and arable area between Ripon and Thirsk. The second area, between Ripon and Leyburn contained a higher proportion of dairy and livestock farms, and included a group of eight upland farms, which are treated separately in Part II of this report.

The survey covers the 1965 and 1966 lamb crops and the 1964-5 and 1965-6 winter fattening periods. There were breeding flocks on nearly all the farms in the sample and on the majority some lambs were fattened in the winter months. On about half of the farms additional store lambs were bought for winter fattening.

In previous surveys of this type[≠] the Winter Fattening and the Breeding and Summer Fattening aspects of sheep production have been kept separate. This division has been retained in the present report.

Although Yorkshire has followed the national postward trend towards increasing sheep numbers, the relative importance of sheep enterprises on these lowland farms is still very small. They are often kept, purely as a convenient way of utilising necessary ley breaks, small areas of unploughable pasture, or cash crop residues. In general these sheep occupy only a small proportion of the farmer's time, and though their financial return is often correspondingly small, this is presumed by many to be of less significance than their contribution to the fertility of the land.

≠ I.G.Simpson, "Economic Aspects of Sheep Production on the Lowland Farm, 1962." Farmers' Report 156

I.G.Simpson, "An Economic Survey of Sheep Production, 1956".
Farmers' Report 132

Section I.THE LOWLAND SHEEP ENTERPRISETHE EWE FLOCK

The majority of flocks consisted entirely of Masham[‡] ewes, the remainder being mostly Scots Halfbreds or Down crosses. These were crossed almost exclusively with Suffolk tups. In this area the Suffolk is now predominant, and only the occasional Oxford remains to remind us of the Oxford dominance of just a few years ago.

Lambing conditions in 1965 were good but in 1966 snow and general dampness made them less favourable. Similarly the summer of 1965 was a little better for fattening lambs than the summer of 1966. In general, however, conditions in both years were sufficiently near to the norm, to make the results meaningful.

Financial Results

Table 1. gives a break-down of the costs and returns for the two years and emphasises that profit per ewe is mainly dependent on the total returns, since the total costs remain relatively constant. Thus profits in 1966 fell principally because there were fewer lambs to sell. In addition those that went fat were lighter than in the previous year, and those that were valued were valued lower than in 1965.

The most important charge is for grazing, followed by concentrate feed, flock depreciation and labour. The relationship between profitability, stocking rate and concentrate use will be examined later in this report, while an analysis of labour costs is given in the Appendix.

‡ The progeny of Swaledale or Dalesbred Ewes
and Teeswater Tups.

Table 1. AVERAGE COSTS AND RETURNS PER 100 EWES †

	Lowland Flocks	
	1965	1966
Farms in Group ††	48	47
Average flock size †	127	134
Ewe lambs in flock	6	6
Lambs per 100 ewes †††	161	154
<u>COSTS</u>	£	£
Concentrates	128	141
Forage crops	75	92
Grazing	256	230
Labour	104	110
Equipment depr.	13	12
Farm transport	7	7
Vet. dips and medicines	32	30
Marketing	7	7
Share of farm overheads	63	63
Flock depreciation	117	127
<u>TOTAL COSTS</u>	802	819
<u>RETURNS</u>		
Lambs	1031	976
Other Returns ††††	3	3
Wool	133	126
<u>TOTAL RETURNS</u>	1167	1105
<u>PROFIT</u>	365	286

† Including ewe-lambs tupped

†† Equival weight is given to each farm's average

††† Sold by, or valued on September 30th

†††† Lambs at foot and casualty lambs

The flock depreciation was calculated as the actual or imputed annual cost of maintaining the initial flock size and structure. Thus returns from cull, casualty and dead ewes and tups, were set against the current cost of a similar number of replacements. Where lambs are bought as replacements, their feed cost is charged to, and their wool output credited to, the breeding flock. Where these lambs are tupped, they are counted in the 'tupped ewes' figures, but since only a proportion actually lamb, they and their progeny, if any, are excluded from the lambing percentage figure, to make possible valid comparisons between farms with and without ewe-lambs in the flock.

Replacement Policy

The majority of flocks used shearling replacements, but quite a number also brought in some lambs as replacements. This latter practice, though cheaper, would seem likely to reduce the overall profit owing to the loss through a lower lambing percentage not being offset by the ewe-lamb appreciation. In addition management will be complicated when the ewe-lambs are lambed after the rest of the flock.

A variation of this ewe-lamb practice is to buy in mixed wether and gimmer Masham lambs for fattening, and to leave the tup with them, late in the season. These are cheaper than the more mature lambs, sold as gimmers, but are just as good as replacements since their smaller size tends to be a function of their age, rather than their potential quality as ewes.

With these smaller lambs the farmer now has two options. He can either retain only those which are in lamb and sell the remainder fat, in the spring, or he can retain all the gimmers as replacements and treat those that lamb as providing a bonus. In either case, once the decision has been made to buy in extra lambs for fattening, the question is really whether the savings resulting from providing ewe replacements in this way are as great or greater than the profits from winter fattening as such. The likelihood is that they will be although flock management will be more complicated.

Acreage Results

Table 2 gives the costs and returns on a per acre basis for the ewe flocks in both years. A slight improvement in the stocking rate in the second year, 1966, raised the total returns per acre, but increased costs caused the net profit to fall, while the gross margin was maintained.

The grazing cost per acre figures cover actual or estimated rental value, a share of the establishment cost, together with lime, fertiliser and general maintenance costs. In calculating the actual charge to the sheep, allowance was made for hay and silage cuts, for use by other stock and for the varying utilisation value at different times of the year.

Physical Results

Table 3 gives the physical inputs and outputs for both years. More hay, concentrates and led roots were used in 1966, but a smaller acreage of grass was used. Less lambs were produced and less were fattened during the summer - and those that were, killed out two pounds lighter, on average, than those in the previous year.

The grass acreage here has been adjusted for additional rough grazing, by including an allowance for the value of rough grazing expressed as additional acres of normal grazing.

The catch crop acreages in Table 3 are actual, but when calculating overall per acre return figures these have been scaled down according to the length of time the crops occupied the land. The beet top acreages were completely discounted, as was their value, since there was evidence that farmers were prepared to let them out, free of charge.

TABLE 2. AVERAGE [≠] COSTS AND RETURNS PER FORAGE ACRE

	Lowland Flocks	
	1965	1966
Farms in Group	48	47
Stocking rate, ewes/acre	2.8	3.1
Grazing Cost/Acre £	7.7	7.2
	£	£
Total Returns	34.9	36.5
Less Variable Costs	14.0	15.6
Gross Margin	20.9	20.9
Less Fixed Costs	10.0	11.4
Profit/Acre	10.9	9.5

≠ Equal weight is given to each farm's average

TABLE 3. AVERAGE INPUTS AND OUTPUTS PER 100 EWES AND EWE LAMBS.

	Lowland Flocks	
	1965	1966
Farms in Group	48	47
<u>INPUTS</u>		
Hay: cwts	95	130
Concentrates: cwts	98	105
Roots Led: cwts	358	424
Turnips & Swedes Folded: acres	0.4	0.4
Kale & Rape folded: acres	0.2	0.2
Beet Tops: Acres	1.5	2.2
Grass: acres	33.4	31.9
Labour: man-hours	361	382
<u>OUTPUTS</u>		
Fat lambs	36	31
Store lambs	8	7
Valued lambs [≠]	110	110
Weight of Fat Lambs lbs. d.c.w.	46	44

≠ Valued on September 30th

Profitability

In order to determine whether there were any particular practices or circumstances which led to high or low profitability, the flocks were ranked in order of their profits per acre and then split into upper profit, middle profit, and lower profit groups. Table 4, columns 1 and 3 summarises the results for 1965 and 1966.

The 1965 results in column 1 indicate that high profits per acre were associated with above average, flock size, lambing percentage and stocking rate. The 1966 results in column 3 confirm the association between high profits, low concentrate feeding and high stocking rates but flock size appears to be decidedly unimportant while the importance of the lambing percentage is brought into question by the fact that the middle group percentage is marginally better than that for the top group. Both, however, are still significantly better than the lower group percentage.

What is surprising is that of the 16 flocks in the upper group for 1965 only 9 remain in it on the basis of their 1966 results, four of the remainder falling over 15 places. Similarly 8 flocks move out of the lower group, 4 of them rising over 15 places.

To see exactly what had happened to the 1965 flocks, the 1965 ranking was used on the 1966 results to produce column 2. This revealed that by 1966 both the upper and lower 1965 groups had shifted towards the middle by 1966 and were in fact closer to the middle 1966 group than to the upper and lower groups. These profit shifts were accompanied by similar shifts in lambing percentage and concentrate feeding. The stocking rate, however, remained constant for the 1965 upper group, improved by 0.3 for the middle group and 0.4 for the lower group. It seems therefore that the stocking rate is the main management factor which can be adjusted to improve the profit per acre.

TABLE 4. LOWLAND FLOCKS - GROUPED ACCORDING TO PROFITS PER ACRE

	1 1965 Ranking 1965 Results	2 1965 Ranking 1966 Results	3 1966 Ranking 1966 Results
Farms in Group	16	16	16
UPPER GROUP			
Flock size	140	147	139
Lambs per 100 ewes	167	157	161
Concentrates fed, cwt/ewe	.82	.92	.83
Stocking rate, ewes/acre	3.4	3.4	3.8
Gross margin/acre £	28.8	23.1	31.8
Profit/Acre £	19.0	12.7	20.8
MIDDLE GROUP			
Farms in Group	16	16	16
Flock size	133	143	132
Lambs per 100 ewes	157	155	164
Concentrates fed, cwt/ewe	1.03	1.20	.98
Stocking rate, ewes/acre	2.7	3.0	2.5
Gross margin/acre £	18.5	18.1	16.0
Profit/Acre £	10.0	9.3	7.3
LOWER GROUP			
Farms in Group	15	15	15
Flock size	105	108	129
Lambs per 100 ewes	149	150	136
Concentrates fed, cwt/ewe	1.01	1.05	1.37
Stocking rate, ewes/acre	2.4	2.8	2.9
Gross margin/acre £	12.9	17.8	10.8
Profit/Loss/acre £	(+) 2.9	(+) 6.3	(-) 0.3

Flock Size

For these subsidiary types of sheep enterprise there seem to be no increased returns to scale beyond the 100 ewe flock size. Thus while the less profitable ewes tended to be concentrated in the smaller flocks, the most profitable flocks were fairly well distributed over all the size groups.

The average flock size rose by six ewes between 1965 and 1966. This was not caused either by a general increase, or by elimination of smaller flocks. The small flock group maintained its numbers and the flocks on the dairy and on the cash root farms in the sample showed gains and losses which were just about equally matched. The significant increases came on corn - livestock farms where all the changes were in the upward direction.

Comparisons with Earlier Surveys

It is of interest to compare the results obtained from this survey with those from earlier surveys of production from ewe flocks in the same area. The comparison is made in Table 5.

TABLE 5. GRASSLAND FLOCK SURVEY TRENDS IN YORKSHIRE

	1951/53 [≠]	1959/61 ^{≠≠}	1964/66
Ewes per flock	71	130	131
Lambs per 100 Ewes	143	139	158
Stocking: Ewes/Acre	2.1	2.9	3.0
Returns/Ewe	£10.14s.	£11.0s.	£11.7s.
Costs/Ewe	£6.18s.	£8.10s.	£8.2s.
Profit/Ewe	£3.16s.	£2.10s.	£3.5s.
Gross Output/Acre	£22.14s.	£27.0s.	£32.2s.
Profit/Acre	£8.11s.	£7.2s.	£10.3s.

[≠] Simpson, op.cit. 1956

^{≠≠} Simpson, op.cit. 1962.

In spite of the better lambing rates recorded in 1964/66, returns per ewe were only slightly above those of the earlier surveys and with fairly constant costs, profits per ewe also showed comparatively little change. Higher stocking rates, however, gave a marked improvement in the level of gross output per acre and to a lesser extent in profit per acre. The improved stocking rates involved a higher capitalisation in stock relative to the area used for sheep and in terms of purchasing power, the increases were of course much less satisfactory. Nevertheless it would appear that to a certain degree, farmers found in higher stocking rates, the means of offsetting the absence of increases in the price of sheep and their products.

Evidence from the present survey indicates that there is still scope for greater intensification on many farms. Any attendant increase in disease problems is now well within the capacity of most farmers to control. The risk of grass shortage in the summer is probably more serious. To some extent this can be avoided by making a bigger effort to market single lambs early, and in addition a small acreage of roots can be grown to help finish off lambs in the late summer.

WINTER FATTENING

Only about 27 per cent of the lambs produced by the ewe flocks were sold during the summer months. The remainder were, for the purposes of this report, valued at their open market value on September 30th in each year, and transferred from the ewe flock account into the winter fattening enterprise. In addition to these home reared lambs, about half the farms which practised winter fattening, bought in additional store lambs and in one or two cases the winter fattening enterprise was supported entirely by purchased lambs.

Financial Results

The 1964-5 winter was reasonably good for winter fattening and over the average 14 week fattening period the gross margin per head averaged about 11s. (See Table 6). However, when labour and other fixed costs were charged against the enterprise there was an overall net loss per head of 4s.

In 1965-6 conditions were less favourable. The wet weather was particularly damaging to beet top and root fattening enterprises on heavier land, and the average fattening period rose to 16 weeks. For these reasons both concentrate and forage feed costs were appreciably higher. The result was a fall in the average gross margin to under 8s. per head and an increase in the overall loss per head to about 9s.

TABLE 6. AVERAGE COSTS AND RETURNS PER 100 FATTENING SHEEP

	1964/5	1965/6
Farms in Group	49	42
Sheep per enterprise	195	233
Average weeks to sale	14	16
Average fat lamb e.c.d.w. lbs.	49	48
Variable Cost/week £	7.4	7.6
<u>COSTS</u>	£	£
Concentrates	46	57
Forage crops	40	55
Grazing	20	16
Labour	22	19
Equipment Depr.	10	9
Farm transport	2	2
Vet.dips & Medicines	3	3
Marketing	15	14
Share of Farm overheads	17	18
TOTAL COST	175	193
<u>RETURNS</u>		
Fat lambs	718	731
Other lambs	58	41
Wool	9	2
TOTAL RETURNS	785	774
less Store Cost	630	627
Feeders Margin	155	147
less Variable Cost	98	109
Gross Margin	57	38
Less Fixed Cost	77	84
LOSS/100 SHEEP	(-) 20	(-) 46

The per acre results (see Table 7) showed similar changes, with the average gross margin falling from £13.8s. to £7.12s. per acre, and the average loss per acre rising from £4.12s. to £9.4s.

Losses of this order were not generally regarded as too important, provided there was some margin over concentrate and other strictly variable costs. There are probably two main reasons for this. First, the number of acres sacrificed to the winter fattening enterprise is usually relatively small, compared to the total farm size, and also compared to the number of stubble, beet top and catch crop acres which benefit from having sheep run over them.

Secondly, many fixed cost items, and labour in particular, may well have had no more profitable use during these winter months. Where this is the case it would probably be more correct and certainly more realistic, to regard these items as 'free' during the winter. Thus, when the enterprise is brought in specifically to use up fixed resources which would otherwise remain idle, the important figure to look at is the gross margin. Provided this is positive, then the enterprise is at least covering its variable or direct costs, and contributing something towards the fixed costs of the farm and so in turn improving the profitability of the farm as a whole. It should be borne in mind, however, that the quantities of fixed resources and of land especially, available without alternative uses are often quite limited.

TABLE 7. AVERAGE COSTS AND RETURNS PER FORAGE ACRE

	1964/5	1965/6
Farms in Group	49	42
Sheep per Acre	19	20
	£	£
Total Returns	183.7	155.8
Less Store Cost †	147.4	126.2
Feeders Margin	36.3	29.6
Less Variable Cost	22.9	22.0
Gross Margin	13.4	7.6
Less Fixed Cost	18.0	16.8
LOSS/ACRE	4.6 LOSS	9.2 LOSS

† Valuation on September 30th or purchase price if bought later.

Fattening Methods

Table 8 gives the physical inputs and financial returns per 100 store lambs fattened under the three principle systems in this area. The 'Mainly off Grass' and 'Mainly off Roots' groups were mutually exclusive, but some of the farms in the 'Beet Top' group were also in one of the other groups.

These results indicate clearly how poor weather affected fattening enterprises in 1965/6. In the first instance the average length of the fattening period was prolonged for each system. This increased the amount of concentrate feed needed, especially for those sheep which had to be fattened without roots or tops, and in turn this was reflected in the lower gross margin results.

Gross margins per head generally increased with the length of the fattening period and for the Beet Top and Root groups they exceeded 10s. in each year.

The Beet Top group just managed to clear all costs in 1964/5 and in 1965/6 it had the smallest loss. The other two groups had losses which ranged up to 9s. per head in 1965/6.

TABLE 8. AVERAGE INPUTS AND OUTPUTS PER 100 FATTENING SHEEP
GROUPED BY SYSTEM

	1964-5			1965-6		
	Mainly off grass	Some Beet Tops	Mainly off roots	Mainly off grass	Some Beet Tops	Mainly off roots
Farms in Group	21	14	18	12	11	23
Average Weeks to sale	11	16	17	12	19	18
Variable Cost/Week £	7.6	7.6	7.2	8.0	7.1	7.4
<u>INPUTS</u>						
Hay, cwt.	10	32	49	21	39	51
Concentrates, cwt.	35	51	49	52	71	52
Roots led, cwt.	18	27	8	8	11	12
Turnips & Swedes folded, acres	0.1	1.2	1.9	0.0	1.0	1.7
Kale & Rape folded, acres	0.0	1.7	1.4	0.1	0.8	1.5
Beet Tops, acres	1.5	3.6	1.7	1.6	4.5	1.3
Grass, acres	3.2	1.9	2.1	2.9	2.3	2.0
Labour, man-hours	57	60	97	71	76	66
<u>OUTPUTS</u>						
Fat Lambs	86	99	98	95	96	97
Other lambs †	14	1	2	5	4	3
Weight at sale, lbs. d.c.w.	47	51	51	46	50	48
	£	£	£	£	£	£
Gross Margin	33	78	82	5	53	56
Profit/Loss	(-) 19	(+) 2	(-) 30	(-) 45	(-) 35	(-) 44

† Retained, store and casualty lambs

Purchase of Store Lambs

About one half of the farms bought in additional lambs to fatten during the winter, and in general these were the farms which were still fattening lambs into February and March.

Some farmers saw a disease risk in this practice, where they also had a breeding flock. An examination of the ewe flock results in 1965, however, showed that the performance of flocks on farms where store lambs were bought in was, if anything, above average.

To the small-flock farmer, this practice offers one real advantage. It gives him an opportunity to augment his winter fattening enterprise to a size which is worth while carrying through into the late winter.

Indoor Fattening

A number of the farmers in this survey were interested in indoor fattening, and one or two have tried it with a few lambs.

To the lowland farmer, with just a few late lambs left, indoor fattening offers a means of saving time and a way of quickly marketing the stragglers. The prospect of most lowland down-cross lambs being fattened inside does not however, seem near. There are three reasons for this. First, many of the winter fattening enterprises are maintained for the good they do to the land, and much of this would be lost if they were put inside. Secondly, most of these lambs are already fairly heavy by the autumn and it seems that only the lighter lambs have given better results by being taken inside.

Finally, with a rapidly improving root technology, involving precision drilling and chemical weed control, and with the prospect of really cheap barley fading into the background, it seems particularly unlikely that the balance of profit will cause a switch at this stage.

SECTION II.THE UPLAND SHEEP ENTERPRISE

This section is based on records from flocks which although not true hill flocks, were kept on poorer land, above 500 feet, and consisted of either Swaledale or Dalesbred ewes, put to Teeswater tups. Where pure bred hill flocks were also kept, drafts from these were used to maintain the flocks in the survey, otherwise replacements were bought from outside.

This sample of only eight farms, was small, and the results were very variable. Overall averages therefore should be considered cautiously. In addition, the snow in the winter and spring of 1966 produced a perverse labour effect, i.e. instead of the labour use rising with the bad conditions, it fell because of more urgent demands by the hill flocks.

Financial Results

Table 9 gives a comparison of costs and returns for the two years, each taken up to September 30th, when the remaining lambs were valued. The final column gives the complete results for the 1965 lamb crops including lamb fattening or maintenance costs from September 30th 1965, up to the time of sale.

This final column shows that the realised profit per ewe was some 9s. less than that indicated by valuing out the lambs on September 30th. It seems unlikely that this could all be due to inaccurate valuations and it certainly was not caused by any particularly bad turn in the market. In fact the results indicate a reasonable increase in actual returns over the estimated values. The real cause of the trouble was the cost of the concentrate feed used in the attempt to get a proportion of these later lambs graded.

Thus in general it did not pay these farmers to aim for the fat lamb market, under normal circumstances. Even in 1966, when the store market was very poor, there was no evidence to show that it was more profitable to bring lambs back from market and attempt to grade them, than to let them go for the low prices.

The main item of cost on these farms was for the grazing and this was fairly constant at about £2 per head. Labour was the next in importance, and as already explained there was a significant fall in this cost in 1966. This resulted in an overall rise in profit per head from about £1.8s. to about £1.13s, in spite of the decline in returns which was only partially offset by some successful Hill Sheep Subsidy claims.

TABLE 9.

AVERAGE COSTS AND RETURNS PER 100 EWES

	Upland Flocks and Lambs to Sept.30.		Upland Flocks and Lambs to Sale
	1965	1966	1965
Farms in Group	8	8	8
Average Flock Size	99	106	99
Ewe-Lambs in Flock	-	-	-
Lambs per 100 Ewes **	120	119	120
<u>COSTS</u>	£	£	£
Concentrates	36	46	57
Forage crops	35	41	53
Grazing	217	189	221
Labour	179	126	185
Equipment Depr.	9	8	10
Farm transport	4	5	5
Vet.Dips and Medicines	23	21	29
Marketing	8	6	17
Share of farm overheads	50	44	57
Flock depreciation	82	87	82
TOTAL COSTS	643	573	716
<u>RETURNS</u>			
Lambs **	731	671	760
Other returns ***	-	17	-
Wool	51	49	51
TOTAL RETURNS	782	737	811
TOTAL PROFIT	139	164	95

** Equal Weight is given to each farm's average

*** Sold by, or valued on Sept. 30th.

**** Lambs at foot, casualty lambs and hill sheep subsidy.

The gross margin per acre figures, given in Table 10 showed a slight improvement corresponding to the improvement in stocking rate, up to 2.3 ewes per acre, while the profit per acre figures merely emphasised the great impact which the fixed costs, and labour costs in particular, have on the overall result.

It should be noted, however, that while the relative changes in the per acre figures reflect fairly well what happened, their absolute values are only as good as our estimates of the grazing equivalents of the rough grazing and moor which some of the flocks used during part of the year.

TABLE 10. AVERAGE[±] COST AND RETURNS PER FORAGE ACRE

	Upland Flocks and Lambs to Sept. 30th.		Upland Flocks and Lambs to Sale.
	1965	1966	1965
Farms in Group	8	8	8
Stocking Rate, ewes/acre	2.0	2.3	2.0
Grazing Cost/Acre, £	4.4	4.2	4.4
Total Returns	£ 16.2	£ 17.0	£ 16.8
Less Variable Costs	5.8	6.5	6.7
Gross Margin	10.4	10.5	10.1
Less Fixed Costs	7.5	6.7	8.1
PROFIT/ACRE	2.9	3.8	2.0

± Equal weight is given to each farm's average

Physical Results

Table 11 gives details of the average physical inputs and outputs. It can be seen that the ewe concentrate feed is kept low and that extra requirements, in as far as they are met at all, are met by increasing the hay offered.

In 1965 one quarter of the lambs were sold fat and the rest were either sold as gimmers or as mixed stores. The very weak store market in 1966, however, caused more lambs to be sold fat, and in addition more lambs were held back until the store market improved.

TABLE 11. AVERAGE INPUTS AND OUTPUTS PER 100 EWES

	Upland Flocks and Lambs to Sept. 30th		Upland Flocks and Lambs to Sale
	1965	1966	1965
Farms in Group	8	8	8
<u>INPUTS</u>			
Hay, cwts.	90	123	95
Concentrates, cwts.	18	19	30
Roots led, cwts.	-	-	-
Turnips & Swedes folded, acres	-	-	-
Kale & Rape folded, acres	0.8	0.6	2.7
Beet tops, acres	-	-	-
Grass, acres	49.2	44.9	50.3
Labour, man-hours	622	438	645
<u>OUTPUTS</u>			
Fat lambs	2	12	38
Store lambs	61	42	90
Valued lambs *	57	66	-
Weight of fat lambs. lbs. d.c.w.44		40	41

* Valued on Sept. 30th

APPENDIX A.LABOUR REQUIREMENTS

The labour used on each flock was collected in two parts. The first was in terms of daily routine time - the time taken to look over the flock and feed it. The second was in terms of specific operations, such as clipping, dipping and dosing, which occurred intermittently.

The eight upland flocks were grouped together and the lowland flocks were split into three size groups. The main lambing period for each lowland flock was assumed to begin on March 1st and the overall time sequence was adjusted to correspond to this. Routine time averages were then calculated on a monthly basis, for each group. These group averages were then adjusted to give data for rounded flock sizes of 100 for the upland group and 50, 100 and 200, for the lowland groups.

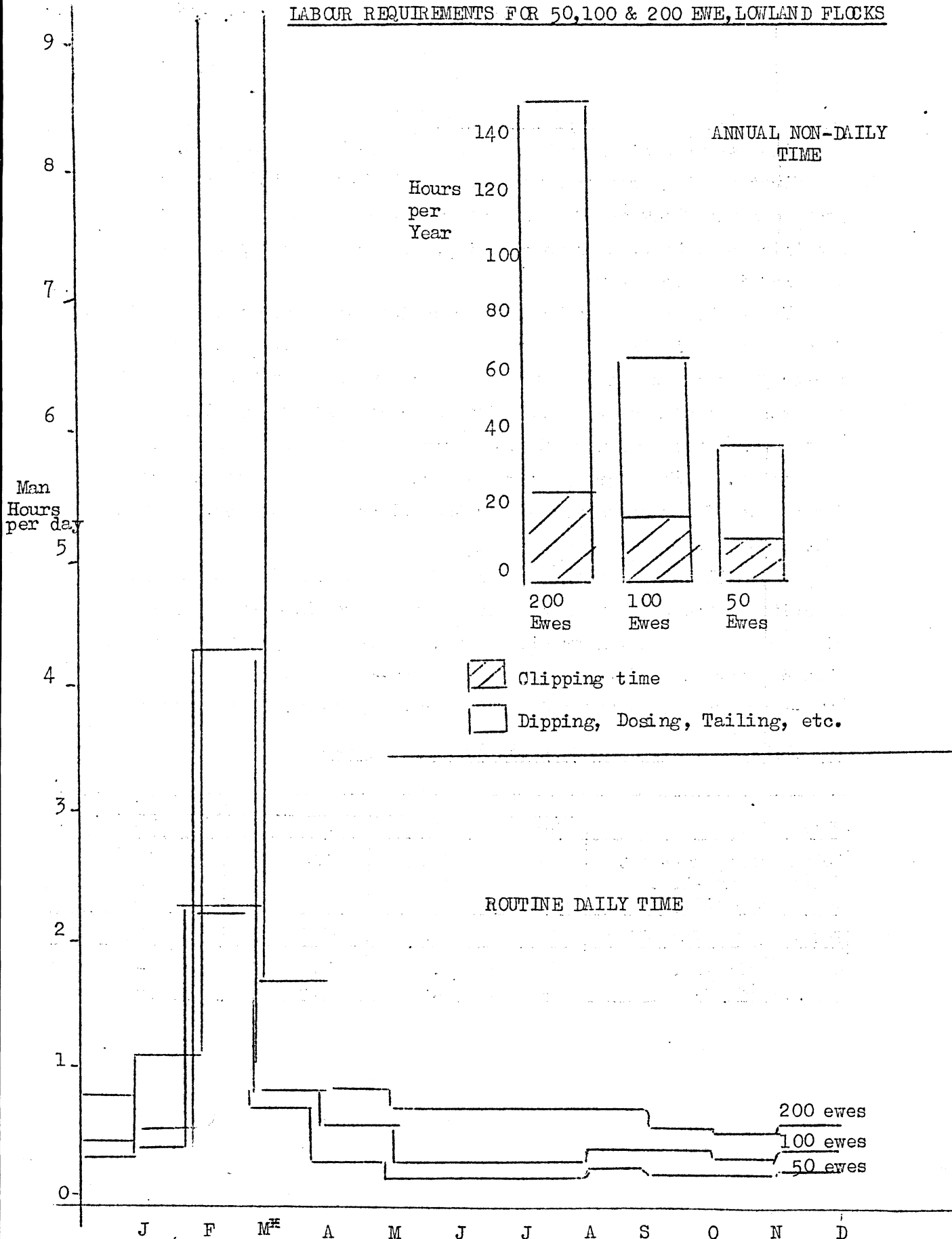
Table 12^{the} and Chart^{on page 23} summarise the results for 1965-6 season.

In spite of the bad winter the lowland flock results were very similar to those of the previous year. The upland results, however, showed a marked fall in labour use in 1965-6 as compared with 1964-5 and so the summarised results probably represent a minimal need.

TABLE 12 FLOCK LABOUR REQUIREMENTS 1965-6

Flock Size	Lowland			Upland
	50	100	200	100
Total Daily, man-hrs.	164	272	546	375
Clipping, man-hrs.	14	20	28	17
Other non-daily, man-hrs	29	50	122	39
Total Annual Farm Time	207	342	696	431
Casual Clipping, £	0.9	4.3	7.8	-
Lambing Bonus, £	-	0.5	4.8	-

LABOUR REQUIREMENTS FOR 50, 100 & 200 EWES, LOWLAND FLOCKS



⌘ Adjusted for all lambing to start on March 1st

APPENDIX B. NOTES ON THE COSTING METHOD

- a) Bought Foods have been entered at cost price and include minerals.
 b) Homegrown Cereals have been entered at their estimated market value at the time of use.
 c) Other Homegrown Foods have been entered at their cost of production, based on the following standard values.

		<u>per cwt</u>
		s. d.
Hay		5. 9.
Silage		2. 0.
Mangolds	led out	2. 2.
Swedes and Turnips	" "	2. 6.
Potatoes	" "	3. 7.
		<u>per acre</u>
		£. s. d.
Swedes & Turnips folded		25. 0. 0.
Kale	"	18. 0. 0.
Rape	"	8.10. 0.
Beet Tops	"	nil

- d) Grazing charge is based on the actual cost of that proportion of the grass which the sheep used.
 e) Labour has been charged at 5s.9d. per hour throughout.
 f) Equipment includes nets, stakes, troughs and racks for which a depreciation charge is made.
 g) Tractors and Vehicles are charged at 4s.6d. per hour while used in connection with the sheep. This excludes transport to market which is charged under marketing.
 h) Marketing includes commission and transport charges on lamb sales.
 i) General Farm Overheads are taken as 10 per cent of all the costs, excluding flock depreciation and the charge for store lambs for winter fattening.
 j) Store Sheep have been charged at valuation price on October 1st or purchase price after that date.
 k) Flock Depreciation has been calculated as the actual or imputed annual cost of maintaining the initial flock size and structure. Thus returns from cull, casualty and dead ewes and tups, are set against the current cost of a similar number of replacements.

Where lambs are bought as replacements, their feed cost is charged to, and their wool output credited to, the breeding flock.

Where these lambs are tupped, they are counted in the 'tupped ewes' figure, but since only a proportion actually lamb, they and their

progeny, if any, are excluded from the lambing percentage figure, to make possible valid comparisons between farms with and without ewe lambs in the flock.

l) Variable Costs include the full cost of corn, concentrates, veterinary expenses, equipment, marketing, non-regular labour and flock depreciation charges, together with the variable elements in the other food, grazing and vehicle costs.

m) Acreages Where the flock uses rough grazing, the acreage shown includes an allowance for the value of this expressed as additional acres of lowland grazing. Similarly, where sheep are fed on catch crops the acreage used has been scaled down according to the length of time the crop occupied the land.

n) Averages All individual farm averages have been given equal weight when calculating group averages.

