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Sheep cost of production

ECONOMICS OF LIVESTOCK PRODUCTION

WINTER FATTENING OF SHEEP 1949-50

by

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WINTER FATTENING OF SHEEP 1949-50

This report covers the costs and returns from fattening sheep on 17 arable farms situated in Fife (8), Berwickshire (5), Roxburghshire (2), Peeblesshire (1) and Angus (1).

Of the 4,350 sheep costed, 55% were bought in as stores for fattening and the remaining 45% were both bred and fattened on the same farm. The majority of the purchased stores were bought in August and September, but some were bought as early as July and others as late as November. Generally speaking, they were put on to roots in October and November. Seven flocks were put on to roots in each of these two months, one was put on to roots in September and the remaining two in December.

Sales took place chiefly from December to April. From December to February the number sold showed a steady rise, falling steadily in March and April. Sales in May were negligible, as also were those in November.

Home-grown foods, which, as later tables show, figured more prominently in costs than did purchased foodstuffs, consisted in the main of turnips and oats. All the farmers taking part in this enquiry fed their sheep on turnips to some extent, although only seven flocks experienced actual folding on turnips. With only one exception, the whole of the flocks costed were, in varying degree, fed on oats. Next in importance in the home-grown feedingstuffs came hay, which was fed to eight of the flocks investigated. (Three other flocks, however, fed purchased hay). Sugar beet tops were fed in four instances, two farmers fed rape, another beans and there was one instance of kale feeding.

The feeding of purchased foods showed the predominance of cake, which was closely followed by beet pulp. There were one or two instances of fish meal, flaked maize and dried grains being fed.

As to breed of sheep, Suffolk and Oxford crosses were by far the most prominent type. They were represented in 15 out of the 17 flocks costed, and made up 75% of the sheep in the sample. The only other breed appreciably represented, was the half-bred (Border Leicester X Cheviot) with 20% of the total number of sheep. The remaining 5% comprised Blackface, Cheviot and Greyface (Border Leicester X Blackface). None of these last-mentioned breeds wholly comprised, or, indeed, were in the majority in, any of the flocks costed.

Some of the sheep initially within the scope of this report, but which were sold as stores, have been excluded from the data given herewith. Costs were allocated to these store sheep in proportion to the number of days which they spent on turnips. Casualties and deaths have been included in the report and costs were allocated on the same principle as was used in the case of store sheep.

The death and casualty rates may not appear to be very heavy, but considering the precariousness of feeding sheep during this past winter of 1949-50, the incidence of deaths and casualties has had a marked effect on profitability and unprofitability per head.

	Average per 100 sheep in all flocks	Average per 100 sheep in 7 profitable flocks	Average per 100 sheep in 10 unprofitable flocks
Casualties	2.18	2.23	2.15
Deaths	.299	.163	.397

Financially /

Financially, the effect of these deaths and casualties, spread over all the 17 flocks costed, was to increase the average loss on the fat stock ultimately sold by 2/9d. per head, raising the loss from 3/4d. per head (excluding deaths and casualties) to 6/1d. per head (including deaths and casualties). In the case of one flock, the incidence of casualties meant the difference between making a profit and running at a loss. Final results showed that seven of the flocks costed made profits, equal to 7/10d. per head when casualties and deaths are included, and ten showed losses, equal to 15/10d. per head.

Size of flocks varied from just under 100 to just over 400, as shown in the appended scale of distribution.

Distribution of Flock Sizes

No. of Sheep	Under 100	100 - 199	200 - 299	300 - 399	400 & Over
No. of flocks	1	5	7	2	2

As will be seen in the table below, fat prices were slightly higher than in 1949, while the store prices for 1949 were on the whole lower than those in the corresponding period of 1948. The price indices were provided by the Department of Agriculture for Scotland.

Price Indices for Store and Fat Sheep in Scotland
1927/29 = 100

Store Sheep			Fat Sheep		
1948		1949	1949		1950
July	233	221	January	197	201
August	275	245	February	201	206
September	239	248	March	204	214
October	259	226	April	214	221
			May	214	221

Only in the month of September which, however, was one of the main months for buying stores, did 1949 store prices exceed the corresponding 1948 prices. However, other things remaining the same, these indices might suggest that there would have been an increase in profitability over 1948-49.

SECTION II. SUMMARISATION OF THE MAIN DATA COLLECTED

This section is taken up entirely with the presentation of data collected during the course of the 1949-50 investigation. The averages used are unweighted. The sample has been treated as consisting of 17 separate flocks rather than of 4,350 different sheep. The averages given below are thus simply the averages of the average figures for each individual flock. For comparative purposes, separate figures are given for the seven profitable flocks and the ten unprofitable flocks.

TABLE I. /

TABLE I. ANALYSIS OF COSTS AND RETURNS, 1949-50 : 17 FLOCKS

	All Flocks		Seven Profitable Flocks		Ten Unprofitable Flocks	
	4350 Sheep		1834 Sheep		2516 Sheep	
	Average cost per head	Average % of gross costs	Average cost per head	Average % of gross costs	Average cost per head	Average % of gross costs
	£ s. d.		£ s. d.		£ s. d.	
Food - Purchased	-. 5. 8	3.2	-. 5. 5	3.1	-. 5.10	3.3
Home-grown	1.16. 4	20.2	1.10. 5	17.6	2. -. 5	22.0
Labour - Shepherd	-. 5. 1	2.9	-. 5. -	2.9	-. 5. 1	2.9
Other	-. -. 5	.2	-. -. 1	.04	-. -. 8	.3
Power - Tractor	-. -. 7	.3	-. -. 1	.03	-. -.10	.4
Horses	-. -. 1	.03	-. -. 1	.01	-. -. 1	.03
Sundry Expenses	-. 1.10	1.04	-. 2. -	1.1	-. 1. 9	1.00
Overheads	-. 1. 7	.7	-. 1. 6	.8	-. 1. 8	.8
Total Feeding Costs	2.11. 7	28.6	2. 4. 7	25.6	2.16. 4	30.8
Initial Cost of Sheep	6. 3. 5	71.4	6. 5. 7	74.4	6. 2. -	69.2
TOTAL COSTS	8.15. -	100.0	8.10. 2	100.0	8.18. 4	100.0
Less Credits	-. 1. 1		-. -.10		-. 1. 3	
NET COSTS	8.13.11		8. 9. 4		8.17. 1	
RETURNS	8. 7.10		8.17. 2		8. 1. 3	
PROFIT or LOSS	-. 6. 1 Loss	3.1	-. 7.10 Profit	4.8	-.15.10 Loss	8.7

Although the presentation of separate sets of figures for profit-:able and for unprofitable flocks may be of some interest, it would not be advisable to attempt to draw any definite conclusions from the figures given herewith. The sample is a small one and thus the average figures given have tended to be distorted by the existence in particular cases of abnormally high or abnormally low costs. For example, in the case of costs of purchased foods per head, the average cost is higher in the unprofit-:able than in the profitable flocks. This difference would be further accentuated were it not for two instances of unprofitable flocks being fed no purchased foods whatsoever. In the case of average initial costs per head the opposite is the case. The removal of one extreme item in both the unprofitable and profitable sections would bring average initial costs in each case very near to the average initial cost for the sample as a whole. More significance should be attached to the average figures for the whole sample, rather than to any dissimilarities which arise between profitable and unprofitable flock averages. In so far as the sample is one representative of the winter sheep fattening industry in the region, the average figures for the whole sample are an attempt to give some broad, general indications of conditions in the industry.

TABLE II. /

TABLE II. DATA REGARDING DEADWEIGHTS AND LENGTH OF FATTENING PERIOD

	Average All flocks	Average for 7 profitable flocks	Average for 10 unprofitable flocks
Estimated deadweight of stores	57.17 lb.	58.06 lb.	56.55 lb.
Estimated deadweight of fat sheep sold	69.62 lb.	73.60 lb.	66.84 lb.
Increase in estimated deadweight	12.45 lb.	15.54 lb.	10.29 lb.
Number of days fed per head	106 days	102 days	109 days
Estimated deadweight increase per day	.122 lb. per day	.157 lb. per day	.098 lb. per day

The average price for store sheep at the opening of the investigation was 2/2d. per lb. for both profitable and unprofitable flocks, the range of opening prices being from 1/11d. per lb. to 2/5d. per lb.

The average return for fat sheep was 2/5d. per lb. The range of fat prices received was from 2/3d. per lb. up to 2/8d. per lb. depending on the month in which the sheep were sold and also to some extent on the weight of the sheep sold, there being a tendency for heavier sheep to return higher prices.

TABLE III. COSTS OF ACHIEVING DEADWEIGHT INCREASE

	Average costs for all flocks (per cwt. dead weight increase)	Average cost per cwt. d'wt. increase for 7 profitable flocks	Average cost per cwt. d'wt. increase for 10 unprofitable flocks
	£ s. d.	£ s. d.	£ s. d.
Labour	3. 2. 6	1.19. 9	3.18. 5
Power	-. 7. 1	-. -. 7	-.11. 7
Sundry Expenses	1. -.11	-.16. -	1. 4. 3
Purchased Foods	2.16. -	2. 4. 5	3. 4. 2
Home-grown Foods	22. 9. 3	11.13. -	30. -. 6
Overheads	-.14.11	-.10. -	-.18. 3
Total cost per cwt. dead weight increase	£30.10. 8	£17. 3. 9	£39.17. 2

Table III brings out such a striking divergence between average figures for profitable and unprofitable flocks that, in spite of what has been said about these comparisons, one is tempted to draw the conclusion that this was partly due to shrewd buying on the part of profitable producers as a whole, not so much through obtaining stores at a low cost per lb. as through obtaining a type of store which is likely to put on weight quickly.

SECTION III. /

SECTION III. A 3-YEAR COMPARISON 1947-48 to 1949-50

Table V below compares costs and returns for the past three years.

TABLE V. AVERAGE COSTS AND RETURNS
1947-48 to 1949-50

	1947-48	1948-49	1949-50
No. of Sheep costed	8,810	5,467	4,350
No. of Flocks	33	20	17
Length of Fattening Period (days)	99	110	106
	Average per head	Average per head	Average per head
	£ s. d.	£ s. d.	£ s. d.
COSTS			
Feedingstuffs - Purchased	-. 2. 8	-. 2. 6	-. 5. 8
- Home-grown	1.13. 2	1.15. 2	1.16. 4
Labour	-. 4. 7	-. 5. 6	-. 5. 6
Power - Tractor	-. -. 3	-. -. 5	-. -. 7
- Horse	-. -. 2	-. -. 2	-. -. 1
Sundry Expenses and Overheads	-. 2. 9	-. 3. 1	-. 3. 5
TOTAL FEEDING COSTS	2. 3. 7	2. 6.10	2.11. 7
Initial Cost of Sheep	5. 6. -	5. 9. 1	6. 3. 5
TOTAL COSTS	7. 9. 7	7.15.11	8.15. -
Less Credits *	-. 1. 4	-. 1. 1	-. 1. 1
NET COSTS	7. 8. 3	7.14.10	8.13.11
RETURNS	7. 6.11	8. -. 8	8. 7.10
PROFIT or LOSS	-. 1. 4 Loss	-. 5.10 Profit	-. 6. 1 Loss
WEIGHTS			
Deadweight at start (lb.)	51.0	52.1	57.17
Deadweight at grading (")	67.05	68.0	69.62
Deadweight Increase (")	16.05	15.9	12.45
Deadweight Increase per day (")	.162	.145	.122

* Credits - receipts from the Grading of Casualties

Unfortunately, the sample over the three years investigation has not remained the same, but the above table does give some indication of the change in conditions between 1947-48 and 1949-50. It shows that three winters of fattening sheep on roots have revealed fluctuations of fortunes. After an average loss of 1/4d. per head in 1947-48, 1948-49 showed an average profit per head of 5/10d., only for 1949-50 to show a complete reversal of the previous year's position with an average loss per head of 6/1d.

Total feeding costs have shown a progressive increase throughout the three years, the most noticeable increase in any single item being the cost of purchased feeding stuffs per head between 1948-49 and 1949-50. This is partly due to the increased price of purchased feeding stuffs consequent on the partial withdrawal of the subsidy in 1949, and also partly due /

due to the greater amounts of purchased food which had to be fed in order to compensate for a somewhat disappointing root yield in 1949-50

Another prominent feature of the year-by-year increases in total cost is the increase in average initial cost per head of the store sheep, amounting to 14/4d. between 1948 and 1949 compared with a more modest increase of 3/1d. per head between 1947 and 1948.

One can reasonably suppose, also, that root crop yield may have had some influence on profitability. Generally speaking, the 1948-49 turnip yield was better than that of the other two years; and the fact that, on the average, more days were spent on turnips in 1948-49 than in the other two years, along with the fact that least was spent on purchased feedingstuffs per head in the same period, would seem to bear this out.

Average returns, like average costs, have risen every year, but with no noticeable degree of harmony between the two. The increase in average net cost of 6/7d. per head between 1947-48 and 1948-49 was more than accounted for by an increase in average returns of 13/9d. per head, and the loss shown in 1947-48 was thus converted to a profit in 1948-49. Average returns per head increased again in 1949-50 by 7/2d. per head but unfortunately for those concerned, average costs rose by 19/1d. per head. The average price per lb. deadweight realised in 1947-48 was just under 2/2d., in 1948-49 it was 2/4½d. per lb. and in 1949-50, 2/5d. per lb. It is somewhat ironical that the sheep fattener should have received an increased return of 2d. per lb. deadweight to meet an increase in cost which was very modest compared with an increase in cost the following year for which they were only to receive an increase of ½d. per lb. deadweight.

SECTION IV. FACTORS AFFECTING PROFITABILITY

One can postulate certain factors which might be expected to affect profitability. Pride of place might be taken by the cost per lb. paid for store sheep, followed by length of fattening period and its relation to deadweight increase, the technique of feeding adopted and the type of stores bought i.e. their breed, weight and condition.

If the 17 flocks are placed in order of profitability per head there is no semblance of any correlation between profitability and the cost of stores per lb. deadweight. The average cost of stores for all flocks was 2/2d. per lb. deadweight. The average costs for both the profitable and unprofitable flocks were, by coincidence, the same figure. Curiously enough, the flock with the lowest average store cost per lb. deadweight was an unprofitable one, while the flock with the highest average store cost per lb. was among the seven profitable flocks. It is not suggested that this shows that store costs per lb. are insignificant in determining the profitability of fattening sheep. Indeed, considering that initial costs comprise, on the average, 71% of total costs, store costs per lb. must be of some importance. Naturally, the higher the price per lb. paid for stores the lower will tend to be the profitability of fattening sheep, and vice versa.

But the mere fact that one farmer was able to make a profit with a margin of only ½d. per lb. between store costs and fat returns per lb. deadweight shows that the opportunity foregone by paying a relatively high price for stores can, within limits, be regained by careful management during the fattening period. It must be emphasised, however, that this was an isolated case, and may have been influenced by fortuitous circumstances. The range of store costs for the remaining six profitable herds was from 2/-¼d. to 2/3d. per lb. estimated deadweight, and the margins between store costs and fat returns per lb. ranged from 2½d. up to 4¼d.

Reference /

Reference has already been made to the preponderance of initial costs in the composition of gross costs - a matter likely to weigh heavily in determining profitability - and to the absence of any cor-:relation between store prices per lb. and profit per head from flock to flock. It might therefore seem logical that we should turn from a con-:sideration of quantitative to qualitative factors. What the farmer needs is a flock which can put on plenty of weight and the quicker it puts on weight the better. It is better to pay a relatively high store price per lb. for a sheep which will thrive, than to pay a low store price per lb. for a sheep which will not thrive. This is where that immeasurable qualitative factor, the acumen of the individual farmer, plays a very large part in affecting profitability.

Table II showed that, on the whole, profitable flocks were fed for a shorter period than were the unprofitable flocks, but if individual figures are studied there is little or no correlation between profitability per head and the number of days spent on turnips. Short fattening periods were by no means confined to profitable flocks, just as long fattening periods were by no means confined to unprofitable flocks.

Unfortunately, the examination of individual costings fails to bring out any one overriding quantitative factor affecting profitability, and one can therefore only say, somewhat platitudinously, that there are several factors which might be expected to affect profitability, but they are so interwoven and act so indiscriminately that it is impossible to draw any conclusions as to the part played by any one factor. Some farmers lost on the swings what they gained on the roundabouts, and others were unfortunate enough to lose on both the swings and the roundabouts.

It would be dangerous to turn to the average figures and attempt to draw conclusions from these as to the strength with which certain factors affect profitability. These averages tend to hide a multitude of variations, and individual figures are therefore the only ones likely to provide a reliable pointer. Because of the variety of factors operating, it is almost impossible to pick out one single pointer to success.

SUMMARY AND CONCLUSIONS

The present report on the costs and returns from fattening sheep on roots is the final report in a series of three consecutive annual investigations, and the year 1949-50 has turned out financially to be the worst of the three. In 1947-48 there were 21 profitable and 15 unprofit-:able flocks in the sample, though there was an average loss of 1/4d. per head. In 1948-49 there were 15 profitable to 5 unprofitable flocks, with an average profit of 5/10d. per head. In 1949-50, for the first time, unprofitable flocks outnumbered those which were profitable by 10 to 7, with an average loss of 6/1d. per head.

It has been a tale of steadily rising feeding costs calling for a wider margin between store price and fat price. In 1948-49 this need was met, but in 1949-50 the increased costs of production were far from covered by increased returns. Because of these rising production costs, farmers need an increasing margin between store price per lb. and fat price per lb. if they are to stand a reasonable chance of making a profit. Unless store prices come down because of increased supplies coming on to the market, present fat prices will still leave the feeder unable to cover his costs.

ACKNOWLEDGMENT

Grateful acknowledgment is made to all farmers who have co-:operated in collecting the necessary information. It is only hoped that each farmer will find this report useful enough to compensate him for his trouble taken in compiling the data in order to furnish us with accurate records.

APPENDIX. METHOD OF COSTING PROCEDURE ADOPTED

Foods

The costs of the purchased feedingstuffs are the actual prices paid, including delivery.

The more important home-grown foods were valued as follows:-

Turnips	£1.16/-	per ton, lifted shawed and carted off.
Turnips	£1.10/-	per ton, growing in the field.
Beet Shaws	£1. 5/-	per ton.
Bruised Oats	£16	per ton.
Hay	£5.10/-	per ton.

Standard residual manurial values have been deducted from the gross cost of both purchased and home-grown foods to arrive at the costs shown in the tables.

Labour

This is based on the actual wages (including perquisites) paid to the shepherd. Where the farmer himself worked with the sheep, his labour has been included at the current rates. Other labour comprises mainly carting-out feedingstuffs, cutting turnips and moving netting.

Power

The cost of any work done by tractors and horses used for the haulage of feedingstuffs and equipment has been charged at 3/8d. per hour and 1/3d. per hour respectively.

Sundry Expenses

These comprise chiefly droving, haulage, dip, medicines, insurance, petrol for turnip cutter and incidental replacements of equipment.

Overheads

These have been calculated at the following rates, based on the direct labour and power used - 5/- per £ of direct labour, 3/- per tractor hour and 9d. per horse hour.

Initial Cost of Sheep

This consists of the actual costs of those sheep which were purchased, plus, in some cases, the cost of feeding them until they were put on to turnips. In the case of home-reared stores, the initial costs were the farmers' estimates of their market value.

Credits

Receipts from the grading of casualties have been shown as credits and deducted to arrive at net costs.

Returns

These are the receipts from the sale of fat sheep.

Store Sheep

The costs and returns from sheep which were initially within the scope of investigation but which were later sold as stores have been completely excluded from the analysis of costs and returns.