Cattle – cost of production O.S.

THE NORTH OF SCOTLAND COLLEGE OF AGRICULTURE

AGRICULTURAL ECONOMICS DEPARTMENT

ECONOMIC REPORT NO. 26

CALF COSTS 1950/51 - PART II

by

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May, 1952.

AGRICULTURAL ECONOMICS DEPARTMENT.

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CALF COSTS 1950-51 PART II

Part I of this report concerned the results of 15 herds in the County of Caithness and this the second part concerns results from 20 herds in the other counties of the North of Scotland.

The 20 herds can be divided into two groups thus:

Group I : Results from 12 herds receiving the Hill Cattle Subsidy
Group II : Results from 8 herds not receiving the Hill Cattle Subsidy.

A synopsis of the standards used in the costings appears in Appendix II. In considering these results it should be constantly remembered that the sample of farms considered was small.

GROUP I - RESULTS FROM 12 HERDS RECEIVING THE HILL CATTLE SUBSIDY

The herds were widely scattered, three being in Upper Banffshire, 5 in the Findhorn-Spey Area, 2 in Ross-shire and one each in Aberdeenshire and Kincardineshire.

There was a proportion of rough grazing or hill on each farm, and the average acreage was 162 acres arable and 400 acres hill. This gives a rather false impression since 6 of the farms had under 100 acres arable and on 9 of them the farmer and his family formed the main part of the labour force of the farm.

LOCATION. The variable nature of these farms is illustrated when we consider the altitude and the distance from the sea. Except in parts of Aberdeenshire and Caithness, it is true to say that the higher the land and the further from the sea it is, the bleaker the climate becomes and Table I shows this data for these farms.

TABLE I

Altitude and Distance from the Sea

Average Altitude	0-300 ft.	300-600 ft.	600-900 ft.	over 900 ft.
No. of Farms	1	4	4	3
Distance from the sea	Under 5 miles	5-15 miles	15-25 miles	over 25 mls.
No. of Farms	2	3	3	4

SUBSIDIES. The Hill Sheep Subsidy was received on 4 farms and 9 of the farmers received Marginal Land Grants.

SIZE OF HERD. The average number of cows kept was 21.5 with three farmers having under 10 cows and 5 between 10 and 20 cows. The average number of cows in the four remaining herds was 22.5, 41, 49.5 and 67 cows respectively.

METHOD OF REARING. Wintering: 6 herds were kept inside
3 herds were completely out-wintered
3 herds were partially out-wintered (being out all day)

Two of the completely out-wintered herds consisted of Highland cross Shorthorn cows whilst the third herd was pure Shorthorn.

The breeds kept in the partially out-wintered herds were -
Highland cross Shorthorn 1: Mixed 1: Aberdeen Angus 1.

The other herds were Aberdeen Angus 3: Mixed 3.

SEASON. The winter 1950-51 was very long and the average time of winter feeding was 182 days. On some of the farms food ran short and this was aggravated by the slow growth of grass in the early summer. Later in the season the grazing was good.

METHOD OF COSTING The breeding cows are kept mainly for rearing calves and since one calf is usually produced each spring, the cost of keeping a breeding cow for a year will also be the cost of a calf to the age of weaning. Minor adjustments have to be made to allow for dairy cows and barren cows. A bull service charge is also added and in some cases a depreciation cost has been incurred. Some of the calves were sold in Autumn Sales 1951, but the majority were retained on the breeding farm.

COST OF KEEPING THE COWS: YEAR 1950/51

The cost per week and the cost for the whole year are set out in Table II

TABLE II

Average Cost of Keeping a Breeding Cow for 12 months 1950/51

	Item	Cost per Week	Cost per Year	
		s. d.	£. s. d.	£. s. d.
WINTER 1950/51 26 weeks	FOODS Turnips	8. -	10. 7. 10¾	
	Eating Straw	1. 10½	2. 8. 8½	
	Bedding Straw	1. 4½	1. 15. 7¾	
	Oats	1. 8¼	2. 3. 7½	
	Hay	-. 8¼	-. 17. 10¾	
	Silage	-. 7¼	-. 15. 8¼	
	Purchased Foods	-. 9¼	1. -. 4¾	
	Winter Grazing	-. -¼	-. -. 7¾	
	GROSS FOODS	15. -¼	19. 10. 6	
	R. M. V.'s	2. 3½	2. 19. 1½	
	NET FOODS	12. 9	16. 11. 4½	
	Man Labour	3. -¼	3. 18. 9½	
	Power	-. 2¾	-. 5. 7	
	Overhead Costs	1. -	1. 5. 8¼	
	Miscellaneous	-. 3½	-. 7. 9	
	WINTER COST	17. 3½	22. 9. 2¼	22. 9. 2¼
SUMMER 1951 26 weeks	Grazing	3. 2¼	4. 2. 9	
	Labour	-. 8	-. 17. -¼	
	Overhead Costs	-. 2½	-. 5. 10¾	
	SUMMER COST	4. -¾	5. 5. 8	5. 5. 8
GENERAL	Cow Depreciation			1. 10. 11¾
	Bull Charge			1. 5. -
	NET COST PER COW PER YEAR			£30. 10. 10

Of the various items making up the cost, winter foods are easily the most important and formed 54.2% of the total cost. Table III compares the results from your farm with the average figures.

TABLE III

Cost of a Cow for the year 1950/51

Percentage Costs	Average £ s. d.	Average Percentage	Your Farm £ s. d.	Your Farm Percentage
Winter Foods	£16: 11: 4½	54.2		
Labour & Power	5: 1: 4¾	16.6		
Grazing	4: 2: 9	13.5		
Overhead Costs	1: 11: 7	5.2		
Cow Depreciation	1: 10: 11¾	5.1		
Bull Charge	1: 5: -	4.1		
Miscellaneous	-: 7: 9	1.3		
	£30: 10:10	100.0	£ : :	

FOODS All the farmers fed the cows quite heavily in the winter months, the lightest feeding occurring on the two fully out-wintered Highland x Shorthorn herds where turnips, silage and straw were the only foods fed. Seven farmers fed hay and seven fed some oats. Draff was used on one farm and four fed other purchased foods (bran, malt culms, cake). The average amounts of foods fed appear in Table IV compared with those for your farm and the average of the three out-wintered herds.

TABLE IV

Average Foods fed per cow per Winter 1950/51

	Average lbs. per day	Cwts. per Winter		
		Average	Your Farm	Three Herds Outwintered
Turnips	52½	85.5		57.9
Eating Straw	10½	16.9		21.5
Bedding Straw	7	11.5		-
Hay	2	3.1		1.4
Silage	4	6.4		38.4
Oats	1½	2.4		-
Purchased Foods	1	1.5		-

LABOUR The average hours per cow per week was 1.19. The herds outwintered show a much lower labour requirement whilst at the other end of the scale come three small herds kept inside in the winter in small badly designed steadings.

TABLE V

Variation in Man Hours per Cow Week - Winter 1950/51

Hrs. per Cow Week	Under .5	.5 - 1.0	1.01 - 1.25	1.26 - 1.50	Over 1.50
No. of Farms	2	3	2	2	3

POWER This item refers to horse and tractor labour used in feeding cows outside.

GRAZING Not all the cows grazed the whole season on the hill ground and hence these costs averaged out higher than those for the Caithness herds. The average cost per cow per week was 3/1¾ and the variation is shown in Table VI.

TABLE VI

Variation in Grazing Cost per L.S.U. Week

Grazing Cost per L.S.U. Week	Under 2/-	2/- to 2/11	3/- to 3/11	4/- and over
No. of Farms	2	6	1	3

MISCELLANEOUS costs refer to veterinary treatment, mineral licks, and any other odd items of expenditure.

COW DEPRECIATION In view of the good prices now obtainable for fat cast cows this would not have amounted to much had not severe losses occurred on one farm of partially out-wintered cows. The death of 5 cows in this small herd has raised the cost per cow by £15: 12/6. It was decided not to exclude this cost from the averages however, since it demonstrates the real risk there is in keeping cows and there are undoubtedly occasional years in every herd when for one reason or another costs become very high.

BULL CHARGE Four farmers had no bull of their own and a service charge has been included instead. . The average cost of keeping a bull for the remaining eight farms is shown in Table VII.

TABLE VII

Calculation of the Bull Charge per Cow

Average of Eight Bulls

Winter Cost of Bull	£23: 3: 3
Summer Cost of Bull	4: 19: 8
Bull Insurance	3: 5: -
Bull Depreciation	9: 8: -
	£40: 15: 11

Average Number of Cows Served 30
Average Charge per Cow (Unit Average) £1: 12/6

The greatest factor influencing the bull cost is the number of cows each bull serves, and it is here that the larger herds tend to score an advantage thus:

	Total Cost of Keeping a Bull	No. of Cows Served	Charge per Cow
4 large herds	£40: 8: 10	43	£-: 19: 3
4 small herds	£41: 3: -	18	£2: 5: 9

Six of the herds used a Shorthorn bull and six used an Aberdeen Angus.

VARIATION IN THE COST OF KEEPING A COW From the foregoing discussion of the individual items making up the cost it will be clear that the large out-wintered herds will have a much lower cost than the small herds kept inside in winter, whilst the other herds will be fairly evenly spaced between them. This tendency is shown in Table VIII.

TABLE VIII

Cost per Cow Year 1950/51: Variation per Farm

Cost per Cow per Year	Under £20	£20 - £25	£25 - £30	£30 - £35	Over £35
Herds Part or entirely Outwintered	2	1	2	-	1
Herds Inside in Winter	-	-	1	2	3

Some home-grown foods form such an important part of the total cost, another factor which tends to high costs is low yields per acre.*

* A low yield means that the costs per cwt. will be high.

It so happened that the out-wintered herds in this sample were on farms which also possessed some good arable land and thus the cost per cwt. of home grown foods was relatively low and widened the gap between the lowest and highest costs still further. The five lowest costs were all for outwintered or partially out-wintered herds.

NUMBERS OF COWS AND CALVES A summary of the numbers of cows and calves is given in Table IX.

TABLE IX

Number of Cows and Calves 1950/51

Numbers	Start	Born	Purchased	TOTAL	Sold	Died	Reared
Cows	255	-	24	279	8	7	264
Calves	-	240	4	244	-	11	233

The month of calving (Table X) is important especially if the calves are to be sold at the Autumn Sales. Calves falling after March are still small in September, but on the other hand, too early calving is undesirable since it adds expense to the feeding of the cow until the grass comes.

TABLE X

Number of Calves Born in the Various Months 1951

Month	Before Jan.	Jan.	Feb.	March	April	May	After May
No. of Calves born	5	32	45	68	63	24	3

COST OF A CALF TO WEANING To obtain the net cost of the calves to weaning, the following additions must be made to the cost of keeping the cows for a year:-

a) Cost of any calves purchased.

b) The cost of keeping any cows in the herd for only part of the year.

c) Carriage costs and Auctioneers fees.

This gives the gross herd cost and from this the proportionate cost of keeping any house dairy cows must be deducted. The resultant net herd cost divided by the number of calves reared gives the net cost per calf to weaning.

TABLE XI

Average Cost of Rearing a Calf to Weaning

	£ s. d.	Your Farm £ s. d.
Total Herd Cost for the Year	511: 9: 6	
Cost of Purchased Calves	2:16: 8	
Cost of Part Year Cows	5:16: 2	
Cost of Marketing Calves Sold	-: 1: -	
GROSS HERD COST	520: 3: 4	
Deduct: Cost of Dairy Cows	18: 7: 5	
	£501:15:11	
Calves Reared 19·5		
NET COST PER CALF	£ 31: 2: 5 ¤	

The gap between the herds kept indoors and these out-wintered is reduced slightly since the calving percentage worked out better for the herds wintered inside. (95½% as against 87½%).

Average net cost per calf: Herds inside in Winter £35: 1: 7
Herds partly or wholly Outwintered £27: 3: 4

On only two farms were calves sold in the Autumn sales but valuations were taken on the other farms and thus an estimated margin between costs and sale price/valuation was calculated. Table XII shows the average results compared with those of your farm.

TABLE XII

Average Margin between Costs and Valuation (or Sale) Autumn 1951

	£ s. d.	Your Calves £ s. d.
Total No. of Calves 233		
Average Cost of Rearing a Calf	31: 2: 5	
Average Sale Price or Valuation	19: 3: 2	
Margin (Negative)	£11:19: 3	

The arbitrary nature of the valuations is recognised and limits the value of the figures. The range of margins is illustrated in Table XIII.

TABLE XIII

Range of Margins between Costs and Valuations/Sales

Margin (per Calf)	+0-£5	-0-£10	-5-£10	-over £10
No. of Farms	2	3	3	4

¤ This is the "average of the averages" taking each farm as one.

The two farms showing a positive return were the two largest herds both out-wintered with Highland X Shorthorn cows. The valuation of their calves was conservative (average £19:-:6) but even so exceeded the costs.

HILL CATTLE SUBSIDY. If this is added to the valuation, a positive margin occurs for six of the twelve herds, i.e. the three out-wintered herds, one partially out-wintered and two others both producing a very good class of Aberdeen Angus calf. The poorest returns appear from the mixed herds kept inside in the winter.

OTHER SUBSIDIES. It has not been possible to take into consideration the effect of marginal land payments, grassland fertiliser subsidies and fuel grants which would all reduce costs by lowering the cost of home grown foods. The fact that these grants do accrue in most cases should be borne in mind, and if they could have been measured it is probable that most of the herds would have shown a small positive margin.

CONCLUSIONS. The results showed that the best returns came from the herds out-wintered but it should be remembered that these herds were large and on hills linked with good arable farms, the cows being fed quite liberally through the winter.

Costs from the pure bred Aberdeen Angus herds were high but this was offset by the superior quality of the calves produced. The valuations put upon them were conservative and if these calves are costed until they are sold it is quite likely that they would show good returns. The poorest performances are from the herds producing medium quality single suckled calves on farms where out-wintering is not practised. Generally, these farms are small and the rough ground and arable grazing is not extensive enough for out-wintering and in any case sheep take first priority. Poor quality arable land often aggravates the situation still further and ultimately the breeding cows must be regarded as an expensive way of keeping up fertility. On such small farms top quality cattle are often out of the question (no bull is kept) and suckling more than one calf to the cow is chancy although it may pay if tackled carefully. On such farms, these results suggest that the best plan may be to reduce the cattle enterprise to a minimum consistent with good husbandry.

GROUP II

RESULTS FROM EIGHT HERDS NOT RECEIVING HILL CATTLE SUBSIDY

These herds are situated on lower ground than those costed in Group I and only one had any rough grazing or hill land. The average size of holding was 253½ acres and three of the farms were in Aberdeenshire, 3 in Banffshire and one each in Ross-shire and Kincardine. Only one farm was under 100 acres in size and three of the farms were over 300 acres.

The average distance from the sea was 8¾ miles and the mean altitude was 282 feet above sea level.

Size of Herd. The average number of cows kept was 15 with the numbers spread evenly from 6 to 23 cows.

Method of Rearing. All the cows were kept inside in the winter months and in no cases were the calves sold at 6 months' old. Four of the farms retained their calves for breeding or fattening whilst the others took the opportunity of selling their calves as young or older stores or even fattening them up according to the state of the markets. Three of the farmers reared one calf to the cow whilst another three reared 2 calves to the cow. The remaining two farmers had a proportion of cows rearing two calves.

Breed The breeds kept were:- Shorthorn and Crosses 4 Herds
Aberdeen Angus & Crosses 3 Herds
Mixed 1 Herd

Six of the farmers used Aberdeen Angus bulls and the other two used Shorthorn bulls.

Method of Costing The methods used are the same as those described on Page 2 for Group I and will therefore not be gone over again in detail.

AVERAGE COST OF KEEPING A BREEDING COW FOR THE YEAR 1950/1951

TABLE XIV

	Item	Cost per Week	Cost per Year	
		£. s. d.	£. s. d.	£. s. d.
WINTER 1950/51 (27 2/7 wks.)	Foods: Turnips & Swedes	-.10. 2½	13.17. -½	
	Eating Straw	-. 1. 5½	2. -. 6	
	Bedding Straw	-. 1. 5½	2. -. 6	
	Oats	-. -.10½	1. 2. 3	
	Hay	-. -. 3½	-. 9. 0¼	
	Purchased Foods	-. -. 1¾	-. 5. 8¼	
	GROSS FOODS	-.14. 5¼	19.15. -	
	Less - Residual Manurial Values	-. 2. 3½	3. 2. 8	
	NET FOODS	-.12. 1¾	16.12. 4	
	Man Labour	-. 1.10	2.10. 6¾	
	Power	-. -. -	-. -. -	
	Overhead Costs	-. -. 7	-.16. 7	
	Miscellaneous	-. -. 3¼	-. 7. 6¼	
	WINTER COST	-.14.10	20. 7. -	20. 7. -
SUMMER 1951 (25 wks.)	Grazing	-. 3.10½	4.16. 9½	
	Labour	-. -. 9¼	-.19. 4½	
	Overhead Costs	-. -. 3¼	-. 6. 9	
	SUMMER COST	-. 4.11	6. 2.11	6. 2.11
GENERAL	Cow Depreciation			-.18. 3
	Bull Charge			1. 9. 5
	NET COST PER COW PER YEAR			£28.17. 7

The net cost per cow per year varied from £21.10/- to £36 and the two lowest costs occurred on farms rearing one calf to the cow.

The greatest single item in the costs was winter food and where this was high the total cost also tended to be high e.g. the % $\frac{\text{Winter Food Cost per Cow}}{\text{Total Cow Cost}}$ was 62% for the 4 farms with low total costs, but 73% for the 4 farms with higher total costs. The average percentage costs of the various items are shown in Table XV which also compares your farm with the average cow costs.

TABLE XV

Cost of a Cow for the Year 1950/51

Percentage Costs -	Average £ s. d.	%	Your Farm £ s. d.	%
Winter Foods	16: 12: 4	57.6		
Labour & Power	3: 9: 11¼	12.1		
Grazing	4: 16: 9½	16.8		
Overheads	1: 3: 4	4.1		
Cow Depreciation	-: 18: 3	3.2		
Bull Charge	1: 9: 4¾	4.9		
Miscellaneous	-: 7: 6½	1.3		
	£28: 17: 7	100.0%	£ : :	%

The cost of foods is higher than for the other two groups and grazing is also higher because the farms receiving the Hill Cattle subsidy all have some cheap rough grazing in the summer.

FOODS The amounts of food fed on your farm are compared in Table XVI with the average amounts and also the average amount fed expressed in lbs. per day.

TABLE XVI

Average Foods fed per Cow - Winter 1950/51

	Lbs. per Day	Average cwts./Winter	Your Farm cwts./Winter
Turnips and Swedes	73	124.6	
Eating Straw	11¼	19.0	
Bedding Straw	11¼	19.0	
Oats	1	1.6	
Hay	1	1.5	
Purchased Foods	1	1.4	

The figures show that the sheet anchor of the feeding on lowland farms is turnips and straw and this was true for all eight farms. Four farmers fed a little hay and five fed oats and if the winter had not been abnormally long it is likely that more than one farmer would have got through on turnips and straw alone. Purchased foods consisted of draff fed on two farms and sugar beet pulp fed on one farm.

LABOUR The mean hours per cow week was .76 with all the farms falling in the range .5 to 1.0 hours per animal week. This is low compared with the other two groups. This is because the farm buildings are better planned and moreover being larger the farm lends itself to easier work organisation (e.g. employment of a full time cattleman).

GRAZING The range of costs per week for grazing was from 1/7 to 5/7. Three costs lay between 3/- and 4/- and another three between 4/- and 5/-. The grassland fertiliser subsidy was obtained for the summer but has not been taken into account in calculating these costs.

COW DEPRECIATION This item affected the trend of the costs to a significant extent on only one farm - the smallest herd in the section in which one cow died and another was sold barren.

BULL CHARGE Seven of the farmers owned their own bulls and the charge varied from 19/- to 55/- per cow. For three herds with under 20 cows the service charge per cow worked out at £2: -/4½ compared with £1: 6/10½ for the four herds in which the bull served over 20 cows per year.

Even so in no case did the bull charge reach 10% of the total cow cost and it was therefore probably well worth while for these farmers to own their own bulls.

NUMBER OF COWS AND CALVES These figures together with the month of calving are shown in Table XVIII. "Transferred in" calves refers to calves born on the farm and transferred from their dam to the suckling cows being costed.

TABLE XVII

Numbers of Cows and Calves and Time of Calving

	No. at Start	Purchased	Born	Transferred in	TOTAL	Sold	Died	No. at End
Cows	123	8	-	-	131	14	1	116
Calves	-	23	120	24	167	-	10	157

Month of Calving (Incd. Calves Transferred)	Before Jan.	Jan.	Feb.	March	April	May	June	TOTAL
No. of Calves	21	10	14	45	39	12	3	144

There were rather more early calves for this group than for the Caithness and upland farms. This was to be expected and partly explains the heavier feeding on these farms.

COST OF A CALF TO WEANING This has been determined in the same way as in the other two sections, but the calculations are simpler because no dairy cows have been mixed with the breeding cows. (Hence the Gross Herd Cost and the Net Herd Cost are the same). The average cost per calf is obtained by taking each herd as equal to one unit. If the average of all the calves is taken, the average cost is £24: 7/9.

TABLE XVIII

Average Cost of Rearing a Calf to Weaning 1950/51

	£ s. d.	Your Farm £ s. d.
Total Herd Cost for the Year	396: 14: 4	
Add Cost of Purchased Calves and Calves Transferred in	45: 15: 11	
Part Year Cows	32: 17: 8	
Gross Herd Cost	475: 7: 11	
Net Herd Cost	475: 7: 11	
Number of Calves reared	19½	
Net Cost per Calf	£25: 3: 11	

Six of the eight costs gave a cost per calf between £21 and £25: 10/-. One cost was below £21 and the other is very high partly due to a low calving percentage and partly because the herd was situated in harder and more exposed country.

MARGINS None of the calves were sold in the autumn 1951 but valuations were placed upon the calves and compared with the costs incurred. The average results are shown in Table XIX compared with those of your farm.

TABLE XIX

AVERAGE MARGIN BETWEEN COSTS AND VALUATION: AUTUMN 1951

	£ s. d.	Your Calves £ s. d.
Average Cost of Rearing Calf	25: 3:11	
Average Valuation	24: -: -	
Margin (Negative) -	£ 1: 3:11	

On these farms the valuation exceeded the cost in three cases, the range of results being:

Positive Margin	£2 - £4	1 Farm
	0 - 2	2 Farms
Negative Margin	£0 - £2	3 Farms
	2 - 4	1 Farm
	Over £4	1 Farm

If fuel and grassland fertiliser grants could have been taken into account the cost per calf would have been reduced (because of the reduction in home grown foods) and it is likely that a small average positive margin would have occurred.

REARING TWO CALVES TO THE COW The better returns for this group arise because of the greater proportion of cows rearing two calves. In Appendix I the average cost of keeping a cow is seen to differ very little as between the Caithness farms and this group. The cost per calf does however work out much cheaper for these animals since more calves were reared.

The autumn valuation of ~~the cows~~ these calves is higher than that for the Caithness calves, partly because the latter contained more late-born (small) calves and partly for geographical (and marketing) reasons.

Within the group itself the farms rearing two calves to the cow showed a better return than those rearing single calves, two of the three positive margins being from herds rearing two calves to the cow. In these herds the cost per calf was reduced by nearly £10 by adopting doubling suckling, thus:-

Average Cost per Calf[*](6 months old) rearing 2 calves per cow	£21: 4: 5
Average Cost per Calf[*]if single suckling had been practised	30:19: 9
Saving in Cost by Double Suckling	£ 9:15: 4

This saving must be set against the poorer quality of the calves and the greater depreciation of the cow. Of the objections to rearing second calves, the two which are fundamental are 1) The difficulty in getting a suitable second calf. 2) Difficulty of selling the weaned calves when it is known that they have been reared more than one to the cow.

On the small farm it may be difficult to get round these problems, but on the larger farms it should be possible to get second calves from heifers which are to be fattened (in the way described below) whilst the calves need not be sold till they are older and these is less obvious difference between them and single suckled animals. The trend of results on these farms over the last three years does favour "double suckling" and it is suggested that wherever cows are to be kept inside during the winter, farmers should be on the alert to practise it at any rate on the better milking cows. An exception must be made however, for those farms which produce top quality calves.

[*]Average for the three herds suckling two calves to the cow.

RESULTS OF FATTENING COW HEIFERS

For the third year running details were available from an Aberdeenshire farm practising double suckling and getting the second calf by putting young heifers to the bull to calve at 2 years old. This year a bunch of 14 heifers calved in spring 1951 and the calves were taken from them and put on to the cows. Ten of the heifers were sold fat in August 1951 and the other four in March 1952. The net profit for the group as a whole was £10.13. 9 per heifer plus the value of the calf.

TABLE XX

COSTS AND RETURNS OF FATTENING UP COW HEIFERS

Costs per Animal		Breed: Shorthorn and Crosses	
Born: Spring 1949			
Opening Valuation October 1950		1½ yrs. old	£28. -. 6
Winter 1950/51 Turnips	80.8cwts.	£7.17. 10½	
Eating Straw	30.7cwts.	2.18. 2½	
Bedding Straw	19.4cwts.	1.16. 9	
GROSS FOODS		12.12.10	
Less R.M.V.'s		2.15. 6	
NET FOODS		9.17. 4	
Labour (.62 man hrs. per week)		2. -. 2¾	
Overhead Costs		-.11. 6¾	
Bull Charge		1. 3.11½	
		13.13. 1	13.13. 1
COST TO SPRING 1950			£41.13. 7
		4 Animals Sold March 1952	10 Animals Sold August 1951
SUMMER COST Grazing		5.18. 7½	3.10. 6½
Labour		-. 8. 7½	-. 5. 1½
Overhead Costs		-. 3. -	-. 1. 9
Miscellaneous		-. -. -	-. 4. 6
		£6.10. 3	£4. 1.11
ADD WINTER COST 1951/52 - Turnips		7.13. 1½	
Straw - Eating		1. 7. 6	
Bedding		1. 7. 6	
Hay		-.10. 5¼	
Oats		1.13. 4½	
Purchased Food		2. 5. 1	
GROSS FOODS		14.17. -¼	
Less R.M.V.'s		2. 5. 6½	
NET FOODS		12.11. 5¾	
Labour		1.14. 5¾	
Overhead Costs		-.12. -½	
Miscellaneous		-. 4. 6	
NET COST WINTER 1951/52		15. 2. 6	
SUMMER COST 1951		6.10. 3	4. 1.11
COST TO SPRING 1951		41.13. 7	41.13. 7
TOTAL COST		63. 6. 4	45.15. 6
Sale Price		69. 2. 6	58. 8. 5
Surplus per Animal		5.16. 2	12.12.11
Grade		All S.S.	All S.S.
Weight		10 cwts.	9 cwts. 1 qr.

Complete costs are set out in Table XX which shows that the 10 animals put off the grass made over twice as much profit as those kept till March. The latter were of course the poorest of the bunch, but even so it is probably wisest to get the animals away fat in the same summer as they calve if it is at all possible. In Table XXI the results of this system for the past three years is shown.

TABLE XXI

RETURNS OF FATTENING COW HEIFERS - 1949-50-51

Year	Time and Number of Animals Sold		Net Profit per Animal
1948/49	2	July 1949	£11. 2.10
	10	(Dec. 1949 (May 1950	£8.15. -
1949/50	10	August - September 1950	£3.12. 9
1950/51	10	August 1951	£12.12.10
	4	March 1952	£5.16. 1

All Plus Value of Calf

This system of getting the second calf can thus be well recommended, but it will only be successful when livestock management is good and careful since both inbreeding and breeding from the calves of their heifers needs to be avoided and on small farms this may prove difficult.

ACKNOWLEDGMENT

The Economics Department wish to thank those farmers who have provided the data used in these costings. The costings are to be continued during the current year and information from herds practising unusual methods will gladly be costed.

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APPENDIX I

COMPARISON OF CALF COSTS - 1950/51

Item	CAITHNESS 15 Farms	NORTH OF SCOTLAND (Excluding Caithness) 12 Farms (Receive Hill Cattle Subsidy)	8 Farms (No Hill Cattle Subsidy)
Size of Farm	106 acres Arable 143 acres Rough	162 acres Arable 400 acres Rough	253½ acres Arable - Rough
Subsidies			
Hill Cattle	14 farms	All Farms	-
Hill Sheep	1 farm	4 farms	-
Marginal Grant	11 farms	9 farms	-
Size of Herd	11.5 cows	21.5 cows	15 cows
Calves per Cow	11 herds 1 calf 4 herds 1¼ calves	1 calf	3 herds 1 calf 2 herds 1½ calves 3 herds 2 calves
Calves born before April	55%	62.5%	69.4%
Winter Housing	11 herds inside 3 part outwintered 1 outwintered	6 inside 3 part outwintered 3 outwintered	All inside
WINTER			
Man hours per Animal Week	1.33	1.19	0.76
Foods - Turnips	88.1 cwt.	85.5 cwt.	124.6 cwt.
Eating Straw	14.9 cwt.	16.9 cwt.	19.0 cwt.
Hay	4.8 cwt.	3.1 cwt.	1.5 cwt.
Oats	3.5 cwt.	2.4 cwt.	1.6 cwt.
Other	-	(Silage)6.4 cwt.	-
Purchased	0.2 cwt.	1.5 cwt.	1.4 cwt.
Period of Feeding	25½ weeks	26 weeks	27 2/7 weeks
SUMMER			
Grass Cost per Week	2/7½d.	3/2¼d.	3/10½d
Period of Grazing	26½ weeks	26 weeks	25 weeks
Cost per cow per Year -			
Winter Food	£15:12: 7¼ 54.8	£16:11: 4½ 54.2	£16:12: 4 57.6
Labour & Power	5:10: 2¼ 19.3	5: 1: 4¾ 16.6	3: 9:11¼ 12.1
Grazing	3: 9: 6½ 12.2	4: 2: 9 13.5	4:16: 9½ 16.8
Bull Charge	-:16:11¼ 3.0	1: 5: - 4.1	1: 9: 4¾ 4.9
Others	3: -:11 10.7	3:10: 3¾ 11.6	2: 9: 1½ 8.6
Total Cow Cost	£28:10: 2¼ 100.0	£30:10:10 100.0	£28:17: 7 100.0
AUTUMN 1951			
Cost per Calf	£28:17: -¾	£31: 2: 5	£25: 3:11
Valuation of Sale Price	19: 2: 4½	19: 3: 2	24: -: -
Margin	-£9:14: 8¼	-£11:19: 3	-£1: 3:11
+ Margins	Nil	2	3
- Margins	All	10	5
Margin if Hill Cattle Subsidy is included	-£3: 5: 3	-£4:19: 2	-£1: 3:11
+ Margins	5	6	3
- Margins	10	6	5

APPENDIX II

HOME GROWN FOODS have been charged at cost of production. A sliding scale was used so that on farms with low yields the cost per cwt. or ton was higher. The figures were based on the cost of production figures in Economic Report No. 21 of this Department.

PURCHASED FOODS have been charged at purchase price.

LABOUR has been charged at rates recommended by the Conference of Scottish Agricultural Economists.

		s. d.
These were -	Man	2/6
	Horse	1/3
	Wheeled Tractor	3/9

OVERHEADS have also been charged at the recommended rates.

	s. d.
These were -	5/9 per £ direct man labour
	3/6 per tractor hour or 4 horse hours
	13/9 per acre

MANURIAL RESIDUES of foods and manures (R.M.V.'s) have been calculated as set down in Miscellaneous Publications No. 7 of D.O.A.S.

CALCULATION OF THE GRAZING COST

The total cost of the grass is obtained for each field grazed. A proportion is deducted if hay or silage has been made (usually 2/3 in the case of hay and $\frac{1}{2}$ or $\frac{3}{4}$ for silage).

The feed grass costs are added together to give a grass cost per farm. One sixth is deducted for winter grazing and the remainder is the farm summer grazing cost.

This divided by the number of livestock units grazing the grass gives a grazing cost per livestock unit.

Livestock Units The Table used is:-

1 horse, bull, cow, 2-3 year cattle	=	1 unit
1-2 year old cattle	=	.75 unit
Young horses; cattle 6 months - 1 yr.	=	.50 unit
Sheep over 6 months	=	.25 unit
Sheep 3 - 6 months	=	.07 unit
Lambs under 3 months) Calves suckling)	=	No charge

FIELD GRAZING COST

The items making up the cost are:-

1. Rent
2. Labour on the Grass
3. Manures applied and manurial residues
4. Overhead Costs
5. Sowing Down Charge - i.e.

Average Cost of Establishing the Grass
(Estimated Years duration of Lea + 1)