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Cattle -  
Cost of prod. o.s.

THE NORTH OF SCOTLAND COLLEGE OF AGRICULTURE

AGRICULTURAL ECONOMICS DEPARTMENT

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BREEDING CATTLE COSTS 1956/57

by

D. GODFREY

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The North of Scotland College of Agriculture,  
Economics Department,  
41½ Union Street,  
Aberdeen.

## BREEDING CATTLE COSTS 1956/57

### Introduction

This report concerns the cost of rearing calves in the breeding herds of the North of Scotland and refers to the year (approximately) 1st November, 1956/57.

The report is divided into two parts:-

Part I: Results from 19 Upland Herds

Part II: Results from 8 Lowland and Outwintered Herds

### PART I - UPLAND HERDS

#### Type of Farms

The nineteen farms are situated in the glens which run up from the Moray Firth coast and the location by counties is:-

Morayshire - 4      Nairnshire - 3      E. Ross - 1

Banffshire - 2      Inverness-shire - 9

These are relatively high lying farms and the mean height above sea level is 760 feet, the average size of farm being 76 acres arable and 629 acres rough grazing. The cow subsidy and marginal land grant were received on all the farms during 1956/57 and the breeding cattle herd was one of the main enterprises on most of the holdings and was usually coupled with wintering sheep or a ewe flock.

#### Season

The winter was mild and fairly short, whilst crops grown in the preceding summer had been good so that at the end of the winter there were roots left over on almost every farm and in almost every case unused stacks of oats and hay were carried forward to the following year.

Average crop yields for these farms were: oats -  $18\frac{1}{2}$  cwts. per acre, roots - 21 tons per acre and hay - 22 cwt. per acre.

#### System

Except on one farm on which some of the cows reared two calves, single suckling was the rule. On seventeen farms an Aberdeen Angus bull was used, and the other two herds used a Shorthorn bull. Most of the cows were Aberdeen Angus x Shorthorn although many herds still had some pure bred Shorthorn cows. The average size of herd was 17, the overall range being 6-38 cows with thirteen of the herds having under 20 cows.

#### Time of Birth of Calves

Thirteen of the farmers sold at least some of their calves in the autumn sales and therefore aimed to get a high proportion of calves born in the preceding November - February. For these herds the proportion of calves born in the different months was:-

January or before - 33%

March - 24%

February - 18%

April or later - 25%

In the other six herds the calves were retained over winter and early calves were not therefore so necessary and for them the corresponding figures were:-

January or before - 12%

March - 29%

February - 18%

April or later - 41%

Cost per Cow

Since each cow will normally produce one calf in each twelve month period, the cost of keeping a cow for a year forms the basis of determining the cost of the calf.

The average cost per cow is shown in Table I together with the percentage which each item forms of the total cost.

Table I

Cost per Cow per Year

	<u>Average</u>	<u>%</u>	<u>Your Herd</u>
Net foods	£14. 2. -	44	
Grazing	3.13. -	12	
Labour and Power	7. 9. -	23	
Cow Depreciation	2. 4. -	7	
Bull Charge	1.11. -	4	
Miscellaneous	-. 8. -	1	
Share of Farm Overheads	2.14. -	9	
	<u>£32. 1. -</u>	<u>100</u>	

Comments

1. The cost per cow varied from £24 - £49 with seven costs between £25 - £30 and five between £30 - £35. Compared with the upland farm group costed the previous year, the cost is over £3 per cow lower, the difference being mainly due to lower food costs.

2. Winter foods. Details of the average cost of winter foods are given in Table II, the charges for home grown foods being based on cost of production figures adjusted according to the yield per acre on each farm. The costs shown are "net", i.e., with residual manurial values already deducted.

Table II

Winter Food Costs per Cow: 1956/57

<u>Type of Food</u>	<u>Average</u>	<u>Your Farm</u>
Turnips and Swedes	£9. 3. -	
Straw (eaten)	1. 5. -	
Oats	1.17. -	
Hay	1. 2. -	
Silage, draff, etc.	-.15. -	
	<u>£14. 2. -</u>	

The lower costs compared with those of the previous year are due mainly to the higher crop yields and consequent lower costs of home grown foods since the actual quantities fed are very little different from those of the previous year. The basic ration on almost every farm was roots and oat straw with variable amounts of oats, hay and concentrates fed in the later part of the winter. The most common combination of foods occurred on eight farms and the average amounts fed on them was:-

Roots	102.3 cwts.
Straw (eaten)	11.3 cwts.
Oats	2.0 cwts.
Hay	4.5 cwts.

The average acreage required for winter feeding was:-

	<u>Average</u>	<u>Your Farm</u>
Turnips and Swedes	0.22 acres	
Hay	0.09 acres	
Oats	0.09 acres	
Others	0.02 acres	
	<u>0.42 acres</u>	

This is considerably lower than that of the previous year (0.58 acres), the difference being due to the reasons already stated. In addition to the above foods the cows require about 1 acre of straw for feeding and bedding.

3. Grazing. The cost of grazing averaged 2/10d., per week, the higher costs occurring on farms with little or no rough grazing thus.

Rough grazing:	0-50 acres	50-250 acres	Over 250 acres
Grass cost per week:	4/-	2/4	2/-

4. Cow depreciation. In calculating this item, allowance was taken of the cow and calf subsidies received during the rearing of replacements.

5. Bull charge. In five small herds this was simply the service charge plus the time taken in walking the cows to the bull. For the other herds the average cost of keeping a bull is shown below:-

Average Cost of Keeping a Bull for a Year

Foods	£14. 7. -
Grazing	5.17. -
Labour and Overheads	6.16. -
Insurance	1.15. -
Depreciation	27.15. -
TOTAL COST	£56.10. -

Number of cows served: 41. Cost per cow: £1. 8/-.

In the above calculation, the effect of grants under the premium scheme have been ignored.

Cost per Calf

The cost of rearing a calf to weaning would be identical with the cost per cow if each cow reared one calf each year. In practice, however, a number of adjustments have to be made. Additions are:-

1. The cost of any cows in the herd for only part of the year
2. The cost of any foods fed to the calves
3. Price of any young calves purchased
4. Cost of grazing by the calves

Deductions have to be made in respect of:-

1. House cows kept for household milk production
2. Young calves sold

In practice these items almost cancel each other out and the average cost per calf came to £32. 3/-, the range being £24 - £56 with nine costs between £25 - £30 and eight between £30 - £40.

Returns

The profit or loss per calf was calculated by comparing the cost per calf with the sale price (or valuation figure if the calves were not sold).

In the autumn of 1957 the market for weaned calves was firm and the average results show a net profit of £17. 9/- per calf including the cow and calf subsidies.

Table III

Cost and Returns per Calf

	<u>Average</u>	<u>Your Farm</u>
Cost per calf to weaning	£32. 3. -	
Sale price or valuation	<u>31.16. -</u>	
	- -. 7. -	
Cow and calf subsidies	<u>17.16. -</u>	
Net margin including subsidies	+£17. 9. -	

It should be mentioned that the effect of the marginal land subsidy in reducing the cost of home grown foods has not been taken into consideration.

Ten farms showed a small profit before the cow and calf subsidies were taken into consideration and only one showed a loss after allowing for these subsidies. Both the best and worst returns came from "high quality" calves indicating that although aiming at top quality can be very profitable, yet it is also easy for costs (especially food costs) to get out of hand.

#### Trend of Costs over Four Years

Nine of the farms in this group have kept records continuously over the past four years and their average cost per calf and margin per calf including the calf and cow subsidies are shown in Table IV.

Table IV

#### Average Cost and Margin per Calf 1953/57 (9 Farms)

<u>Year</u>	<u>Cost per Calf to Weaning</u>	<u>Valuation or Sale Price including Subsidies</u>	<u>Margin</u>
1953/4	£31. 5. -	£43.16. -	£12.11. -
1954/5	29.13. -	44. 1. -	14. 8. -
1955/6	31.15. -	45. 2. -	13. 7. -
1956/7	30.19. -	49.18. -	18.19. -

The better results of the 1956/57 costs show up fairly clearly and are due to a higher sale/valuation price linked with a decrease in food costs.

#### PART II

Although most of the calves reared in the North of Scotland come from upland farms like those described in Part I of this report, there are a number of low ground herds with breeding herds (some kept inside in winter and some outwintered) and there are also a number of herds of hardy cattle outwintered.

It is with these variations from the normal system that this part of the report is concerned and the results from a very small sample of eight herds are shown in Table V under three headings:-

- (a) Average costs for four low ground herds on better land than those of Part I.
- (b) Average costs from three herds of hardy cattle outwintered
- (c) Cost from a single herd outwintered in which the calves were born "off season", i.e., in the period August-October.



Table V

Cost and Margin per Cow and Per Calf

Item	A (4 Low Ground herds)	B (3 Outwintered herds)	C
Turnips and Swedes	£ 7. 9. -	£ 1. 3. -	£ 2.10. -
Straw (eaten)	-.15. -	-.15. -	2. -. -
Oats	1. 5. -	-. 3. -	-. -. -
Hay	1.10. -	2.14. -	-. -. -
Silage	1. 4. -	-. 7. -	1. 8. -
Other Foods	-.11. -	-. 2. -	-. -. -
Net Food Cost	12.14. -	5. 4. -	6. -. -
Grazing	5. 8. -	2.16. -	3.19. -
Labour and Power	4. 7. -	5. 2. -	7. 2. -
Cow Depreciation	2.12. -	1.14. -	4. -. -
Bull Charge	2. 1. -	1. 6. -	1. 9. -
Miscellaneous	-. 4. -	-. 2. -	1. -. -
Share of Farm Overheads	1.19. -	2.18. -	6. 1. -
Net Cost Per Cow	29. 5. -	19. 2. -	29.11. -
Net Cost per Calf	30.11. -	20. 8. -	28.11. -
Valuation or Selling Price	31.18. -	31. 4. -	30. 6. -
Margin	+ 1. 7. -	+ 10.16. -	+ 1.15. -
Cow and Calf Subsidies	8. -. -	18. -. -	17. 3. -
Margin including Subsidies	+ 9. 7. -	+ 28.16. -	+ 18.18. -

Lowground Herds

The results are very similar to those of previous years, but food costs are somewhat lower due to the better crop yields in 1956/57 and it could, therefore, be expected that the acreage of winter foods required per cow (0.38 acres) would be lower than that of the previous year (0.44 acres). Two of the four herds purchased in calves and reared two calves on some of the cows; in one case this brought the eventual cost per calf down to £25 but in the other the high price paid for the young calves largely offset the saving in other costs with the result that the ultimate cost per calf was £31.

Outwintered Herds

The results fall into line with those of previous years and show that if a suitable type of cow can be purchased and there is adequate shelter from cold winds then this system of cattle rearing will tend to give better results than any other. It is in this type of herd that the advantages of a mild winter are most apparent and the average requirement of winter foods per cow was 0.18 acres compared with 0.24 acres for the same farms in the previous year.

"Off Season" Calvings

Calving some of the cows in the period July-October may fit in with a particular system of farming and in the example given the performance was probably rather better than appears at first sight since some of the factors making for a high cost, e.g., cow depreciation and miscellaneous expenses, are not liable to recur every year.

About half the calves were sold in the spring sales and made a good price - indeed the aim of this system should be to take full advantage of the high prices which are often characteristic of the late spring.

Acknowledgment

The staff of the Economics Department wish to thank the farmers who so willingly helped by supplying the data used in preparing this report and in answering all relevant questions.

APPENDIX

Standards used in Breeding Cattle Costs

According to recommendations of the Scottish Agricultural Economists.

Man Labour

Stockmen - Winter 3/7d. per hour. Summer - 3/10d. per hour.

Tractor Labour

Wheeled - 3/9d. per hour.

Overhead Costs

	<u>Winter</u>	<u>Summer</u>
(a)	6/9 per £ man labour	7/- per £ man labour
(b)	6/- per tractor hour	4/9 per tractor hour
(c)	16/6 per acre	19/- per acre

Foods

(I) Purchased foods at purchase price.

(II) Home grown foods at average cost of production weighted according to yield per acre and in the case of turnips method of cultivation and use.

Livestock Units used in Grazing Costs:

1 cow	=	1	L.S.U.
1-2 year stirk	=	0.75	
Under 1 year	=	0.50	
1 ewe	=	0.25	
1 lamb	=	0.07	from 3-6 months
Sheep over 3 months old	=	0.25	

Grazing Costs

Calculated by the method described in detail in Milk Cost Report No. 32.