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*Costs of  
production  
1949-50*

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THE NORTH OF SCOTLAND COLLEGE OF AGRICULTURE  
AGRICULTURAL ECONOMICS DEPARTMENT

ECONOMIC REPORT NO. 20

CALF COSTS 1949 - 50

by

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AGRICULTURAL ECONOMICS DEPARTMENT

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CALF COSTS 1949-50

During the year 1949-50 the cost of producing and rearing calves was obtained on seven farms in the North of Scotland. The number of costs is too small for the sample to be representative of the area, but the individual costs are of interest and they illustrate a variety of systems.

METHOD OF COSTING Where cows are being kept solely for rearing, the cost of rearing a calf is the cost of keeping the cows for the year divided by the number of calves reared. A bull service charge is added, but no depreciation has been allowed on the cows since they usually bear calves for several years and when they are eventually sold the price received will generally be quite high. The period under consideration was from October, 1949 to October, 1950 when the spring born calves were weaned. All the calves were suckled and there is no record of pail fed (cogged) calves.

Before going on to consider the cost of the cows for the year it is as well to get an idea of the types of farm and the system of rearing employed on them. These facts are set out in Table I.

TABLE I  
TYPE OF FARM AND SYSTEM OF CALF REARING

Farm	1	2	3	4	5	6	7
County	Aberdeen	Banff	Aberdeen	Ross	Caithness	Caithness	Aberdeen
Type of Cow	Cross Shorthorn	Aberdeen Angus	Cross Shorthorn	Cross Shorthorn	Mixed	Cross Shorthorn	Cross Highland
System	Two Calves per cow	Mainly two Calves per cow	Two Calves per cow	Mainly One Calf per cow	One Calf per Cow		
Notes on System	Second Calf obtained from Hfrs. Fattened	Second Calf Purchd. or Transfd. fr. Dairy Cows	Second Calf Purchased		Cows on Hill part of Summer	Cows out during day all the yr. Hill land used.	Cows out during day all the year. Act as "Scavengers".
Destiny of Calves	Retained on Farm and Mainly Fattened.		Sold at 12 - 18 months as stores.	Retained on Farm usually Fattened.	Sold as Spent Calves in Autumn 1950.		

The table emphasises just how different are the farms and the systems employed and we are faced with the intriguing but difficult question of which systems pay best on any particular type of farm.

COST OF KEEPING THE COWS - WINTER 1949-50

The various standards used in the calculations are set out in detail in the appendix. The cost per cow per week is shown for each farm in Table II.

TABLE II  
COST OF COWS PER WEEK IN WINTER PERIOD 1949 - 50.

	1	2	3	4	5	6	7	Average
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
<u>Foods -</u>								
Turnips	7. 6 $\frac{1}{2}$	7.11 $\frac{1}{2}$	6. 6 $\frac{1}{2}$	8. 6 $\frac{1}{4}$	8. 1 $\frac{3}{4}$	1. 9 $\frac{1}{2}$	2. 9	6. 2
Hay	- . 5 $\frac{1}{4}$	-	- . 6	-	- . 8 $\frac{1}{4}$	3. 6 $\frac{1}{2}$	-	- . 9
Straw E	1. 6 $\frac{1}{2}$	1.11 $\frac{1}{2}$	- . 9	1. 4 $\frac{3}{4}$	2. 2 $\frac{1}{4}$	- . 11 $\frac{1}{4}$	2. 6 $\frac{3}{4}$	1. 7 $\frac{1}{2}$
Straw B	1. 6 $\frac{3}{4}$	1.11 $\frac{1}{2}$	1. 6	1. 4 $\frac{3}{4}$	2. 5 $\frac{1}{4}$	1. 6 $\frac{1}{4}$	-	1. 5 $\frac{3}{4}$
Oats	- . 3 $\frac{3}{4}$	-	- . 1	- . 4	3. 8 $\frac{3}{4}$	5. 4	-	1. 4 $\frac{3}{4}$
Silage	-	-	3. 6	-	-	-	-	- . 6
Winter Grazing	-	-	-	-	-	- . 3	- . 6 $\frac{3}{4}$	- . 1 $\frac{1}{4}$
Other	- . 7 $\frac{3}{4}$	-	- . 2	-	-	-	-	- . 1 $\frac{1}{4}$
Total Foods	12. - $\frac{1}{2}$	11.10 $\frac{1}{2}$	13. - $\frac{1}{2}$	11. 7 $\frac{3}{4}$	17. 2 $\frac{1}{2}$	13. 4 $\frac{1}{2}$	5.10 $\frac{1}{2}$	12. 1 $\frac{1}{2}$
Less R.M.V. 's	2. 4 $\frac{3}{4}$	2. 9 $\frac{1}{2}$	2. 7	2. - $\frac{1}{4}$	3. 4 $\frac{3}{4}$	2. 3 $\frac{1}{2}$	- . 9 $\frac{1}{4}$	2. 3 $\frac{1}{2}$
Net Foods	9. 7 $\frac{3}{4}$	9. 1	10. 5 $\frac{1}{2}$	9. 7 $\frac{1}{2}$	13. 9 $\frac{3}{4}$	11. 1 $\frac{1}{4}$	5. 1 $\frac{1}{4}$	9.10
Man Labour	3. 2 $\frac{3}{4}$	2. 4	2.11	4. 2	4. 1 $\frac{1}{2}$	1. 9 $\frac{1}{4}$	1. 2 $\frac{1}{2}$	2.10
Horse & Tr. Labour	-	-	-	-	-	- . 7 $\frac{3}{4}$	- . 8 $\frac{1}{4}$	- . 2 $\frac{1}{4}$
Overheads	- . 11 $\frac{1}{4}$	- . 8	- . 10	1. 2 $\frac{1}{2}$	1. 2 $\frac{1}{2}$	- . 7	1. 1	- . 11
Miscellaneous	- . 1	- . - $\frac{1}{2}$	- . 2 $\frac{1}{2}$	- . 2 $\frac{1}{2}$	-	-	-	- . - $\frac{3}{4}$
NET COST PER WEEK	13.10 $\frac{3}{4}$	12. 1 $\frac{1}{4}$	14. 5	15. 2 $\frac{1}{2}$	19. 1 $\frac{3}{4}$	14. - $\frac{3}{4}$	8. 1	13.10
Average No. of Weeks	28	28	25	28	24.4	28.9	26	26.9
Cost per Cow in Winter	£19. 9. 1	£16.18.11	£18.-.5	£21.5.10	£23.7.2	£20.6.4 $\frac{3}{4}$	£10.10.2	£18.11.1 $\frac{1}{2}$

FOODS form 71% of the average cost per cow per week and thus influence the ultimate winter cost to a very great extent. The amounts of food fed on the different farms are shown in Table III.

TABLE III

AVERAGE FOODS FED IN LBS. PER DAY. WINTER PERIOD 1949/50.

	1	2	3	4	5	6	7	Average
Turnips	77.0	78.0	43.0	58.0	70.0	13.9	36.9	53.8
Hay	1.2	-	1.0	-	1.8	9.3	-	1.9
Total Straw	23.8	32.0	12.5	21.5	26.8	11.8	24.7	21.9
Oats	0.4	-	0.1	.43	3.35	4.24	-	1.2
Silage	-	-	19.0	-	-	-	-	2.7
Other	0.4	-	1.5 (vetches)	-	-	Grazing	Grazing	0.3

On Farms 1, 2 and 4 the cows were kept on turnips and straw with small quantities of hay and concentrates being fed to the autumn calvers on Farm 1. The food cost per week is very uniform on these farms and subsequent results indicate that this is a safe and not too costly system of bringing spring calvers through the winter. Where turnips do not grow successfully a case can be made for using hay and silage as on Farm 3.

The cost per week is considerably higher on Farm 5 because more oats were fed; the yield of oats per acre was low on this Caithness farm and the cost per cwt. was therefore high.

On Farms 6 and 7 the cows were out grazing during the day all through the winter. On farm 6 the cows were not given much hand feeding until December, but thereafter large quantities of hay and oats were fed and here again the yields per acre were low and thus helped to make the net food cost per week rather high. On Farm 7 there were 12 cows and heifers rough wintered and the only feeding apart from their grazing was some turnips and straw during the coldest weather.

TABLE IV

MAN HOURS PER COW WEEK - WINTER PERIOD

	1	2	3	4	5	6	7	Average
Man Hours per Week	1.30	0.93	1.28	1.7	1.65	0.88	0.48	1.17

MAN LABOUR forms an average of 20.5% of the average cost per cow week and Table IV shows the great farm to farm variation which may be due to all kinds of factors. The horse and tractor labour costs on Farms 6 and 7 (Table II) were incurred in carting foods out into the fields.

LENGTH OF WINTER PERIOD This varied from  $24\frac{1}{2}$  to  $29\frac{1}{2}$  weeks and most of the cows were brought in towards the end of October and turned out again near the end of April.

COST OF KEEPING COWS THROUGH THE SUMMER 1950.

Here the main charge is the cost of grazing and Table V shows how that was worked out.

TABLE V  
AVERAGE GRAZING COST PER ACRE FOR THESE FARMS

	£. s. d.	%
Rent	1. -. 4.	20.6
Labour - Man $\frac{1}{4}$ d. Tractor $\frac{1}{1}$ d.	-. 2. 5	2.5
Sowing Down Charge	-.15.11	16.1
Manures applied £1. -.11		
Add R.M.V.'s b/f $\frac{3. 3. 4}{4. 4. 3}$		
Less R.M.V.'S c/f $\frac{1.19. 4\frac{1}{2}}$		
Net Manures	2. 4.10 $\frac{1}{2}$	45.4
Overhead Costs	-.15. 3	15.4
	4.18. 9 $\frac{1}{2}$	100.0
Less Proportion of Hay & Silage	-.15. 2 $\frac{1}{2}$	
Average Grazing Cost per Acre	£4. 3. 7	

Average Grass Cost per Acre £4. 3. 7

Average Grass Cost per Farm £469.18. 5

Less  $\frac{1}{6}$  Winter Grazing £78. 6. 5

Summer Grass Cost per Farm £391.12. -

Divide this by Number of L.S.U.Weeks 2185.9

to give Net Grazing Cost of  $\frac{3}{7}$ d. per L.S.U. Week.

The cost of the grass is obtained for each field or group of fields and these costs are added together to give grass cost per farm. One sixth is then deducted as an allowance for winter grazing. The remaining figure is the summer grass cost per farm and this divided by the total number of livestock grazing the grass, gives the grazing cost per livestock unit (expressed in Table V as a cost per livestock unit week).

The summer cost of keeping the cows on the seven farms is shown in Table VI.

TABLE VI  
COST OF COWS PER WEEK - SUMMER, 1950.

Farm	1	2	3	4	5	6	7	Average
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Grazing	4. 2	4. 4½	3. 7	3. 7	1. 4	1. 11½	5. 11½	3. 7
Labour	-. 3½	-. 2¼	1. 5¼	-. 8½	-. 3½	-. 7	-. 3½	-. 6½
Overheads	-. -¾	-. -¾	-. 5	-. 2½	-. 1	-. 2	-. -¾	-. 1¾
Net Cost per Animal Week	4. 6¼	4. 7½	5. 5¼	4. 6	1. 8½	2. 8½	6. 3¾	4. 3¼
Average Number of Weeks	25.7	24.0	30.4	24.14	27.7	23.43	26.14	25.9
Summer Cost per Cow	£5.16.2½	£5.11.-	£8.5.3½	£5.8.7¾	£2.7.1	£3.3.3	£8.4.8¼	£5.10.10½

The summer grazing cost tends to be low on farms with hill land since there is usually no charge to be made for manures or sowing down and moreover the rent is very little. Such land usually produces a fair amount of keep in the summer and the resultant grazing cost is low. This effect is seen on farms 5 and 6 both of which had some rough grazing. The very high cost per animal week on Farm 7 hardly gives a true idea of the cost of grazing the cows and heifers. They did not get the pick of the grass, but followed the grazing of other stock. It was not possible to "grade" the grass however, so a flat rate was taken. No supplementary foods were fed to the cows at grass and the only other items making up the summer cost per cow week are man labour and overheads.

Man labour consisted of routine locking round the calves together with the occasional odd jobs of earmarking, moving them from field to field, etc. The overheads were charged on the man labour. The length of the grazing season varied from 23½ to 30½ weeks and the very long period on Farm 3 helps to make the total summer cost high on that farm. The total cost of keeping a cow for a year worked out at just over £24 (average of the 7 farms) of which ¾ (£18.10/-) was incurred in the winter. The cheapness of grass compared with other foods is thus evident and these figures emphasise the advantage of getting good grass for as long a time as possible. This is a practical method of reducing costs. It may be noticed in comparing Tables II and VI that the "cow year" does not stand uniformly at 52/7 weeks. This is because it is fixed by the time when the calves become spent (i.e. are weaned) and this varies a little from year to year. Hence the cow year may be 53 weeks one year and another year 51 weeks. Another cost to be put against the calves is the

BULL SERVICE CHARGE

Where a bull is hired this is simply the service fee per cow. All these farmers however had bulls of their own and the service charge was determined by getting the cost of keeping the bull for the year and adding to it the annual depreciation cost.≠

The resultant bull cost is divided by the number of cows served in the year to get the service charge per cow. The calculation for the average of the individual costs is shown in Table VII.

≠ This is the difference between the prospective selling price and the purchase price divided by the number of seasons the bull is likely to be used.



TABLE VII

CALCULATION OF THE BULL SERVICE CHARGE (AVERAGE FIGURE)

Winter Period	26.52 weeks	
Cost per Week - Turnips	7. 3 $\frac{1}{2}$ d.	
Eating Straw	-.11	
Bedding Straw	1.10 $\frac{1}{2}$	
Hay	1. 2 $\frac{3}{4}$	
Oats	2. 2 $\frac{1}{2}$	
Other	<u>-. 7<math>\frac{1}{2}</math></u>	
	14. 1 $\frac{3}{4}$	
Less R.M.V. 's of Foods	<u>2. 9<math>\frac{1}{4}</math></u>	
	11. 4 $\frac{1}{2}$	
Labour	3. -	
Overheads	<u>-.10<math>\frac{1}{4}</math></u>	
Winter Cost per Bull Week	15. 2 $\frac{3}{4}$	
TOTAL WINTER COST		£20. 2.10 $\frac{1}{2}$
Summer Period	25.56 wks.	
Cost per Bull Week - Grazing	3. - $\frac{3}{4}$	
Overheads	-. 2	
Labour	<u>-. 6<math>\frac{1}{2}</math></u>	
Summer Cost per Bull Week	3. 9 $\frac{1}{4}$	
Summer Cost per Bull		<u>£4.16. 8</u>
		24.19. 6 $\frac{1}{2}$
Add Bull Depreciation		<u>7. -. 6<math>\frac{3}{4}</math></u>
		£32. -. 1 $\frac{1}{4}$
		<hr/>
Divide by Number of Cows Served - 25.16		
Service Charge per Cow -		<u>£1. 8. -</u>

The charge per cow varied from £1 to £1.17.11. The cost of keeping the bull does not affect the service charge so much as the number of cows served and the farmer with fewer cows will normally bear an increased expense for the advantage of having his own bull on the farm. Four of the farmers used an Aberdeen Angus bull and one a Shorthorn. Two farmers used two bulls - one of each breed.

COST OF BREEDING AND REARING THE CALVES

Most of the calves were born in the early spring (February to April) and the numbers for the various months are shown in Table VIII.

TABLE VIII

TIME OF CALVING AND PURCHASING OF CALVES

	Nov. or earlier	Dec.	Jan.	Feb.	Mar.	Apr.	May	June or Later	Total
Calves Born	4	1	7	19	41	19	3	1	95
Calves Purchased or Transferred	4	-	2	13	22	5	-	2	48

21 calves were purchased and 27 were "transferred". "Transferred" calves are the progeny of other cows on the farm (e.g. Dairy Cows) which are taken from their dams and put on to the rearing cows when a few days old. There were no losses of cows and altogether only 3 calves died on these seven farms. In considering the financial results Table IX gives at "A" the cost per calf on the seven farms ignoring calves purchased or transferred (i.e. it is as if they all reared one calf to the cow). The figure at "B" shows the net cost per calf reared on each farm. (Table IX see p.8)

It will be seen that the cost of rearing a single calf per cow was £25 on farms 5 and 6 whilst on the true lowland farms 1 - 4 it would have worked out at nearer £30 if they had not had some cows with two calves.

IS THE SINGLE CALF SYSTEM PROFITABLE?

Farmers 5, 6 and 7 sold their calves in the autumn 1950 and the results are summarised in Table X.

TABLE X

RETURNS ON SINGLE SUCKLED CALVES

Farm	5	6	7
Cost of Rearing Calves	£26.18. 5	£24. 9. 8	£21. 2.10 $\frac{1}{2}$
Sale Price	15.10. -	17.12. 6	19.18. 4
Margin (All losses)	£11. 8. 5	£6.17. 2	£1. 4. 6 $\frac{1}{2}$

In the case of Farm 7 the loss was on paper rather than real since as has been mentioned before the cows acted as scavengers and little would have been saved if they had not been there.

In such cases when the cows fit into the farming system without much additional expense being incurred by keeping them, the single suckling system may prove worth while. Similarly if the cows can be kept mainly on hill land without heavy winter feeding the system should pay well enough. On lowland farms where the cows were kept inside or wherever heavy feeding is necessary in the winter the single calf system is liable to result in losses (as on Farms 5 and 6) unless the price received

TABLE IX

COST OF REARING CALVES

Farm	1	2	3	4	5	6	7
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
No. of Cows	19	11	14	22	10	8	12
Cost per Cow per year	25: 5: 3½	22: 9: 11	26: 5: 8½	26: 14: 5¾	25: 14: 3	23: 9: 7¾	18: 14: 10¾
Herd Cost	480: -: 6½	247: 9: 1	367: 19: 11	587: 18: 6½	257: 2: 6	187: 17: 2	224: 18: 3
Service Charge	19: 14: 3	20: 17: 1	25: 13: 4	31: 5: 2	12: 1: 8	8: -: -	16: 16: -
Foods fed to Calves	16: 11: 8						
Total Cost (Z)	516: 6: 5½	268: 6: 2	393: 13: 3	619: 3: 8½	269: 4: 2	195: 17: 2	241: 14: 3
Calves Born	19	11	14	21	10	8	12
Calves Died	-	-	2	-	-	-	1
Net Calves Born & Reared	19	11	12	21	10	8	11
Cost per Calf born & reared "A"	27: 3: 6	24: 7: 11	32: 16: 1¼	29: 9: 8½	26: 18: 5	24: 9: 8	21: 19: 6¼
Calves purchd.	3	3	13	1	-	-	1
Calves Trnsfd.	20	3	-	4	-	-	-
Cost of Calves purchased	33: -: -	31: -: -	133: 10: -	3: 15: -	-	-	12: -: -
Cost of Calves Transferred	190: -: -	25: 10: -	-	38: -: -	-	-	-
Cost of foods fed to calves transferred	16: 11: 8½	-	-	-	-	-	-
Cost to calves (from Z above)	516: 6: 5½	268: 6: 2	393: 13: 3	619: 3: 8½	269: 4: 2	195: 17: 2	241: 14: 3
TOTAL COST ALL CALVES	755: 18: 1¾	324: 16: 2	527: 3: 3	660: 18: 8½	269: 4: 2	195: 17: 2	253: 14: 3
TOTAL CALVES REARED	42	17	25	26	10	8	12
Net Cost per Calf Reared	17: 19: 11½	19: 2: 1¾	21: 1: 9	25: 8: 5	26: 18: 5	24: 9: 8	21: 2: 10½

exceeds £25 per calf.<sup>≠</sup> Would it have been better to retain the calves until they were older? Table XI has been compiled from the various cattle costs and gives a build up of the average cost of cattle from birth to 3½ years old. The figures are of course very approximate but may be a useful guide.

TABLE XI  
APPROXIMATE COST OF REARING STORES

Time	Age	Period Cost	Cost to Date
Spring say 1950	Born	-	-
Autumn 1950	6 months	£25 (or more)	£25 (or more)
Spring 1951	1 year	£10	£35
Autumn 1951	1 yr. 6 months	£3.10/-	£38.10/-
Spring 1952	2 years	£14	£52.10/- or £16 if fattened totalling £54.10/-
Autumn 1952	2 yrs. 6 months	£4.10/-	£57
Spring 1953	3 years	£14	£71 or £16 if fattened totalling £73
Autumn 1953	3 yrs. 6 months	£4.10/-	£75.10/-

If the rearer could keep the calf to the age of 18 months and sell it as a 6/4 animal at about £40 he should make a profit especially as the calf subsidy will then have been payable to him. If he does not sell then his only hope is to grade the animal fat at under 2½ years old (i.e. before the 3rd winter). If the animal is kept to near 3 years old or over the total cost will have been over £70 and it is unlikely that he will see any return from the animals. The average price received for a bunch of fat steers rarely exceeds £70 per beast and is usually well below that figure.<sup>♠</sup> In this connection it should also be remembered where animals are kept on the farm for a long time (e.g. 3 years) then even a profit of £10 per animal is only a very small return on the capital locked up (invested) in the cattle.

In many cases of course lack of accommodation and keep means it is impossible to retain the animals beyond the spent calf stage. In such cases consideration could be given to keeping less cows and rearing two calves to the cow. Then if prices are poor in the Autumn Sales some of the calves might be retained on the farm until they are older.

All the above remarks are of course only suggestions and the individual farmer alone can decide which system will fit in most profitably on his farm.

≠ The prices in 1950 were generally below this figure.

♠ These remarks apply to the fixed prices for 1950/51 before the changes announced in the 1951 Price Review.

REARING TWO CALVES TO THE COW

The effect of being able to rear two calves to the cow is shown distinctly in the lower half (B) of Table IX. Transferred calves have been charged at 85% of what similar calves were costing on the market at that time. The foods fed to the calves on Farm 1 occur because four heifers calved in autumn and subsequently reared 3 calves each. The first 2 calves were given supplementary foods sometime before being turned out to grass. The table shows that the rearing of 2 calves to the cow has reduced the costs per calf on farms 1 and 3 by £9. 5/- and £11.15/- respectively. On farms 2 and 4 a proportion of the cows reared 2 calves and as a result the costs per reared calf have been brought down by £5 and £4 respectively.

These systems then provide calves at £18 - £20 per head which means that even if the animals are kept through their third winter (i.e. to rising 3 years old) the cost of production per animal is not likely to exceed £65. That means that if the animals are to be kept and sold off fat there is a good chance of getting a profit especially as the calf subsidy will have been paid to the farmer.

On the other hand if the animals are to be sold as spent calves they are very unlikely to make the prices of single suckled animals and in a year of low prices the loss sustained may be heavier than that incurred on the single suckling system.

The two calves to the cow system provides cheaper calves of lower quality but the better quality of single suckled calves can be offset by subsequent management (e.g. during the store period) and ultimately results indicate that many calves reared two to the cow become top quality animals.

SUPPLY OF CALVES WHEN REARING TWO CALVES TO THE COW

This often constitutes a major problem. The second calf is difficult to obtain and much time may be lost and money spent in rearing the right type of animal. Last year (economic Report No. 13) details were given of the system whereby heifers on Farm 1 were served at about the same time as the breeding cows were being served. When the cows and heifers calved in the spring time the heifers' calves were taken from them and put on to the cows, the heifers being subsequently fattened.

This year the same system was successfully followed and 10 of the heifers were fattened off the grass after calving in the spring at 2 years old. The cost of keeping them is shown in Table XII.

TABLE XII

COST OF KEEPING HEIFERS FATTENED AFTER CALVING

	<u>lbs. per day</u>	<u>Cost per Week</u>	
		£. s. d.	£. s. d.
<u>Winter 1949-50</u>			
Turnips	100	-. 9. 9 <sup>3</sup> / <sub>4</sub>	
Straw	30	-. 3. 11	
		-. 13. 8 <sup>3</sup> / <sub>4</sub>	
Less R.M.V. 's (on foods)		-. 2. 11	
Net Foods		-. 10. 9 <sup>3</sup> / <sub>4</sub>	
Labour	0.6 Hrs. per Average Wk.	-. 1. 6	
Overheads		-. -. 5	
Net Cost per Week		-. 12. 8 <sup>3</sup> / <sub>4</sub>	
Winter Period	26 weeks		
Winter Cost			16.10.11 <sup>1</sup> / <sub>2</sub>
<u>Summer 1950</u>			
Grass		-. 4. 2	
Labour		-. -. 1 <sup>3</sup> / <sub>4</sub>	
Overheads		-. -. <sup>1</sup> / <sub>2</sub>	
Carriage (on sale)		-. -. 3	
Net Cost per Week	c/f	-. 4. 7 <sup>1</sup> / <sub>4</sub>	

	£. s. d.	£. s. d.
Net Cost per Week      b/f	- 4. 7 $\frac{1}{4}$	
Summer Cost		3.16. 4 $\frac{1}{2}$
Cost of Bull Service (Bull hired)		- .11. 7
Opening Value of Heifers (Cost figure to date)		<u>28. 1.10</u>
<b>TOTAL COST OF HEIFERS</b>		<b>49. -. 9</b>
10 sold in August - September		
Average Price Received		<u>£52.13. 6</u>
<b>Surplus</b>		<b>£3.12. 9</b>
		plus value of Calf born in Spring (say £7)

Grading of Heifers - 2 S.S.: 7 S.: 1 A+

Average Weight - 9 cwts. 3 qrs.

This system requires care and good management. It would be difficult to work on small farms and the use of 2 bulls is required to prevent undesirable inbreeding.

The female calves of the heifers are not used for breeding, but do make good fattening animals. The system has worked well on Farm 1 for two years and other farmers would do well to explore its possibilities. It is not only profitable but also an intensive system giving the country more of the beef that it so desperately requires.

Yet another variation occurred on Farm 1 in that 4 older heifers calved in the autumn 1950 and each brought up 3 calves. Two of these were suckled through the winter and the third was put on in April just before the stock were turned out to grass.

The heifers had to be fed heavily during the winter and Table XIII compares the average costs for the four heifers with those of the 15 cows.

TABLE XIII

AVERAGE COSTS FOR REARING TWO AND THREE CALVES PER COW

	Heifers (3 Calves each)	Cows (2 Calves each)
Winter Cost per Week	£-.19. 4 $\frac{3}{4}$	£-.12. 5 $\frac{1}{4}$
Number of Weeks	33.85	26.43
Winter Cost	£32.16. -	£17.15. 2 $\frac{1}{2}$
Summer Cost per Week	£-. 4. 7 $\frac{1}{4}$	£-. 4. 7 $\frac{1}{4}$
Number of Weeks	25.7	25.7
Total Summer Cost	£5.16. 2 $\frac{1}{2}$	£5.16. 2 $\frac{1}{2}$
Bull Service Charge	<u>£1. -. 9</u>	<u>£1. -. 9</u>
Total Cost	£39.12.11 $\frac{1}{2}$	£24.12. 2
<u>ADD</u> Cost of Calves Transferred	<u>19. -. -</u>	<u>9.10. -</u>
Total Cost Charged to Calves	<u>£58.12.11<math>\frac{1}{2}</math></u>	<u>£34. 2. 2</u>
Cost per Calf Reared	£19.11. -	£17. 1. 1

The cost of extra winter feeding meant that the calves reared by the heifers cost more than those of the cows. The quality of the calves should not be very different for the two groups and it is possible that sometimes the greater intensity of production (i.e. the fact that you have 3 calves instead of 2) will counterbalance the greater cost entailed, making it worthwhile to use this method in part. Details of the subsequent growth rates of autumn and spring born calves will also be required in making a comparison between them.

#### ACKNOWLEDGMENT

The Economics Department of the North of Scotland College of Agriculture wish to thank the farmers who have provided the data used in this report and discussion on their individual results is invited. It should again be emphasised that results from such a small number of farms must not be taken too far and the economic discussion in this report needs to be substantiated by further costings involving more farms. Moreover the question of the suckling of more than two calves has only been skirmished with whilst that of pail fed (cogged) calves has not been touched.

The Economics Department are continuing this costing scheme and it is hoped that many more records will be completed for the year 1950-51.

APPENDIX

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. 15 of this Department.

PURCHASED FOODS have been charged at purchase price.

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

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

OVERHEADS have also been charged at the recommended rates.

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.

In the Summer Grazing Costs:

CHARGE OF SOWING DOWN THE GRASS was taken as

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

LIVESTOCK UNITS The scale used was -

1 Horse, Bull, Cow or 2-3 yr. Cattle	=	1 Unit
1-2 yr. Old Cattle	=	.75 Unit
Young Horses; Cattle 6 months-1 yr. old	=	.50 Unit
Sheep over 6 months	=	.25 Unit
Sheep 3 - 6 months	=	.07 Unit
Lambs under 3 months	}	No Charge
Calves suckling		