



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

WITHDRAWN

Cattle  
Cost  
Production  
Average

THE WEST OF SCOTLAND AGRICULTURAL COLLEGE  
ECONOMICS DEPARTMENT

HILL-CATTLE IN 1951-53  
COSTS AND RETURNS FROM SOME THIRTY FARMS  
IN SOUTH-WEST SCOTLAND

by

C.W. Roberts

Report No. 14

6, Blythswood Square,  
Glasgow, C.2.

March, 1954

INDEX

	Page
Introduction and acknowledgments	1
The field of enquiry	1
The situation of the farms	1
The types of farm	1
The production objectives in the herds	1
Breeds of cattle	1
Size of herds	2
The financial results	2
Expenditure on foods	3
Depreciation of cows	3
Depreciation and upkeep of bulls	4
Fertility	4
Calving seasons	4
Calf prices	4
Subsidies	4
Some results from 32 herds for 3 years	4
Changes in numbers of Hill Cattle	5
Summary	6
Definitions and methods	7
 <u>Tables</u>	
1 Breeds of bulls used	9
2 Breeds of cows used	10
3 Number of herds	11
4 Sizes of herds by locality groups	12
5 Costs and returns per cow in detail and Cost per calf, by locality groups	13
6 ditto. by groups according to housing	14
7 Surplus per cow - distribution table - by locality and by breed of cow	15
8 Weights of several kinds of food fed per cow, by locality and by housing groups	16
9 Annual turnover of cows by locality groups	17
10 Prices and valuations of cows by locality groups	18
11 Numbers of live calves born per 100 cows by locality and housing groups; and numbers of calves weaned	19
12 Method of disposal of calves by locality and by housing groups	20
13 Prices of calves by locality and by housing groups	21
14 Subsidies received: by locality groups	22
15 Distribution tables for 32 3-year herds	
(a) Hay equivalent fed - by locality & by housing groups	23
(b) Hours of labour - by housing groups	23
(c) Net costs per weaned calf - by locality groups	24
(d) Value per weaned calf including Calf Subsidy - by locality groups	24
16 Calving seasons	25
17 Numbers of beef cows in the counties 1950-1953	26
18 Changes in the numbers of cows in these herds	27
19 Numbers of cows qualifying for Hill Cattle Subsidy in 1951, 1952 and 1953	28

HILL CATTLE 1951 TO 1953COSTS AND RETURNS ON SOME 30 HILL FARMS IN SOUTH WEST SCOTLAND

Introduction and acknowledgments This report concerns a small enquiry made by the writer into the costs of keeping hill cows. It covers also the returns from those cows. The report itself has been written against time; and, partly for that reason, it does not fully recompense the many farmers who kindly helped the enquiry either by general advice or both by general advice and the supplying of information. In particular it has not been possible to refer in detail to the practice in individual herds. To the farmers who helped, to others including Inspectors of the Department of Agriculture for Scotland, some of whom helped in the early stages, and to colleagues of the West of Scotland Agricultural College, warm thanks are expressed.

The field of enquiry Originally the enquiry was intended to be confined to herds of hill breeds or their crosses which were eligible for the Hill Cattle Subsidy and were primarily concerned with selling weaned calves. In the end, however, several of the Galloway herds for which details were collected kept their calves on instead of selling them at from 6 to 9 months of age. Similarly it was intended to exclude herds housed night and day during the winter; but information from one such herd is included.

The situation of the farms The farms themselves are situated in the following districts:

West Perth (including also two farms a few miles north of Glasgow),	9 farms,
Coastal North Argyll (including also one farm near Loch Lomond)	10 farms,
and Galloway, North Dumfries-shire and South Ayrshire	12 farms.

For convenience, these groups are called respectively West Perth, North Argyll, and South West.

Because there were two herds on each of two farms, and three herds on another, from which separate records could be taken, the number of herds mentioned in the various tables in this report exceeds 31.

The types of farm The farms varied from hill farms capable of producing little winter keep to upland farms where hay and sometimes oats and roots could be grown. All received Hill Cattle Subsidy. The actual heights on which the cattle grazed varied from sea level in Argyll and the South, and low moors in Galloway, to over 1000 feet in the Grampians.

The hill cattle were much less important sources of revenue than hill sheep on all except about 1 in 10 of the farms; the number of hill cattle varying from 1 for every 5 ewes on a small coastal farm, to 1 to every 7 score ewes on a large farm in the Grampians. Most commonly there were about 30 ewes for every hill cow.

The production objectives The majority of the calves produced in the West Perth herds were sold at the sales of suckled calves held towards the end of September or in early October (Table 12). Generally these farms had neither the buildings nor the winter keep to carry their calf crop over into the following year.

On the other hand most of the calves in the North Argyll and South West Groups were retained beyond weaning. These were variously kept for rearing into the herd, for sale as breeding stock, for sale as yearlings and as six-quarter-year-olds or as mature fat stock.

Breeds of cattle (a) Bulls Amongst the herds Shorthorn bulls were most common and always used for crossing; Galloways followed closely, all being used primarily for pure, though not necessarily pedigree, breeding: a Hereford was used to good effect in one West Perth herd and in two herds in one ownership in the South West; and Aberdeen Angus bulls were used in 8 herds, 3 in West Perth and 5 in North Argyll. (Table 1). Five herds had more than one breed of bull.

Breeds of cattle. (b) Cows The cows were of various breeds and crosses, first or second cross of Shorthorn on Highland being commonest in West Perth, with pure Highlanders next; pure Highlanders and first or second cross Shorthorn x Highland were equally common in North Argyll, with Galloway or Galloway crosses close behind; while in the South West Galloway cows predominated, the only cows in this group which did not carry any Galloway blood being in two herds in one ownership and one other herd. (Tables 2 & 3). The latter, of first cross Shorthorn x Highland, did well by most standards. Even in the north of the province the herds included some cows which carried some Ayrshire blood, even up to 50%; but in general the records were arranged to exclude first crosses with dairy breeds. Most of these crosses had sprung from the dairy cows kept for the house. However one of the Wigtownshire herds had actually been founded by a purchase of first cross Galloway x Ayrshire heifers.

The degree of dependence upon purchases of breeding stock varied. The pure herds had no difficulty in this respect, and the herds which were big enough to carry more than one bull could make suitable plans for breeding replacement heifers; but those who wished to produce an attractive calf from cross bred cows found it desirable to purchase their breeding cows. These were bought variously as stirks, bulling heifers, calving heifers, and even as cows.

Size of herds About half the herds carried between 15 and 24 cows. (Table 4). While admittedly any increase in the numbers of hill cattle carried is likely to come either from small additions to existing herds or from the establishment of herds of less than 20 cows, the figures for the herds covered by this study are likely to be relevant to such new smaller herds.

The financial results In Table 5 are set out the main items of cost and return per cow in the three locality groups for each of the three years. The high food costs and the low value of calves produced in 1951 stand out clearly. So does the importance of subsidies. In all groups and in all years (except in the South West in 1953) the value of calves was less than total expenses. When the subsidies are added in however, there was a surplus in all groups and years, except in West Perth and North Argyll in 1951.

Total costs per cow were generally considerably lower in the kindly winter and summer of 1951/52 than in the severe winter and spring of 1950/51; while the early cold snap of December 1952 prevented any further noticeable drop in costs for the 1953 crop of calves. Average cost per calf rose in 1952 despite the fall in costs per cow, because fertility was reduced as a result of the hard winter and spring of 1951. (Tables 5 & 11).

On average, giving each group equal weight, the cost per cow over the three years was about £28, made up, per cow, of:-

	£
Foods	12.1
Labour	4.
Share of hill expenses and overheads	4.8
Stock depreciation and bull upkeep	4.7
All other expenses	2.2
	<u>£27.8</u>

Against this could be set:

The value of calves, per cow	£20.8
leaving unrecovered in the price	7.0;
but, with subsidies of	13.0,
yielding a surplus per cow of	£6.0.

Net costs of weaned calves averaged on the same basis, £36.10/- a calf.

As a commentary on Table 5, it may be observed that on average the value of the calves themselves exceeded, by nearly £2 a cow, the total of expenses other than the charges for labour, hill and overheads. If the farm labour and the buildings had had no alternative employment, and if the cattle did not use up hill pasture that could have been profitably used by other stock; and if the cattle did not necessitate increased costs on the hill or increased overhead expenditure; then the additional income from keeping or

adding to a herd of hill cows like these would on average amount to about £2 a cow, together with the subsidies mentioned on the previous page.

As between herds most cows of which were housed at night and those in which most were not housed at all, foods, labour, and total expenses per cow and per calf cost more for the housed herds than for the others. As calf values were not correspondingly higher, the surplus shown by the herds housed at night was somewhat less than for the herds not housed. (Table 6). It should however, be said that rather more of the calves from the housed herds could be carried on relatively inexpensively to older ages, at which they would attract prices sufficient to yield an additional profit. (Table 12b).

Surpluses per cow varied widely in each year, though deficits and low surpluses varied rather less in 1951 than did the better results of 1952 and 1953. (Table 7).

Expenditure on foods As already indicated, the most important group of expenses on these cattle was that on foods, whether homegrown or purchased. A mild winter with an open autumn and an early spring on the hill may well reduce the quantity of fodder required on individual farms by much more than the 10% drop between 1951 and 1952 shown in Table 8. And if that drop is associated with a fall in the price of hay of 23%, such as occurred on some farms between the winter of 1950/51 and that of 1951/2, profits may well be increased by over £4 a cow on this account alone. Similarly a farm unable to harvest winter fodder may face big losses, as did these farms, if the harvest has been poor and the winter is long.

Actual prices in £'s per ton for bought hay were as follows:

	<u>1951</u>	<u>1952</u>	<u>1953</u>
West Perth	12.3	12.4	9.4
North Argyll	17.4	15.0	10.6
South West	16.2	13.8	9.9

The regional differences are partly due to difference in cost of haulage and partly to difference in time of year when the purchase was made.

Opinions varied from farm to farm upon the type and quality of hay most suitable for hill cows. What is clear is that timeliness of feeding, shelter for feeding (for man and beast), and adequate food or grass to secure a good level of nutrition at the time when service is due are dominant factors in maintaining strength to avoid bogs and other dangers towards the end of winter, in securing good calving condition and ensuring a full timely calf crop in the following year.

It is of interest to examine the possible economic effect of feeding additional food in hard winters when fodder is scarce. Had additional foods been obtainable and used in 1950/51 it is very probable that calf deaths in 1951 would have been lower (Table 12), live calves born in 1952 would have been higher by fully 7% (Table 11), and cow deaths in both 1951 and 1952 would have been lower by about a quarter. (Table 9). If replacement heifers cost £63 (Table 10) and calves make £28 these exceptional losses represent at current prices about £2.10/- per cow of the whole herd. This is in addition to the probable failure to produce a good well grown calf in full bloom for the autumn sales. This £2.10/- itself is the price of 3½ cwts of hay, at £14 a ton, or 2 cwts of grain at £25 a ton. Whether the feeding of so little extra as 3½ cwts of hay would have prevented the ill effects of the winter of 1950/51 it is not possible to judge. But it is clear from scrutiny of the records that natural shelter, and an area of good rough 'pulling' for the winter are highly desirable features if hill cattle are to be wintered profitably.

Depreciation of cows This averaged about £3 a cow. The written down value per cow averaged about £36. (Tables 9 & 10). Had all cows in these herds been bought or reared at recent prices (of say £63) this figure for depreciation would have been nearer £4 per cow. Disposals of reactors during attestation tests accounted for higher turnover than usual on some of these farms in 1953. Most of those cows made prices higher than their written-down valuations.

Deaths of cows arose from bracken poisoning (1 case), Johnes' Disease,

Stomach staggers, calving troubles and blackleg/. It is probable that good stockmanship would have avoided the bracken poisoning: it occurred on a day the cattle were not counted by the 'looking' shepherd. Indeed good stockmanship - judgment when to shift the cows, when to feed and so on, as well as knowledge of the ways of the livestock market - is a very important factor in success.

Depreciation and upkeep of bulls This was highly variable; bull depreciation being as high as £4.5/- a cow in the one herd where an expensive bull "reacted." Bull depreciation averaged about 11/- a cow and bull keep cost about 17/- a cow.

Fertility The number of live calves born averaged about 83%; calves weaned were rather less than this because of deaths and sales of a few unweaned calves, usually bad doers or lamed animals (Table 12); while the fact that in some herds calves are bought to twin on to dams that have lost their calves, tends in the other direction. Where it is possible this twinning is normally advantageous. Changes in the numbers of unweaned calves on hand also affects the number weaned in the year.

Abortion and slow conception were prevalent in some herds. Appropriate treatment against abortion had been given and remedies for the failure to conceive timeously were being sought. The value of a rising plane of nutrition and of silage is mentioned <sup>this</sup> on/page.

Calving seasons The concentration of most calvings in March and early April is indicated in Table 16. There is a tendency to late calvings. This tendency may not be serious in Galloway herds in the somewhat milder South West; but on farms in West Perth where there is neither housing nor keep for young stock during the winter the effect of late calvings is either a severe drop in the autumn prices for the under-grown calves that result or a decision to forego the next year's crop. The latter may indeed be the best decision, a decision that is accepted as normal in some herds where the calving interval is about 13½ months; and cows are therefore yielded one year in four. Whether improved feeding methods together with improved mineral supplements would lead to a steady 12-month calving interval and would then be profitable is an interesting problem.

One farmer succeeded in getting all his cows served within a month or so of one another and all therefore calving within about a month. This was at least partly due to adequate feeding and good winter grazing, and resulted in a full crop of very well grown calves for sale in the autumn. It was also early enough to avoid the busy lambing season. In a herd in the north of West Perth and in another in the south of the South West the use of grass silage had been accompanied by a very welcome improvement in acceptance of the bull and effectiveness of service.

Calf prices These varied from market to market and, as usual, from hour to hour within a given market. Since some steer calves were sold in 1951 after being marked for subsidy, <sup>since</sup> none of these calves were so sold in 1952, and since many of them were so sold in 1953 comparison of the prices are difficult to make. The price arrived at by adding together the proceeds of all weaned calf sales and the valuations at weaning of all weaned calves on hand, together with the calf subsidy actually accruing to the herd owner gives as fair an indication of the course of prices as is possible from these records. (Table 13). Price plus subsidy rose by £5.6/- in 1952 and by a further £3.12/- in 1953.

Subsidies The effect of the increase of the Calf Subsidy from £5 per steer calf in 1951 to £5 per calf in 1952 and 1953 has been included in the foregoing figures. The effect of the institution of the Winter Keep Subsidy of £3 per qualifying cow in 1952 and its incorporation in the Hill Cattle Subsidy, raised thereby to £10 per qualifying cow in 1953, is shown in Table 14. So is the increase in the proportion of attested herds receiving their £1 a head at December and £1 a head at June. Not all cows qualify for the Hill Cattle Subsidy, because (a) Heifers thought to be in calf may fail to breed and qualify, and (b) Cows may die and not be replaced in time to secure approval.

Results from 32 herds each represented in each of the 3 years Variations in quantities of foods fed (expressed in terms of hay), in hours of labour, in average costs per weaned calf and in the values of weaned calves plus subsidy are shown in Table 15. For this table the results of each farm for the 3

years have been merged.

Changes in the numbers of hill cattle In Table 17 are given the numbers of beef cows in the counties in which these herds are situated, and in Scotland in December of 1950-1953. These have been kindly supplied by the Department of Agriculture for Scotland. These numbers are also expressed as percentages of the average numbers in these years. In general the South Western counties and Argyll increased their herds more than the average for Scotland, while Perth, with its substantial numbers of low-ground herds has changed less. Table 19 shows how the numbers of Hill Cows qualifying for subsidy in 1951, 1952 and 1953 have changed, compared with the numbers in the 33 herds for which corresponding information is known from this study.

Changes in the numbers of cows in the herds studied were affected by removal of reactors during the preliminaries to attestation, and in one herd by a decision to cease to keep the particular breed of cow. One herd was newly started for the 1952 crop. The figures in Table 18 which gives information about these changes suggest that the county and national changes were due to other factors than those present in the studied herds. It should, however, be noted that some of the owners of the herds which were studied had other cows than those for which particulars were collected.

In Table 19, the details for which were received after the paragraphs above were written, the figures for West Perth relate to the parishes falling in that part of Perthshire, whilst in Table 17 the entries are simply a conventional half of the whole county's numbers.

---

(A summary of the main contents follows on page 6)



Summary of the main contents In this small enquiry, particulars about the hill cattle in 33 herds receiving Hill Cattle Subsidy, were collected for the calf crops of 1951, 1952 and 1953. Additional information from two other herds for 2 and 1 years respectively as well as general information from about a dozen other farms, was obtained.

These calf crops were respectively a crop following a very severe winter after a light hay harvest, subject to a steer calf subsidy of £5 and a Hill Cattle Subsidy of £7 an eligible cow; a relatively light calf crop after a mild winter and an early spring, subsidised by an additional £3 per cow as representing half the cost of winter keep, and selling with the assurance to the buyer of reaping a £5 per head Calf Subsidy, at prices considerably higher than in 1951, apart from the subsidy; and a fuller crop after a fairly long winter, with hay prices £3 or £4 lower than for 1952, with the same assistance as for 1952 and with another series of buoyant autumn prices.

Most of the herds were of medium size, of between 10 and 24 cows; (Table 4). Cross Highlanders predominated in West Perth and North Argyll, and Galloways in the South West. (Table 2)

Average total costs per cow were about £28, average total cost per weaned calf about £36, average value of calves about £21, and average surplus about £6 after allowing for subsidies of £13. (Table 5)

Average surpluses rose from a deficit of £2 per cow in 1951, to £7 in 1952 and £13 in 1953. (Table 5)

Without the subsidies, average deficits would have occurred in all years and all groups, except for a minor surplus in one group in 1953.

Food was the most important item of expense at about £12 a cow. (Table 5)

Some of the expenses charged might be considered already covered by the other activities of the farm. If so the addition to income from keeping these cattle might be reckoned, on the basis of these years, at about £9 more than the £6 already mentioned. (Page 2.)

There were no very marked differences between districts; and, as between housing the cows at night and not doing so, average differences in food consumption were not large. This absence of differences is presumably due to other differences <sup>in circumstances</sup> than those distinguished. Housed herds used about 48/- more labour per cow, a difference that would represent, on a 22 cow herd, about a seventh of a man's time. (Tables 6 and 8)

Surpluses per cow varied from deficits of more than £12 for 4 herds in 1951 and 1 in 1952 to surpluses of over £18 in 1 herd in 1951, 4 herds in 1952 and 11 herds in 1953. (Table 7)

Average food consumption varied from district to district and from season to season. In terms of hay the average consumption was 22 cwts a cow. (Table 8)

For every 100 breeding cows and heifers about 18 new cows or heifers were introduced each year. This is higher than normal in these herds, the higher number being due to some building up of herds and some switching from one breed to another. Deaths were about 3%. (Table 9)

Average fertility varied from 73% in 1952 in the North Argyll group to 90% in West Perth in 1951 and the South West in 1953. (Table 11)

Approximately 3% of calves died. (Table 11)

Variations between the three-year-average results for 32 individual herds are set out. (Table 15)

Changes in the numbers of cows in these herds are compared with changes in the numbers of beef and hill cows in the Counties concerned and in Scotland. (Tables 17, 18 and 19)

Stockmanship is an essential for success.

DEFINITIONS AND METHODS

- 1 The method of enquiry The information embodied in this report was normally gathered during one visit to each farm between June and November 1952 and another visit in November and December 1953. It was based on the farmer's recollection aided by his accounts, diary, and other records. Only on a very few farms was a special record, designed for 1953, kept. It follows that the figures are not precisely accurate, but since the farmer's general approval of the figures has been obtained for all herds except four whose acceptance is awaited they are considered reasonably representative of the facts.
- 2 The accounting period For the 1951 crop the accounting year covers a year commencing between 1st October 1950 and 1st December 1950; and similarly for 1952 and 1953. In determining the date, the objective was to take a time when culled cows had all been disposed of, and before winter feeding had commenced. If culling intended to be made earlier was in fact delayed, the account was adjusted to show what would have happened ordinarily.
- 3 Commercial values For the few pedigreed herds included, sales or purchases of stock at prices higher than those which would have ruled for pure non-pedigreed stock of similar general quality, have been reduced to such lower figures. Bull calves sold as bulls are valued as steers. For these reasons the results for four of the Highland herds and a few of the Galloway herds are lower than those actually achieved.
- 4 Valuation of cows All cows were valued at their purchase price, or estimated market value, at introduction, less depreciation.
- 5 Valuation of calves In general, unweaned calves on hand at the end of the season (October or November) were valued at a proportion of their value as weaned calves, the proportion being determined by their age since conception. The value of such calves was included in the expenditure of the following year. Calves retained after weaning were normally valued at their market price as suckled calves.
- 6 Purchased foods were charged at delivered cost.
- 7 Homegrown foods were charged at the following prices:

Hay	8/-	a	cwt
Oat sheaves	12/-	"	"
Oat grain, bruised	22/6	"	"
Oat straw	4/-	"	"
Grass silage	3/6	"	"
Turnips	3/3	"	"

- 8 Hay equivalent is the estimated Starch Equivalent of the foods fed multiplied by 3, to represent hay of 33 S.E.
- 9 The charge for the Hill In general the method was to estimate the rent attributable to the hill itself, add various expenses on the hill, such as special draining, fencing, manuring and seeding, and to take a share of this total, the share being very roughly based on stock units.
- 10 Labour was charged at actual rates per hour if known, or, more usually at the following rates:

	<u>1951</u>	<u>1952</u>	<u>1953</u>
Farmer	2/6	2/9	3/-
Other men	2/5	2/8	2/10

- 11 Tractor and horse work was charged at:

	<u>1951</u>	<u>1952</u>	<u>1953</u>
Tractor	3/9	4/3	4/6
Horse	1/3	1/6	1/6

- 12 Entries were made to cover jeeps, vans and lorries, repairs and depreciation of equipment used for these cattle, (principally hand tools, surgical instruments and cattle crushes), rent of buildings at 10/- a cow housed, and sundry expenses. Haulage to market, market fees and luckspennies on these cattle were recorded.
- 13 Cow depreciation, calculated by writing down each cow towards her estimated ultimate selling price, includes the whole of the valuation of cows that died. Bull depreciation was reckoned similarly. Keep and insurance of bulls was included under the heading of Bull Keep and not under Foods, Use of hill and so on.
- 14 Share of Overheads or General expenses In default of a generally agreed basis for estimating this item on hill farms and in default of precise information about the general expenses of each farm, the expenses were estimated as follows. First the total of expenses on the farm which would not be charged directly to cattle, sheep and the small amount of crops was estimated, - usually in conjunction with the farmer and the whole was shared, in proportion to the normal value of sales or increase in valuation of the several enterprises. It follows that the higher the proportion of the farm's revenue which came from these cattle the higher is the proportion of overhead expenses. On the big sheep farm with few cattle the charge per cow is consequently small.
- 15 Interest on Capital, and Management have not been charged for.
- 16 Milk used in the farm house In Tables 5 and 6 the small value (2/- per cow in one group only) of milk used in the house has been included with the value of calves.
- 17 Net costs per weaned calf (Tables 5, 6 and 15(c)) This is arrived at from the total costs in the herd less the value realised for calves sold before weaning and less the value of unweaned calves on hand, divided by the number of calves weaned in the year.
- 18 Averages Throughout this report each average figure gives each year as much importance as each other year, and each herd as much importance as each other herd. The exceptions are as follows:
- (a) In Tables 9a and 10 and the foot of Table 19 the figures represent the result of counting all the cows in the herds of a particular group as if they were all in one big herd.
  - (b) In the text of this report, rough over-all averages give the averages for each of the groups equal importance.
- 19 Results per cow Throughout, the divisor is the number of cows and reputedly incalf heifers on hand at the beginning of the accounting year, reduced by the number of any cows to be sold or dying early in the year, and increased to include cows shortly to be bought.

TABLE 1.

BREEDS OF BULLS USED: NUMBERS OF HERDS USING ONE OR MORE BULLS OF THE STATED BREED.

Breed of bull	Locality group			
	West Perth	North Argyll	South-West	All
Highland	3	12	-	15
Galloway	-	3	30	33
Shorthorn	23	7	9	39
Hereford	1	-	6	7
Aberdeen Angus	7	13	-	20
	—	—	—	—
	34	35	45	114
	==	==	==	==

Note: A herd using both a Shorthorn bull and a Highland bull in each of the three years would contribute 3 to the Shorthorn entry and 3 to the Highland entry.

TABLE 2.

BREEDS AND CROSSES OF COWS USED: NUMBERS OF HERDS CONTAINING ONE OR MORE COWS OF THE STATED BREED OR CROSS

Breed of cow	Locality group			
	West Perth	North Argyll	South-West	All
Highland	12	12	3	27
Shorthorn x Highland, 1st or 2nd crosses	25	12	6	43
Highland x Shorthorn, 2nd cross	3	-	-	3
Galloway	-	3	30	33
Blue Grey	3	8	4	15
Other Shorthorn crosses	7	8	-	15
Other Galloway crosses	-	3	6	9
	—	—	—	—
	50	46	49	145
	==	==	==	==

Note: A herd containing both Galloway cows and Blue Grey cows in each of the three years would contribute 3 to the Galloway entry and 3 to the Blue Grey entry.

TABLE 3.

NO. OF HERDS IN EACH YEAR

(a) <u>Arranged by locality and breed</u>					
Main type of cow		Locality group			All
		West Perth	North Argyll	South-West	
Highland	1951	4	4	1	9
	1952	3	4	1	8
	1953	3	4	1	8
Shorthorn Highland	1951	5	2	2	9
	1952	6	2	2	10
	1953	7	2	2	11
Galloway and Galloway Crosses (No. of Galloway Cross herds is in brackets)	1951	-	4(2)	11(2)	15(4)
	1952	-	5(3)	11(2)	16(5)
	1953	-	5(3)	10(2)	15(5)
Totals	1951	9	10	14	33
	1952	9	11	14	34
	1953	10	11	13	34
(b) <u>Arranged according to housing</u>					
		Not housed at night	Housed at night		
	1951	21	12		
	1952	23	11		
	1953	24	10		

TABLE 4.

## SIZES OF HERDS: NUMBER OF HERDS WITH THE STATED NUMBERS OF COWS

No. of cows in herd	West Perth			North Argyll			South-West		
	1951	1952	1953	1951	1952	1953	1951	1952	1953
5 - 9							3	3	2
10 - 14	1	2	2	2		1	2	2	2
15 - 19	2	1		4	5	3	3	2	
20 - 24	2	3	6	2	3	5	3	3	4
25 - 29	1	1	1	2	3			1	1
30 - 39	2	1				2	3	2	2
40 - 49								1	1
50 - 59									1
80 - 99	<u>1</u>	<u>1</u>	<u>1</u>	—	—	—	—	—	—
Total	<u>9</u>	<u>9</u>	<u>10</u>	<u>10</u>	<u>11</u>	<u>11</u>	<u>14</u>	<u>14</u>	<u>13</u>

TABLE 5.

## COSTS AND RETURNS: £'S PER COW: HERDS GROUPED BY LOCALITY

	West Perth			North Argyll			South-West		
	1951	1952	1953	1951	1952	1953	1951	1952	1953
No. of herds	9	9	10	10	11	11	14	14	13
No. of cows per herd	29.8	28.2	27.1	19.1	21.2	22.4	18.9	20.1	24.1
Home grown fodder	4.8	4.7	5.3	5.0	4.5	6.2	4.4	6.2	6.9
Bought fodder	7.9	6.4	4.1	8.7	5.5	3.9	9.0	4.1	2.9
Concentrates	.7	.6	1.1	1.1	1.1	1.4	.4	.3	1.7
Total foods	<u>13.4</u>	<u>11.7</u>	<u>10.5</u>	<u>14.8</u>	<u>11.1</u>	<u>11.5</u>	<u>13.8</u>	<u>10.6</u>	<u>11.5</u>
Manual labour	3.8	4.0	4.7	4.6	4.0	4.6	3.6	3.3	3.2
Share of hill and buildings	1.6	1.5	1.4	1.7	1.6	1.6	1.9	1.8	1.8
Share of overheads	3.5	3.7	3.8	2.7	2.6	2.5	3.2	3.4	3.4
Total of these	<u>8.9</u>	<u>9.2</u>	<u>9.9</u>	<u>9.0</u>	<u>8.2</u>	<u>8.7</u>	<u>8.7</u>	<u>8.5</u>	<u>8.4</u>
Cow and bull depreciation and bull keep	3.9	5.0	4.6	5.4	4.5	1.6 x	4.2	4.7	4.7
Calves bought or unweaned at start	.2	.1	.2	-	.1	.5	.8	.9	.7
All other expenses	2.0	2.3	2.6	2.4	1.9	2.3	1.9	1.9	2.1
Total of these	<u>6.1</u>	<u>7.4</u>	<u>7.4</u>	<u>7.8</u>	<u>6.5</u>	<u>4.4</u> x	<u>6.9</u>	<u>7.5</u>	<u>7.5</u>
Grand total of expenses(per cow)	28.4	28.3	27.8	31.6	25.8	24.6 x	29.4	26.6	27.4
Total value of calves	16.3	21.9	23.5	14.9	16.5	20.6	22.5	22.7	27.6
Value of calves, less expenses	- 12.1	- 6.4	- 4.3	- 16.7	- 9.3	- 4.0	- 6.9	- 3.9	.2
Subsidies and bonus	8.2	11.1	14.8	10.0	14.3	15.4	11.4	15.7	17.3
Surplus	- 3.9	4.7	10.5	- 6.7	5.0	11.4	4.4	11.8	17.5
Net Cost per weaned calf	31.7	37.9	35.8	43.7	38.4	34.4	35.4	38.6	30.4

x This is depressed by about £2.4 by the profits on dispersal of one herd.



TABLE 6.

## COSTS AND RETURNS: £'S PER COW: HERDS GROUPED ACCORDING TO HOUSING

	Not housed			Housed at night		
	1951	1952	1953	1951	1952	1953
Number of herds	21	23	24	12	11	10
Av. no. of cows	23	24	26	21	19	22
Home grown foods	3.5	4.4	5.6	7.9	8.1	9.6
Bought foods	<u>11.0</u>	<u>6.4</u>	<u>5.3</u>	<u>5.3</u>	<u>3.6</u>	<u>2.5</u>
Total foods	14.5	10.8	10.9	13.2	11.7	12.1
Manual labour	3.1	3.0	3.4	5.5	5.3	5.8
All other expenses	<u>12.0</u>	<u>12.4</u>	<u>11.2</u>	<u>11.4</u>	<u>11.0</u>	<u>11.6</u>
Grand total of expenses (per cow)	29.6	26.2	25.5	30.1	28.0	29.5
Total value of calves	18.9	20.6	23.8	17.7	20.2	25.0
Value of calves, less expenses	- 10.7	- 5.6	- 1.7	- 12.4	- 7.8	- 4.5
Subsidies and bonus	9.9	13.9	16.0	10.5	14.3	15.9
Surplus	- 0.8	8.3	14.3	- 1.9	6.5	11.4
Net cost per weaned calf	34.9	38.1	32.0 <sup>x</sup>	40.2	38.9	33.0

x excluding one herd dispersed at foot

TABLE 7.

## SURPLUS PER COW: NUMBERS OF HERDS YIELDING SURPLUSES OF THE STATED AMOUNTS

(a) Herds grouped by locality.												
Surplus per cow	West Perth			North Argyll			South-West			All herds		
	1951	1952	1953	1951	1952	1953	1951	1952	1953	1951	1952	1953
Deficit over £12	1	1		2			1			4	1	
Deficit between £6 and £12	2		2	4			3	1		9	1	2
Deficit between £0 and £6	3	2	1	2	4	1	1	2		6	8	2
Surplus between £0 and £6	2	1		2	3	2	2		1	6	4	3
Surplus between £6 and £12	1	2	1		1	3	4	4	2	5	7	6
Surplus between £12 and £18		3	4		3	4	2	3	2	2	9	10
Surplus over £18	—	—	2	—	—	1	1	4	8	1	4	11
Total	9	9	10	10	11	11	14	14	13	33	34	34

  

(b) Herds grouped by main breed of cow in herd									
Surplus per cow	Highland			Cross Highland			Galloway & Galloway Crosses		
	1951	1952	1953	1951	1952	1953	1951	1952	1953
Deficit over £12	1	1		2			1		
Deficit between £6 and £12	3		1	3	1	1	3		
Deficit between £0 and £6	2	1	1	1	3	1	3	4	
Surplus between £0 and £6	3	2		2	1	1	1	1	2
Surplus between £6 and £12		2	2	1	1	1	4	4	3
Surplus between £12 and £18		2	3		3	4	2	4	3
Surplus over £18	—	—	1	—	1	3	1	3	7
Total	9	8	8	9	10	11	15	16	15

TABLE 8.

FOODS FED TO COWS: CWT'S. PER COW.

(a) Herds grouped by locality									
	West Perth			North Argyll			South-West		
	1951	1952	1953	1951	1952	1953	1951	1952	1953.
Hay	21.3	17.9	17.8	13.0	10.6	11.7	21.0	18.0	21.0
Straw	1.5	1.4	2.7	4.3	2.4	2.6	1.9	1.9	2.5
Sheaves	.4	.5		3.2	2.5	3.6	.9	1.6	.6
Silage and roots	5.5	6.4	7.0	11.1	11.7	10.8	.1	5.8	.2
Grain, cake and beet pulp	.4	.5	.8	.9	1.0	1.1	.3	.2	1.1
Total hay equivalent	23.5	21.5	22.6	22.7	19.1	21.0	23.0	20.8	24.3
Number of days from start to finish of foddering	146	150	157	157	130	156	162	148	165
(b) Herds grouped according to housing									
	Not housed at night			Housed at night					
	1951	1952	1953	1951	1952	1953			
Total hay equivalent	22.6	19.5	22.0	23.9	22.5	24.4			

Note: A small quantity of food fed to calves during a spell of husk is included above.

TABLE 9.

(a) ANNUAL TURNOVER OF COWS: NUMBER PER 100 COWS. (b) DEPRECIATION £ PER COW

	West Perth			North Argyll			South-West		
	1951	1952	1953	1951	1952	1953	1951	1952	1953
(a) Opening stock of previous year's cows	84	85	91	81	75	82	73	87	81
Heifers bought		3	1	4	2	3	5	neg.	3
Heifers reared	11	11	11	16	23	15	21	12	11
Cows bought	6	1	-	-	-	-	1	1	5
Cows transferred	-	-	-	-	-	-	-	-	-
Total	<u>101</u>	<u>100</u>	<u>103</u>	<u>101</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>
Cows and heifers sold	21	9	16	3	9	19	3	5	4
Cows and heifers transferred	-	-	3	2	-	-	-	-	-
Cows and heifers died	2	2	2	4	4	1	4	3	3
Closing stock of these cows	<u>78</u>	<u>89</u>	<u>82</u>	<u>92</u>	<u>87</u>	<u>80</u>	<u>93</u>	<u>92</u>	<u>93</u>
Total	<u>101</u>	<u>100</u>	<u>103</u>	<u>101</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>
(b) Depreciation per cow	2.7	3.4	2.8	3.5	2.9	2.4 <sup>x</sup>	3.3	3.8	3.4

Note: (a) For the purpose of Part (a) of this table the cows in each group of herds have been treated as one large herd.

(b) For the purposes of this enquiry heifers put to the bull in the spring and summer of say, 1951, are treated as entering the herd in early winter 1951, and appear in the 1952 entries of Heifers reared or Heifers bought.

<sup>x</sup> (c) This item excludes the result of the herd disposal.

TABLE 10.

## PRICES AND VALUATIONS OF COWS AND HEIFERS. £ PER HEAD

	West Perth			North Argyll			South-West		
	1951	1952	1953	1951	1952	1953	1951	1952	1953
Opening stock of previous year's cows	29.2	30.9	31.3	35.3	34.9	35.0	32.1	35.2	35.5
Heifers bought	-	50.0	61.0	39.3	30.3	65.0	47.1	33.0	63.3
Heifers reared	41.5	46.3	52.3	47.0	43.9	54.3	49.2	53.7	57.2
Cows bought	31.7	50.0	-	-	-	-	34.7	52.3	64.7
Cows and heifers sold	21.2	29.5	32.0	31.3	36.7	46.8	24.1	33.0	44.1
Cows and heifers transferred	-	-	20.0	35.0	42.0	-	-	-	-
Closing stock of these cows	30.4	31.2	32.1	34.9	35.0	36.9	35.2	35.7	37.9

Note: For the purpose of this table the cows in each group of herds have been treated as one large herd.

TABLE 11.

NUMBER OF LIVE CALVES BORN AND NUMBER OF CALVES WEANED, PER 100 COWS

(a) Herds grouped by locality.									
	West Perth			North Argyll			South West		
	1951	1952	1953	1951	1952	1953	1951	1952	1953
Live calves born	90	85	86	79	73	83	85	79	90
Calves weaned	92	83	84	77	69	77 <sup>x</sup>	86	76	89

  

(b) Herds grouped according to housing.									
	Not housed			Housed at night					
	1951	1952	1953	1951	1952	1953			
Live calves born	86	79	86	82	78	88			
Calves weaned	88	77	82 <sup>x</sup>	81	73	91			

<sup>x</sup> excluding a herd dispersed at foot.

TABLE 12.

DISPOSAL OF CALVES

Numbers of calves disposed of in the stated ways, per 100 calves born alive, bought or on hand at the beginning.

(a) Herds grouped by locality.									
	West Perth			North Argyll			South West		
	1951	1952	1953	1951	1952	1953	1951	1952	1953
Sold at weaning	61	67	63	22	18	15	23	19	20
Sold otherwise	0.5	1	1	-	3	12	-	-	1
On hand, weaned	35	28	31	74	74	67	70	71	74
On hand, unweaned	0.5	1	neg.	-	1	3	4	8	3
Died	3	2	5	4	4	3	3	2	2

  

(b) Herds grouped according to housing.						
	Not housed			Housed at night		
	1951	1952	1953	1951	1952	1953
Sold at weaning	41	34	30	19	27	34
Sold otherwise	neg.	1	6		3	1
On hand, weaned	55	60	59	74	63	60
On hand, unweaned	2	3	2	2	5	2
Died	2	2	3	5	2	3

TABLE 13.

## SALE AND VALUATION PRICES OF CALVES: £ PER HEAD

(a) Herds grouped by locality									
	West Perth			North Argyll			South West		
	1951	1952	1953	1951	1952	1953	1951	1952	1953
Sold at weaning: stots	21.4	31.0	34.2	19.4	28.4	27.0	22.3	37.0 <sup>x</sup>	33.2
	queys	17.1	24.3	26.7	18.1	24.6	22.0	28.8	29.5
	stots & queys	19.7	28.3	29.6	18.7	25.6	25.4	23.1	31.3 <sup>x</sup>
Sold otherwise: stots & queys	8.0	13.5	14.6	-	12.0	17.6	-	-	32.0
On hand, weaned	18.7	22.8	23.9	19.2	22.4	25.4	25.4	27.0	29.9
All calves	18.0	25.5	27.3	19.5	22.6	24.3	24.9	27.1	30.1
All calves weaned, plus Calf Subsidy received on them	19.7	26.4	30.6	21.6	26.9	29.8	27.9	31.8	35.5
(b) Herds grouped according to housing									
	Not Housed			Housed at night					
	1951	1952	1953	1951	1952	1953			
Sold at weaning: stots	21.7	31.9 <sup>x</sup>	33.1	20.1	32.6	29.3			
	queys	18.9	26.8	28.3	18.0	23.8	23.8		
	stots & queys	21.4	28.9 <sup>x</sup>	30.4	19.4	28.3	26.5		
Sold otherwise: stots & queys	8.0	20.3	19.0	-	12.0	19.2			
On hand, weaned	22.2	24.7	27.1	21.8	24.6	27.0			
All calves	20.4	25.6	26.6	21.6	22.4	26.8			
All calves weaned, plus Calf Subsidy received on them	23.5	28.6	32.8	24.2	29.2	31.1			

<sup>x</sup>Note: These marked prices have been adjusted to eliminate the effect of a single suckled stot which was sold for a very high price.



TABLE 14.

SUBSIDIES RECEIVED. £'S PER COW

	West Perth			North Argyll			South-West		
	1951	1952	1953	1951	1952	1953	1951	1952	1953
Attested Bonus	-	1.0	2.1	1.9	2.1	2.4	3.0	3.0	3.0
Hill Cattle Subsidy	6.8	6.8	10.0	6.5	6.6	9.6	6.3	6.8	9.9
Winter Keep Subsidy	<u>—</u>	<u>2.9</u>	<u>—</u>	<u>—</u>	<u>2.8</u>	<u>—</u>	<u>—</u>	<u>2.9</u>	<u>—</u>
Total of these	6.8	10.7	12.1	8.4	11.5	12.0	9.3	12.7	12.9
Calf subsidy	<u>1.5</u>	<u>0.4</u>	<u>2.7</u>	<u>1.6</u>	<u>2.8</u>	<u>3.5</u>	<u>2.1</u>	<u>3.0</u>	<u>4.4</u>
Total	<u>8.3</u>	<u>11.1</u>	<u>14.8</u>	<u>10.0</u>	<u>14.3</u>	<u>15.5</u>	<u>11.4</u>	<u>15.7</u>	<u>17.3</u>

TABLE 15.

s. SOME FIGURES FROM 32 HERDS, EACH REPRESENTED IN EACH YEAR: DISTRIBUTION TABLES

Cwts. Hay Equivalent	(a) <u>By foods fed per cow.</u> (Numbers of herds)						(b) <u>By hours of labour</u> (Numbers of herds)		
	West Perth	North Argyll	South West	All	Not Housed	Housed at night	No. of hours of labour	Not Housed	Housed at night
9 to 12	1			1	1	-	9 - 10	1	
12 to 15		2	1	3	1	2	10 - 20	11	2
15 to 18			2	2	2		20 - 30	7	2
18 to 21	3	2	4	9	7	2	30 - 40	1	
21 to 24	4	3	3	10	7	3	40 - 50	1	3
27 to 30		3	1	4	2	2	50 - 60		2
33 to 36			1	1	1		60 - 70	1	1
36 to 39			1	1	1				
45 to 48	1			1		1			
	<u>9</u>	<u>10</u>	<u>13</u>	<u>32</u>	<u>22</u>	<u>10</u>		<u>22</u>	<u>10</u>

Note: For this table the results for each herd have been averaged, each year having equal weight.

TABLE 15 (Contd.)

SOME FIGURES FROM 32 HERDS, EACH REPRESENTED IN EACH YEAR : DISTRIBUTION TABLES

	(c) By Net Costs per weaned calf				(d) By value per weaned calf inclusive of Calf Subsidy			
	(Number of herds)				(Number of herds)			
	West Perth	N. Argyll	South West	All	West Perth	N. Argyll	South West	All
£17 - £20	1		1	2	1			1
£20 - £25	2	1	1	4	1	5		6
£25 - £30		1	4	5	6	3	4	13
£30 - £35	2	1	3	6	1	1	8	10
£35 - £40	1	2		3			1	1
£40 - £50	1	3	2	6				
£50 - £55	1	1		2				
£55 - £60	1	1	2	4				
	<u>9</u>	<u>10</u>	<u>13</u>	<u>32</u>	<u>9</u>	<u>9</u> x	<u>13</u>	<u>31</u>

x Excluding one herd dispersed at foot.

TABLE 16

CALVING SEASONS : NUMBERS OF HERDS FOR WHICH MOST CALVES WERE BORN IN THE STATED TWO MONTHS

Two months commencing as below	1951	1952	1953
Mid November			1
Early December	2	1	1
Mid December	1	1	1
Early January	1	1	2
Mid January			1
Early February	2	1	2
Mid February	3	4	2
Early March	7	7	5
Mid March	8	9	7
Early April	7	8	10
Mid April	1	1	1
	<u>32</u>	<u>33</u>	<u>33</u>

Note : Two herds in one ownership have been merged for this table.

TABLE 17

BEEF "COWS" (i.e. COWS &amp; HEIFERS IN MILK, PLUS COWS IN CALF, PLUS HEIFERS IN CALF) IN THE AGRICULTURAL RETURNS FOR 4th DECEMBER

	Number of "Cows" as defined above				Index Nos. (Average of 1950-53 = 100)			
	1950	1951	1952	1953	1950	1951	1952	1953
Argyll	9544	9514	10523	11979	91.8	91.6	101.3	115.3
Half of Perth	7977	7589	7960	8430	99.9	95.0	99.6	105.5
Stirling	1461	1452	1486	1716	95.6	95.0	97.2	112.2
Dunbarton	391	377	453	559	87.9	84.7	101.8	125.6
Total of these three	9829	9418	9899	10705	98.7	94.5	99.4	107.4
Ayr	1045	1187	1813	2605	62.8	71.4	109.1	156.7
Dumfries	3942	3880	4516	5506	88.4	87.0	101.2	123.4
Kirkcudbright	3011	3171	3622	4125	86.5	91.1	104.0	118.4
Wigtown	2079	2159	2382	2930	87.1	90.4	99.8	122.7
Total of these four	10077	10397	12333	15166	84.0	86.7	102.8	126.5
Total of all eight	29450	29329	32755	37850	91.0	90.7	101.3	117.0
Scotland	159251	153565	164550	183002	96.4	93.1	99.7	110.8

TABLE 18

NUMBERS OF COWS IN THE STUDIED HERDS AT 4th DECEMBER

(100 = average number of cows at the four dates)

	Unweighted averages				Weighted averages			
	1950	1951	1952	1953	1950	1951	1952	1953
West Perth	101	99	99	101	86	104	110	99
North Argyll	95	108	111	104	104	98	99	100
South West	92	96	105	106	89	95	108	102
All these	96	101	105	104	93	99	106	103

Note: This table is necessarily confined to the herds for which figures are available for each year.