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# THE GROSS MARGIN TECHNIQUE OF FARM PLANNING

An Outline of the Technique
incorporating Gross Margin Data
for East of Scotland Conditions

by

B. PEART, B.A. & J. D. ROWBOTTOM, B.SC.

**The Edinburgh School of Agriculture**
WEST MAINS ROAD, EDINBURGH, 9

# I N D E X

## SECTION I

## THE GROSS MARGIN APPROACH OUTLINED

In the search for more effective management tools, attention of late has been turned to the "gross margin" concept as a basis for analysis and planning procedures. For many years, Mr. V. Liversage argued the merits of this approach and used it extensively in Northern Ireland, but more recently a good deal greater degree of publicity has been given to it, particularly through a series of television programmes in 1961 and the subsequent publication by the B.B.C., in conjunction with Farm Economics Branch, Cambridge University, of a bulletin, "Planning for Profits", which has had wide circulation.

### The Logic of the Gross Margin Approach

Briefly, the argument for adopting a gross margin approach takes the following lines: For farm management purposes, it is unrealistic to attempt to assess the profitability of individual enterprises, which are combined in a complete farm business, by adopting traditional cost accounting conventions. Such cost accounting conventions, in the course of splitting up all farm costs and apportioning them to one enterprise or another, involve a good deal of purely arbitrary allocation of many items of an overhead nature. It is much more realistic to acknowledge that there are broadly two types of cost items - (a) those costs clearly specific to individual enterprises in the farm business, and (b) those costs which are part and parcel of the system of farming as a whole and which are not readily attributable to any particular enterprise.

The former category of costs is known as variable costs (sometimes also known as specific costs) because they will vary with the amount of a particular crop which is grown or with the quantities of stock and livestock produce produced. The second category of costs is known as fixed costs (sometimes also known as overhead costs) because they tend to stay very much the same irrespective of anything but major changes in the pattern of enterprises or amounts produced.

There is thus a fundamental distinction between these two categories into which total costs can be split, and since this division into variable costs and fixed costs recognises the fact that a farm is an integrated business unit - which is the essence of a farm management approach - and not merely a collection of independent enterprises it is logical, in farm management, to look at costs in the manner outlined above and therefore to make use of this concept in farm analysis and planning procedures.

"Gross margin" is the difference between output, on the one hand, and variable costs on the other hand. In the case of any individual enterprise, the gross margin is a measure of the contribution which that enterprise makes towards meeting the fixed costs of the farming system of which it is part and also towards the net profit which that farming system earns.

### Variable and Fixed Costs

The distinction between variable and fixed costs is easily recognised in principle but in practice the distinction is not always easy to draw. In fact, it will depend to some extent on the situation being considered, for a particular item which may be a variable cost item under one set of circumstances may well be a fixed cost item under another set of circumstances. However this need not deter one from drawing up a list showing into which of the two categories of cost certain items will generally fall.

| Variable Costs: | Crops | Livestock |
|---|---|---|
| | Seeds | Purchased Feed |
| | Fertilisers | Home Grown Concentrates (at market value) |
| | Spray Materials | Veterinary & Medicines |
| | Contract Work | Casual Labour |
| | Casual Labour | Variable costs of home-grown roughage crops. |
| | Twine, Baskets, etc. | |
| | Fuel | |

Fixed Costs: Rent and rates, repairs and upkeep, depreciation, regular labour, telephone, insurances, etc.

Some of these allocations are arguable but they will adequately serve the general purpose, and the above classification is used as a basis for the gross margin data presented in subsequent pages.

The Uses of the Gross Margin Technique

The technique is likely to be most useful in cases where enterprise combination is under review, but it can also be used in contributing towards the measurement of enterprise efficiency. Three main types of use can be defined :-

(a) As an analytical tool, to measure the respective contributions of individual enterprises towards fixed costs and profit, leading to adjustments in the pattern of enterprises.

In such a case, enterprise gross margins per acre would be calculated and, as far as possible within the fixed cost complex of a given situation, enterprises with relatively high gross margins per acre should take the place of those showing relatively low gross margins per acre.

(b) To measure enterprise efficiency by making comparison with standard data.

With an existing farm business under analysis, it is often advisable, as a first step, to compare gross margins of individual enterprises against standard data, and before deciding on any re-shuffling of enterprises to find out whether it is feasible to increase gross margins on those enterprises where, on the face of things, improvement might be possible.

For example, gross margins per acre on potatoes may be low relative not only to the other enterprises on a particular farm but also to local standards. Initially, however, before deciding on cutting down or cutting out potatoes it would be as well to examine the situation to see whether changes in say manuring, varieties, marketing, harvesting or cultivations, or any combination of these, might bring about a significant improvement in gross margins.

(c) As a forward planning tool, to guide in the choice of enterprises and the scale of each.

Within a given fixed cost situation, the choice of enterprises and the scale of each will be largely determined by the gross margins per acre which can be achieved under the given circumstances.

An Example

As an example of how this technique can be used, take the hypothetical case of a 500 acre Border arable farm where the farmer wishes to assess the respective contributions to the farm economy of the barley and sheep enterprises and thereafter to consider the extent to which one might be expanded at the expense of the other.

He could adopt the following procedure :-

1. From the farm accounts, extract the fixed costs and then calculate these costs per acre. Take the opportunity at this stage to compare these with the standard figures for the locality.

2. Figure out, from available data pertaining to the farm, the gross margins per acre on barley and sheep respectively. If there are abnormalities in any one particular year's figures it will be advisable to use 'normal' figures.

3. Consider whether the gross margin per acre from either sheep or barley is capable of improvement and, if so, to what extent. Standard gross margin figures for the locality may be of some guidance here.

4. Having decided on possible gross margins, determine the extent to which it is practicable for the enterprise showing the higher gross margin per acre to replace the other.

The figures might appear as follows :

(a) Fixed Costs

| | |
|---|---|
| Regular Labour | £ 3200 |
| Machinery Costs | 2200 |
| Rent | 900 |
| Other Fixed Costs | 1000 |
| | £ 7300 |

on 500 acres = £14.6 per acre.

The standard fixed costs figure for Berwickshire and Roxburghshire Cropping Farms is £16.6 per acre, so, on the face of things, there seems little wrong with fixed costs.

(b) Gross Margin on Barley

| | | |
|---|---|---|
| Output per Acre, including deficiency payment: | | £ 37 - - |
| less Variable Costs per acre: | | |
| 1½ cwts. Seed | £ 2 12 - | |
| 3 " Fertiliser | 2 14 - | |
| Sprays, Twine, etc. | - 18 - | |
| Fuel, including combining and drying | 1 6 - | £ 7 10 - |
| Gross margin per Acre | | £ 29: 10 - |

(c) Gross Margin on Sheep (400 Ewes)

| | | | |
|---|---|---|---|
| Output: | 660 lambs @ £8 | £ 5280 | |
| | Wool | 600 | |
| | 100 Cast and Draft Ewes @ £6 | 600 | |
| | | £ 6480 | |
| less | 120 Gimmers @ £14 | 1680 | £ 4800 |

Variable Costs:

(a) directly attributable to sheep:

| | | |
|---|---|---|
| Purchased Concentrate | £ 250 | |
| Home Grown Oats | 150 | |
| Other (mainly vet. and medicine) | 250 | £ 650 |

(b) attributable to home-grown roughage:

| | | | |
|---|---|---|---|
| Hay (8 acres) | 40 | | |
| Roots (16 " ) | 200 | | |
| Grazing (180 acres) | 400 | 640 | £ 1290 |
| Gross Margin (on 204 acres) | | | £ 3510 |

=£17.2 per acre.

The gross margin per acre for barley is much higher than that for sheep, and barley therefore makes a much bigger contribution to fixed costs and profit than does the sheep enterprise.

(d) Gross Margins Compared with Standards

| | | This Farm | Standard |
|---|---|---|---|
| Gross margin per acre: | Barley | £29: 10: - | £29: -: - |
| | Sheep | 17: 4: - | £11: 17: - |

Gross margins compare favourably with the standards, but the farmer must still make up his mind as to whether he can improve on his present gross margins per acre. For example, in the case of the sheep enterprise, he might consider more intensive grazing management as a means of increasing gross margin per acre. In the case of barley, he may possibly reconsider his manuring policy. If improvements in gross margin are feasible these possible gross margins should be used as the basis for making any change.

(e) Planning the Change

Suppose, for the sake of this example, that it was decided that no improvement was possible in either enterprise. The problem would then be :- To what extent can barley, showing a gross margin of £29: 10s per acre, replace sheep which show a gross margin of only £17: 4s: per acre?

Why not, for example, do away with the sheep altogether and turn over to barley the entire 204 acres that they had used? Whilst this is a possibility that should be considered, it is hardly within the scope of this calculation. It would involve wider cost changes for, because of the radical nature of the change, fixed costs would certainly alter - regular labour and machinery expenses to name only two items. One could not safely use the gross margin technique in this instance without first taking into account the changed fixed cost situation. Nor could husbandry considerations be ignored, of course, and these themselves might rule out such a drastic move.

However, if we restrict ourselves to fairly minor changes we need consider the gross margin figures only. Within certain limits, every acre turned over from sheep to barley should increase profit by £12: 6s: (i.e. £29:10s. less £17: 4s.). But to what extent is the changeover feasible? It all depends on the circumstances on the farm. It may be that, all husbandry considerations having been taken into account, the existing staff, equipment and buildings could handle a further 20 acres of barley. In that case, 40 ewes would be dispensed with and the 20 acres of land that they had used would be put down to barley. This should increase profit by £296. It is quite beside the point, in this context, that the shepherd will have 40 less ewes to look after and will therefore be less fully employed.

Once the gross margin data has been prepared, the calculation is thus fairly simple.

A Cautionary Word

At the risk of stating the obvious, it must be pointed out that maximising farm profits is a matter of maximising the difference between total output and total costs. It follows therefore that achieving the highest gross margins is not by itself any guarantee of maximising profits except in relation to a given fixed costs situation. It must be remembered that there may be other fixed costs situations which could offer more profitable bases.

In selecting farming systems for maximum profits the choice may range from, at one extreme, low cost - low output systems to, at the other extreme, high cost - high output systems, with many grades in between. A £7 per acre profit might be obtained just as well from a £25 output per acre system incurring £18 per acre total costs as from a £50 output per acre incurring £43 per acre total costs. One must not assume too readily therefore that those enterprises showing high gross margins per acre are necessarily those which will lead to highest profit in all situations or that maximising profits is only a matter of devoting the maximum of one's resources to those enterprises with the highest gross margins per acre. In certain systems of farming there may be no place for some of these enterprises with the highest gross margins per acre and therefore it is essential to realise that it is largely in relation to a prescribed system of farming (i.e. within a given fixed costs set-up) that gross margins per acre can reliably indicate the optimum pattern of enterprises.

In searching for maximum profit, possible changes in the fixed costs element must not be ignored and in analysing a particular situation the possibilities for changing the level or pattern of fixed costs should not be overlooked when using the gross margin approach. In forward planning, if a farmer is prepared to consider a fairly wide range of alternatives, it may be adviseable to consider a number of basically different systems of farming each with its own pattern of fixed costs and to plan for maximum gross margins within the context of each fixed costs complex. Prospective whole-farm profits under each system can then be compared.

The Gross Margin Approach vis-a-vis Other Analytical and Planning Procedures

The two well tried techniques commonly used in farm management advisory work are the account-analysis technique - primarily a diagnostic and fact-finding tool - and the budgeting technique, which is primarily used in forward planning. The gross margin approach supplements rather than supplants these two techniques.

In relation to the familiar account-analysis procedure, the gross margin technique confers the advantage of splitting up the total cost into its fixed and variable components, and of providing, in the form of gross margins per acre, a much better pointer towards the respective contributions of each enterprise to the farm as a whole than do the output standards common to account-analysis. On the other hand, however, the account-analysis technique makes the measurement of productive efficiency - the efficiency of labour use, of machinery use and of food use - a primary objective, whereas the gross margin approach tends to concentrate very largely on questions of enterprise combination.

In relation to budgeting work, gross margin data will, in many cases, considerably facilitate and expedite the budgeting process. In fact, gross margin planning is budgeting.

## SECTION II

## FIXED COSTS DATA

In the ensuing pages are set out data for different types of East of Scotland farms for 1959/60. Total farm expenditure is split up into its variable costs and fixed costs components and figures on cropping, stocking, labour and machinery are provided. These figures will permit ready comparison with those for farms being studied and will enable a better appreciation of standard fixed costs data.

Farm profits tend to vary markedly from one year to another, but these variations are very closely correlated with variations in gross margins. Fixed costs are a relatively stable item and these 1959/60 fixed costs data should provide a fairly reliable yardstick for subsequent years. The output and variable costs data, however, may not be appropriate to any year other than 1959/60.

In the 'per acre' calculations, 'adjusted' acres are used throughout, one adjusted acre being equivalent to one arable acre, or two permanent grass acres, or six rough grazing acres.

TYPE 1 — UPLAND FARMS

With Substantial Rough Grazing

## Financial Results 1959/60

| Expenditure | Per Farm £ |
|---|---|
| **Variable Costs:** | |
| Purchased Feed | 689 |
| Seeds | 204 |
| Manures | 462 |
| Contract Work | 38 |
| Casual Labour | 318 |
| Fuel | 240 |
| Miscellaneous | 278 |
| Total Variable Costs | £2229 |
| **Fixed Costs:** | |
| Regular Labour | 1701 |
| Machinery Costs | 719 |
| Rent | 312 |
| Miscellaneous | 681 |
| Total Fixed Costs | £3413 |
| Total Expenditure ..... | £5642 |
| Net Profit ..... | £1081 |

| Output | Per Farm £ |
|---|---|
| Cattle | 1721 |
| Sheep | 3042 |
| Pigs & Poultry, etc. | 363 |
| Stock | £5126 |
| Wheat | 9 |
| Barley | 395 |
| Oats | 339 |
| Potatoes | 370 |
| Hay, Straw, Grants, etc. | 484 |
| Crops, etc. | £1597 |
| Total Output ..... | £6723 |

| | |
|---|---|
| Gross Margin ... ... ... ... | £4494 |
| Fixed Costs ... ... ... ... | £3413 |
| Fixed Costs % of Gross Margin ... | 76% |
| Net Profit % of Gross Margin.. ... | 24% |

**Cropping:**

| | |
|---|---|
| Cereals | 38 a. |
| Potatoes | 3½ a. |
| Roots | 13 a. |
| Other Crop | 5 a. |
| | 59½ a. |
| Hay/Silage | 20 a. |
| Rotn. Grazing | 90 a. |
| Perm Grass | 70 a. |
| Rough Grazing | 614 a. |
| | 853½ a. |

**Stock:**

| | |
|---|---|
| 24 | Beef Cows |
| 17 | Other Cattle |
| 443 | Ewes |
| 97 | Ewe Hoggs |

Regular Hired Labour - 3 men
Tractors - 2

TYPE 2A

## LIVESTOCK REARING FARMS

Sheep the Predominant Stock.

### Financial Results 1959/60

| Expenditure | Per Farm | Per Adj. Acre |
|---|---|---|
| **Variable Costs:** | £ | £ |
| Purchased Feed | 1204 | 3.0 |
| Seeds | 293 | .7 |
| Manures | 713 | 1.8 |
| Contract Work | 127 | .3 |
| Casual Labour | 580 | 1.5 |
| Fuel | 346 | .9 |
| Miscellaneous | 418 | 1.1 |
| Total Variable Costs | 3681 | 9.3 |
| **Fixed Costs:** | | |
| Regular Labour | 2639 | 6.7 |
| Machinery Costs | 1252 | 3.2 |
| Rent | 375 | 2.7 |
| Miscellaneous | 1049 | .9 |
| Total Fixed Costs | 5315 | 13.5 |
| Total Expenditure... .. | £8996 | £22.8 |
| Net Profit ... ... .. | £1103 | £ 2.8 |

| Output | Per Farm | Per Adj. Acre |
|---|---|---|
| | £ | £ |
| Cattle | 2380 | 6.0 |
| Sheep | 4486 | 11.4 |
| Pigs & Poultry | 261 | .7 |
| Stock | 7127 | 18.1 |
| Wheat | 176 | .4 |
| Barley | 874 | 2.2 |
| Oats | 784 | 2.0 |
| Potatoes | 629 | 1.6 |
| Hay, Straw, Grants, etc. | 509 | 1.3 |
| Crops, etc. | 2972 | 7.5 |
| Total Output ... ... | £10,099 | £25.6 |

| | |
|---|---|
| Gross Margin ... ... ... ... | £16.3 per acre |
| Fixed Costs ... ... ... ... | £13.5 " " |
| Fixed Costs % of Gross Margin ... | 83% |
| Net Profit % of Gross Margin . ... | 17% |

**Cropping:**

| | |
|---|---|
| Cereals | 86½ a. |
| Potatoes | 5½ a. |
| Roots | 30½ a. |
| Other Crops | 6½ a. |
| | 129 a. |
| Hay/Silage | 39½ a. |
| Rotn. Grazing | 121 a. |
| Perm. Grass | 156½ a. |
| Rough Grazing | 165 a. |
| | 611 a. (396 Adjusted Acres) |

**Stock:**

| | |
|---|---|
| 44 | Beef Cows |
| 15 | Other Cattle |
| 382 | Ewes |
| 118 | Ewe Hoggs |
| Regular Hired Labour: | 5 men |
| Tractors: | 3 |

TYPE 2B

# LIVESTOCK REARING FARMS

Cattle the Predominant Stock

## Financial Results 1959/60

### Expenditure

| | Per Farm | Per Adj. Acre |
|---|---|---|
| Variable Costs: | £ | £ |
| Purchased Feed | 707 | 3.1 |
| Seeds | 206 | .9 |
| Manures | 632 | 2.7 |
| Contract Work | 80 | .4 |
| Casual Labour | 379 | 1.6 |
| Fuel | 240 | 1.0 |
| Miscellaneous | 186 | .8 |
| Total Variable Costs | 2430 | 10.5 |
| Fixed Costs: | | |
| Regular Labour | 1176 | 5.1 |
| Machinery Costs | 710 | 3.1 |
| Rent | 233 | 1.0 |
| Miscellaneous | 404 | 1.8 |
| Total Fixed Costs | 2523 | 11.0 |
| Total Expenditure ... | £4953 | £21.5 |
| Net Profit ... ... | £1684 | £ 7.3 |

### Output

| | Per Farm | Per Adj. Acre. |
|---|---|---|
| | £ | £ |
| Cattle | 2681 | 11.6 |
| Sheep | 1293 | 5.6 |
| Pigs & Poultry, etc. | 252 | 1.1 |
| Stock | 4226 | 18.3 |
| Wheat | 343 | 1.5 |
| Barley | 364 | 1.6 |
| Oats | 632 | 2.7 |
| Potatoes | 808 | 3.5 |
| Hay, Straw, Grants, etc. | 264 | 1.2 |
| Crops, etc. | 2411 | 10.5 |
| Total Output ... ... | £6637 | £28.8 |

| | |
|---|---|
| Gross Margin ... ... ... | £18.3 per acre |
| Fixed Costs ... ... ... | £11.0 " " |
| Fixed Costs % of Gross Margin | 60% |
| Net Profit % of Gross Margin | 40% |

### Cropping:

| | |
|---|---|
| Cereals | 52½ a. |
| Potatoes | 10½ a. |
| Roots | 11 a. |
| | 74 a. |
| Hay/Silage | 31 a. |
| Rotn. Grazing | 100½ a. |
| Perm. Grass | 26½ a. |
| Rough Grazing | 66 a. |
| | 298 a. (230⅓ adjusted acres) |

### Stock:

32 Beef Cows
48 Other Cattle

116 Ewes
4 Ewe Hoggs

Regular Hired Labour: 2 men
Tractors: 2

TYPE 3 ARABLE LIVESTOCK FARMS

Financial Results 1959/60

| Expenditure | Per Farm | Per Adj. Acre |
|---|---|---|
| Variable Costs: | £ | £ |
| Purchased Feed | 1068 | 3.0 |
| Seeds | 291 | .8 |
| Manures | 614 | 1.7 |
| Contract Work | 116 | .3 |
| Casual Labour | 577 | 1.6 |
| Fuel | 297 | .9 |
| Miscellaneous | 361 | 1.0 |
| Total Variable Costs | 3324 | 9.3 |
| Fixed Costs: | | |
| Regular Labour | 2065 | 5.8 |
| Machinery Costs | 1137 | 3.2 |
| Rent | 429 | 1.2 |
| Miscellaneous | 976 | 2.8 |
| Total Fixed Costs | 4607 | 13.0 |
| Total Expenditure ... | £7931 | £22.3 |
| Net Profit ... ... | £1499 | £ 4.4 |

| Output | Per Farm | Per Adj. Acre |
|---|---|---|
| | £ | £ |
| Cattle | 2236 | 6.3 |
| Sheep | 3535 | 10.0 |
| Pigs & Poultry, etc. | 317 | .9 |
| Stock | 6088 | 17.2 |
| Wheat | 164 | .5 |
| Barley | 1150 | 3.3 |
| Oats | 772 | 2.2 |
| Potatoes | 747 | 2.1 |
| Hay, Straw, Grants, etc. | 509 | 1.4 |
| Crops, etc. | 3342 | 9.5 |
| Total Output | £9430 | £26.7 |

Gross Margin ... ... ... £ 17.4 per acre
Fixed Costs ... ... ... £ 13.0 " "
Fixed Costs % of Gross Margin 75%
Net Profit % of Gross Margin 25%

Cropping:

| | |
|---|---|
| Cereals | 88 a. |
| Potatoes | 10¾ a. |
| Roots | 27 a. |
| Other Crops | 2¾ a. |
| | 128½ a. |
| Hay/Silage | 33 a. |
| Rotn. Grass | 162 a. |
| Perm. Grass | 46½ a. |
| Rough Grazing | 39 a. |
| | 409 a. (353¼ adjusted acres) |

Stock:

| | |
|---|---|
| 21 | Beef Cows |
| 35 | Other Cattle |
| 275 | Ewes |
| 67 | Ewe Hoggs |

Regular Hired Labour: 4 men
Tractors: 3

TYPE 4A PERTH/ANGUS CROPPING FARMS

Financial Results 1959/60

| Expenditure | Per Farm | Per Adj. Acre |
|---|---|---|
| Variable Costs: | £ | £ |
| Purchased Feed | 1801 | 6.7 |
| Seeds | 936 | 3.5 |
| Manures | 1404 | 5.3 |
| Contract Work | 255 | 1.0 |
| Casual Labour | 990 | 3.7 |
| Fuel | 463 | 1.7 |
| Miscellaneous | 533 | 2.0 |
| Total Variable Costs | 6382 | 23.9 |
| Fixed Costs: | | |
| Regular Labour | 3058 | 11.5 |
| Machinery Costs | 1584 | 5.9 |
| Rent | 531 | 2.0 |
| Miscellaneous | 1140 | 4.3 |
| Total Fixed Costs | 6313 | 23.7 |
| Total Expenditure ... | £12695 | £47.6 |
| Net Profit ... ... | £2752 | £10.3 |

| Output | Per Farm | Per Adj. Acre. |
|---|---|---|
| | £ | £ |
| Cattle | 3117 | 11.7 |
| Sheep | 669 | 2.5 |
| Pigs & Poultry, etc. | 756 | 2.8 |
| Stocks | 4542 | 17.0 |
| Wheat | 887 | 3.3 |
| Barley | 1426 | 5.4 |
| Oats | 1220 | 4.6 |
| Potatoes | 4784 | 17.9 |
| Sugar Beet | 1311 | 4.9 |
| Hay, Straw, Grants, etc. | 1277 | 4.8 |
| Crops, etc. | 10905 | 40.9 |
| Total Output ... ... | £15447 | £57.9 |

| | | |
|---|---|---|
| Gross Margin ... ... ... | £34.0 | per acre |
| Fixed Costs ... ... ... | £23.7 | " " |
| Fixed Costs % of Gross Margin. | 70% | |
| Net Profit % of Groos Margin.. | 30% | |

Cropping:

| | |
|---|---|
| Cereals | 93 a. |
| Potatoes | 31½ a. |
| Sugar Beet | 12½ a. |
| Roots | 9 a. |
| Other Crops | 15 a. |
| | 161 a. |
| Hay/Silage | 36½ a. |
| Rotn. Grazing | 60¼ a. |
| Perm. Grass | 11 a. |
| Rough Grazing | 22¾ a. |
| | 291½ a. (267 adjusted acres) |

Stock:

| | |
|---|---|
| 9 | Beef Cows |
| 83 | Other Cattle |
| 23 | Ewes |
| Regular Hired Labour: | 6 men |
| Tractors: | 3 |

TYPE 4B — LOTHIANS CROPPING FARMS

Financial Results 1959/60

| Expenditure | Per Farm | Per Adj. Acre |
|---|---|---|
| Variable Costs: | £ | £ |
| Purchased Feed | 2291 | 5.9 |
| Seeds | 1285 | 3.3 |
| Manures | 1475 | 3.8 |
| Contract Work | 226 | .6 |
| Casual Labour | 1372 | 3.5 |
| Fuel | 614 | 1.6 |
| Miscellaneous | 530 | 1.4 |
| Total Variable Costs | 7793 | 20.1 |
| Fixed Costs: | | |
| Regular Labour | 4364 | 11.3 |
| Machinery Costs | 1885 | 4.8 |
| Rent | 709 | 1.8 |
| Miscellaneous | 1536 | 4.0 |
| Total Fixed Costs | 8494 | 21.9 |
| Total Expenditure ... | £16,287 | £42.0 |
| Net Profit ... ... | £ 2,874 | £ 7.4 |

| Output | Per Farm | Per Adj. Acre |
|---|---|---|
| | £ | £ |
| Cattle | 2355 | 6.1 |
| Sheep | 2002 | 5.2 |
| Pigs & Poultry, etc. | 1953 | 5.0 |
| Stock | 6310 | 16.3 |
| Wheat | 2579 | 6.6 |
| Barley | 2770 | 7.1 |
| Oats | 891 | 2.3 |
| Potatoes | 4700 | 12.1 |
| Sugar Beet | 659 | 1.7 |
| Hay, Straw, Grants, etc. | 1252 | 3.3 |
| Crops, etc. | 12851 | 33.1 |
| Total Output | £19,161 | £49.4 |

| | | |
|---|---|---|
| Gross Margin ... ... ... | £29.3 | per acre |
| Fixed Costs ... ... ... | £21.9 | " " |
| Fixed Costs % of Gross Margin | 75% | |
| Net Profit % of Gross Margin | 25% | |

Cropping:

| | |
|---|---|
| Cereals | 163 a. |
| Potatoes | 45½ a. |
| Sugar Beet | 8 a. |
| Roots | 23¼ a. |
| Other Crops | 10¾ a. |
| | 250½ a. |
| Hay/Silage | 29 a. |
| Rotn. Grazing | 91 a. |
| Perm. Grass | 35 a. |
| Rough Grazing | ½ a. |
| | 406 a. (388 adjusted acres) |

Stock:

| | |
|---|---|
| 5 | Beef Cows |
| 70 | Other Cattle |
| 117 | Ewes |
| 13 | Ewe Hoggs |

Regular Hired Labour: 8-9 Men
Tractors: 6

TYPE 4C BERWICK/ROXBURGHSHIRE CROPPING FARMS

Financial Results 1959/60

| Expenditure | Per Farm | Per Adj. Acre |
|---|---|---|
| Variable Costs: | £ | £ |
| Purchased Feed | 1970 | 3.9 |
| Seeds | 675 | 1.3 |
| Manures | 1409 | 2.8 |
| Contract Work | 133 | .3 |
| Casual Labour | 891 | 1.8 |
| Fuel | 574 | 1.1 |
| Miscellaneous | 650 | 1.2 |
| Total Variable Costs | 6302 | 12.4 |
| Fixed Costs: | | |
| Regular Labour | 4052 | 8.0 |
| Machinery Costs | 2550 | 5.0 |
| Rent | 546 | 1.1 |
| Miscellaneous | 1244 | 2.5 |
| Total Fixed Costs | 8392 | 16.6 |
| Total Expenditure ... | £14,694 | £29.0 |
| Net Profit ... .... | £ 4,753 | £ 9.4 |

| Output | Per Farm | Per Adj. Acre |
|---|---|---|
| | £ | £ |
| Cattle | 3071 | 6.1 |
| Sheep | 4764 | 9.4 |
| Pigs & Poultry, etc. | 1103 | 2.2 |
| Stock | 8938 | 17.7 |
| Wheat | 914 | 1.8 |
| Barley | 4400 | 8.7 |
| Oats | 997 | 2.0 |
| Potatoes | 2706 | 5.3 |
| Sugar Beet | 932 | 1.8 |
| Hay, Straw, Grants, etc. | 560 | 1.1 |
| Crops, etc. | 10,509 | 20.7 |
| Total Output | £19,447 | £38.4 |

| | | |
|---|---|---|
| Gross Margin ... ... ... | £ 26.0 | per acre |
| Fixed Costs ... ... ... | £ 16.6 | " " |
| Fixed Costs % of Gross Margin | 64% | |
| Net Profit % of Gross Margin | 36% | |

Cropping:

| | |
|---|---|
| Cereals | 183 a. |
| Potatoes | 20½ a. |
| Sugar Beet | 10 a. |
| Roots | 35 a. |
| Other Crops | 5 a. |
| | 253½ a. |
| Hay/Silage | 45½ a. |
| Rotn. Grazing | 182½ a. |
| Perm. Grass | 37 a. |
| Rough Grazing | 36 a. |
| | 554½ a. (506 adjusted acres) |

Stock:

| | |
|---|---|
| 21 | Beef Cows |
| 72 | Other Cattle |
| 285 | Ewes |
| 54 | Ewe Hoggs |

Regular Hired Labour: 8 men
Tractors: 5

TYPE 4D FIFE CROPPING FARMS

Financial Results 1959/60

| Expenditure | Per Farm | Per Adj. Acre |
|---|---|---|
| **Variable Costs:** | £ | £ |
| Purchased Feed | 980 | 4.2 |
| Seeds | 603 | 2.6 |
| Manures | 1183 | 5.1 |
| Contract Work | 193 | .8 |
| Casual Labour | 686 | 2.9 |
| Fuel | 316 | 1.3 |
| Miscellaneous | 240 | 1.0 |
| Total Variable Costs | 4201 | 17.9 |
| **Fixed Costs:** | | |
| Regular Labour | 1878 | 8.0 |
| Machinery Costs | 1143 | 4.9 |
| Rent | 420 | 1.7 |
| Miscellaneous | 582 | 2.5 |
| Total fixed costs | 4023 | 17.1 |
| Total Expenditure ... | £8224 | £35.0 |
| Net Profit ... ... | £2165 | £ 9.2 |

| Output | Per Farm | Per Adj. Acre. |
|---|---|---|
| | £ | £ |
| Cattle | 2261 | 9.6 |
| Sheep | 919 | 3.9 |
| Pigs & Poultry, etc. | 456 | 2.0 |
| Stock | 3636 | 15.5 |
| Wheat | 766 | 3.2 |
| Barley | 1216 | 5.2 |
| Oats | 779 | 3.3 |
| Potatoes | 2912 | 12.4 |
| Sugar Beet | 615 | 2.6 |
| Hay, Straw, Grants, etc. | 465 | 2.0 |
| Crops, etc. | 6753 | 28.7 |
| Total Output | £10,389 | £44.2 |

| | |
|---|---|
| Gross Margin ... ... ... | £ 26.3 per acre |
| Fixed Costs ... ... ... | £ 17.1 " " |
| Fixed Costs % of Gross Margin. | 65% |
| Net Profit % of Gross Margin.. | 35% |

**Cropping:**

| | | |
|---|---|---|
| Cereals | 78 | a. |
| Potatoes | 23 | a. |
| Sugar Beet | 6¼ | a. |
| Roots | 15¾ | a. |
| Other Crops | 2 | a. |
| | 125 | a. |
| Hay/Silage | 26 | a. |
| Rotn. Grazing | 76 | a. |
| Perm. Grass | 16 | a. |
| Rough Grazing | 2 | a. |
| | 245 | a. (235 adjusted acres) |

**Stocks:**

| | |
|---|---|
| 19 | Beef Cows |
| 41 | Other Cattle |
| 46 | Ewes |

Regular Hired Labour: 4 men
Tractors: 3

TYPE 5A

# DAIRY FARMS

With Cash Cropping Important

## Financial Results 1959/60

### Expenditure

| | Per Farm | Per Adj. Acre |
|---|---|---|
| **Variable Costs:** | £ | £ |
| Purchased Feed | 3592 | 10.7 |
| Seeds | 882 | 2.6 |
| Manures | 1388 | 4.1 |
| Contract Work | 191 | .6 |
| Casual Labour | 1143 | 3.4 |
| Fuel | 788 | 2.3 |
| Miscellaneous | 504 | 1.5 |
| Total Variable Costs | 8488 | 25.2 |
| **Fixed Costs:** | | |
| Regular Labour | 4877 | 14.5 |
| Machinery Costs | 2896 | 8.6 |
| Rent | 591 | 1.7 |
| Miscellaneous | 1346 | 4.0 |
| Total Fixed Costs | 9710 | 28.8 |
| Total Expenditure .... | £18,198 | £54.0 |
| Net Profit .... .... | £ 3,705 | £11.0 |

### Output

| | Per Farm | Per Adj. Acre |
|---|---|---|
| | £ | £ |
| Cattle | 2627 | 7.8 |
| Sheep | 434 | 1.3 |
| Pigs & Poultry | 1291 | 3.8 |
| Dairy Produce | 8996 | 26.7 |
| Stock | 13,348 | 39.6 |
| Wheat | 1341 | 4.0 |
| Barley | 1221 | 3.6 |
| Oats | 1458 | 4.3 |
| Potatoes | 3370 | 10.0 |
| Sugar Beet | 179 | .6 |
| Hay, Straw, Grants, etc. | 986 | 2.9 |
| Crops, etc. | 8555 | 25.4 |
| Total Output | £21,903 | £65.0 |

| | | |
|---|---|---|
| Gross Margin ... ... ... | £ 39.8 | per acre |
| Fixed Costs ... ... ... | £ 28.8 | " " |
| Fixed Costs % of Gross Margin | 72% | |
| Net Profit % of Gross Margin | 28% | |

### Cropping:

| | |
|---|---|
| Cereals | 124¼ a. |
| Potatoes | 29¾ a. |
| Sugar Beet | 2½ a. |
| Roots | 20½ a. |
| Other Crop | 16½ a. |
| | 193½ a. |
| Hay/Silage | 41 a. |
| Rotn. Grazing | 93½ a. |
| Perm. Grass | 16 a. |
| Rough Grazing | 2 a. |
| | 346 |

### Stock:

65 Dairy Cows
87 Other Cattle

14 Ewes

Regular Hired Labour: 8 men
Tractors: 3

TYPE 5B

# DAIRY FARMS

With Crop Sales Unimportant

## Financial Results 1959/60

### Expenditure

| | Per Farm | Per Adj. Acre |
|---|---|---|
| **Variable Costs:** | £ | £ |
| Purchased Feed | 2367 | 9.9 |
| Seeds | 326 | 1.3 |
| Manures | 564 | 2.4 |
| Contract Work | 75 | .3 |
| Casual Labour | 401 | 1.7 |
| Fuel | 343 | 1.5 |
| Miscellaneous | 265 | 1.1 |
| Total Variable Costs | 4341 | 18.2 |
| **Fixed Costs:** | | |
| Regular Labour | 2336 | 9.8 |
| Machinery Costs | 1123 | 4.7 |
| Rent | 256 | 3.4 |
| Miscellaneous | 813 | 1.1 |
| Total Fixed Costs | 4528 | 19.0 |
| Total Expenditure ... | £8869 | £37.2 |
| Net Profit ... ... | £1539 | £ 6.4 |

### Output

| | Per Farm | Per Adj. Acre. |
|---|---|---|
| | £ | £ |
| Cattle | 1681 | 7.0 |
| Sheep | 1224 | 5.2 |
| Pigs & Poultry | 410 | 1.7 |
| Dairy Produce | 4930 | 20.7 |
| Stock | 8245 | 34.6 |
| Wheat | 282 | 1.2 |
| Barley | 165 | .7 |
| Oats | 513 | 2.1 |
| Potatoes | 782 | 3.3 |
| Hay, Straw, Grants, etc. | 421 | 1.7 |
| Crops, etc. | 2163 | 9.0 |
| Total Output ... ... | £10,408 | £43.6 |

| | | |
|---|---|---|
| Gross Margin ... ... ... | £ 25.4 | per acre |
| Fixed Costs ... ... ... | £ 19.0 | " " |
| Fixed Costs % of Gross Margin | 75% | |
| Net Profit % of Gross Margin | 25% | |

### Cropping:

| | |
|---|---|
| Cereals | 54¾ a. |
| Potatoes | 6 a. |
| Sugar Beet | 3 a. |
| Roots | 9 a. |
| Other Crop | 3¼ a. |
| | 76 a. |
| Hay/Silage | 32½ a. |
| Rotn. Grazing | 124 a. |
| Perm. Grass | 9 a. |
| Rough Grazing | 9½ a. |
| | 251 a. |

### Stock:

| | |
|---|---|
| 42 | Dairy Cows |
| 63 | Other Cattle |
| 97 | Ewes |
| 18 | Ewe Hoggs |

Regular Hired Labour: 4 men
Tractors: 3

## SECTION III

## VARIABLE COSTS/GROSS MARGIN DATA - CROP ENTERPRISES

The figures of variable costs and, where appropriate, gross margins, which follow are typical of East of Scotland experience. They are presented to provide some standards for comparison and also to illustrate the main variable costs elements in crop production. As has already been discussed, reliable farm planning requires that the data used must be appropriate to the particular farm under consideration, and it is unlikely therefore that the figures which are presented in the following section will be applicable, as they stand, to the vast majority of individual situations. They merely serve as a general guide.

In the examples given it has generally been assumed that the farmer owns all the necessary equipment but typical contract charges have been set out in footnotes to guide in those not uncommon situations where the farmer has to seek outside help and where, as a result, contract charges can be a sizeable variable cost item.

## CEREALS

| Variable Costs per Acre: | Binder-harvested £. | s. | Combine-harvested (own combine & drier) £. | s. |
|---|---|---|---|---|
| Seed 1¾ cwt. | 2 | 12 | 2 | 12 |
| Fertiliser 3 cwt. | 2 | 14 | 2 | 14 |
| Twine & Spray Materials | 1 | - | - | 17 |
| Fuel (incl.drying) | 1 | 1 | 1 | 4 |
| Casual Labour | - | 5 | - | - |
| Total Variable Costs | £ 7 | 12 | £ 7 | 7 |

| Output per Acre: (Incl. def. payt.): | Wheat | Barley | Oats |
|---|---|---|---|
| | 31 cwt. £42: -/- | 30 cwt. £37: -/- | 23 cwt. £28:10/- |

Gross Margin per Acre:

| | | | |
|---|---|---|---|
| Binder | £34: 8/- | £29: 8/- | £20: 18/- |
| Combined | £34:13/- | £29:13/- | £21: 3/- |

Contract Charges:

| | | |
|---|---|---|
| Combining | - | £4 - £5 per acre. |
| Baling Straw | - | 30s. - 40s. per acre. |
| Drying per ton | - | 30s. (18%); 36s. (20%); 44s. (22%); |
| Spraying | - | Low Volume 11s. per Acre (excluding materials) |
| | | High Volume 33s. per acre ( " " ) |

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## SUGAR BEET

(mechanically harvested)

| Variable Costs per Acre: | Precision sown £. | s. | Non-Precision sown | £. | s. |
|---|---|---|---|---|---|
| Seed 6 lb. | 1 | 5 | 15 lb. | 1 | 10 |
| Fertiliser 10½ cwt. | 9 | 9 | 10½ cwt. | 9 | 9 |
| Spray Material | 1 | 4 | | 1 | 4 |
| Tractor Fuel 32 hrs. | 3 | 4 | 32 hrs. | 3 | 4 |
| Casual Labour 10 hrs. | 2 | 10 | 18 hrs. | 4 | 10 |
| Total Variable Cost : | £17 | 12 | | £19 | 17 |

Output per Acre: 12½ tons - Value £75: -/-

Gross Margin Per Acre: Precision sown: £57: 8/-
Non-precision sown: £55: 3/-

Contract Charges: Complete Harvester - £10 per acre.
Topping, Lifting, Dumping £8 - £9 per acre.
Spraying - Low Volume 11s. per acre (excluding material)
High Volume 33s per acre (excluding material)

Overall labour requirements are 92 hours per acre precision sown and 100 hours per acre non-precision sown.

## POTATOES

| Variable Costs Per Acre: | Early | | Second Early | | Main Crops | |
|---|---|---|---|---|---|---|
| | | £. s. | | £. s. | | £. s. |
| Seed | 25 cwt. | 31 - | 20 cwt. | 25 - | 20 cwt. | 25 - |
| Fertiliser | 12 " | 13 3 | 10 " | 10 19 | 10 " | 10 19 |
| Spray Materials | | - - | | 2 - | | 2 - |
| Baskets, etc. | | 1 15 | | 2 - | | 2 - |
| Tractor Fuel | 20 hrs. | 2 - | 22 hrs. | 2 4 | 25 hrs | 2 10 |
| Casual Labour - picking | | 7 11 | | 8 5 | | 8 16 |
| Total Variable Costs | | £55 9 | | £50 8 | | £51 5 |
| Output per Acre: | 6 tons | £150 | 7½ tons | £120 | 8½ tons | £110:10s. |
| Gross Margin per Acre: | | £ 94:11s. | | £69: 12s. | | £ 59: 5s. |

Note:

(i) Figures above assume planting by own machine.
For hand planting add 10 hours casual labour.
Contract charges for planting vary between 34/6 - 69/6 per acre.

(ii) Main crop assumed to be dressed by farm staff.
Casual labour costs £4:10s. per acre (assuming half of squad are casual workers).

(iii) Contract spraying charges - Low volume 11s. per acre (excluding materials)
- High volume 33s. per acre (excluding materials)

(iv) Overall labour inputs above are 80 hrs., 85 hrs., and 140 hrs., for early, second-early and main crops respectively.

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## TURNIPS

| Variable Costs per Acre: | | Carted & Shawed | | Folded | |
|---|---|---|---|---|---|
| | | £. s. | | £. s. | |
| Seed | | - 8 | | - 8 | |
| Fertiliser | 8 cwt. | 7 4 | | 7 4 | |
| Tractor Fuel | 30 hrs. | 3 - | 17 hrs. | 1 14 | |
| Casual Labour (Thinning & Hoeing) | 10 " | 2 10 | 10 " | 2 10 | |
| Casual Labour (Shawing) | 12 " | 3 - | | - - | |
| | | £16 2 | | £11 16 | |

Note:

(i) Precision-seeding is assumed. If non-precision seeding, add 8 hours casual labour to thinning and hoeing and add 2/- to seed cost.

(ii) Overall labour input is 87 hours for carted and shawed crops, and 41 hours for folded crops, assuming precision-seeding.

## K A L E

| Variable Costs per Acre: | | £. | s. |
|---|---|---|---|
| Seed | | 1 | - |
| Fertiliser | 8 cwt. | 7 | 4 |
| Tractor Fuel | 41 hrs. | 4 | 2 |
| Casual Labour: | | | |
| Thinning & Hoeing | 10 hrs. | 2 | 10 |
| Total Variable Costs | | £14 | 16 |

Note:

(i) Above figures assume kale to be cut and carted. If folded, tractor hours are reduced to 13 hours.

(ii) If folded, with no thinning and hoeing, casual labour is not required.

(iii) Overall labour input is 95 hours per acre where the crop is thinned, hoed, cut and carted; and 17 hours per acre where the crop is folded and neither hand thinned nor hoed.

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## H A Y

| Variable Costs per Acre: | Ricked | | Pick-up Baled | |
|---|---|---|---|---|
| | £. | s. | £. | s. |
| Seeds | 1 | 10 | 1 | 10 |
| Fertiliser (3 cwt. / 3 cwt.) | 2 | 7 | 2 | 7 |
| Tractor Fuel (7 hrs. / 4 hrs.) | - | 14 | - | 8 |
| Total Variable Cost | £ 4 | 11 | £ 4 | 5 |

Overall labour requirements: Ricked 20 hrs.; Pick-up baled 11 "

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## GRASS SILAGE

| Variable Costs per Acre: | Harvested by Buckrake | | Harvested by Forage Harvester | |
|---|---|---|---|---|
| | £. | s. | £. | s. |
| Seeds | 1 | 10 | 1 | 10 |
| Fertiliser (4 cwt. / 4 cwt.) | 2 | 18 | 2 | 18 |
| Tractor Fuel (14 hrs / 7 hrs.) | 1 | 8 | - | 14 |
| Total Variable Cost | £ 5 | 16 | £ 5 | 2 |

Overall labour requirements: 16 hrs. and 9 hrs. buckrake and forage harvester respectively.

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## GRAZING

| Variable Costs per Acre: | | £. | s. |
|---|---|---|---|
| Seed | | 1 | 10 |
| Fertiliser | 2 cwt. | 1 | 16 |
| Tractor Fuel | 1 hr. | - | 2 |
| Total Variable Cost | | £3 | 8 |

## SECTION IV.

## LIVESTOCK ENTERPRISES

## VARIABLE COSTS/GROSS MARGIN DATA

Variable costs in livestock production have two components:-

(a) those costs, such as concentrates and veterinary and medicine expenses, directly attributable to the livestock.

(b) those costs comprising the variable costs element in the production of the roughages consumed by the livestock.

In the ensuing section, these two sets of variable costs are stated separately but those variable costs attributable to home-grown roughage consumption are not set out in detail. The crops section gives this latter detail.

## DAIRY COWS - SILAGE FEEDERS

(Rearing own replacements)

**Variable costs per cow:**

(a) Variable costs directly attributable to cattle:

| | | | | | |
|---|---|---|---|---|---|
| (i) To cows: | Concentrates | 20.26 cwt. | £31: 10: - | | |
| | Dairy Expenses | | 4: 1: 3 | | |
| | Fuel | | 1: 18: 5 | £37 | 9 8 |
| (ii) To replacement: (Detail below) | | | | 6 | 3 9 |

(b) Variable costs attributable to home-grown roughage:

| | | | | | |
|---|---|---|---|---|---|
| (i) To cows: | | Acres | | | |
| | Hay | .25 | £ 1: 2: 9 | | |
| | Silage | .34 | 1: 14: 8 | | |
| | Kale | .08 | 1: 3: 8 | | |
| | Grazing | .90 | 3: 1: 5 | 7 | 2 6 |
| (ii) To replacement (detail below) | | | | 2 | - 6 |
| | | | Total Variable Cost | £52 | 16 5 |

**Output per Cow:**

| | | | |
|---|---|---|---|
| Milk sales per annum (750 galls.) | £112: 10: - | | |
| Calf sales per cow (annual average) | 5: -: - | | |
| Cast cow sales (annual average per cow) | 11: -: - | £128 | 10 - |

**Gross Margin:** (a) per cow ..... £ 75: 13: 7
(b) per acre ..... £ 36: 11: 2

**Note:** (i) Gross margin per acre figure is based on 2.07 acres

(ii) Assumed that cows have an average of four lactations. The replacement costs per year which are included are therefore one quarter of the cost of bringing one heifer to the calving, one heifer being required every fourth year to replace each cow.

## VARIABLE COSTS PER REPLACEMENT

(Costs of one heifer brought up from birth to calving at 2½ years old)

**Variable costs per Replacement**

| | | | | | |
|---|---|---|---|---|---|
| (i) Directly attributable to replacement | | | | | |
| | Concentrate | 10.5 cwt. | £15: 10: - | | |
| | Milk | 45 galls. | 6: 15: - | | |
| | Miscellaneous | | 2: 10: - | £24 | 15 - |
| (ii) Attributable to home-grown roughage: | | | | | |
| | Hay | .41 a. | £ 1: 17: 4 | | |
| | Silage | .39 a. | 1: 19: 10 | | |
| | Grazing | 1.25 a. | 4: 5: - | £ 8 | 2 2 |
| | | 2.05 a. | Total Variable Cost | £32 | 17 2 |

**Output per Replacement:**

| | | | |
|---|---|---|---|
| | Value of heifer at calving | £75: -: - | |
| less | Value of new-born calf | 5: -: - | £70 - - |

**Gross Margin:** (a) per replacement .....£37: 2: 10
(b) per acre ..... £18: 2: 4

## DAIRY COWS - ROOTS FEEDERS

(Rearing own replacements)

Variable Costs per Cow:

| | | | | | |
|---|---|---|---|---|---|
| (a) Variable costs directly attributable to cattle. | | | | | |
| (i) To cows: | Concentrates | 20.26 cwt. | £31: 10: - | | |
| | Dairy Expenses | | 4: 1: 3 | | |
| | Fuel | | 1: 18: 5 | £37 9 8 | |
| (ii) To replacement (detail below) | | | | 6 3 9 | |
| (b) Variable costs attributable to home-grown roughage: | | | | | |
| (i) To cows: | | Acres | | | |
| | Hay | .55 | £ 2: 10: 6 | | |
| | Roots | .12 | 1: 18: 8 | | |
| | Kale | .06 | 17: 9 | | |
| | Grazing | 1.10 | 3: 14: 10 | £ 9 1 9 | |
| (ii) To replacement (detail below | | | | 2 14 5 | |
| | | | Total Variable Cost | £55 9 7 | |

Output per Cow:

| | | |
|---|---|---|
| Milk Sales per annum (750 gallons) | £112: 10: - | |
| Calf Sales per cow (annual average) | 5: -: - | |
| Cast cow Sales (annual average) | 11: -: - | £128 10 - |

Gross Margin: (a) per cow ..... £ 73: -: 5
(b) per acre ..... £ 30: 13: 7

Note: (i) Gross margin per acre figure is based on 2.38 acres

(ii) Assumed that cows have an average of four lactations. The replacement costs per year which are included are therefore one quarter of the cost of bringing one heifer to the calving, one heifer being required every fourth year to replace each cow.

## VARIABLE COSTS PER REPLACEMENT

(Costs of one heifer brought up from birth to calving at 2½ years old)

Variable Costs per Replacement:

| | | | | |
|---|---|---|---|---|
| (i) Directly attributable to replacement | | | | |
| | Concentrates | 10.5 cwt. | £ 15: 10: - | |
| | Milk | 45 galls. | 6: 15: - | |
| | Miscellaneous | | 2: 10: - | £ 24 15 - |
| (ii) Attributable to home-grown roughage: | | | | |
| | Hay | .75 a. | 3: 8: 3 | |
| | Roots | .20 a. | 3: 4: 5 | |
| | Grazing | 1.25 a. | 4: 5: - | £ 10 17 8 |
| | | 2.20 a. | Total Variable Cost | £ 35 12 8 |

Output per Replacement:

| | | | |
|---|---|---|---|
| | Value of heifer at calving | £75: -: - | |
| less | Value of new-born calf | 5: -: - | £ 70 - - |

Gross Margin: (a) per replacement .... £34 7 4
(b) per acre ..... £15 12 5

## SUCKLER COWS (INWINTERED)

(Replacements purchased as in-calf heifers)

### SILAGE FEEDERS

Variable Costs per Cow:

(i) Variable costs directly attributable to cows:

| | | | |
|---|---|---|---|
| Concentrates | 3.49 cwt. | £ 4 13 10 | |
| Miscellaneous | | 1 10 - | £ 6 3 10 |

(ii) Variable costs attributable to home-grown roughage:

| | Acres | | |
|---|---|---|---|
| Hay | .32 | 1 9 1 | |
| Silage | .37 | 1 5 9 | |
| Grazing | 1.25 | 4 5 - | £ 6 19 10 |
| | | Total Variable Cost | £13 3 8 |

### ROOTS FEEDERS

Variable Costs per Cow:

(i) Variable costs directly attributable to cows:

| | | | |
|---|---|---|---|
| Concentrates | 3.25 cwt. | £ 4 - 5 | |
| Miscellaneous | | 1 10 - | £ 5 10 5 |

(ii) Variable costs attributable to home-grown roughage:

| | Acres | | |
|---|---|---|---|
| Hay | .34 | £ 1 11 - | |
| Roots | .10 | 1 12 2 | |
| Grazing | 1.25 | 4 5 - | £ 7 8 2 |
| | | Total Variable Costs | £12 18 7 |

### OUTPUT PER COW

| | |
|---|---|
| Calf | £45 - - |
| Calf Subsidy | 8 10 - |
| | £53 10 - |
| Less Cow Replacement Cost | 5 - - |
| | £48 10 - |

Note: Assumed that cows have an average herd life of 8 years, that cast cows are sold for £40 and in-calf heifers are purchased for £80.

### GROSS MARGIN:

(a) per cow

| | |
|---|---|
| (i) silage feeders ... ... ... | £ 35 6 4 |
| (ii) root feeders ... ... ... | £ 35 11 5 |

(b) per acre

| | |
|---|---|
| (i) silage feeders ... ... ... | £ 18 4 1 |
| (ii) root feeders ... ... ... | £ 21 - 11 |

Note: Gross margin per acre is based on 1.94 acres for silage feeders and 1.69 acres for root feeders.

## SUCKLER COWS (OUTWINTERED) - UPLAND FARMS

(Replacement purchased as in-calf heifers)

### SILAGE FEEDERS

Variable Costs per Cow:

(i) Variable costs directly attributable to cows:

| | | | |
|---|---|---|---|
| Concentrates | 1.50 cwt. | £ 1: 17: 6 | |
| Miscellaneous | | 1: 10: - | £ 3 7 6 |

(ii) Variable costs attributable to home-grown roughage:

| | Acres | | |
|---|---|---|---|
| Hay | .33 | 1: 10: 4 | |
| Silage | .33 | 1: 13: 8 | |
| Grazing | 1.50 | 5: 2: - | £ 8 6 - |
| | | Total Variable Cost | £ 11 13 6 |

### ROOTS FEEDERS

Variable Costs per Cow:

(i) Variable costs directly attributable to cows:

| | | | |
|---|---|---|---|
| Concentrates | 1.50 cwt. | £ 1: 17: 6 | |
| Miscellaneous | | 1: 10: - | £ 3 7 6 |

(ii) Variable costs attributable to home-grown roughage:

| | Acres | | |
|---|---|---|---|
| Hay | .35 | 1: 11: 10 | |
| Roots | .06 | 19: 4 | |
| Grazing | 1.50 | 5: 2: - | 7 13 2 |
| | | Total Variable Cost | £ 11 - 8 |

### OUTPUT PER COW

| | | | |
|---|---|---|---|
| Calf | £30 | - | - |
| Calf Subsidy | 8 | 10 | - |
| Hill Cow Subsidy | 12 | - | - |
| | £50 | 10 | - |
| Less Cow Replacement Cost | 5 | - | - |
| | £45 | 10 | - |

Note: Assumed that cows have an average herd life of 8 years, that cast cows are sold for £40 and in-calf heifers are purchased for £80.

### GROSS MARGIN:

| | | | | | | |
|---|---|---|---|---|---|---|
| (a) | per cow | | | | | |
| | (i) silage feeders | ... | ... | ... | £33 | 16 6 |
| | (ii) root feeders... | ... | ... | ... | £34 | 9 4 |
| (b) | per acre | | | | | |
| | (i) silage feeders | ... | ... | ... | £15 | 12 3 |
| | (ii) root feeders.. | ... | ... | ... | £18 | - 10 |

Note: Gross margin per acre is based on 2.16 acres for silage feeders and 1.91 acres for root feeders.

## WINTERING SUCKLED CALF

Variable Costs per Calf:

(i) Variable costs directly attributable to calf

| | | | |
|---|---|---|---|
| Concentrates | 5.0 cwt. | £ 7 9 6 | |
| Miscellaneous Costs | | - 10 - | |
| | | | £ 7 19 6 |

(ii) Variable costs attributable to home-grown roughage:

| | Acres | | |
|---|---|---|---|
| Hay | .37 | 1 13 8 | |
| Roots | .09 | 1 9 - | |
| | | | 3 2 8 |
| | | Total Variable Cost | £11 2 2 |

Gross Output

| | | |
|---|---|---|
| | Selling Price | £ 60 |
| Less | Cost of calf | 40 |
| | | £ 20 |

GROSS MARGIN

| | |
|---|---|
| (a) per Store Beast ... ... | £ 8 17 10 |
| (b) per Acre ... ... ... | £19 6 6 |

## WINTERING STORE BEAST (12-14 months old)

Variable Costs per Store Beast:

(i) Variable costs directly attributable to store:

| | | | |
|---|---|---|---|
| Concentrates | 4.5 cwt. | £ 4 17 6 | |
| Miscellaneous costs | | - 15 - | |
| | | | £ 5 12 6 |

(ii) Variable costs attributable to home-grown roughage:

| | Acres | | |
|---|---|---|---|
| Hay | .25 | £ 1 2 9 | |
| Roots | .13 | 2 1 11 | |
| | | | £ 3 4 8 |
| | | Total Variable Cost | £ 8 17 2 |

Gross Output

| | | |
|---|---|---|
| | Selling Price | £ 65 |
| Less | Cost of Store | 50 |
| | | £ 15 |

GROSS MARGIN:

| | |
|---|---|
| (a) per Store ... ... | £ 6 2 10 |
| (b) per Acre ... ... | £16 3 2 |

## PAIL FED CALF FATTENED AT 18-20 MTHS.

(Autumn Calf)

### Variable Costs per Fat Beast

(i) Variable costs directly attributable to cattle:

| | | | |
|---|---|---|---|
| Concentrates | 12.75 cwt | £20 9 7 | |
| Miscellaneous costs | | 1 12 - | £ 22 1 7 |

(ii) Variable costs attributable to home-grown roughage:

| | | | |
|---|---|---|---|
| Hay | .45 | £ 2 1 - | |
| Roots | .17 | 2 14 9 | |
| Grazing | .50 | 1 14 - | £ 6 9 9 |
| | | Total Variable Cost | £ 28 11 4 |

### Output per Beast

| | | |
|---|---|---|
| Selling Price | £ 72 - - | |
| Calf Subsidy | 8 10 - | |
| | £ 80 10 - | |
| Less Calf Cost | 15 - - | |
| | £ 65 10 - | |

### GROSS MARGIN:

| | |
|---|---|
| (a) per beast ... ... ... ... | £ 36 18 8 |
| (b) per acre ... ... ... ... | £ 32 19 5 |

## WINTER-FATTENED BULLOCK

### Variable Costs per Bullock:

(i) Variable costs directly attributable to cattle:

| | | | |
|---|---|---|---|
| Concentrates | 6.75 cwt. | £ 7 6 3 | |
| Miscellaneous Costs | | 1 10 - | £ 8 16 3 |

(ii) Variable costs attributable to home-grown roughage:

| | Acres | | |
|---|---|---|---|
| Hay | .25 | £ 1 2 9 | |
| Roots | .23 | 3 14 1 | £ 4 16 10 |
| | | Total Variable Costs | £13 13 1 |

### Output per Bullock:

| | | |
|---|---|---|
| | Selling Price | £ 95 |
| Less | Cost of Store | 70 |
| | | £ 25 |

### GROSS MARGIN:

| | |
|---|---|
| (a) per bullock ... ... | £ 11 6 11 |
| (b) per acre ... ... | 23 12 8 |

## SUMMERING BEEF CATTLE

### Variable Costs per Beast (6 months old)

(i) Variable costs directly attributable to cattle:

| | | | |
|---|---|---|---|
| Concentrates | .4 cwt. | £ - 14 - | |
| Miscellaneous costs | | - 2 - | £ - 16 - |

(ii) Variable costs attributable to home-grown roughage:

| | | |
|---|---|---|
| Grazing | .5 acres | 1 14 - |
| | Total Variable Cost | £ 2 10 - |

### Variable Costs per Beast (12 months old)

(i) Variable costs directly attributable to cattle:

| | | | |
|---|---|---|---|
| Concentrates | .3 cwt. | £ - 10 6 | |
| Miscellaneous costs | | - 4 - | £ - 14 6 |

(ii) Variable costs attributable to home-grown roughage:

| | | |
|---|---|---|
| Grazing | .8 acres | 2 14 5 |
| | Total Variable Cost | £ 3 8 11 |

### Variable Costs per Beast (18 months old)

(i) Variable costs directly attributable to cattle:

| | | | |
|---|---|---|---|
| Concentrates | .1 cwt. | £ - 3 6 | |
| Miscellaneous costs | | - 4 - | £ - 7 6 |

(ii) Variable costs attributable to home-grown roughage:

| | | |
|---|---|---|
| Grazing | 1.0 acres | 3 8 - |
| | Total Variable Cost | £ 3 15 6 |

### Variable Costs per Beast (24 months old)

(i) Variable costs directly attributable to cattle:

| | | | |
|---|---|---|---|
| Concentrates | .2 cwt. | £ - 7 - | |
| Miscellaneous costs | | - 4 - | £ - 11 - |

(ii) Variable costs attributable to home-grown roughage:

| | | |
|---|---|---|
| Grazing | 1.2 acres | £ 4 1 8 |
| | Total Variable Cost | £ 4 12 8 |

# P I G S

## BREEDING SOWS

### Variable Costs per Sow

| | | |
|---|---|---|
| Concentrates 31 cwt. | £ 46 | 10 - |
| Miscellaneous costs | 3 | - - |
| Total Variable Cost | £ 49 | 10 - |

### Output per Sow

| | | |
|---|---|---|
| | 16 Weaners @ £5 | £80 |
| Less | Sow replacement Cost | 7 |
| | | £73 |

GROSS MARGIN per Sow per Year £ 23: 10s.

## FATTENING PIGS

### Variable Costs per Pig

| | Pork | Bacon | Heavy Pigs |
|---|---|---|---|
| Concentrates | £ 5 8 - (4 cwt.) | £ 8 2 - (6 cwt.) | £ 10 16 - (8 cwt.) |
| Miscellaneous Costs | - 8 - | - 13 - | - 13 - |
| Total Variable Costs | £ 5 16 - | £ 8 15 - | £ 11 9 - |
| Output per Pig | £ 12 | £17 10s. | £20 10s. |
| Less Weaner Cost | 5 | 5 | 5 |
| | £ 7 | £12 10s. | £15 10s. |
| GROSS MARGIN per Pig | £1 4s. | £ 3 15s. | £ 4 1s. |

## SHEEP

## HALF BRED EWE FLOCK

(Replacements purchased as gimmers)

### Variable Costs per Score Ewes

(i) Variable costs directly attributable to ewes:

| | | | |
|---|---|---|---|
| Concentrates | 20.2 cwt. | £26 11 6 | |
| Miscellaneous costs | | 10 - - | £ 36 11 6 |

(ii) Variable costs attributable to home-grown roughage:

| | Acres | | |
|---|---|---|---|
| Hay | .40 | £ 1 16 5 | |
| Roots | .80 | 12 17 8 | |
| Grazing | 9.65 | 32 16 2 | £ 47 10 3 |
| | | Total Variable Cost | £ 84 1 9 |

### Output per Score Ewes

| | | | |
|---|---|---|---|
| Sales: | 30 Lambs | @ £7: 10s. | £225 - - |
| | 5 Draft Ewes | @ £8: 6s. | 41 10 - |
| | Wool 20 fleeces | @ £1: 10s. | 30 - - |
| | | | £296 10 - |
| Less | Replacements 6 Gimmers @ £14 | | 84 - - |
| | | | £212 10 - |

Note: Assumed lambing percentage of 150% and ewes drafted after 4 crops.

GROSS MARGIN:

(a) per score ewes ... ... £ 128 8 3
(b) per acre .. ... ... £ 11 16 8

## REARING GIMMER REPLACEMENTS

### Variable Costs per Gimmer

(i) Variable costs directly attributable to gimmers:

| | | | |
|---|---|---|---|
| Concentrates | 1 cwt. | £ 1 10 - | |
| Miscellaneous costs | | - 4 - | £ 1 14 - |

(ii) Variable costs attributable to home-grown roughage:

| | Acres | | |
|---|---|---|---|
| Hay | .02 | £ - 1 10 | |
| Roots | .05 | - 16 1 | |
| Grazing | .25 | - 17 - | £ 1 14 11 |
| | | Total Variable Cost | £ 3 8 11 |

### Output per Gimmer

| | | |
|---|---|---|
| | Gimmer | £14 |
| Less | Value of Ewe Lamb | 8 |
| | | £ 6 |

GROSS MARGIN:

(a) per gimmer ... ... £2 11 1
(b) per acre ... ... £7 19 8

## EGG PRODUCTION

### Variable Costs per Bird

| | Free Range | | Deep Litter | | Battery | |
|---|---|---|---|---|---|---|
| Concentrates | .98 cwt. | £ 1 8 5 | 1.03 cwt. | £ 1 9 10 | 1.07 cwt. | £ 1 12 1 |
| Miscellaneous costs | | - 2 - | | - 3 - | | - 4 - |
| Total Variable Cost | | £ 1 10 5 | | £ 1 12 10 | | £ 1 16 1 |
| Output per Bird | | £ 2 13 6 | | £ 2 16 6 | | £ 3 1 1 |
| Less Replacement Cost | | - 6 - | | - 6 - | | - 8 - |
| | | £ 2 7 6 | | £ 2 10 6 | | £ 2 13 1 |
| GROSS MARGIN per Bird | | £ - 17 1 | | £ - 17 8 | | £ - 17 - |

## BROILER PRODUCTION

### Variable Costs per Bird

| | |
|---|---|
| Concentrates .08 cwt. | £ - 3 6 |
| Miscellaneous Costs | - - 3 |
| Total Variable cost | £ - 3 9 |

### Output per Bird

| | |
|---|---|
| Selling Price | £ - 5 7 |
| Less Chick Cost | - 1 3 |
| | £ - 4 4 |

GROSS MARGIN per Bird ... ... ... 7d.