



**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.*

*Farm business analysis*

GIANNINI FOUNDATION OF

LIBRARY  
**WITHDRAWN**

MAY 17 1955

**WYE COLLEGE**

(UNIVERSITY OF LONDON)

**YOUR FARM BUSINESS**

*Wye College*

**DEPARTMENT OF AGRICULTURAL ECONOMICS**

YOUR FARM BUSINESS

A guide to the practical use of Comparative  
Analysis and Gross Margin Techniques in  
Farm Business Management.

WYE COLLEGE: DEPARTMENT OF AGRICULTURAL ECONOMICS.

PRICE: 5/6

LIST OF CONTENTS

	Page
Management and the Farm Business	5
Profitability on Your Farm	8
Comparison with Similar Farms	11
Efficiency and Profitability	13
Planning the Farm Business	19
Appendix	29
Farm Business Statistics Supplement	In Folder

## FOREWORD

Many producers, advisors, accountants and others concerned with farm business matters come into contact with modern techniques of farm business management such as budgeting, gross margins and comparative analysis. These 'tools of management' are more readily applied and yield more useful information than the older and more elaborate methods such as "cost accounting" which they have largely displaced.

These techniques do, however, call for a certain amount of specialist knowledge and it is for this reason that this handbook has been prepared. In it are set out the procedures to be followed to take a farm through the main stages of Farm Business Analysis; the assessment of overall efficiency, the control of day to day operations and the planning of future production. The first part of the booklet deals with the handling and interpretation of factual information about a farm business, and, in particular, with comparative methods of assessing efficiency. The second part outlines methods of forward planning and illustrates how the selected plan may be incorporated into a system of budgetary control.

Farm Business Analysis is not a simple subject and it often appears somewhat formidable to the newcomer. With the growing size and complexity of many farm businesses, however, a systematic approach to the problems of management is almost essential. This draws attention to the need for better and simpler records and for making good use of the services provided by accountants and other advisors. More and more, the farm office is becoming the centre of farming operations and the place where the key decisions are made.

Messrs. J.D. Sykes and J.B. Hardaker have combined their knowledge of this subject to create this advisory manual. They have drawn heavily on the experiences and records of many farms in the South East of England and on the knowledge of other colleagues in the Department.

G.P. Wibberley  
Professor of Rural Economy  
Wye. September 1964

MANAGEMENT AND THE FARM BUSINESS

Many of the old farming arts are fast declining, the victims of scientific and technological developments and economic pressure. The farmer has become a businessman, intent on making the best use of modern methods and increasingly concerned about the return shown by his investment of capital and time. He is increasingly aware that success depends largely upon his own decisions, in selecting what and how much to produce and the most economic methods of production.

The basic economic features of a farm business grow out of the decisions a farmer makes about his cropping and stocking policy. His choice virtually sets an upper limit on output and profitability and also establishes an inescapable minimum for overheads or fixed costs.

It is, however, the skill with which the farm is managed that determines actual profitability, for even the best system will be ruined by bad management. So the efficiency of the day to day running of the farm and the success with which the interplay of weather and market forces is handled and exploited have an immediate impact on profit and are a measure of management competency.

The opportunities for error are extraordinarily large owing to the wide range of decisions which have to be made each day on every farm. Success, in the shape of good profits largely reflects a clear sense of purpose, a sound knowledge of the facts, executive ability and, not least, a modicum of good luck.

Farm Business Analysis is concerned with establishing the facts about a farm and with interpreting their significance, firstly, to improve the efficiency of existing farm enterprises by better day to day management control, secondly, to develop more profitable lines of production and to set up targets by forward planning, and lastly, to study the comparative economic efficiency of the farm as a whole so as to pinpoint its particular weaknesses and strengths.

### Management Control

Simple control records can improve the day to day management of many enterprises, particularly those using 'expensive' resources such as bought feedingstuffs. A good example would be a dairy herd where both labour and concentrates can easily be wasted if the cows fail to breed regularly.

A wall chart showing each cow's milking and breeding status has proved most useful on several farms. Similarly, simple charts can be employed for quickly checking on trends in egg production or pig breeding. An example is given in the Appendix of the type of chart useful for a dairy herd.

As enterprises grow in size it becomes more and more necessary for management to have basic information in a readily available form. In no other way is it possible to ensure, during the course of a financial year, that an intensive enterprise is progressing satisfactorily towards the planned target.

### Forward Planning

Forward Planning is the key stage in Farm Business Analysis. Detailed study of the farm business and observation of the general farming scene pinpoint the areas where improvements are desirable and provide a basis for future planning. Forward Planning helps to rationalize the selection of alternative enterprises or different methods of production.

Planning methods range from relatively straight forward and easily learned budgeting procedures to complex methods such as linear programming. The primary aim of all planning methods, however, is to achieve an improved farming system.

A secondary but important role of forward planning is the establishment of targets for future production, providing an obvious way of increasing one's effective control over the business. This helps to underline priorities and ensures that critical features, such as 'break-even' points for costs or levels of yields are fully appreciated. Important inter-relationships between enterprises also become more apparent.

### Farm Business Efficiency

The study of the results achieved on a given farm is valuable for pin-pointing weaknesses that may need to be remedied before profits can be improved and for gaining a deeper insight into the basic structure of the business.

This may be done by looking at the achievements of a single enterprise or it may relate to the farm as a whole. For reasons of space, the detailed analysis of individual farm enterprises has not been included in this booklet. The Department of Agricultural Economics, Wye College, has previously published short guides to the economics of dairy farming, pig production and the use of concentrates, and similar work books have been published by other University centres.

The question of the relative efficiency of a farm's recent performance may be approached by making a comparison with average results for similar farms, or alternatively by comparing the farm with its own planned or budgeted results or with the results for the previous year. Comparison with past or budgeted performance puts the spotlight on the progress made in the period under review, whilst comparison with others makes it possible to assess whether resources are being used as profitably as on similar farms.

Records and accounts are necessary, of course, before either investigation can be commenced. Details are given in the Appendix of the particulars required and the standard methods which should be followed in preparing the financial results and efficiency standards for comparative analysis. A new farm account and records book, recently sponsored by the N.F.U. and N.A.A.S., is a convenient way of compiling the necessary information. Comparative results for the main farm business types in South East England are provided in a pocket inside the back cover of this booklet.

The following pages are devoted to a description of the steps to be followed in studying the progress and efficiency of a farm business. The first stage is to compare the results for the last two years noticing particularly the main changes in costs and returns and profitability. Secondly, a comparison can be made with average results for similar farms with the object of picking out the reasons for differences in the levels of profitability and efficiency.



PROFITABILITY ON YOUR FARM OVER THE LAST TWO YEARS

The best comparative measures of profitability from a farm management standpoint are 'Management and Investment Income' and 'Net Farm Income'. Both are concerned purely with the profitability of farming alone. In other words, they approximate to the net return to the farmer as a tenant rather than to an owner occupier who necessarily incurs certain 'estate' charges, but who pays no rent.

The following table shows how these two measures of profitability are derived. In part, they reflect the difference between sales and purchases and various charges, such as depreciation, but they also take into account changes in valuations and the value of produce and services utilized in the farmhouse.

	196 £	196 £
Surplus of Income over Expenditure		
Value of Farmhouse Consumption		
Increase (+) or Decrease (-) in Valuation		
	_____	_____
<u>MANAGEMENT &amp; INVESTMENT INCOME</u>		
add Farmer & Wife's Manual Labour		
	_____	_____
<u>NET FARM INCOME</u>	=====	=====

Management and Investment Income shows profitability after charging all unpaid manual labour but before any charge has been made for managerial services or for interest on the tenant's own or borrowed capital.

Net Farm Income also includes the value of the farmer and wife's own labour. It therefore provides a better measure of the amount available to the farm family for living purposes, for the payment of interest and for further investment. It is particularly appropriate for assessing profitability on the smaller farm where the major share of net income often comprises the value of the labour of the farmer and his wife.

Output over the Last Two Years

The table below shows the extent of changes in output over the last two years. It summarizes the combined effects of differences in prices, weather conditions, farm policy, etc., on the value of production, which in turn has an important bearing on profitability.

	196 £	196 £
Cattle		
Sheep and Wool		
Pigs		
Poultry and Eggs		
Milk		
	_____	_____
<u>Total Livestock</u>		
Cereals		
Roots and Market Garden		
Hops and Fruit		
Other Crops		
	_____	_____
<u>Total Crops</u>		
Sundries		
	_____	_____
<u>Total Output</u>	_____	_____

For purposes of farm business analysis, however, it is desirable, as far as possible, to relate production to actual inputs used in the period under review. To this end, sales and purchases may be adjusted for stocks on hand in the opening and closing valuations. For example, the value of livestock on the farm at the end of the year added to sales, less the value of stock at the beginning of the year, together with any purchases, gives the value of livestock output for the year under review. Similar principles are applied to derive crop output and to 'adjust' expenditure on materials such as bought feed, seed and fertilizers for valuation changes. Fuller details of these procedures are given in the Appendix.

Net Product and Expenditure over the Last Two Years

Expenditure items are listed in the two following tables. The first is concerned with the purchased materials which have been deducted from Total Output to give Net Product. The second shows the balance of Net Product remaining as Management and Investment Income, after all other charges have been met.

	196 £	196 £
<u>Total Output</u>		
less <u>Purchases</u>		
Feedingstuffs		
Seeds		
Fertilizers		
Power and Machinery		
Sundries		
	_____	_____
<u>Total Purchases</u>	_____	_____
<u>Net Product</u>	£	£

Net Product is an important measure of efficiency. It is a better measure than Total Output of the true value of farm production owing to the increasing dependence on bought materials such as fertilizers, feedingstuffs, fuel, etc. The rapid growth of "processing agriculture" means that an increasing proportion of Output is absorbed by Expenditure on items of non-farm origin. As a general rule, Other Charges should not absorb more than two-thirds, or at the most three-quarters of Net Product.

	196 £	196 £
<u>Net Product</u>		
less <u>Other Charges</u>		
Rent and Rates		
Machinery Depreciation		
Labour - paid		
- unpaid		
	_____	_____
<u>Total Other Charges</u>	=====	=====
<u>Management &amp; Investment Income</u>	£	£

A COMPARISON OF FINANCIAL RESULTS WITH THOSE OF SIMILAR FARMS

While the factors causing year to year variations in profitability are best observed by comparing one's most recent results with those for the previous year, the relative levels of profit are best studied by comparison with results of similar farms.

It is important, of course, to ensure as far as possible that only truly comparable results are used for this purpose. Even so, the unique characteristics of soil, layout, etc., on any farm must always be borne in mind. Comparative results are enclosed in the pocket inside the back cover of this booklet.

Output, Expenditure & Profitability on Your Farm

£ per 100 acres

Total Output

less Purchases

Feedingstuffs

Seeds

Fertilizers

Power & Machinery

Miscellaneous

Total Purchases

Net Product

less Other Charges

Rent & Rates

Machinery Depreciation

Labour - Paid

- Unpaid

Total Other Charges

Management & Investment Income

£

Return on Tenant's Capital \*

%

\* Management and Investment Income per £100 Tenant's Capital

Group averages are a useful means of assessing relative profitability and efficiency but this does not mean they indicate the best level of production or investment for a particular farm. These questions have to be resolved by other means, such as budgeting or linear programming. Comparative analysis, however, can help to improve the profitability of a given farm by leading to a better appreciation of the farm's organization and special problems and particularly by highlighting the reasons for indifferent results. It is now proposed to trace the use of the comparative analysis technique in this role.

A systematic approach to comparative analysis is recommended along the following lines:

1. Compare Profitability per 100 Acres and £100 Capital with the appropriate group average. (A method for selecting the appropriate group results is given in the Farm Business Statistics Supplement).
2. Compare the value of Net Product with the group average, and check what proportion of this sum is absorbed by Other Charges.
3. If Other Charges appear to be excessive, the individual components of Rent, Depreciation and Labour per 100 acres and per £100 Net Product should be checked.
4. If Net Product itself appears to be inadequate, this might be associated with a low Total Output, a high level of Purchases, or both. It is also valuable to check whether the level of Total Output is satisfactory relative to expenditure on purchased feed and seed.
5. Finally, check the level of expenditure on Fertilizers, Power and Machinery and Miscellaneous Items per 100 acres and per £100 Total Output.

These comparisons will show how efficiently the farm is organized and managed and will suggest key points requiring further investigation and improvement. The next step in comparative analysis makes use of 'Efficiency Indicators' to obtain a better insight into the reasons for unsatisfactory or inadequate performance.

### EFFICIENCY & PROFITABILITY

Greater profits may result either from a higher level of output or from a reduction in costs. It is useful to examine each of these components in turn in a systematic way, beginning by listing the factors affecting the levels of output and expenditure:

1. The Level of Output reflects:
  - a) the intensity of the farming system; or, in other words, the numbers and kinds of livestock, the acreages and types of crops.
  - b) the physical yields obtained and the net prices realised for sale products.
  
2. The Level of Costs mainly reflects efficiency in two fields, first in expenditure directly related to productive activities, such as fertilizers or purchased feed, and second, the overheads or fixed charges of the farm. Within this broad division, there are two areas which especially merit close investigation:
  - a) The Feed Economy of the whole farm, including the wider aspects of feed crop production and the utilization of all feed.
  - b) Labour & Machinery Costs, which relate to the 'services' element of the whole farm and which together with rent and general maintenance charges largely comprise Overheads or Fixed Costs.

Efficiency Indicators may be used to investigate these aspects of Output and Expenditure and some of the chief indicators are listed on page 15. They are designed to throw light on both organizational and operational efficiency, leading to a deeper understanding of the structure of the farm business and a better appreciation of the reasons underlying its actual profit earning achievements.

### Intensification of the Farming System

Various Efficiency Indicators can be used to investigate the organizational features of a given farm.

The System Index is used as a measure of intensity to show whether, in comparison with farms of similar type and size, a given farm has a high or low output capacity. A higher than average System Index means that the overall pattern of stocking and cropping is more intensive, and, therefore, should result in the production of a larger output.

Intensity of farming system has an important effect on overall profitability, especially when, as is normally the case, the farm acreage cannot easily be increased. In these circumstances, a change in the balance of enterprises, such as an increase in the area of cash cropping, a higher density of stocking, or a larger number of intensive livestock, which results in an increase in output, often presents the best means of increasing profit. Such opportunities may well be restricted, however, by shortage of working capital, labour, buildings or equipment, thereby justifying the development of a more extensive system. In appropriate circumstances such a 'low cost' system can be both highly profitable and very resilient to economic pressures.

The level of Basic Costs per 100 acres is important in this context. These costs comprise overheads such as rental charges, depreciation, labour, etc., which are not directly affected by the level of output achieved. They therefore tend to dictate the minimum level of intensity at which the farm can be successfully run.

Other indicators which can usefully be included in a review of organizational features, include the proportion of land devoted to feed crops and the proportion of livestock output produced by intensive stock, (pigs, poultry and dairy cows).

It is important to consider whether the existing farming system is the most appropriate and best designed to give the most effective use of the land, labour, equipment and other resources available. Study of the present emphasis given to the various lines of production and comparison with other farms, lead one to investigate the reasons underlying the results.

INDICATORS OF ORGANIZATIONAL & OPERATIONAL EFFICIENCYYour FarmSystem Indicators

Index of System Intensity  
 Basic Costs per 100 Acres  
 % Acreage in Feed Crops  
 % Intensive Livestock Production  
 Tenant's Capital per 100 Acres

Yield Indicators

Index of All Yields  
 Index of Crop Yields  
 Index of Livestock Yields  
 Output per Grazing Livestock Unit  
 Milk Sales per Cow

Feed Economy

Livestock Output per Adjusted Feed Acre  
 Index of Concentrate Use  
 Forage Acres per Grazing Livestock Unit  
 % Feed Purchased

Labour & Machinery Use

Labour and Machinery Costs per £100 Net Output \*  
 Labour Cost per 100 Work Days  
 Power and Machinery Costs per 1000 Tractor Hours  
 Repairs, Tax & Insurance  
 Fuel and Electricity  
 Contract Charges  
 Depreciation

Total

\* Net Output = Total Output less Purchased Feed and Seed.



If a relatively large area is devoted to feed crops, for example, it will obviously limit the acreage available for cash cropping. This can be justified if a higher level of livestock output is consequently achieved, or commensurately less purchased feed is required. On the other hand, a relatively large feed crop acreage could be due to poor crop yields, to indifferent quality products, or to extravagant feeding, leading directly to reduced profits.

#### Yields and Farm Efficiency

Experience has shown that yields are a crucial factor in the achievement of good profits. Even a well planned farm system is ineffective without satisfactory yields. This means obtaining good economic yields rather than merely high physical yields, and most farmers are well aware that striving for the highest possible physical yield without attention to costs seldom leads to satisfactory profits. Achieving good economic yields involves both obtaining good prices and also ensuring the largest amount of produce is sold or otherwise put to good use in raising farm production.

Several Efficiency Indicators are available for the measurement of economic yields. The degree of success achieved in combining good physical and financial yields over the farm as a whole is shown by the Index of All Yields. One or more of the following reasons will account for relatively low index value:

- a) poor physical yields from crops and/or livestock
- b) unsatisfactory prices for sale products
- c) poor quality sale products
- d) failure to market or otherwise utilize potentially salable produce

The analysis can be continued by examining the Crop Yield Index and the Livestock Yield Index, and if thought necessary, by a more detailed examination of the yields of the individual enterprises.

Taking a specific example, a low Livestock Yield Index might be traced to a relatively low Output per Grazing Livestock Unit, perhaps associated with low Milk Sales per Cow. Further examination is then needed to discover whether poor milk yields are involved and if so whether they are caused by, for example, fertility problems or poor quality bulk feeds. So the evidence is systematically built up showing the need, perhaps, for better methods of conservation or closer supervision of breeding.

### The Feed Economy

There are comparatively few farms where efficiency in feed production and use is not important. Unprofitability may stem from overfeeding, from excessive dependence on expensive purchased feed or from the use of bulks of indifferent quality. Quite frequently the livestock themselves prove to be poor converters, perhaps as a result of the conditions under which they are kept.

The obvious cost of such inefficiency is readily apparent in low output from livestock or in high outlays on purchased feed. Less apparent, but often more serious, is the loss of income arising from the inefficient use of land and other resources which might otherwise have been devoted to some other more productive enterprise on the farm. For example, if the density of stocking could be improved, land grazed by sheep or cattle might be partly diverted to cash cropping.

A full analysis of the feed economy of a farm requires accurate records of the feed used by different classes of stock. The margin of output over concentrate feed costs, for example, is a valuable measure of efficiency for most livestock enterprises. Up to the present time, relatively few farmers have kept the necessary records for such detailed analysis, and it is for this reason that the following 'overall' approach has been adopted for the assessment of the feed economy of a farm. Where information is available, the analysis can be taken beyond that described here, often making it possible to pinpoint more precisely the causes of unsatisfactory performance.

An overall and approximate measure of the efficiency of feed use is given by Livestock Output (£) per Adjusted Feed Acre. The Adjusted Feed Acreage includes an allowance for purchased feed, and so this is a broad indicator showing the success with which all feed has been converted into livestock products. The use of this measure is not recommended where there are large numbers of pigs and poultry, when the need for accurate records of concentrate feeding cannot be too strongly urged.

If the level of Livestock Output per Adjusted Feed Acre appears unduly low, the cause may be found in one or more of the following:

- a) poor yields from livestock, as discussed in the foregoing section
- b) excessive outlays on bought feed
- c) poor yields, indifferent quality, or extravagant use of homegrown feed crops.

Amongst the Efficiency Indicators generally employed are the Index of Concentrate Use and Forage Acreage per Grazing Livestock Unit. A relatively low index for the former suggests a need for more effective rationing and for frequent checks on the rates of concentrate use by each type of livestock. Similarly, an unduly high Forage Acreage per Grazing Livestock Unit indicates a need to review the types of feed crops grown and their yields. Alternatively, inefficient use of forage may simply stem from a failure to fully exploit the stock-carrying capacity of grassland.

#### Efficiency in the Use of Labour and Machinery

Although labour and machinery services together generally comprise the largest element of farming costs, it is normally difficult to pick out the root causes of inefficient utilization. Time spent on non-productive tasks, for example, is generally substantial, but is not easily assessed. There are obvious difficulties in estimating the value of unpaid labour and in making allowance for time spent on farm improvements, etc.

Labour and Machinery Costs per £100 Net Output\* provides a useful overall measure of efficiency. Where costs appear to be comparatively high, the cause may be one or more of the following:

- a) A low level of output
- b) Excessive amounts of labour or machinery
- c) Costly labour or machinery services
- d) Poor buildings and farm layout
- e) Inadequate and/or ill-designed machinery and equipment
- f) Inefficient work routines, methods and supervision

Further light can be thrown on these matters by considering whether the charges for labour or machinery services separately appear to be competitively prices. Labour Cost per 100 Work Days and Power and Machinery Costs per 1000 Tractor Hours each relate actual expenses to estimated productive work requirements. Relatively high costs, therefore, may be indicative of excessive amounts of non-productive work. Alternatively, wages or machinery running costs may be higher than average.

\* Net Output = Total Output less Purchased Feed and Seed.

### PLANNING THE FARM BUSINESS

So far, this booklet has shown how to establish the main economic strengths and weaknesses of a farm business. Often, of course, it is desirable to go into further detail but since husbandry considerations become increasingly important these matters are obviously best discussed with officers of the National Agricultural Advisory Service.

The next step is to consider the forward planning aspects of farm business management. Most farm planning problems are concerned with the choice between alternatives: alternative methods of production or alternative enterprises. Such decisions need to be made with care, after considering all the consequences. Without budgets or economic plans it is normally impossible to know how worthwhile a new development will be, since any reorganization must inevitably affect many of the other enterprises. Before any capital is invested in concrete or expensive equipment it is wise to estimate capital requirements and to have a clear knowledge of the probable future costs and returns of each alternative.

Budgeting or forward planning involves two steps. The first aims at discovering how each alternative system or method of production is likely to affect the total farm profit. The second concerns the incorporation of the chosen plan into income and expenditure targets for the whole farm.

Four questions have to be answered before the profitability of a proposed change can be ascertained. These are as follows:

- What additional revenue will be obtained from the new development?
- Will any additional costs be incurred?
- Will there be any sacrifice of revenue from established enterprises?
- Are any existing costs likely to be reduced?

On the next page a budget has been set out to show whether it would be profitable for the farmer concerned to produce weaner pigs instead of buying them. It is assumed that labour is available together with the necessary capital to purchase stock and to put up housing. It will be noted that only those items of expenditure and income actually affected by the proposed reorganization are shown. As labour and general overhead expenses will remain unaltered they are omitted from the calculation.

Budgeting for a Change in the Annual Supply of Weaner Pigs

<u>Additions to Present Costs</u>	£	<u>Additions to Present Revenue</u>	£
Feed for 10 sows and 150 weaners	450	3 cull sows	50
Sundries, Interest, Depreciation	125		
Purchase of 3 gilts	95		
Annual Cost of New Accommodation	50		
 <u>Reductions in Present Revenue</u>		 <u>Reductions in Present Costs</u>	
nil	-	Purchase of 150 weaners	850
 <u>Addition to Farm Profit</u>		 <u>Reduction in Farm Profit</u>	
	180		-
	<hr style="width: 50px; margin: 0 auto;"/>		<hr style="width: 50px; margin: 0 auto;"/>
	900		900
	<hr style="width: 50px; margin: 0 auto;"/>		<hr style="width: 50px; margin: 0 auto;"/>

It is important to take into account all the probable changes in costs and revenue, whether caused directly or indirectly by the reorganization under review. In the budget above, for example, home-bred pigs might be expected to show improved food conversion in the fattening stage. In this case, some estimate of the food costs saved should be included under the heading "Reductions in Present Costs."

In practice, many budgeting problems are concerned with the effects on profitability of some change in the balance of enterprises. For example, what would be the most probable consequences of replacing 10 acres of barley with wheat, or of expanding a pig unit relative to the rest of the farm? For this kind of change in farm organization the use of Gross Margins is helpful, particularly in reducing the amount of arithmetic involved.

Farm Planning - The Gross Margin Method

The Gross Margin of an enterprise is the difference between the Output of the enterprise and the Specific or Variable Costs attributable to it. Common or Fixed Costs, such as regular labour, machinery expenses and rental charges are not allocated to any enterprise. However, they are deducted from the Total Gross Margin of all enterprises in order to arrive at a net profit figure for the whole farm.

A Gross Margin for an enterprise such as wheat production is calculated as follows:

A Gross Margin for Wheat Production

<u>Output:</u>	£ per acre
32 cwt @ 27/6d.	44
<u>Variable Costs:</u>	
Seed : 1½ cwt @ 40/-	3
Fertilizer : 5 cwt @ 20/-	5
Sundries	2
	<u>£10</u>
<u>Gross Margin</u>	£34 per acre

The use of Gross Margins for farm planning is illustrated below by a simple example of a 180 acre dairy and cereal growing farm in East Kent. The original cropping of this farm was 100 acres of barley, 72 acres of leys and 8 acres of kale. The forage crops were devoted entirely to a herd of 36 dairy cows and followers. Using the procedure outlined in the Supplement, tables were prepared showing the Gross Margins of the various enterprises and the profitability of the farm as a whole. The chief parts are summarized below:

Farm X - Original Organization and Profitability

<u>Dairy Enterprise</u>	£	£
Output:		
36 cows with followers @ £115		4140
<u>less Livestock Variable Costs:</u>		
36 cows @ £37	1340	
<u>Forage Variable Costs:</u>		
80 acres @ £8	640	-1980
		<u>£2160</u>
<u>Gross Margin</u>		<u>£2160</u>

i.e. A Gross Margin, including followers, of £60 per cow or £27 per forage acre.

<u>Barley Enterprise</u>	£
Output - 100 acres @ £32	3200
<u>less</u> Variable Costs of Barley: 100 acres @£12	<u>-1200</u>
<u>Gross Margin</u>	<u>£2000</u>

i.e. A Gross Margin of £20 per acre.

The profitability of the whole farm was assessed as follows:

	£	£
Gross Margins:		
Dairy Enterprise	2160	
Barley Enterprise	<u>2000</u>	4160
<u>less</u> Fixed Costs		<u>-3400</u>
<u>Management and Investment Income</u>		<u>£ 760</u>

The dairy enterprise showed a Gross Margin of £27 per forage acre compared with only £20 per acre for barley production and the possibility was therefore investigated of expanding the dairy herd at the expense of cereal growing. It was found that by making some simple modifications to the yard and parlour arrangements an extra 9 cows could be kept, which with their followers would require an additional 20 acres of forage crops to be grown on land taken from the barley acreage. The effects of these proposed changes were investigated by means of the following budget:

<u>Decrease in Gross Margin</u>	£	<u>Increase in Gross Margin</u>	£
20 acres barley @ £20	400	9 cows with followers @ £60	540
<u>Increase in Fixed Costs</u>		<u>Decrease in Fixed Costs</u>	
Regular Labour	70	Regular Labour	20
Rental Charges	25		
<u>Increase in Profit</u>	<u>65</u>	<u>Decrease in Profit</u>	<u>-</u>
	<u>560</u>		<u>560</u>
	<u><u>560</u></u>		<u><u>560</u></u>

When using Gross Margins for farm planning it is most important that any changes in Fixed or Overhead Costs should not be overlooked. In this example, labour costs were increased by the amount of the extra overtime and bonus payments to the cowman, less a small saving in overtime pay as a consequence of the reduction in cereal growing. The increase in rental charges reflects the annual cost of the capital invested in improving the yard and parlour.

In addition to examining the effects on Fixed Costs, it is necessary to consider possible changes in the Gross Margins themselves arising from the reorganization. For example, milk yield per cow might be adversely affected if the increase in cow numbers were to result in overcrowding in the yards or less individual attention at milking. No such effects were anticipated in this case.

#### The Reconciliation of the Budget with the Farm Account

The full value of farm budgeting is only realized if it is used to steer production and control expenditure. This involves the preparation of a budgeted farm account, based on performance in previous years, but modified to include any anticipated changes in output and expenditure. It is most convenient if a similar layout is adopted for both the budgeted and the actual results, thereby facilitating direct comparisons, if necessary during the course of the farming year.

Once again, Gross Margins prove to be a most effective way of tackling this problem. This is illustrated below, using budgeted and actual results for the dairy and arable farm discussed above for the year following the one already considered. The proposed increase in cow numbers investigated above was accepted by the farmer, and the financial consequences have been incorporated into the budgeted account. Similarly, an expected rise in the agricultural wage rate has been taken into account along with other less important changes.

#### Farm X - Budgeted and Actual Output

	<u>Budget</u>	<u>Actual</u>
	£	£
Barley (80 acres)		
Sales and Closing Valuation	3550	4125
Fed to Livestock	600	520
Seed Corn	200	210
	<hr/>	<hr/>
	4350	4855
<u>less</u> Opening Valuation	- 1800	- 1800
	<hr/>	<hr/>
<u>Total Output of Barley</u>	<u>2550</u>	<u>3055</u>



<u>Dairy Enterprise (45 cows with followers)</u>	<u>Budget</u> £	<u>Actual</u> £
Sales of Livestock and Closing Valuation	3075	2945
<u>less</u> Opening Valuation	- 2700	- 2700
Value of Cattle Output	375	245
<u>plus</u> Milk Sales	4800	4885
<u>Total Livestock Output</u>	<u>5175</u>	<u>5130</u>

The first step was to determine the output expected from both barley and the dairy enterprises. The budgeted and actual results are compared in the above tables. It should be noted that opening and closing valuations and transfers of home-produced grain for feed and seed have been included to ensure a proper reconciliation of the budget and the accounts.

It must also be emphasized that outlays on fertilizers, seeds and sprays may require adjustment for quantities used in preceding and succeeding financial years. This is necessary when the accounting year does not coincide with the crop production year.

Farm X - Budgeted and Actual Crop Expenses

	<u>100 acres Forage</u>		<u>80 acres Barley</u>	
	<u>Budget</u> £	<u>Actual</u> £	<u>Budget</u> £	<u>Actual</u> £
<u>Variable Costs</u>				
Purchased Seed	225	275	30	-
Home-grown Seed	-	-	200	210
Fertilizers	450	370	400	305
Sundries	80	70	120	100
Contract Work	45	70	200	295
<u>Total</u>	<u>£800</u>	<u>£785</u>	<u>£950</u>	<u>£910</u>

The above table shows the Variable Costs of crop production, again giving some details of both budgeted and actual results.

On the basis of the information given on the previous page the Gross Margin of the barley was directly determined:

<u>Barley Enterprise</u>	<u>Budget</u>	<u>Actual</u>
	£	£
Output	2550	3055
<u>less</u> Variable Costs	<u>- 950</u>	<u>- 910</u>
<u>Gross Margin</u>	<u>£1600</u>	<u>£2145</u>

The calculation of the Gross Margin of the dairy enterprise, however, involved two steps:-

<u>Dairy Enterprise</u>	<u>Budget</u>	<u>Actual</u>
	£	£
Output	5175	5130
<u>less</u> Livestock Variable Costs:	£	£
Purchased Feed	650	725
Homegrown Barley	600	520
Vet. & Medicines	150	95
Sundries	275	190
	<u>- 1675</u>	<u>- 1530</u>
	3500	3600
<u>less</u> Forage Variable Costs	<u>- 800</u>	<u>- 785</u>
<u>Gross Margin</u>	<u>£2700</u>	<u>£2815</u>

As the above example shows, the two steps in determining the Gross Margin of Livestock were, firstly, to deduct livestock variable costs, such as veterinary and medicine expenses and, secondly, forage variable costs, seed and fertilizer, etc., from Gross Output.

It will be appreciated that the farmer concerned had more detailed information than can be presented here. In the case of his dairy herd, for example, estimates were made of the expected milk yield from cows, the requirement of replacement animals, levels of feeding, etc. In practice, the precise method of preparing the budget should have regard to the particular circumstances of the farm. Similarly, Gross Margin planning data such as that given in the Appendix will usually need to be modified in the light of the actual levels of performance achieved.

It now remains to complete the review of the budgeted and actual results by considering the Summary of Overheads or Fixed Costs and the Statement of Profits. The Fixed Costs which were not attributed to any given enterprise are summarized in the following table:

Farm X - Summary of Fixed Costs

	<u>Budget</u> £	<u>Actual</u> £
Total Labour	1600	1690
Rent & Rates	1000	1015
Machinery - Depreciation	350	445
"    - Operating Costs	600	635
Sundries	300	270
<u>Total Fixed Costs</u>	<u>3800</u>	<u>4055</u>

Finally, in the Statement of Profits the Gross Margins of the various enterprises were amalgamated and then by deducting Fixed Costs, Management and Investment Income was obtained. This is shown below:

Statement of Profits

	<u>Budget</u> £	<u>Actual</u> £
Gross Margin of Barley Enterprise	1600	2145
"    "    " Dairy Enterprise	2700	2815
	<u>4300</u>	<u>4960</u>
Sundry Income	200	205
Farmhouse Consumption	100	100
	<u>4600</u>	<u>5265</u>
<u>less</u> Fixed Costs	<u>-3800</u>	<u>-4055</u>
<u>Management and Investment Income</u>	<u>800</u>	<u>1210</u>

The farmer concerned in the above example was encouraged to develop his business on the basis of the above forecasts and his bank manager was willing to grant the necessary credit facilities. The detailed budget gave a clear set of production and expenditure targets which, by underlining the main priorities, made for more purposeful management. The opportunity to check actual performance against budgeted results enabled the causes of better or worse than expected performance to be pinpointed. Finally, it should be recorded that by following this procedure over a number of years, the farmer has considerably improved his income.

#### CONCLUSION

The costliness of present day production, and the speed at which the economic situation on farms is changing make it imperative to improve the general standard of management. It is increasingly acknowledged that farming must be run on sound business lines if profits are to be expanded and more competitive levels of production achieved. Methods of Business Analysis, based on sound records, can do much to help a farmer to improve the planning, management and control of his farm. The future holds promise of still better methods of analysis and recording, with business machines and computers being used to provide up to date and comprehensive information for the making of decisions. In the meantime, this handbook has sought to show the part comparative analysis, budgeting and the gross margin approach can play in tackling farm business problems.

APPENDIX

## LIST OF CONTENTS

	<u>Page</u>
Farm Accounts and Farm Management Analysis	30
Definitions and Calculation of Efficiency Indicators	34
Management Control Records	38

FARM ACCOUNTS AND FARM MANAGEMENT ANALYSIS

Details are given below of the standard procedures used to prepare farm records and accounts for management analysis:

Valuations

A consistent basis of valuation is essential. The following methods of valuing assets are recommended:

1. Breeding stock, growing crops, cultivations and home-grown feed - at conservative 'standard' values.
2. Salable crop products and livestock nearing time of sale - at market prices less an allowance to cover costs still to be met and risk.
3. Purchased feed, stores, etc., - at net cost.
4. Machinery and equipment - at depreciated original cost.

Management Accounting Records

The following records, documents and information provide the basic material for the analysis of a farm business:

1. Wages, petty cash and farm account books. Use of the N.F.U. Farm Business Record Book is recommended.
2. Bank statements, paying-in books and cheque book stubs - with details of transactions, e.g. type and number of livestock bought and sold.
3. Receipts and sales vouchers, preferably filed in chronological order by commodity e.g. pigs, potatoes, subsidy receipts.
4. Delivery notes and invoices - filed by supplier in chronological order.
5. List of accounts owed and owing at the end of each financial year.
6. Inventory and valuation at the end of each financial year, detailing numbers of livestock and quantities of home-grown and purchased crop products, feeding-stuffs, stores, and the acreage of growing crops and cultivations.

7. Records of cropping, fertilizing and yields.
8. Births, deaths, sales and purchases of livestock may usefully be reconciled with the numbers of stock in the opening and closing inventories. Similarly, the disposal of crop products may be reconciled with production and with inventories at the beginning and end of the year.

Records showing the amounts of purchased and homegrown feed, especially concentrates, fed to the various classes of livestock are especially valuable.

#### The Compilation of Farm Accounts for Management Analysis

The following procedures are in general use in the preparation of accounts for comparative analysis:

1. Farms are treated as tenant operated. On owner occupied farms, therefore, landlord type maintenance charges and improvements are excluded.
2. A rental is charged on owner occupied farms at a rate equivalent to rents payable on comparable tenanted farms.
3. Where Management and Investment Income is regarded as the final measure of profitability, no charge is made for managerial services nor for interest on any capital.
4. Accounts prepared for taxation purposes may require considerable modification before they are suitable for use in management analysis. In particular, the methods of estimating valuations, machinery depreciation charges and the value of farmhouse consumption may require modification.

A method of summarizing financial information is set out on the next two pages.

EXPENDITURE SUMMARY

	Expen- diture	Plus Opening Valuation	Less Closing Valuation	= Total Expen- diture	Expen- diture per 100 acres
	£	£	£	£	£
<u>Purchased Feed and Keep</u>					
<u>Purchased Seed</u>					
<u>Fertilizers and Lime</u>					
<u>Power and Machinery</u>					
Implement Repairs, etc.		-	-	-	-
Tax, Insurance and Licences		-	-	-	-
Fuel and Electricity		-	-	-	-
Contract Charges		-	-	-	-
<u>Total</u>					
<u>Miscellaneous</u>					
General Repairs, etc.		-	-	-	-
Haulage		-	-	-	-
Vet & Med, A.I., etc.		-	-	-	-
Water		-	-	-	-
Sundry Stores		-	-	-	-
General Insurance		-	-	-	-
Office Expenses, etc.		-	-	-	-
<u>Total</u>					
<u>TOTAL PURCHASES</u>					
<u>Rent &amp; Rates</u>					
Rent/Rental Value		-	-	-	-
Interest on Improvements		-	-	-	-
Rates		-	-	-	-
<u>Total</u>					
<u>Machinery Depreciation</u>					
<u>Labour</u>					
Wages & National Insurance		-	-	-	-
Unpaid Family Labour		-	-	-	-
Farmer's Manual Labour		-	-	-	-
<u>Total</u>					
<u>TOTAL OTHER CHARGES</u>					

Notes

- a Net of Fertilizers and Lime Subsidies
- b Excluding private use
- c Excluding Investment and Initial Allowances
- d Tenant's repairs only
- e Excluding private expenditure and capital outlays
- f Excluding Schedule A tax, tithes, land tax etc..on owner-occupied farms but including a rental charge based on rents payable on comparable tenanted farms.
- g Charge 6 per cent on net cost of capital improvements carried out by tenant himself. On owner-occupied farms any such charge should be reflected in the rental value.
- h Exclude labour used for capital improvement, for estate maintenance and private work. Omit managerial salaries except for any element of manual labour involved.
- i Value at statutory rate for hired labour.



OUTPUT SUMMARY

	Sales	+ Closing Valuation	Less Opening Valuation	+ Purchases	= Total Output	Output Per 100 acres *
	£	£	£	£	£	£
Cattle						
Sheep and Wool						
Pigs						
Poultry and Eggs						
Milk						
<u>Total Livestock</u> (j)						
Cereals (j)				-		
Potatoes, Sugar Beet				-		
Roots and Vegetables				-		
Fruit and Hops				-		
Other Crops				-		
Cultivations				-		
<u>Total Crops</u>						
Other Receipts: (k)						
Other Subsidies		-	-	-	-	-
Produce to House		-	-	-	-	-
Contract Work		-	-	-	-	-
Sundry (l)		-	-	-	-	-
<u>Total Sundries</u>		-	-	-	-	
<u>TOTAL OUTPUT</u>						
<u>Less</u> TOTAL PURCHASES (b/f)						
<u>NET PRODUCT</u>						
<u>Less</u> TOTAL OTHER CHARGES (b/f)						
<u>MANAGEMENT &amp; INVESTMENT INCOME</u>						

Notes

- j Include Deficiency Payments receipts with Sales.  
k Excluding Fertilizers & Lime Subsidies and Capital Improvement Grants.  
l Sales of Capital Equipment, Machinery, etc., should be excluded. Credit for the private use of the car should be included.

\* Farm acreage of crops and grass plus the acreage equivalent of rough grazing.

DEFINITIONS AND THE CALCULATION OF EFFICIENCY INDICATORS

The following definitions relate to the calculation and use of efficiency indicators:

Farm Feed Acres Quantities of homegrown feed used are converted into acreage equivalents on the basis of actual crop yields. It is advisable to take account of changes in opening and closing stocks of feed in estimating consumption.

Forage and Grass Acres This comprises the total Farm Feed Acreage less the cereal element, together with an acreage allowance where keep is rented or bulk feed is purchased.

Adjusted Feed Acres All purchased feed used is converted into acreage equivalents and added to the Farm Feed Acreage. The following conversion rates are suggested:

	<u>acreage equivalent per ton</u>
Purchased Concentrates	0.85
Hay	0.5
Wet grains	0.25

The acreage equivalent of rented keep can be estimated on the basis of a standard charge of £10 per acre.

Livestock Production. The standard production periods listed below form the basis on which the Standard Output and Work Requirement factors, etc., listed opposite are derived. Where the duration of a production period is shorter or longer than the standard, adjustments may be needed before applying the factors concerned.

	<u>Months</u>		<u>Months</u>
Single Suckled beef calves to weaning	8	Porkers	3
Multiple " " " " "	3	Baconers	4
Single Suckled Beefers - weaning to fat	6	Heavy Hogs and	
Multiple " " " " "	12	Breeding Gilts	5
Other Calves - to 6 months old	6	Store Pigs Sold	1½
" Cattle - ½ to 1 year old	6½		
" " - 1 to 2 years old	12	Pullets	5
" " - Over 2 years old	8	Broilers	2
		Capons	3
Ewe Tegs	12	Turkeys	6
Fat Sheep over 6 months old	6	Hens	12

FACTORS FOR CALCULATING STANDARD OUTPUT, LIVESTOCK UNITS, LABOUR,  
TRACTOR & CONCENTRATE REQUIREMENTS OF LIVESTOCK

	<u>Standard</u> <u>Output</u> £	<u>Concentrate</u> <u>Requirements</u> Tons	<u>Livestock</u> <u>Units</u>	<u>Work</u> <u>Days</u>	<u>Tractor</u> <u>Hours</u>
<u>Cattle</u>					
Dairy Cows - Parlour Milked	115	-	1	10	8
" " - Cowshed "	115	-	1	13	8
Milk - per 1000 gallons produced	-	1.4	-	-	-
Bulls	-	0.5	1	3	5
Beef Cows	-	0.2	1	2½	5
Beef Calves - to weaning					
- single suckled per head	40	-	-	-	-
- multiple " " "	30	-	-	½	1
Early Fattened Beefers - post weaning					
- single suckled per head	40	0.8	0.4	1½	3
- multiple " " "	40	1.1	0.6	3	5
Other Calves - under six months	20	0.23	0.2	2	1
Other Cattle - ½ - 1 year	10	0.1	0.3	1½	2
" " - 1 - 2 years	25	0.2	0.7	3	5
" " - over 2 years	20	0.2	0.5	2	3
<u>Sheep</u>					
Ewes	8	0.03	0.2	3	1
Rams	-	0.03	0.15	3	1
Ewe Tegs	5	0.01	0.15	3	1
Other Sheep over ½ year	3	0.03	0.05	3	1
<u>Pigs</u>					
Sows	75	1.4		4	2½
Boars	-	1.0		2	1
Breeding Gilts	18	0.45		3	1
Heavy Hogs Sold	13	0.43		3	1
Baconers "	11½	0.3		3	1
Porkers "	7½	0.2		3	1
Store Pigs "	3½	0.1		4	0.1
<u>Poultry</u>					
Hens - per 100	200	4.7		20	4
Pullets - per 100 produced	75	1.4		5	1½
Broilers " " "	20	0.43		1½	0.1
Turkeys " " "	150	1.7		10	2

The Standard Output and Labour Requirements, etc., of Breeding Stock are calculated on the basis of average numbers in the herd.

In the case of other livestock, the factors are applied to the numbers produced.

FACTORS FOR CALCULATING STANDARD OUTPUT & LABOUR & TRACTOR REQUIREMENTS OF CROPS

	Standard <sup>∅</sup> Output £	Work* Days	Tractor* Hours
<u>Cereals &amp; Pulses</u>			
Wheat	40	1½	10
Barley, Beans, Oats, Mixed Corn	35	1½	10
Peas - Threshing	35	3	10
<u>Roots, etc.</u>			
Potatoes	120	18	25
Sugar Beet	75	14	28
Feed Roots - Carted	20	13	28
" " - Folded	20	3	10
Kale - carted	20	6	40
Forage	20	1	5
Bare Fallow	-	1	8
<u>Field Scale Vegetables - Market Garden</u>			
Peas - Vining	60	5	20
" - Picking	100	35	15
Cabbage (transplanted)	110	22	25
Brussels Sprouts	130	32	24
Cauliflower	120	32	50
Brassicac - other	200	60	20
Carrots	100	15	25
Onions	500	100	40
Celery	220	20	50
Lettuce	250	40	12
<u>Fruit &amp; Hops</u>			
Hops	380	45	160
Dessert Apples	250	45	30
Culinary Apples	100	40	20
Strawberries	300	40	20
Raspberries/Gooseberries	175	40	20
<u>Grass</u>			
Hay & Silage - 1st Cut	10	1½	8
" " " - 2nd Cut	10	1	4
Clover/Grass Seed	40	1½	8
Direct Reseeding	8	2½	4
Pasture	10	½	2

∅ Standard output factors apply to the output acreages of crops. This is defined as the quantity sold plus the closing stock minus the opening stocks, all divided by the yield per acre.

\* Labour & Tractor Hour Requirements relate to the acreage of crops actually grown, allowing for the area of land double cropped.

INDICATORS OF ORGANIZATIONAL & OPERATIONAL EFFICIENCYSystem Indicators

Intensity of System	= $\frac{\text{Standard Output of Crops \& Livestock}}{\text{Total Area of Crops \& Grass}} \times \frac{100}{1}$
Basic Costs per 100 Acres	= $\frac{\text{Basic Costs}^*}{\text{Total Area of Crops \& Grass}} \times \frac{100}{1}$
% Acreage in Feed Crops	= $\frac{\text{Total Area of Homegrown Feed}}{\text{Total Area of Crops \& Grass}} \times \frac{100}{1}$
% Intensive Livestock Production	= $\frac{\text{Standard Output Dairy Cows, Pigs \& Poultry}}{\text{Standard Output All Livestock}} \times \frac{100}{1}$

Yield Indicators

Index of All Yields	= $\frac{\text{Output (\pounds) Livestock \& Crops (ex.cultivations)}}{\text{Standard Output of Livestock \& Crops}} \times \frac{100}{1}$
Index of Crop Yields	= $\frac{\text{Output (\pounds) Crops (ex.cultivations)}}{\text{Standard Output of Crops}} \times \frac{100}{1}$
Index of Livestock Yields	= $\frac{\text{Output (\pounds) All Livestock}}{\text{Standard Output of Livestock}} \times \frac{100}{1}$
Output per Grazing Livestock Unit	= $\frac{\text{Output (\pounds) Milk, Sheep, Cattle}}{\text{Total Grazing Livestock Units}}$
Milk Sales per Cow	= $\frac{\text{Output (\pounds) Milk}}{\text{Average Number Dairy Cows in Herd}}$

Feed Economy

Livestock Output per Adjusted Feed Acre	= $\frac{\text{Output (\pounds) All Livestock}}{\text{Acreage Equivalent All Purchased \& Homegrown Feed}}$
Index of Concentrate Use	= $\frac{\text{Estimated Concentrate Requirements}}{\text{Total Concentrates Fed (Tons)}} \times \frac{100}{1}$
Forage Acres per Grazing Livestock Unit	= $\frac{\text{Grass \& Forage Crop Acres}}{\text{Total Grazing Livestock Units}}$
% Feed Purchased	= $\frac{\text{Equivalent Acres of Purchased Feed}}{\text{Adjusted Feed Acres}} \times \frac{100}{1}$

Labour & Machinery Use

Labour & Machinery Cost per \pounds100 Net Output	= $\frac{\text{Total Labour \& Machinery Cost}}{\text{Total Output (\pounds) less Purchased Seed \& Feed}} \times \frac{100}{1}$
Labour Cost per 100 Work Days	= $\frac{\text{Total Labour Cost}}{\text{Total Work Day Requirements}} \times \frac{100}{1}$
Power & Machinery Costs per 1000 Tractor Hours	= $\frac{\text{Power \& Machinery Costs}}{\text{Total Tractor Hour Requirements}} \times \frac{1000}{1}$

\* Basic Costs comprise Labour & Machinery Costs, excluding Casuals & Contract Charges, plus Rent & Rates, Tenant's Repairs to Buildings etc., plus sundry other Overhead or Common Costs, but not including Water Charges, Vet. & Medicines, Haulage, Sprays & Management.

MANAGEMENT CONTROL RECORDS

Two examples are given below of methods of recording key operations, so as to improve control over the use of feedingstuffs and the breeding of dairy cows.

The former record has a layout enabling the quantities of feedingstuffs to be summarized on a weekly, monthly or annual basis, for all types of feed and as a barn, herdsman's or manager's record.

1. An example showing the Reconciliation of Feed Supplies & Utilization

TYPE OF FEED	Barley					
	cwt					
Opening Stock	320					
<u>Add</u> Production or Amount Mixed ) Deliveries ) or Purchases )	- 100					
Sub Total	420					
<u>Deduct</u> Closing Stock	250					
TOTAL USED *	170					

Amount fed to:						
Dairy Cows	100					
Other Cattle	-					
Pigs	70					
etc.	-					
TOTAL FED *	170					

\* These totals should agree

The second example shown opposite is designed as a wall chart which may be displayed in the dairy, or possibly in the farm office. The aim is to have readily available a record of each individual cow's breeding status so that regularity of breeding can be maintained over the whole herd. Each cow is put on the list as she calves and notes are made of the dates heats are observed and services take place, etc.

2. Breeding Status of Dairy Cows

No. or Name of Cow	Calving date	Weeks after Calving																	
		1	2	3	....	3	9	10	11	12	13	14	....	20	21	22		53	54
Rose	13/2/64	✓	✓	⑤	....	✓	②	✓	✓	✓	✓	✓	....	✓	P	✓	D(8/12/64)		

Information Recordedweeks

- 1-8 Pre-Service Period - Date Heat Observed  
 9-12 Service Period - Insemination by Breed & Date  
 13-20 Return Service Period - ditto  
 21 Pregnancy - Confirmatory Test  
 - Normal Lactation  
 - Termination of Lactation

symbol

- △ or □ etc.  
 ditto  
 P  
 ✓  
 D (Date)

Days of the week, numbered 1-7, may be inserted in the symbols relating to services.