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MILK INVESTIGATION
SCHEME

COSTS OF MILK PRODUCTION
IN ENGLAND AND WALES

INTERIM REPORT NO. 10.

October 1st, 1943 to
September 30th, 1944

(with cost data for winter period
October 1st, 1944 to March 31st, 1945)

OXFORD

Issued by the AGRICULTURAL ECONOMICS
RESEARCH INSTITUTE

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Foreword

This is the tenth and final yearly statement on milk costs to be made by the Agricultural Economics Research Institute at Oxford, under the Milk Costs Investigation Scheme initiated in 1934 by the Milk Marketing Board. In it the returns for a sample of 574 dairy herds in England and Wales, covering the period from the beginning of October 1943 to the end of September 1944, are analysed and the results compared with those of the previous year. It is hoped that another report will be issued later, summarising the results of the war period and the tendencies which may have become apparent over the whole period of years since 1934-5.

The characteristics of 1943-4 were not all strongly marked or general. This was evident when the wholesale and graded groups were compared and when the regional groups of the wholesale sample were examined individually. The upward trend of costs continued, net farm costs rising more sharply than in 1942-3, from 15.98d. per gallon to 17.46d. and from 16.35d. to 17.10d. in the wholesale and graded groups. Food costs rose after their temporary stability in 1942-3. This was the result of both increased price and increased use. The greater consumption of purchased concentrates was one of the features of the year, but the home-grown ration was maintained or increased also. Labour costs rose although there was no change in the national minimum wage. There was an improvement in the average yield but in the wholesale group it was slight, from 1.54 to 1.56 gallons per cow per day, and mainly of winter origin. In the graded group it was more pronounced, from 1.61 to 1.78 gallons, and obtained in the summer as well as in the winter period.

Response to official encouragement had been satisfactory on these farms in the case of winter production and the conversion of permanent grass but silage was used even less than in 1942-3. The main expansion in winter milk, from 44.6 per cent. to 46.3 per cent. of total production, had taken place in the wholesale group. The increase was less in the graded group, from 46.1 per cent. to 46.9 per cent., and this probably combined with the improved yield to make the graded producer lower costed this year than the producer of ordinary milk. The percentage of land in permanent grass fell from 47.8 per cent. to 43.6 per cent. of the total acreage.

The methods of costing used in this and the earlier reports are explained in Appendix 2.

I. Statement of Costs in the Wholesale, Graded
and Producer-retailer Groups: 1943-4

In the year 1943-4 returns were made under the Milk Investigation Scheme for 626 herds, but it was not possible to classify 35 of these, and 17 were rejected for other reasons. The analysis refers to 574 herds, classified as follows:-

Group	Nature of contract or sale	No. of herds
1. Wholesale	Wholesale: more than 88 per cent. of sales as wholesale milk.	375 ^{1.}
2. Graded	Producers of tuberculin-tested milk: attested herds: mostly wholesale, a few retail.	147
3. Producer-retailer	Retail	52
		<u>574</u>

The change in the size of sample of wholesale and graded producers since 1942-3 was negligible but for the producer-retailer was sufficient to prejudice the comparison of results between the years and no reference is made in the text, therefore, to the separate costs of this group. There was no significant change in the average number of cows, 32 and 35, in the wholesale and graded herds.

The capital valuation was higher in all groups than in 1942-3, having risen from £44. 0. 8 to £47. 18. 4 per cow in the wholesale and, more sharply, from £52. 18. 5 to £61. 17. 6 in the graded. An increase in the valuation of the dairy cows was the principal cause of the change but in the graded group a rise in other capital items was important also. Rent increased in the wholesale group by 10d. an acre to 29s. 1d.; it was again lowest, 27s. 2d. per acre, in the graded group. These two fundamental costs only appear indirectly, in so far as they appear at all, in the cost analysis.^{3.}

1. Including 234 producers of accredited milk.
2. This is the outcome of conflicting movements in the regional groups; for instance there was a decrease in North Wales from 28s. 0d. to 23s. 9d. per acre and an increase in the Far-western from 33s. 5d. to 39s. 9d. following sample changes.
3. See Appendix 2. Interest and management charges are not included in net farm costs.

Yield was satisfactory but unequally developed and although it rose over all herds from 1.56 to 1.62 gallons per cow per day, it was only in the graded group that there was any real improvement, from 1.61 to 1.78 gallons, as the result of better yields in both the winter and summer periods. In the wholesale group the increase was small, from 1.54 to 1.56 gallons per cow, and was concentrated in the winter period. Such a wide difference in development between the groups is unusual and may be connected with the different treatment of winter milk. In the wholesale group further emphasis had been laid on this, and winter production rose from 44.6 per cent. to 46.3 per cent. of the total. (Expressed in the form customarily used in these reports, summer production fell from 124.2 to 116.2 per cent. of winter production). The number of cows in milk in summer fell from 105.8 per cent. to 102.5 per cent. of those in winter, or almost to parity, and winter yield rose from 1.37 to 1.43 gallons per cow. In the graded group there had been a greater swing towards winter production in 1942-3 and there was little further change in seasonal economy this year. Winter milk formed 46.9 per cent. instead of 46.1 per cent. of total production and the increase in yield in winter, from 1.47 to 1.66 gallons per day, was only slightly more pronounced than that in summer. For the whole sample of herds the proportion of milk produced in winter rose from 45.1 per cent. to 46.4 per cent. of the total.

Costs of production increased more than in the two preceding years, mainly because food costs were higher after a period of stability or decline. They were now 10.41d. and 9.98d. per gallon in the two groups as compared with 9.63d. and 9.86d. in 1942-3. Labour costs, especially for paid workers, rose also, from 4.12d. to 4.51d. and from 4.41d. to 4.75d., although there had been no change in the national minimum wage during the year. As a result of increases in these and, with minor exceptions in the graded group, in all other categories of costs, net farm costs rose from 15.98d. to 17.46d. per gallon in the wholesale group and, in spite of the increased yield, from 16.35d. to 17.10d. in the graded. Without the variation of yield, net farm costs per cow rose more evenly from £37. 8. 0 to £41. 10. 5 and from £40. 1. 11 to £46. 5. 5.

The chief development in the food costs was a recovery in the importance of purchased concentrates. An increase in the price, which had been relatively stable since 1941-2, was partly responsible but consumption was heavier as well. More home-grown concentrates were used also, especially in the graded group. In the wholesale group the total concentrates ration rose from 14.80 cwt. to 16.44 cwt. per cow and the proportion taken in purchased concentrates from 8.28 cwt. to 9.39 cwt; in the graded, in which consumption has always been higher, it rose from 16.58 cwt. to 19.94 cwt., of which 11.20 cwt. were taken in purchased concentrates as compared with 9.64 cwt. in 1942-3. In consequence of these changes in price and quantity the costs of total purchased foods, which had fallen between 1941-2

and 1942-3, rose from 2.52d. to 2.97d. and from 2.76d. to 2.99d. per gallon in the two groups; costs of home-grown foods increased less than this in the wholesale group but more in the graded and stood at 6.15d. and 5.84d. per gallon. Costs of purchased foods per cow rose from £5. 18. 0 to £7. 1. 1, and from £6. 15. 6 to £8. 2. 1, and those of home-grown foods from £13. 17. 5 to £14. 12. 7 and from £14. 6. 9 to £15. 16. 0. Both the value and quantity of hay and home-grown straw (included in the home-grown foods), had risen and grazing costs were rather higher, £3. 1. 2 and £3. 12. 1 per cow in comparison with £2. 15. 1 and £3. 1. 2 in 1942-3. The area under permanent grass was reduced again, equally with other years since 1940-1, from 47.8 per cent. to 43.6 per cent. of the total acreage. The consumption of silage fell in both groups. There was no reduction in the amount fed of roots and green fodder, 59.28 cwt. and 66.16 cwt., in spite of the increased concentrates, but in the wholesale group there was little increase for the first time since 1938-9. Weather conditions did not have an exceptional influence on feeding this year.

Prices or values per cwt. of foods other than roots and fodder were as follows:-

	Price or value per cwt.				Percentage increase or decrease in
	1942-3		1943-4		1943-4
	s.	d.	s.	d.	%
Purchased concentrates	12	7	13	3	+ 5.30
Home-grown concentrates	12	1	12	1	-
Purchased hay	9	9	9	10	+ 0.85
Home-grown hay	5	1	5	4	+ 4.92
Straw	2	8	2	9	+ 3.12

Seasonal costs of production are not sufficiently differentiated to allow a real estimate to be made of the cost to the wholesale group of the increase in winter milk, but the increase per gallon in foods, labour and miscellaneous expenses, as calculated, was only $\frac{1}{4}$ d. more for the winter than for the summer period. The most important increase was in foods. In the graded group, with its relative absence of change in the balance of production, the greater increase in cost was in the summer period. (In both groups labour costs rose more in the summer than in the winter). Winter costs per cow are given in Table 19.

1. The method of valuing hay and straw was changed in 1942-3, and no strict comparison with their costs in earlier years should be made. See Appendix 2.

for the wholesale group for the season of 1944-5 also. The increase was less than that between the winters of 1942-3 and 1943-4 in spite of the heavier feeding of concentrates (consumption of roots was reduced), and with a further improvement in yield, from 1.43 to 1.49 gallons, net farm costs per gallon were lower than in the winter of 1943-4. This is the first break in the rise of winter costs since the beginning of the war. These seasonal figures can be accepted, however, only with reserve.

The graded producer, as in 1941-2, had the lowest costs per gallon, the better yield offsetting considerable advances in food and labour costs per cow.¹ The absence of seasonal disturbance of the economy may have given the group some advantage this year - although the greater deterioration in costs, as they are calculated, had been in the summer period - but the improvement in its position has been apparent for some time. How far this should be attributed to the graded economy itself is not clear; it is at least possible that the more efficient producers tend increasingly to turn to graded production.

1. Costs were even lower than for the producer of accredited milk. See page 9.

II. Analyses of Costs in the Wholesale Group

A. Statement of Costs by Milk Marketing Scheme Regions

The total number of wholesale producers making returns in 1943-4 was similar to that in 1942-3 and there was little change within the regional groups composing the sample, except in the mainly level producing¹ Eastern and Southern groups and the seasonal producing¹ Far-western which were represented by 26, 16 and 43 herds instead of 18, 23 and 32, with consequences that were evident in nearly all details of cost. Similarly a change in total identity of sample affected results in North Wales. There had been some fluctuations in the average size of farm, the change in the composition of the Southern group involving a decline from 246 to 203 acres but, except in this group, variations in size of herd were negligible. In the Eastern group the valuation of dairy cows was increased from £24 to £30, and the revision of the Southern resulted in a higher average valuation of equipment.

Changes in costs and yields are not easy to classify, the difficulty being increased by the disturbance of the Eastern and Southern samples. They were not related clearly to type of production as associated with the different regions although, on the whole, it may be said that they were least favourable in the western groups.

There was a rise in net farm cost per gallon in all groups except that of South Wales.² In the disturbed Far-western, Southern and Eastern groups the increases were considerable, from 15.12d., 14.47d. and 17.15d. to 18.19d., 17.08d. and 18.88d. respectively, but there was a substantial rise in the large North-western group also, from 15.51d. to 17.46d., and in the Mid-western, from 13.48d. to 15.28d. per gallon. In the Far-western group the higher cost was accompanied or caused by a falling yield, but in the others yield was little changed or had improved.³ The increases in the Far-western and the North-western regional groups placed them among those experiencing

¹ The groups are described as level or seasonal producing on the basis of their pre-war classification.

² This group is so small that detailed changes in its position are disregarded in this section.

³ Measuring from the average, low costs per gallon went with high yields in the Southern, West Midland and Mid-western groups and high costs with low yields in the Far-western and North-western. But high costs accompanied high yields in the Eastern, South-eastern and East Midland groups, and low costs accompanied low yields in the remainder.

average or above average costs; the North-western has been among these in all years except 1939-40 and 1942-3. Otherwise the broad distinction between the groups was the same as in 1942-3, the lower-costed being the western and northern, and the higher the eastern. This has been roughly true in all years since 1934-5 in spite of the unequal effects of the war on systems of farming and the seasonal balance of production.¹.

Rising food costs were common to all groups except North Wales. There was an increase of approximately 1d. per gallon in the East Midland, Far-western and North-western, and of more than $\frac{3}{4}$ d. in the West Midland, Eastern and Southern. The Northern and South-eastern were the only groups in which the increase was much less than the average of 0.78d. per gallon. In the East and West Midlands the extra outlay was compensated in total costs by improved yield. Home-grown foods, which may be compared straightforwardly once more after the interruption of 1941-2 to 1942-3, accounted for the greater part of the rise in the North-western, Mid-western and East Midland groups, and for the decline in North Wales,². but elsewhere, for the first time since the war, an increase in costs of purchased foods was more important.

Changes in other costs were important in some regions. There was a rise in labour cost of more than 1d. per gallon in the Far-western, and of more than $\frac{1}{2}$ d. in the Eastern, Southern and Mid-western groups, and herd replacement charges rose in the Southern, Far-western and North-western groups.

The only appreciable increases in yield during the year were in the East and West Midland, from 1.53 and 1.47 to 1.61 and 1.59 gallons per day, and in the Mid-western and South-eastern groups. These were groups relatively unaffected by change in sample, and the improvement was the result of increases in both winter and summer. In the rest yield remained at about the former level or even fell a little below it. The loss since 1938-9 was greatest in the Northern, North-western and North Wales groups, more than a quarter of a gallon a day, and it was only a little less in the Southern and South-eastern. Yield reflects more exactly than costs, perhaps, unequal disturbances of economy, and some relationship

1. This does not exclude some displacement during the period, for instance of the Mid-western and Southern groups in certain years, and the order of the groups and the differences between them in cost have varied.

2. By 1943-4 the cost of home-grown foods in most groups was about double that of purchased, the Eastern being one of the few in which the difference was not so wide. Of the groups which relied least on these foods before the war the East and West Midland and the North-western were among those more highly costed for them in 1943-4; the proportional increase in the South-eastern was rather less.

with type of production, though not a close one, is evident here.

This year there was a further withdrawal in all groups from the difficult position of 1941-2 in feeding-stuffs, and some return to the use of purchased concentrates. The only groups in which the total consumption of concentrates fell were the North Wales and Far-western and it may be relevant that it was only in these two that there was any real, if slight, fall in yield. In the East and West Midland, Eastern and Southern groups there had been increases in the ration ranging from 16 per cent. to 25 per cent. In general purchased concentrates were more affected than home-grown, particularly in the Eastern group, but a rise in the latter was important in the East Midland, Southern and South-eastern groups. In contrast to the pre-war practice the North-western group now ranks as one of the smaller users of concentrates (14.2 cwt. per cow); only the seasonal Mid-western and Far-western¹ and the North Wales groups had a lower consumption per head this year. Of the other groups with high pre-war inputs the Eastern and East and West Midland returned almost to the level of 1938-9 and both the South-eastern and the partly seasonal producing Northern were in a better position than the North-western.

A slight check to the increasing use of roots and green fodder was experienced in some groups. Consumption had risen in the Far-western, North Wales, Mid-western and South-eastern groups but elsewhere it was more or less stable or had declined as an accompaniment of increased concentrates feeding. Even so it was high, 37.21 cwt. per cow at its lowest² in the Mid-western group and 88.72 cwt. at its highest in the Eastern, where relatively heavy root feeding is the normal practice.

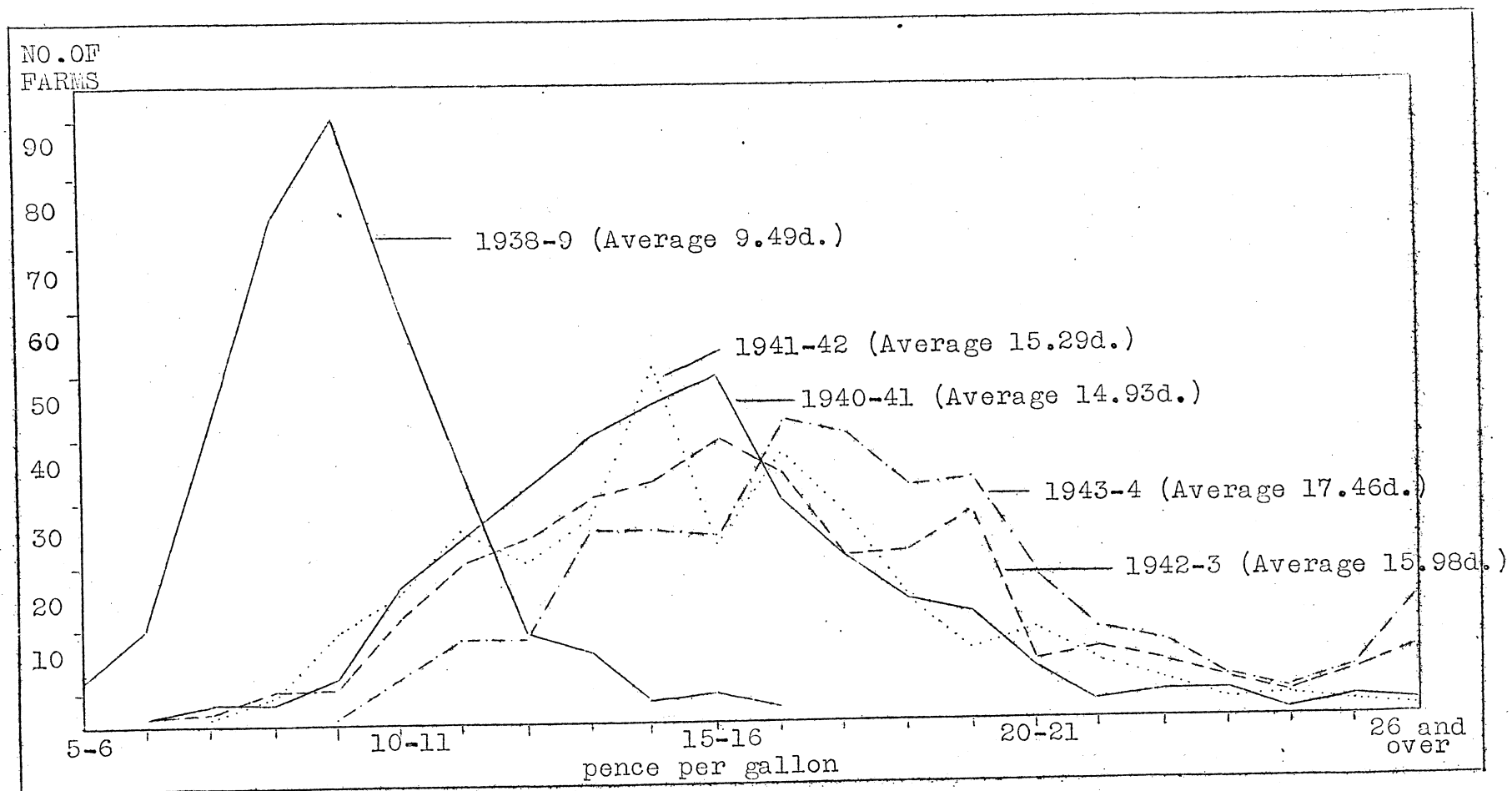
Grazing costs, influenced by improvement of grassland, were higher in almost all groups, ranging from £1. 16. 6 per cow in the Northern to £4. 6. 10 in the Far-western group. (Rental changes were important in the North Wales and Far-western groups and moderately so in the Southern). At the same time the acreage under permanent grass had been reduced again except in North Wales. More hay was fed in all but three groups.

All costs had been subject to the influence of expanding winter production. This trend continued in every group and was particularly marked in the

¹. The Eastern group and West Midland, and to a lesser extent the East Midland, among the heavy users, and the Mid-western and Far-western among the lighter had kept up the highest proportion of purchased concentrates, but in the last two little use was made of home-grown concentrates.

². Excluding South Wales.

FREQUENCY DISTRIBUTION OF NET FARM COSTS - WHOLESALE GROUP 1938-9 AND 1940-1 TO 1943-4



North-western and South-eastern. Not only the seasonal Mid-western and Far-western groups, and North Wales, but the Eastern and Southern, with a winter to summer ratio of 49 to 51, and the East Midland and South-eastern, with a ratio of 48 to 52, had a more level production than in 1938-9. Breeding and feeding policy were evidently both directed to this end; the proportion of cows in milk in the summer to those in winter was reduced in all groups except the Far-western, and most of the extra concentrates ration had been fed in the winter. Winter yield had improved, in varying degrees, in the East and West Midland (from 1.43 and 1.22 gallons to 1.52 and 1.40 gallons per day), the Mid-western, South-eastern, North-western and Eastern groups; summer yield tended to fall everywhere except in the first four of these groups, having declined in the North-western from 1.59 to 1.26 gallons. These shifts in seasonal production are, of course, important factors in the background of the costs although their effects are difficult to measure.

B. Distribution of Net Farm Costs

The distribution of net farm costs in the wholesale group in frequencies of 1d. per gallon is given in Table 13. The greater dispersion brought about by wartime conditions and the reactions of the farmer is still evident. The scale of costs rose by rather more than 1d. per gallon, the groups of herds with net farm costs of 16d.-17d. and 17d.-18d. per gallon forming the mode. The main concentration lay between 13d. and 20d., the quartiles occurring at approximately 15d. and 20d. (13d. and 19d. in 1942-3). Approximately half the number of herds, accounting for 53.4 per cent. of the gallonage, had costs of 17.5d. or under (16d. and under in 1942-3); 67 per cent. had costs of 19d. or less. Only one farm had a cost of less than 10d. but 36, or almost 10 per cent. of the total, had costs of more than 23d., the highest recorded being 39.98d. per gallon.

C. The Influence of "Accredited" Production on Costs

The relation between the costs of producing non-accredited and accredited milk was similar, on the gallonage basis, to that in 1942-3. Net farm costs were 17.30d. per gallon for non-accredited and 17.52d. for accredited herds (Table 14). In 1942-3 all individual costs except labour had been higher for the accredited group; in 1943-4 only the two less important but relevant costs, herd replacement and miscellaneous, were higher. Food and labour stood at 10.37d. and 10.49d., and 4.42d., and 4.79d. per gallon in the two groups. This is the normal relationship for the sample; herd replacement and miscellaneous costs have always been higher and labour costs nearly always lower in the accredited group and a lower food cost is not unusual.

The similarity of the relationship was the result of a change in the comparative levels of yield which had been unusually close in 1942-3, 1.54 gallons

per cow for accredited and 1.52 for non-accredited producers. In 1943-4 yield had risen in the accredited group to 1.59 gallons as the result of an improvement in the winter period; in the non-accredited, with only a small winter increase to offset a summer decline, it had fallen to 1.49 gallons. On the basis of costs per cow, therefore, the difference between the two groups was wider than in the previous year.

Changes in seasonal economy and an unequal handling of the winter milk problem probably influenced the comparison this year. Although the non-accredited group was less successful than the accredited in improving winter yield its production in winter had risen more, from 43.9 per cent. to 46.8 per cent. of the total as compared with a rise from 44.8 per cent. to 46.1 per cent., and this must have been to its disadvantage.

The additional cost of accredited production for the sample was well within the premium paid. This was the case in 1942-3 also and for the four years from 1938-9 to 1941-2 production had been cheaper than in the non-accredited group.¹ The marked inequality of yield in all years except 1942-3 has been decisive and this and the lower labour cost seem to promise a consistent advantage in running costs to the accredited group. On the other hand, the trend in the important food costs is less settled and factors not intrinsic to accreditation, although they may be relevant, such as the difference in the average size of herd, have contributed to the result. The generalization cannot, therefore, be applied more closely.

The accredited group was again the larger, representing 62 per cent. of the sample (68 per cent. in 1942-3), and this has a bearing on the interpretation of the costs of the wholesale group.

D. Milk Yields and Costs

In order to examine the relationship of yield and cost the wholesale herds were grouped in six groups ranging, by intervals of 0.25 gallons, from those with yields per cow of 1.25 gallons a day or less to those with yields of 2.26 gallons and more (Table 15). The distribution of herds on this basis was little different from that in 1942-3; the average size of the herds was also similar, except in the 2.01-2.25 gallon group, and did not differ greatly between the various yield groups. As in other years a higher proportion of cows were kept in milk in the two

¹. In earlier years the two groups were subdivided according to level and non-level production. For those farmers working on a level contract costs were always higher for accredited than for non-accredited production, but there were fewer level than non-level producers.

highest yield groups than in the rest.

The trend of costs was normal. Total costs per cow rose with yield, because of the consistent upward movement of food and labour and, with the exception of the 2.01-2.25 group, of miscellaneous costs also. The scale was not very different from that in 1942-3, costs rising, roughly, by £5 with each group. The lowest yield was obtained for an average net farm cost of £33. 0. 10 per cow, and the highest for £57. 1. 1, in comparison with £29. 13. 7 and £51. 1. 8 in 1942-3.

Net farm costs per gallon were in inverse ratio to yield and fell uninterruptedly from 19.96d. in the lowest gallonage group of 1.25 gallons and under to 14.93d. in the final one of 2.26 gallons and over. This was the result of a decline in all the main items of cost, the only disturbance of the trend of any importance being caused by a high food cost in the 2.01-2.25 gallonage group and a disproportionate fall in labour in the 1.51-1.75 gallon group.

There was a larger interval than in 1942-3 between the average cost of the 2.01-2.25 gallon group, 16.29d., and that of the highest yield group, 14.93d. per gallon, but the thirteen herds of the latter cover a range of yield from 2.26 to 3.29 gallons, the average being high, and a range of costs from 11.30d. to 20.31d.

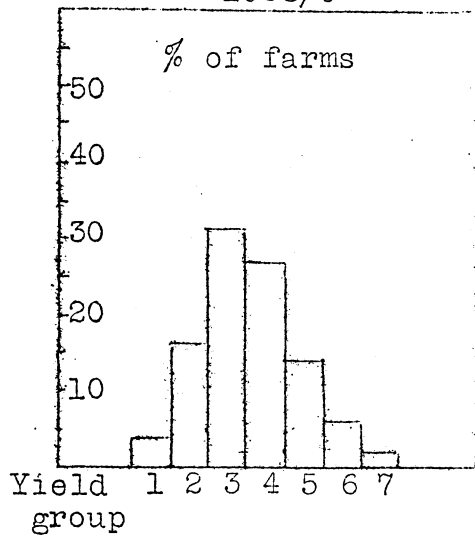
The greater part of the additional purchased foods taken up during the year was used in the higher yielding groups in the range between 1.51 and 2.25 gallons.¹ The cost rose from £3. 8. 5 per cow in the lowest to £13. 14. 8 in the 2.01-2.25 yield group, where the increase was one of 40 per cent., and to £13. 2. 4 in that of 2.26 gallons and over. Total consumption of concentrates increased with yield from 10.4 cwt. to 32.0 cwt. per cow; in 1942-3 the range had been from 9.2 cwt. to 25.3 cwt. and increases over that year varied from 5 per cent. to 26 per cent. (in the 2.26 gallon and over group). (Table 16).

The two highest yield groups provided a contrast in feeding practice. In that of 2.01-2.25 gallons there had been an exceptionally heavy rise during the year in the use of purchased feeds. In the group of 2.26 gallons and over the increase was less, cost being actually lower than in the group below, but this was compensated by the use of home-grown foods, the cost of which had risen very considerably to almost £20 per cow, and the total quantity of concentrates fed was much higher.

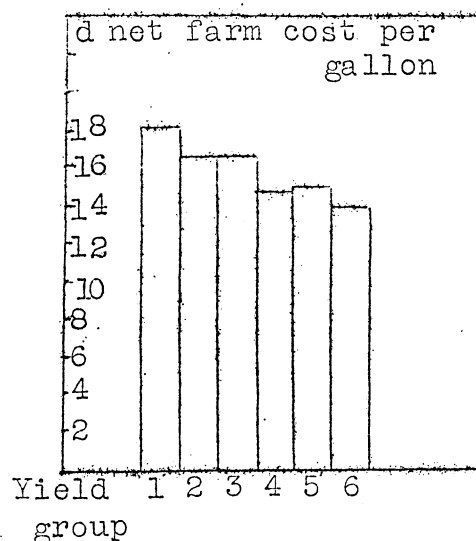
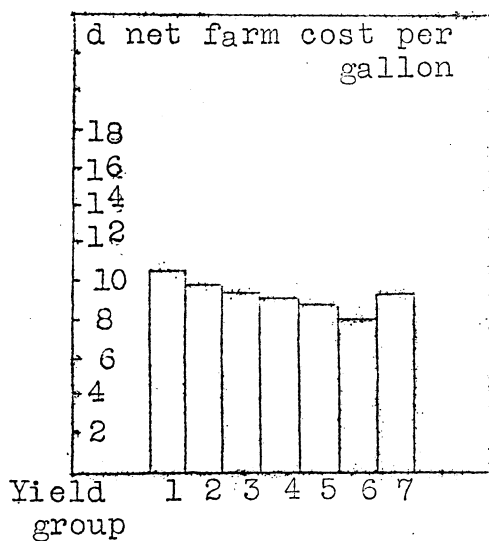
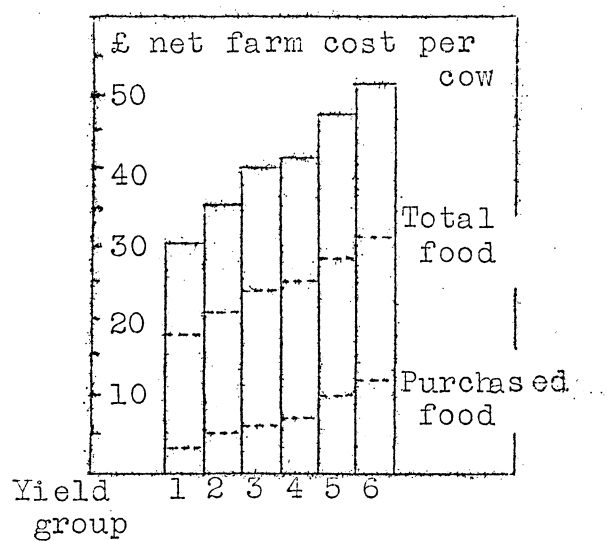
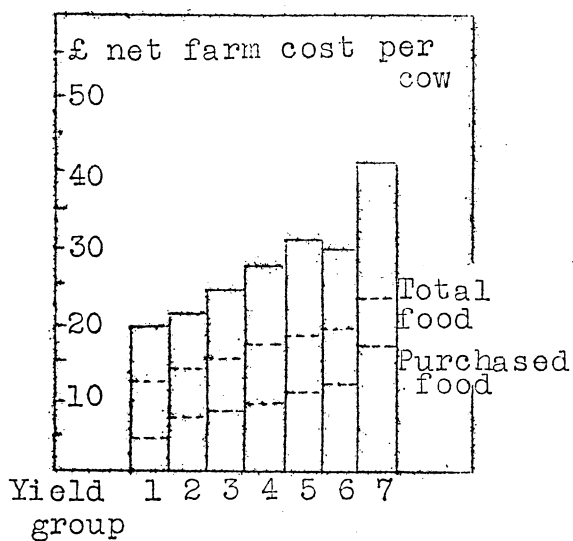
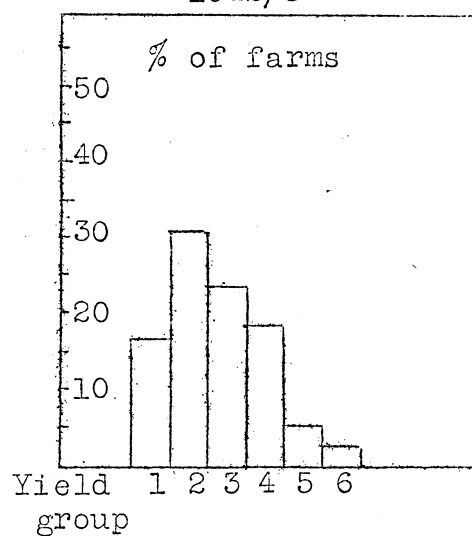
¹ Improved feeding did not mean an increase in the proportion of herds found in the higher yield groups but the average yields in the 2.01-2.25 gallon and the 2.26 gallon and over groups were above the levels of 1942-3.

Percentage of farms, net farm costs per cow and per gallon

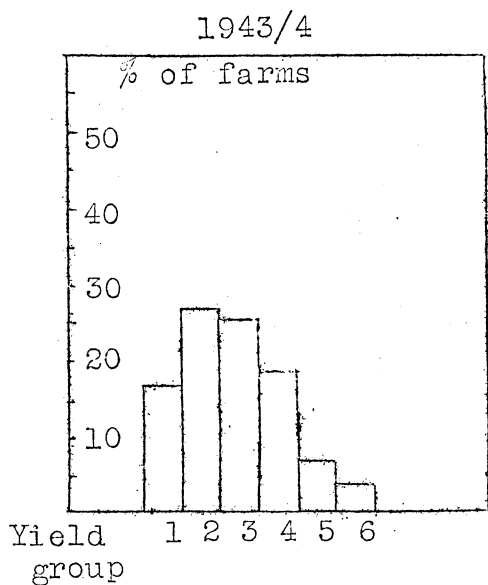
1938/9



1942/3

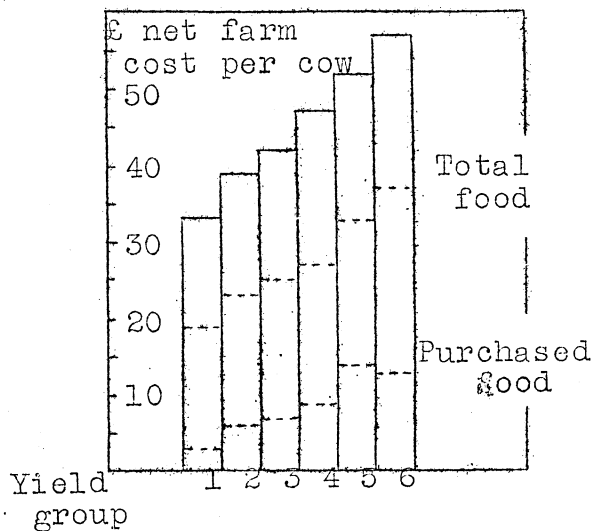


in the wholesale group : by yield groups

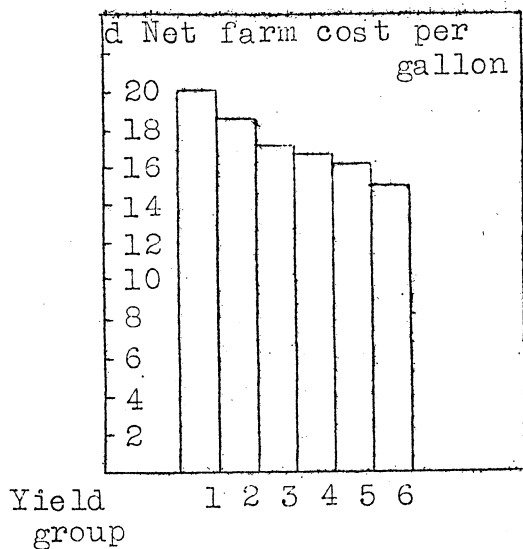


Yield groups

1. Up to 1.25 gallons
2. 1.26 to 1.50 "
3. 1.51 to 1.75 "
4. 1.76 to 2.00 "
5. 2.01 to 2.25 "
6. 2.26 to 2.50 "
7. 2.51 and over



In 1942/3 and 1943/4
group 6/combined with /cs
group 7.



E. The Influence of Size of Herd on Costs

In Table 17 the herds of the wholesale group are classified by size and the costs are shown for seven groups ranging from those of 10 cows and fewer to those of more than 60 cows.¹

Total costs per cow fell as size of herd increased, if the exceptionally low cost of the 20.1-30.0 cow group is disregarded. Average yields were erratic as between groups, however, and this helped to deprive net farm costs per gallon of a steady trend. They were lowest for the larger, and higher yielding, herds of 40.1-50.0 and 50.1-60.0 cows. Of the various individual costs that of labour fell per cow and per gallon as size increased - possibly as a result of the use of machines and not of any direct labour economy of scale - and, on the whole, miscellaneous costs fell also. Food costs were variable, although they tended to fall per gallon if the extremes of the range and the 30.1-40.0 size group are omitted. The medium-sized herds experienced the least increase in cost over the year.

As in 1942-3 the average yield for the herds of more than 60 cows was the lowest obtained, and this year the net farm cost per gallon was high, food costs and herd replacement being greater in this group than in any other. It covers a wide range of herd sizes, however. Similarly the small number of herds in the group of 10 cows and under prevents it from having much value as a part of the scale, but it may be noticed that there had been a sharp rise in net farm cost, from 15.59d. to 19.43d. per gallon. The increase in labour cost was heavier than for other groups.

The size of herd is a variant which must be taken into account when estimating the effect on cost of any other factor, but on the evidence of the Scheme sample in this and other years, although its influence on cost per cow tends to be constant, its influence on yield and cost of output is rather indeterminate. The analysis made here, however, is very limited.

F. Costs on Farms with and without Milking Machines

For the full sample of wholesale farms, irrespective of size of herd, machine-milking was cheaper than hand-milking in 1943-4, the average net farm cost for the machine-milked herds being 17.38d., and for the hand-milked 17.63d. per gallon. (Table 18). One reason for this was that the hand-milked herds had lost their advantage in yield which averaged 1.57 and 1.56 gallons per day in the two groups.² This is

¹•The numbers of herds in the groups are unequal.

²•At the same time the percentage of dry cows was, as usual since the war, higher in the machine-milked than in the hand-milked groups.

contrary to the experience of other years; a rather lower yield is held to be a feature of machine-milking although the difference has, in fact, only been slight for the farms of the sample (0.06 gallons in 1942-3.)

The saving in labour which it is the chief object of machine-milking to secure worked out in terms of cost at 1d. per gallon for the whole sample, and was sufficient to outweigh the greater expense, amounting to 0.76d. per gallon, in all other items. As a general rule miscellaneous costs are higher in machine-milking because of the running of the machine, and food and herd replacement charges tend to be higher also. In 1943-4 food, miscellaneous and herd replacement costs averaged 10.52d., 2.31d. and 1.49d. in the machine-milked, and 10.17d., 2.09d. and 1.30d. in the hand-milked group. Labour costs were 4.19d. and 5.19d. respectively.¹

The economy of adopting machine-milking varies with the size of herd. Comparing different size of herd groups,² net farm costs were, as usual, lower for machine-milking than for hand-milking in the larger herds, those of over 30 cows, and higher in the smaller. At the same time lower labour costs and higher other costs obtained generally for machine-milking in the different size groups as they did in the sample as a whole and yield was higher in all except those of 20-30 cows and 50 cows and over. The greatest advances over the costs of 1942-3 were in the groups of 10-20 cows in each case, the composite group of 50 cows and over in machine-milking and that of 10 cows and fewer in hand-milking. The rise in cost in the last group, of which there is no counterpart in machine-milking, may be associated as much with its small scale economy as with hand-milking.

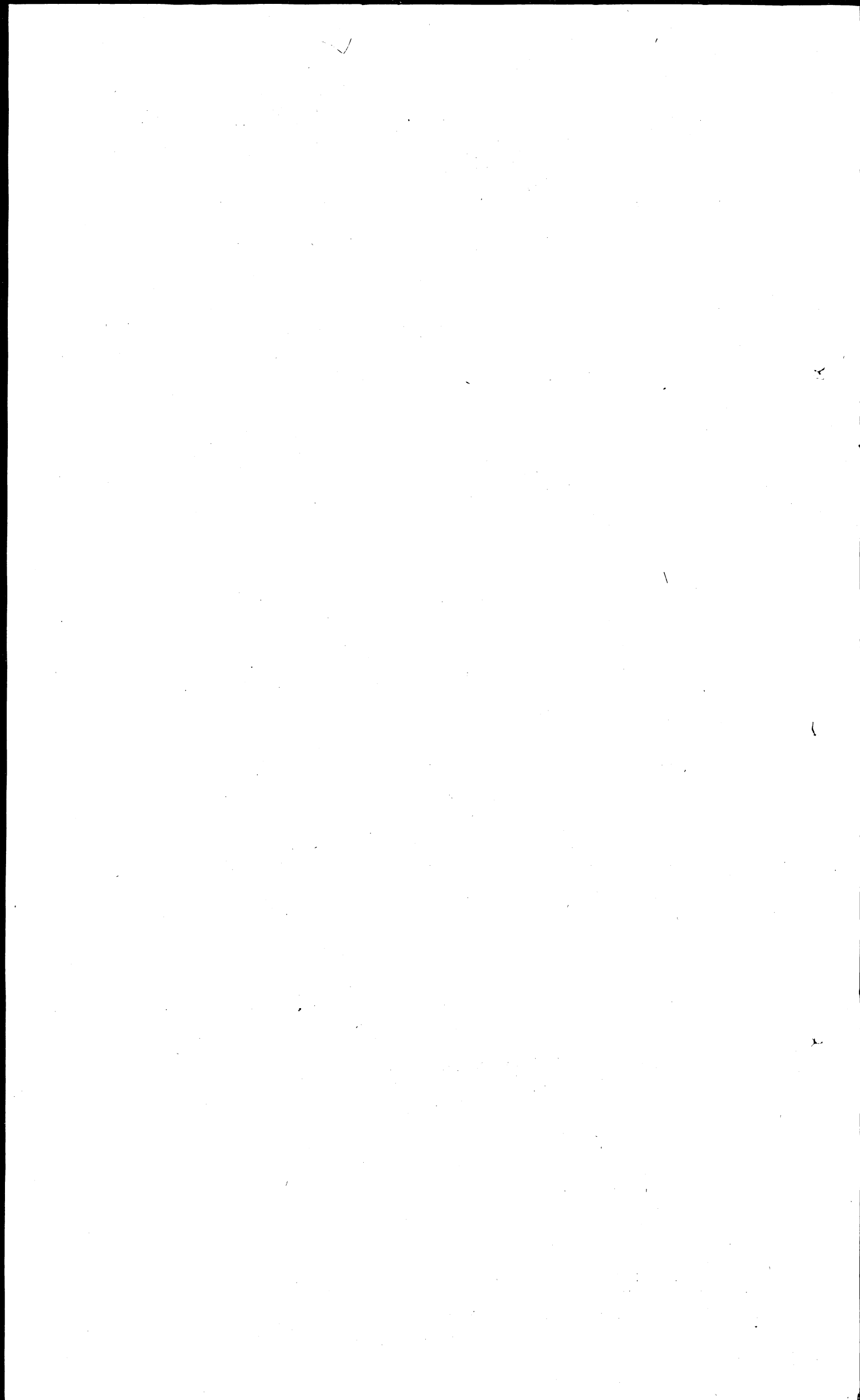
There was a slight increase, from 52 per cent. to 55 per cent., in the proportion of herds milked by machine as a result of its introduction in the smaller herds. Of all herds of 30 cows and under, 37 per cent. were machine-milked in 1943-4 as compared with 31 per cent. in 1942-3. At the beginning of the war the proportion was 24 per cent.

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¹. Some qualification of the comparison may be implied in the fact that there were a greater number of large herds in the machine-milked than in the hand-milked sample, the average size being 39 and that of hand-milked herds 23 cows.

². The discrepancy in the number of herds of each type within the size groups prevents the comparison from being exact.



APPENDIX I

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Table 1. Number and average size of farms, percentage of permanent grass, and rental value: 1943-4.

	Number of farms	Average size of farms acres	Percentage of permanent grass per cent.	Average rental value per acre s. d.	
Wholesale:-					
Northern region	49	196.5	38.2	25	3
North- western "	73	150.3	52.4	34	9
Eastern "	26	330.8	31.4	22	3
East Midland "	39	272.9	35.1	25	11
West Midland "	30	179.6	50.5	31	10
North Wales "	13	122.2	65.3	23	9
South Wales "	3	108.8	68.7	23	6
Southern "	16	202.8	44.7	25	11
Mid-western "	29	194.6	51.8	33	0
Far-western "	43	96.6	49.7	39	9
South- eastern "	54	201.4	44.3	27	2
Total Wholesale	375	189.5	43.8	29	1
Graded	147	250.5	43.4	27	2
Producer-retailer	52	169.9	43.5	31	9
All farms	574	203.4	43.6	28	8

Table 2. Capital in cows, other dairy stock, and dairy equipment per cow in herd: 1943-4.

Region	Total number of cows	Capital per cow in herd in									Total capital per cow in herd		
		Cows			Other dairy stock			Equip- ment					
		£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
Wholesale:													
Northern	1,307	31	7	10	16	11	10	3	5	9	51	5	5
North-western	2,928	29	12	7	9	18	0	3	7	3	42	17	10
Eastern	823	30	3	1	20	9	1	3	9	7	54	1	9
East Midland	1,294	30	10	9	15	13	7	3	2	7	49	6	11
West Midland	1,058	28	14	7	14	2	8	3	1	8	45	18	11
North Wales	323	28	8	11	15	15	1	1	1	4	45	5	4
South Wales	64	29	11	0	11	18	4	1	8	0	42	17	4
Southern	440	31	12	9	21	5	5	5	12	10	58	11	0
Mid-western	1,030	30	11	2	19	5	5	3	19	10	53	16	5
Far-western	891	32	18	11	15	18	8	2	7	7	51	5	2
South-eastern	1,839	24	19	6	16	4	10	3	3	5	44	7	9
Total Wholesale	11,997	29	10	8	15	3	2	3	5	6	47	18	4
Graded	5,146	34	8	0	22	18	9	4	10	11	61	17	6
Producer- retailer	1,819	29	3	10	13	13	3	3	19	0	46	16	1
All farms	18,962	30	16	5	17	2	7	3	13	9	51	12	9

Table 3. Number of cows, total milk produced, and yield per cow per day in the wholesale, graded, and producer-retailer groups: 1943-4.

	Number of herds	Number of cows per herd	Total number of cows				Total number of cows in milk*			
			Winter	Summer	Year	Number in summer as percentage of winter	Winter	Summer	Year	Number in summer as percentage of winter
Wholesale:										
Northern	49	26.7	1,327	1,290	1,307	97.2	950	1,020	984	107.4
North-western	73	40.1	2,949	2,908	2,928	98.6	2,182	2,322	2,252	106.4
Eastern	26	31.6	853	792	823	92.8	689	668	677	97.0
East Midland	39	33.2	1,319	1,270	1,294	96.3	979	966	973	98.7
West Midland	30	35.3	1,054	1,061	1,058	100.7	785	877	833	111.7
North Wales	13	24.8	330	316	323	95.8	258	262	261	101.6
South Wales	3	21.2	63	65	64	103.2	56	60	57	107.1
Southern	16	27.5	457	422	440	92.3	356	336	346	94.4
Mid-western	29	35.5	1,057	1,000	1,030	94.6	840	817	829	97.3
Far-western	43	20.7	903	881	891	97.6	710	751	730	105.8
South-eastern	54	34.1	1,888	1,792	1,839	94.9	1,512	1,475	1,499	97.6
Wholesale	375	32.0	12,200	11,797	11,997	96.7	9,317	9,554	9,441	102.5
Graded	147	35.3	5,186	5,107	5,146	98.5	4,064	4,140	4,103	101.9
Producer-retailer	52	35.0	1,854	1,785	1,819	96.3	1,414	1,453	1,431	102.8
All groups	574	33.0	19,240	18,689	18,962	97.1	14,795	15,147	14,975	102.4

* including suckling cows

Table 3. (continued)

	Total gallons produced in 000's			Percentage of milk produced in		Summer production as percentage of winter production	Yield per cow per day* (gallons)			
	Winter	Summer	Year	Winter	Summer		Winter	Summer	Year	Summer as % of winter yield
Wholesale:										
Northern	317	404	721	44.0	56.0	127.4	1.31	1.71	1.51	130.5
North-western	672	829	1,501	44.8	55.2	123.4	1.25	1.26	1.40	100.8
Eastern	258	270	528	48.9	51.1	104.5	1.66	1.86	1.76	112.0
East Midland	366	395	761	48.1	51.9	107.8	1.52	1.70	1.61	111.8
West Midland	268	346	614	43.6	56.4	129.2	1.40	1.78	1.59	127.1
North Wales	74	86	160	46.3	53.7	116.0	1.24	1.49	1.36	120.2
South Wales	12	19	31	39.6	60.4	152.8	1.06	1.56	1.32	147.2
Southern	130	135	265	49.0	51.0	101.4	1.56	1.75	1.65	112.2
Mid-western	291	352	623	46.6	53.4	114.4	1.51	1.82	1.66	120.5
Far-western	215	261	476	45.1	54.9	121.7	1.31	1.62	1.46	123.7
South-eastern	564	602	1,166	48.4	51.6	106.8	1.64	1.84	1.74	112.2
Wholesale	3,167	3,679	6,846	46.3	53.7	116.2	1.43	1.70	1.56	118.9
Graded	1,569	1,773	3,342	46.9	53.1	113.0	1.66	1.90	1.78	114.5
Producer-retailer	474	555	1,029	46.1	53.4	117.1	1.40	1.70	1.55	121.4
All groups	5,210	6,007	11,217	46.4	53.6	115.3	1.49	1.76	1.62	118.1

* calculated on total number of cows in herd.

Table 4. Costs of milk production per cow in the wholesale, graded, and producer-retailer groups: 1943-4.

	Wholesale			Graded			Producer-retailer		
Number of farms	375			147			52		
Number of cows in herd	32.0			35.3			35.0		
Percentage of cows in milk and suckling	78.7			79.7			78.7		
Yield per cow per day, gallons	1.56			1.78			1.55		
Costs of production	per cow £ s. d.	per cent.		per cow £ s. d.	per cent.		per cow £ s. d.	per cent.	
Foods:									
Purchased	7 1 1	16		8 2 1	16		7 11 1	16	
Home-grown	14 12 7	33		15 16 0	32		14 1 6	29	
Grazing	3 1 2	7		3 12 1	6		2 13 8	5	
Total foods	24 14 10	56		27 0 2	54		24 6 3	50	
Labour:									
Employees	8 6 1	18		11 5 3	23		10 17 0	22	
Family	2 8 8	6		1 11 10	3		1 15 1	4	
Total labour	10 14 9	24		12 17 1	26		12 12 1	26	
Miscellaneous expenses	5 6 8	12		7 9 4	15		6 12 0	14	
Herd replacement	3 7 9	8		2 6 5	5		4 14 5	10	
Gross farm cost	44 4 0	100		49 13 0	100		48 4 9	100	
Credits:									
Calves	1 15 11			2 7 7			1 14 10		
Manurial residues	17 8			1 0 0			18 0		
Total credits	2 13 7			3 7 7			2 12 10		
Net farm cost	41 10 5			46 5 5			45 11 11		

Table 5. Costs of milk production per gallon in the wholesale, graded, and producer-retailer groups: 1943-4.

	Wholesale		Graded		Producer-retailer	
Number of farms	375		147		52	
Number of cows in herd	32.0		35.3		35.0	
Percentage of cows in milk and suckling	78.7		79.7		78.7	
Yield per cow per day, gallons	1.56		1.78		1.55	
Cost of production	d. per gall.	per cent.	d. per gall.	per cent.	d. per gall.	per cent.
(i)						
Foods:						
Purchased	2.97	29	2.99	30	3.20	31
Home-grown	6.15	59	5.84	59	5.97	58
Grazing	1.29	12	1.15	11	1.14	11
Total foods	10.41	<u>100</u> 56	9.98	<u>100</u> 54	10.31	<u>100</u> 50
Labour:						
Employees	3.49	77	4.16	88	4.60	86
Family	1.02	23	0.59	12	0.75	14
Total labour	4.51	<u>100</u> 24	4.75	<u>100</u> 26	5.35	<u>100</u> 26
(ii)						
Miscellaneous expenses	2.24	12	2.76	15	2.80	14
Herd replacement	1.43	8	0.86	5	2.00	10
Gross farm cost	18.59	100	18.35	100	20.46	100
Credits:						
Calves	0.76		0.88		0.74	
Manurial residues	0.37		0.37		0.38	
Total credits	1.13		1.25		1.12	
Net farm cost	17.46		17.10		19.34	
	d. per gall.		d. per gall.		d. per gall.	
	Winter	Summer	Winter	Summer	Winter	Summer
Cost of foods	15.30	6.19	13.87	6.54	14.56	6.69
Cost of labour	5.12	4.00	5.09	4.45	6.14	4.67
Miscellaneous expenses	2.51	2.01	2.85	2.68	3.11	2.53
Yield per cow per day, gallons	1.43	1.70	1.66	1.90	1.40	1.70

(i) For further details see Table 7.

(ii) For further details see Table 8.

Table 6. Consumption of foods per cow and per gallon in the wholesale, graded, and producer-retailer groups: 1942-3 and 1943-4.

	Wholesale		Graded		Producer-retailer	
	1942-3	1943-4	1942-3	1943-4	1942-3	1943-4
	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.
PER COW						
Concentrates:						
Purchased	8.28	9.39	9.64	11.20	7.40	9.68
Home-grown	6.52	7.05	6.94	8.74	6.12	7.19
Total	14.80	16.44	16.58	19.94	13.52	16.87
Hay:						
Purchased	0.47	0.40	0.71	0.73	0.69	0.75
Home-grown	17.61	18.49	16.25	17.79	18.00	18.82
Total	18.08	18.89	16.96	18.52	18.69	19.57
Silage	4.00	3.00	10.37	7.53	6.59	7.65
Straw*	6.21	6.58	5.37	5.90	7.16	6.14
Roots and green fodder*	58.94	59.28	59.40	66.16	62.73	51.38
	lb.	lb.	lb.	lb.	lb.	lb.
PER GALLON						
Concentrates:						
Purchased	1.65	1.84	1.84	1.93	1.48	1.92
Total	2.95	3.22	3.16	3.44	2.71	3.34
Hay:						
Purchased	0.09	0.08	0.14	0.13	0.14	0.15
Total	3.60	3.71	3.23	3.20	3.74	3.87
Silage	0.80	0.59	1.97	1.30	1.32	1.52
Straw*	1.24	1.29	1.02	1.02	1.43	1.22
Roots and green fodder*	11.75	11.63	11.31	11.41	12.56	10.28

* Home-grown only.

Table 7. Food costs of milk production in pence per gallon in the wholesale, graded, and producer-retailer groups: 1943-4.

	Wholesale		Graded		Producer-retailer	
Food details per gallon.	d. per gallon	per cent.	d. per gallon	per cent.	d. per gallon	per cent.
(a) Concentrates:						
Purchased	2.61	..	2.76	..	2.77	..
Home-grown	1.80	..	1.94	..	1.81	..
Total	4.41	42.4	4.70	47.1	4.58	44.4
(b) Hay:						
Purchased	0.08	..	0.13	..	0.14	..
Home-grown	2.09	..	1.70	..	1.98	..
Total	2.17	20.8	1.83	18.3	2.12	20.6
(c) Other foods:						
Purchased	0.38	1.9	0.10	1.0	0.57	5.5
Straw*	0.38	3.7	0.29	2.9	0.35	3.4
Roots and green fodder*	1.78	17.4	1.91	19.2	1.55	15.0
Total	2.54	24.4	2.30	23.1	2.47	23.9
(d) Grazing	1.29	12.4	1.15	11.5	1.14	11.1
Total foods	10.41	100.0	9.98	100.0	10.31	100.0

* Home-grown only.

Table 8. Miscellaneous expenses in pence per gallon in the wholesale, graded, and producer-retailer groups: 1943-4.

	Wholesale		Graded		Producer-retailer	
	d. per gallon	Sub-total d. per gallon	d. per gallon	Sub-total d. per gallon	d. per gallon	Sub-total d. per gallon
Bull upkeep and service fees	0.42		0.52		0.44	
Veterinary and medicines	0.23		0.33		0.32	
Consumable dairy stores	0.27		0.35		0.39	
General dairy expenses	<u>0.16</u>	1.08	<u>0.23</u>	1.43	<u>0.24</u>	1.39
Milking machine expenses	<u>0.17</u>	0.17	<u>0.20</u>	0.20	<u>0.20</u>	0.20
Charge for cowshed and dairy buildings	0.24		0.24		0.27	
Dairy equipment, repairs, and depreciation	0.12		0.15		0.16	
General farm expenses (share of)	0.63	0.99	0.74	1.13	0.78	1.21
Total miscellaneous expenses		2.24		2.76		2.80

Table 9. Costs of milk production per cow in the wholesale group by regions: 1943-4.

	Northern	North-western	Eastern	East Midland	West Midland	North Wales	South Wales	Southern	Mid-western	Far-western	South-eastern
Number of herds	49	73	26	39	30	13	3	16	29	43	54
Number of cows	1307.24	2928.30	822.75	1294.55	1058.04	322.95	63.56	439.59	1029.55	891.47	1839.35
Average number of cows per herd	26.68	40.11	31.65	33.20	35.27	24.84	21.19	27.47	35.50	20.73	34.06
Gallons produced	720,885	1,500,766	527,668	760,759	614,221	160,471	30,677	264,671	623,130	475,895	1,166,761
Average yield per cow per day (gallons)	1.51	1.40	1.76	1.61	1.59	1.36	1.32	1.65	1.66	1.46	1.74
Costs of Production (per cow)	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Foods - Purchased	5 0 3	6 8 11	10 1 5	7 5 0	7 10 5	4 0 3	6 1 11	6 5 9	6 13 4	6 15 1	8 16 6
Home-grown	15 15 5	13 19 9	15 3 0	16 19 4	15 6 0	11 15 7	9 0 11	15 16 3	11 6 5	12 6 0	15 19 1
Grazing	1 16 6	2 17 0	2 17 10	3 6 2	3 17 0	2 13 1	3 7 11	2 5 1	3 8 11	4 6 10	3 2 4
Total Foods	22 12 2	23 5 8	28 2 3	27 10 6	26 13 5	18 8 11	18 10 9	24 7 1	21 8 8	23 7 11	27 17 11
Labour - Employees	6 17 8	5 14 3	13 13 7	9 18 1	6 14 0	4 11 5	1 11 3	8 17 0	8 12 7	6 6 10	12 7 3
Family	2 5 7	2 11 8	18 6	1 11 10	2 17 4	4 17 0	6 15 8	2 17 1	2 7 6	4 12 3	1 12 5
Total Labour	9 3 3	8 5 11	14 12 1	11 9 11	9 11 4	9 8 5	8 6 11	11 14 1	11 0 1	10 19 1	13 19 8
Miscellaneous* A	1 16 8	1 18 0	3 18 4	2 10 1	1 19 11	17 0	19 7	2 11 9	2 13 10	2 4 7	3 2 5
B	13 5	7 6	6 3	4 1	9 3	3 0	5	5 9	9 4	1 5	11 4
C	2 8 1	1 19 9	3 8 9	2 12 2	1 18 0	1 19 2	2 17 2	3 7 4	1 16 3	2 12 1	3 16 8
Total Miscellaneous	4 18 2	4 5 3	7 13 4	5 6 4	4 7 2	2 19 2	3 17 2	6 4 10	4 19 5	4 18 1	7 10 5
Herd Replacement	3 12 0	3 18 1	2 16 6	1 16 11	2 13 5	2 4 11	1 12 11	3 16 8	3 13 8	4 1 11	3 16 8
Gross farm cost	40 5 7	39 14 11	53 4 2	46 3 9	43 5 4	33 1 5	32 7 9	46 2 8	41 1 10	43 7 0	53 4 8
Credits - Calves	1 10 10	1 13 11	1 14 4	1 15 11	2 0 2	1 14 11	2 0 7	2 6 8	1 12 0	2 4 2	1 16 7
Manurial Residues	18 1	15 3	1 0 9	1 0 5	19 5	11 11	14 9	19 1	19 0	13 10	18 8
Total Credits	2 8 11	2 9 2	2 15 1	2 16 4	2 19 7	2 6 10	2 15 4	3 5 9	2 11 0	2 18 0	2 15 3
Net farm cost	37 16 8	37 5 9	50 9 1	43 7 5	40 5 9	30 14 7	29 12 5	42 16 11	38 10 10	40 9 0	50 9 5

* See note on p. 23.

Table 10. Costs of milk production per gallon in the wholesale group by regions: 1943-4.

	Nor- thern	North- western	Eas- tern	East Midland	West Midland	North Wales	South Wales	Southern	Mid- western	Far- western	South- eastern
Number of herds	49	73	26	39	30	13	3	16	29	43	54
Number of cows	1307.24	2928.30	822.75	1294.55	1058.04	322.95	63.56	439.59	1029.55	891.47	1839.35
Average number of cows per herd	26.68	40.11	31.65	33.20	35.27	24.84	21.19	27.47	35.50	20.73	34.06
Gallons produced	720,885	1,500,766	527,668	760,759	614,221	160,471	30,677	264,671	623,130	475,895	1,166,761
Average yield per cow per day (gallons)	1.51	1.40	1.76	1.61	1.59	1.36	1.32	1.65	1.66	1.46	1.74
Costs of Production (per gallon)	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
Foods - Purchased	2.18	3.02	3.77	2.96	3.11	1.94	3.05	2.51	2.64	3.04	3.34
Home-grown	6.86	6.55	5.67	6.93	6.33	5.69	4.54	6.30	4.49	5.53	6.04
Grazing	0.80	1.33	1.08	1.35	1.59	1.28	1.70	0.90	1.37	1.95	1.18
Total Foods	9.84	10.90	10.52	11.24	11.03	8.91	9.29	9.71	8.50	10.52	10.56
Labour - Employees	3.00	2.67	5.12	4.04	2.77	2.21	0.78	3.53	3.42	2.85	4.68
Family	0.99	1.21	0.34	0.65	1.18	2.34	3.40	1.13	0.94	2.08	0.61
Total Labour	3.99	3.88	5.46	4.69	3.95	4.55	4.18	4.66	4.36	4.93	5.29
Miscellaneous *A	0.80	0.89	1.46	1.02	0.82	0.41	0.49	1.03	1.07	1.00	1.18
B	0.29	0.18	0.12	0.08	0.19	0.07	0.01	0.12	0.18	0.03	0.21
C	1.05	0.93	1.29	1.07	0.79	0.95	1.43	1.34	0.72	1.17	1.45
Total Miscellaneous	2.14	2.00	2.87	2.17	1.80	1.43	1.93	2.49	1.97	2.20	2.84
Herd Replacement	1.56	1.83	1.06	0.76	1.11	1.08	0.82	1.53	1.46	1.84	1.45
Gross farm cost	17.53	18.61	19.91	18.86	17.89	15.97	16.22	18.39	16.29	19.49	20.14
Credits - Calves	0.67	0.79	0.64	0.73	0.83	0.84	1.02	0.93	0.63	0.99	0.69
Manurial residues	0.39	0.36	0.39	0.42	0.40	0.29	0.37	0.38	0.38	0.31	0.35
Total Credits	1.06	1.15	1.03	1.15	1.23	1.13	1.39	1.31	1.01	1.30	1.04
Net farm cost	16.47	17.46	18.88	17.71	16.66	14.84	14.83	17.08	15.28	18.19	19.10

* A (1) Charge for cowshed and dairy buildings
 (2) Dairy equipment, repairs and depreciation
 (3) General farm expenses (share of)
 B (1) Milking machine expenses

C (1) Bull upkeep and service fees
 (2) Veterinary and medicines
 (3) Consumable dairy stores
 (4) General dairy expenses

Table 11. Foods consumed per cow (cwt.) and per gallon (lb.) in the wholesale group: 1943-4.

	Northern	North-western	Eastern	East Midland	West Midland	North Wales	South Wales	Southern	Mid-western	Far-western	South-eastern	All regions
<u>PER COW</u>												
<u>WINTER 1943-4</u>												
Concentrates:												
Purchased	4.3	4.5	10.2	7.4	6.8	3.3	2.9	4.5	6.1	5.3	6.6	5.9
Home-grown	6.3	4.8	5.1	6.6	6.1	5.1	4.9	4.4	1.7	2.6	5.4	4.8
Total	10.6	9.3	15.3	14.0	12.9	8.4	7.8	8.9	7.8	7.9	12.0	10.7
Hay:												
Purchased	-	0.2	0.0	-	0.2	-	3.3	-	-	0.4	1.4	0.3
Home-grown	17.0	12.7	13.1	18.2	17.7	12.2	19.5	20.2	17.9	14.5	14.0	15.3
Total	17.0	12.9	13.1	18.2	17.9	12.2	22.8	20.2	17.9	14.9	15.4	15.6
Straw:												
Purchased	0.1	0.2	-	-	0.5	-	-	0.2	-	0.4	0.1	0.2
Home-grown	6.3	5.6	9.3	5.7	3.8	6.4	4.8	6.0	0.9	3.3	8.1	5.6
Total	6.4	5.8	9.3	5.7	4.3	6.4	4.8	6.2	0.9	3.7	8.2	5.8
Silage:												
Home-grown	1.6	3.3	2.5	2.1	2.8	-	-	0.4	4.6	3.9	1.7	2.6
Roots and green fodder:												
Purchased	0.2	3.9	4.1	-	0.6	0.1	2.6	-	0.2	0.2	7.5	4.8
Home-grown	41.4	54.2	68.2	64.2	50.4	41.4	16.3	45.8	28.7	51.4	42.4	49.4
Total	41.6	58.1	72.3	64.2	51.0	41.5	18.9	45.8	28.9	51.6	49.9	54.2

Table 11. (continued)

	Northern	North- western	Eastern	East Midland	West Midland	North Wales	South Wales	Southern	Mid- western	Far- western	South eastern	All regions
<u>PER COW</u> <u>SUMMER 1944</u>												
Concentrates:												
Purchased	2.7	2.7	6.2	4.0	4.0	2.2	2.9	4.1	3.1	2.9	3.9	3.5
Home-grown	3.1	2.2	1.9	2.1	1.8	2.3	1.5	2.6	0.7	1.1	2.6	2.0
Total	5.8	4.9	8.1	6.1	5.8	4.5	4.4	6.7	3.8	4.0	6.5	5.5
Hay:												
Purchased	-	0.1	-	-	0.1	-	-	-	0.1	0.1	0.2	0.1
Home-grown	4.5	3.0	1.5	2.9	2.8	3.5	3.1	3.9	3.2	2.8	2.1	2.9
Total	4.5	3.1	1.5	2.9	2.9	3.5	3.1	3.9	3.3	2.9	2.3	3.0
Straw:												
Purchased	0.0	0.2	-	-	0.1	-	-	-	-	0.1	0.0	0.1
Home-grown	1.2	1.2	0.5	0.8	0.6	2.0	1.2	0.8	0.1	0.2	1.0	0.8
Total	1.2	1.4	0.5	0.8	0.7	2.0	1.2	0.8	0.1	0.3	1.0	0.9
Silage:												
Home-grown	0.2	0.5	0.1	0.1	0.1	-	0.6	0.0	1.5	0.6	0.2	0.4
Roots and green fodder:												
Purchased	-	0.6	2.0	0.1	-	-	-	-	0.1	0.2	5.3	1.8
Home-grown	7.0	8.0	12.2	8.5	4.7	9.6	2.8	9.5	7.7	9.6	15.1	9.2
Total	7.0	8.6	14.2	8.6	4.7	9.6	2.8	9.5	7.8	9.8	20.4	11.0

Table 11. (continued)

	Northern	North- western	Eastern	East Midland	West Midland	North Wales	South Wales	Southern	Mid- western	Far- western	South- eastern	All regions
<u>PER COW</u>												
<u>YEAR 1943-4</u>												
Concentrates:												
Purchased	7.1	7.3	16.6	11.5	10.8	5.5	3.4	8.7	9.3	8.2	10.7	9.4
Home-grown	9.4	6.9	7.1	8.7	7.9	7.4	6.4	7.0	2.4	3.7	8.0	7.0
Total	16.5	14.2	23.7	20.2	18.7	12.9	9.8	15.7	11.7	11.9	18.7	16.4
Hay:												
Purchased	-	0.3	0.0	-	0.2	-	3.3	-	0.1	0.6	1.6	0.4
Home-grown	21.7	15.9	15.0	21.6	20.4	15.9	22.3	24.8	21.5	17.4	16.5	18.5
Total	21.7	16.2	15.0	21.6	20.6	15.9	25.6	24.8	21.6	18.0	18.1	18.9
Straw:												
Purchased	0.1	0.4	-	-	0.6	-	-	0.2	-	0.5	0.2	0.2
Home-grown	7.6	6.8	10.1	6.6	4.5	8.6	6.0	7.0	1.0	3.5	9.3	6.6
Total	7.7	7.2	10.1	6.6	5.1	8.6	6.0	7.2	1.0	4.0	9.5	6.8
Silage:												
Home-grown	1.8	3.8	2.7	2.2	2.9	-	0.6	0.4	6.2	4.6	1.9	3.0
Roots and green fodder:												
Purchased	0.2	4.5	6.2	0.1	0.6	0.1	2.6	-	0.3	0.4	12.9	6.7
Home-grown	48.9	62.5	82.5	73.8	55.0	51.7	18.8	56.8	36.9	61.4	58.2	59.3
Total	49.1	67.0	88.7	73.9	55.6	51.8	21.4	56.8	37.2	61.8	71.1	66.0

Table 11. (continued)

	Northern	North- western	Eastern	East Midland	West Midland	North Wales	South Wales	Southern	Mid- western	Far- western	South- eastern	All regions
<u>PER GALLON</u>												
<u>WINTER 1943-4</u>												
Concentrates:												
Purchased	2.02	2.23	3.79	2.99	2.99	1.61	1.69	1.80	2.47	2.48	2.48	2.54
Home-grown	2.96	2.33	1.88	2.65	2.70	2.55	2.87	1.73	0.69	1.25	2.03	2.09
Total	4.98	4.56	5.67	5.64	5.69	4.16	4.56	3.53	3.16	3.73	4.51	4.63
Hay:												
Purchased	-	0.10	0.01	-	0.07	-	1.94	-	-	0.20	0.50	0.14
Home-grown	7.96	6.26	4.84	7.33	7.79	6.09	11.30	7.99	7.30	6.83	5.26	6.61
Total	7.96	6.36	4.85	7.33	7.86	6.09	13.24	7.99	7.30	7.03	5.76	6.75
Straw:												
Home-grown	2.95	2.74	3.44	2.32	1.69	3.19	2.80	2.39	0.37	1.52	3.03	2.43
<u>PER GALLON</u>												
<u>SUMMER 1944</u>												
Concentrates:												
Purchased	0.97	1.06	2.04	1.46	1.37	0.49	0.69	1.44	1.05	1.10	1.31	0.67
Home-grown	1.10	0.85	0.63	0.74	0.62	0.50	0.36	0.90	0.22	0.40	0.85	0.40
Total	2.07	1.91	2.67	2.20	1.99	0.99	1.05	2.34	1.27	1.50	2.16	1.07
Hay:												
Purchased	-	0.05	-	-	0.02	-	-	-	0.02	0.05	0.07	0.02
Home-grown	1.62	1.19	0.51	1.05	0.97	0.77	0.74	1.36	1.09	1.04	0.70	0.57
Total	1.62	1.24	0.51	1.05	0.99	0.77	0.74	1.36	1.11	1.09	0.77	0.59
Straw:												
Home-grown	0.44	0.46	0.16	0.29	0.22	0.45	0.29	0.13	0.04	0.07	0.34	0.17

Table 11. (continued)

	Northern	North- western	Eastern	East Midland	West Midland	North Wales	South Wales	Southern	Mid- western	Far- western	South- eastern	All regions
<u>PER GALLON</u>												
<u>YEAR 1943-4</u>												
Concentrates:												
Purchased	1.43	1.58	2.90	2.19	2.08	1.24	0.80	1.62	1.72	1.72	1.88	1.84
Home-grown	1.92	1.52	1.24	1.66	1.53	1.67	1.50	1.31	0.44	0.78	1.42	1.38
Total	3.35	3.10	4.14	3.85	3.61	2.91	2.30	2.93	2.16	2.50	3.30	3.22
Hay:												
Purchased	-	0.07	-	-	0.04	-	0.77	-	0.09	0.12	0.28	0.08
Home-grown	4.41	3.46	2.62	4.07	3.94	3.59	5.20	4.61	3.98	3.65	2.91	3.63
Total	4.41	3.53	2.62	4.07	3.98	3.59	5.97	4.61	4.07	3.77	3.19	3.71
Straw:												
Home-grown	1.54	1.48	1.76	1.26	0.86	1.93	1.40	1.31	0.19	0.73	1.64	1.29

Table 12. Purchased and home-grown concentrates per cow in herd in the wholesale group by regions: 1941-2 to 1943-4.

Region	1941-2				1942-3				1943-4			
	Purchased cwt.	Home-grown cwt.	Total cwt.	Yield galls.	Purchased cwt.	Home-grown cwt.	Total cwt.	Yield galls.	Purchased cwt.	Home-grown cwt.	Total cwt.	Yield galls.
(a) WINTER												
Northern	6.2	3.6	9.8	1.22	3.5	5.8	9.3	1.31	4.3	6.3	10.6	1.31
North-western	6.4	3.7	10.1	1.26	4.1	4.2	8.3	1.19	4.5	4.8	9.3	1.25
Eastern	9.8	2.3	12.0	1.69	8.1	4.0	12.1	1.63	10.2	5.1	15.3	1.66
East Midland	6.8	3.4	10.2	1.32	6.6	4.2	10.8	1.43	7.4	6.6	14.0	1.52
West Midland	6.2	3.0	9.2	1.22	5.0	5.2	10.2	1.22	6.8	6.1	12.9	1.40
North Wales	6.3	5.3	11.6	1.15	4.3	5.8	10.1	1.34	3.3	5.1	8.4	1.24
South Wales	5.9	3.1	9.0	1.37	2.6	3.9	6.5	1.07	2.9	4.9	7.8	1.06
Southern	6.6	2.7	9.3	1.48	4.6	3.7	8.3	1.56	4.5	4.4	8.9	1.56
Mid-western	6.1	1.0	7.1	1.40	5.7	1.3	7.0	1.46	6.1	1.7	7.8	1.51
Far-western	5.9	3.1	9.0	1.30	3.7	5.0	8.7	1.32	5.3	2.6	7.9	1.31
South-eastern	7.8	2.0	9.8	1.56	6.2	4.7	10.9	1.56	6.6	5.4	12.0	1.64
All regions	6.8	2.9	9.7	1.36	5.1	4.3	9.4	1.37	5.9	4.8	10.7	1.43
(b) SUMMER												
Northern	3.4	2.7	6.1	1.71	2.7	3.8	6.5	1.72	2.7	3.1	5.8	1.71
North-western	2.8	1.6	4.4	1.51	2.6	1.9	4.5	1.59	2.7	2.2	4.9	1.26
Eastern	5.3	1.8	7.1	1.99	4.8	3.5	8.3	1.91	6.2	1.9	8.1	1.86
East Midland	3.5	3.2	6.7	1.65	3.5	1.8	5.3	1.63	4.0	2.1	6.1	1.70
West Midland	1.1	0.6	1.7	1.63	3.0	1.9	4.9	1.72	4.0	1.8	5.8	1.78
North Wales	2.3	3.5	5.8	1.84	2.3	2.2	4.5	1.67	2.2	2.3	4.5	1.49
South Wales	3.0	1.4	4.4	1.72	2.3	1.0	3.3	1.57	2.9	1.5	4.4	1.56
Southern	2.8	2.2	5.0	1.79	3.3	1.9	5.2	1.76	4.1	2.6	6.7	1.75
Mid-western	2.4	0.5	2.9	1.68	3.0	0.7	3.7	1.73	3.1	0.7	3.8	1.82
Far-western	1.9	1.2	3.1	1.57	2.8	1.8	4.6	1.71	2.9	1.1	4.0	1.62
South-eastern	4.4	1.1	5.5	1.88	4.2	2.6	6.8	1.82	3.9	2.6	6.5	1.84
All regions	3.2	1.8	5.0	1.69	3.2	2.2	5.4	1.71	3.5	2.0	5.5	1.70

Table 12. (continued)

Region	1941-2				1942-3				1943-4			
	Purchased cwt.	Home- grown cwt.	Total cwt.	Yield galls.	Purchased cwt.	Home- grown cwt.	Total cwt.	Yield galls.	Purchased cwt.	Home- grown cwt.	Total cwt.	Yield galls.
(c) YEAR												
Northern	9.7	6.3	16.0	1.47	6.2	9.6	15.8	1.52	7.1	9.4	16.5	1.51
North-western	9.1	5.3	14.4	1.39	6.7	6.1	12.8	1.39	7.3	6.9	14.2	1.40
Eastern	15.1	4.0	19.1	1.84	13.0	7.5	20.5	1.77	16.6	7.1	23.7	1.76
East Midland	10.4	6.6	17.0	1.49	10.2	6.0	16.2	1.53	11.5	8.7	20.2	1.61
West Midland	9.1	4.6	13.7	1.43	8.0	7.2	15.2	1.47	10.8	7.9	18.7	1.59
North Wales	8.6	8.9	17.5	1.49	6.6	8.1	14.7	1.51	5.5	7.4	12.9	1.36
South Wales	9.0	4.5	13.5	1.55	4.9	4.8	9.7	1.33	3.4	6.4	9.8	1.32
Southern	9.3	5.0	14.3	1.65	7.9	5.5	13.4	1.66	8.7	7.0	15.7	1.65
Mid-western	8.5	1.5	10.0	1.54	8.8	2.1	10.9	1.59	9.3	2.4	11.7	1.66
Far-western	7.7	4.3	12.0	1.44	6.5	6.8	13.3	1.51	8.2	3.7	11.9	1.46
South-eastern	12.5	3.2	15.7	1.75	10.4	7.2	17.6	1.69	10.7	8.0	18.7	1.74
All regions	10.0	4.7	14.7	1.53	8.3	6.5	14.8	1.54	9.4	7.0	16.4	1.56

Table 13. Frequency distribution of net farm costs in the wholesale group: 1943-4.

Pence per gallon	Number of farms		Total cows		Gallons produced		Average yield per cow per day	Average net farm cost per gallon
	number	per cent. of total	number	per cent. of total	number	per cent. of total		
							<u>gallons</u>	<u>pence</u>
9 and under 10	1	0.3	11	0.1	7,553	0.1	1.88	9.26
10.00 to 10.99	7	1.9	196	1.6	114,592	1.7	1.60	10.74
11.00 " 11.99	13	3.5	423	3.5	269,221	3.9	1.75	11.50
12.00 " 12.99	13	3.5	453	3.8	310,756	4.5	1.88	12.51
13.00 " 13.99	30	8.0	771	6.4	502,430	7.3	1.78	13.49
14.00 " 14.99	30	8.0	960	8.0	588,327	8.6	1.68	14.52
15.00 " 15.99	29	7.7	806	6.7	489,639	7.2	1.66	15.58
16.00 " 16.99	47	12.5	1,587	13.2	962,980	14.1	1.66	16.52
17.00 " 17.99	45	12.0	1,542	12.9	819,214	12.0	1.46	17.53
18.00 " 18.99	37	9.9	1,314	11.0	761,545	11.1	1.59	18.34
19.00 " 19.99	38	10.1	1,223	10.2	636,937	9.3	1.43	19.42
20.00 " 20.99	23	6.1	914	7.6	467,409	6.8	1.40	20.48
21.00 " 21.99	14	3.7	534	4.5	303,320	4.4	1.56	21.40
22.00 " 22.99	12	3.2	397	3.3	191,294	2.8	1.32	22.46
23.00 " 23.99	6	1.6	175	1.5	89,182	1.3	1.39	23.29
24.00 " 24.99	4	1.1	88	0.7	43,435	0.7	1.35	24.46
25.00 " 25.99	7	1.9	156	1.3	83,823	1.2	1.47	25.59
26.00 " 26.99	4	1.1	139	1.2	55,275	0.8	1.09	26.73
27.00 " 27.99	2	0.5	72	0.6	36,925	0.5	1.40	27.32
28.00 " 28.99	1	0.3	26	0.2	10,980	0.2	1.14	28.88
29.00 " 29.99	3	0.8	41	0.3	18,391	0.3	1.24	29.57
30.00 " 30.99	2	0.5	61	0.5	30,580	0.5	1.38	30.22
31.00 " 31.99	2	0.5	17	0.1	8,696	0.1	1.38	31.08
32.00 and over	5	1.3	91	0.8	43,350	0.6	1.30	34.53
TOTAL	375	100.0	11,997	100.0	6,245,904	100.0	1.56	17.46

Table 14. Number of cows, production of milk, and costs, on accredited and non-accredited farms: 1943-4.

	Accredited	Non-accredited
1. <u>Number of herds</u>	234	141
Number of cows per herd	37.3	23.2
2. <u>Total number of cows</u>		
Winter	8871	3328
Summer	8587	3219
Year	8728	3269
3. <u>Total gallons produced ('000)</u>		
Winter	2336	830
Summer	2734	945
Year	5070	1775
<u>Percentage production</u>		
Winter	46.1	46.8
Summer	53.9	53.2
Summer production as percentage of winter production	117.0	113.7
4. <u>Gallons produced per cow per day</u>		
Winter	1.48	1.37
Summer	1.74	1.61
Year	1.59	1.49
Summer as percentage of winter yield	117.6	117.5
5. <u>Cost in pence per gallon</u>		
Foods	10.37	10.49
Labour	4.42	4.79
Miscellaneous	2.32	2.03
Herd replacement	1.53	1.13
Gross farm cost	18.64	18.44
Credits - Calves	0.75	0.77
Manurial residues	0.37	0.37
Total Credits	1.12	1.14
Net farm cost	17.52	17.30

Table 15. Costs per cow and per gallon by yield groups, wholesale group: 1943-4.

	Up to 1.25 gallons	1.26-1.50 gallons	1.51-1.75 gallons	1.76-2.00 gallons	2.01-2.25 gallons	2.26 gallons and over	All groups
Number of herds	64	102	98	72	26	13	375
Average number of cows in herd	31.3	35.3	31.6	29.8	29.9	28.8	32.0
Per cent. dry cows	27.8	22.1	20.7	18.4	15.9	15.6	21.4
Gallons per cow per day	1.09	1.38	1.63	1.86	2.11	2.51	1.56
<u>Costs per cow</u>	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Foods - Purchased	3 8 5	5 14 7	7 2 7	9 1 9	13 14 8	13 2 4	7 1 1
Home-grown	13 6 10	14 2 9	14 17 5	15 2 4	15 7 7	19 17 2	14 12 7
Grazing	2 13 5	3 4 4	3 0 3	2 17 11	3 12 7	3 14 0	3 1 2
Total foods	19 8 8	23 1 8	25 0 3	27 2 0	32 14 10	36 13 6	24 14 10
Labour - employees	5 15 10	7 6 7	8 6 1	10 6 9	12 2 0	11 13 3	8 6 1
family	2 14 11	2 5 2	2 9 7	2 7 8	2 2 8	2 19 1	2 8 8
Total labour	8 10 9	9 11 9	10 15 8	12 14 5	14 4 8	14 12 4	10 14 9
Miscellaneous	4 0 0	4 17 7	5 11 0	6 8 9	6 3 3	6 19 11	5 6 8
Herd replacement	3 7 3	3 16 2	3 5 4	3 7 10	2 11 9	2 4 4	3 7 9
Gross farm cost	35 6 8	41 7 2	44 12 3	49 13 0	55 14 6	60 10 1	44 4 0
Credits	2 5 10	2 10 3	2 15 7	2 15 11	3 7 2	3 9 0	2 13 7
Net farm cost	33 0 10	38 16 11	41 16 8	46 17 1	52 7 4	57 1 1	41 10 5

Table 15. (continued)

	Up to 1.25 gallons	1.26-1.50 gallons	1.51-1.75 gallons	1.76-2.00 gallons	2.01-2.25 gallons	2.26 gallons and over	All groups
	pence	pence	pence	pence	pence	pence	pence
<u>Costs per gallon</u>							
Foods - Purchased	2.07	2.73	2.88	3.22	4.27	3.43	2.97
Home-grown	8.06	6.73	6.01	5.36	4.79	5.20	6.15
Grazing	1.61	1.53	1.22	1.02	1.13	0.97	1.29
Total foods	11.74	10.99	10.11	9.60	10.19	9.60	10.41
Labour - employees	3.50	3.49	3.36	3.66	3.77	3.05	3.49
family	1.66	1.07	1.00	0.84	0.66	0.77	1.02
Total labour	5.16	4.56	4.36	4.50	4.43	3.82	4.51
Miscellaneous	2.41	2.32	2.24	2.28	1.92	1.83	2.24
Herd replacement	2.03	1.81	1.32	1.20	0.80	0.58	1.43
Gross farm cost	21.34	19.68	18.03	17.58	17.34	15.83	18.59
Credits	1.38	1.19	1.12	0.99	1.05	0.90	1.13
Net farm cost	19.96	18.49	16.91	16.59	16.29	14.93	17.46

Table 16. Quantity of concentrates, hay, and straw fed per cow and per gallon by yield groups, wholesale group: 1943-4.

	Up to 1.25 gallons		1.26-1.50 gallons		1.51-1.75 gallons		1.76-2.00 gallons		2.01-2.25 gallons		2.26 galls. and over		All groups	
	per cow cwt.	per gall. lb.	per cow cwt.	per gall. lb.	per cow cwt.	per gall. lb.	per cow cwt.	per gall. lb.	per cow cwt.	per gall. lb.	per cow cwt.	per gall. lb.	per cow cwt.	per gall. lb.
Concentrates	10.4	2.9	14.0	3.1	16.6	3.1	20.5	3.4	24.0	3.5	32.0	3.9	16.4	3.2
Hay	19.4	5.5	18.6	4.1	18.2	3.4	18.9	3.1	21.2	3.1	19.6	2.4	18.9	3.7
Straw	8.3	2.4	6.4	1.4	7.6	1.4	5.9	1.0	5.0	0.7	5.3	0.6	6.8	1.3

Table 17. Costs of milk production, wholesale group by size of herd: 1943-4. (Pence per gallon and £.s.d. per cow in herd).

Size of herd groups	Up to 10.0	10.1-20.0	20.1-30.0	30.1-40.0	40.1-50.0	50.1-60.0	Over 60.0 cows	All herds
Number of herds	14	104	89	65	46	28	29	375
Number of cows	110	1,594	2,238	2,270	2,040	1,507	2,239	11,997
Gallons produced ('000)	65	929	1,245	1,311	1,224	892	1,180	6,846
Average percentage of dry cows	21.35	19.89	22.06	20.10	18.26	21.45	23.50	21.42
Average daily yield per cow (gallons)	1.62	1.60	1.52	1.58	1.64	1.62	1.44	1.56
pence per gallon								
Costs of production								
Foods: Purchased	3.25	3.07	2.89	2.99	2.90	2.99	2.98	2.97
Home-grown	5.21	6.03	6.04	6.39	6.10	5.51	6.69	6.15
Grazing	1.50	1.31	1.35	1.17	1.16	1.25	1.48	1.29
Total foods (per cow	9.96 £24.11.0	10.41 £25.5.3	10.28 £23.16.9	10.55 £25.7.11	10.16 £25.8.3	9.75 £24.0.8	11.15 £24.9.5	10.41 £24.14.10)
Labour: employees	1.85	2.56	3.45	3.95	3.52	3.42	3.88	3.49
family	4.81	2.38	1.36	0.83	0.66	0.58	0.32	1.02
Total labour (per cow	6.66 £16.8.2	4.94 £11.19.9	4.81 £11.3.0	4.78 £11.10.1	4.18 £10.9.4	4.00 £9.16.11	4.20 £9.4.6	4.51 £10.14.9)
Miscellaneous	2.43	2.40	2.42	2.48	2.13	2.03	1.93	2.24
Herd replacement	1.67	1.14	1.24	1.22	1.03	1.85	2.16	1.43
Gross farm cost	20.72	18.89	18.75	19.03	17.50	17.63	19.44	18.59
Credits: calves	0.95	0.84	0.81	0.77	0.68	0.65	0.76	0.76
manurial residues	0.34	0.37	0.38	0.37	0.36	0.36	0.39	0.37
Total credits	1.29	1.21	1.19	1.14	1.04	1.01	1.15	1.13
Net farm cost per gallon	19.43	17.68	17.56	17.89	16.46	16.62	18.29	17.46
Net farm cost per cow	£47.17.8	£42.18.5	£36.4.8	£43.1.4	£41.3.5	£40.19.2	£40.3.5	£41.10.5

Table 18. Costs of milk production in the wholesale group (a) on farms with milking machines and (b) on farms without milking machines: 1943-4.

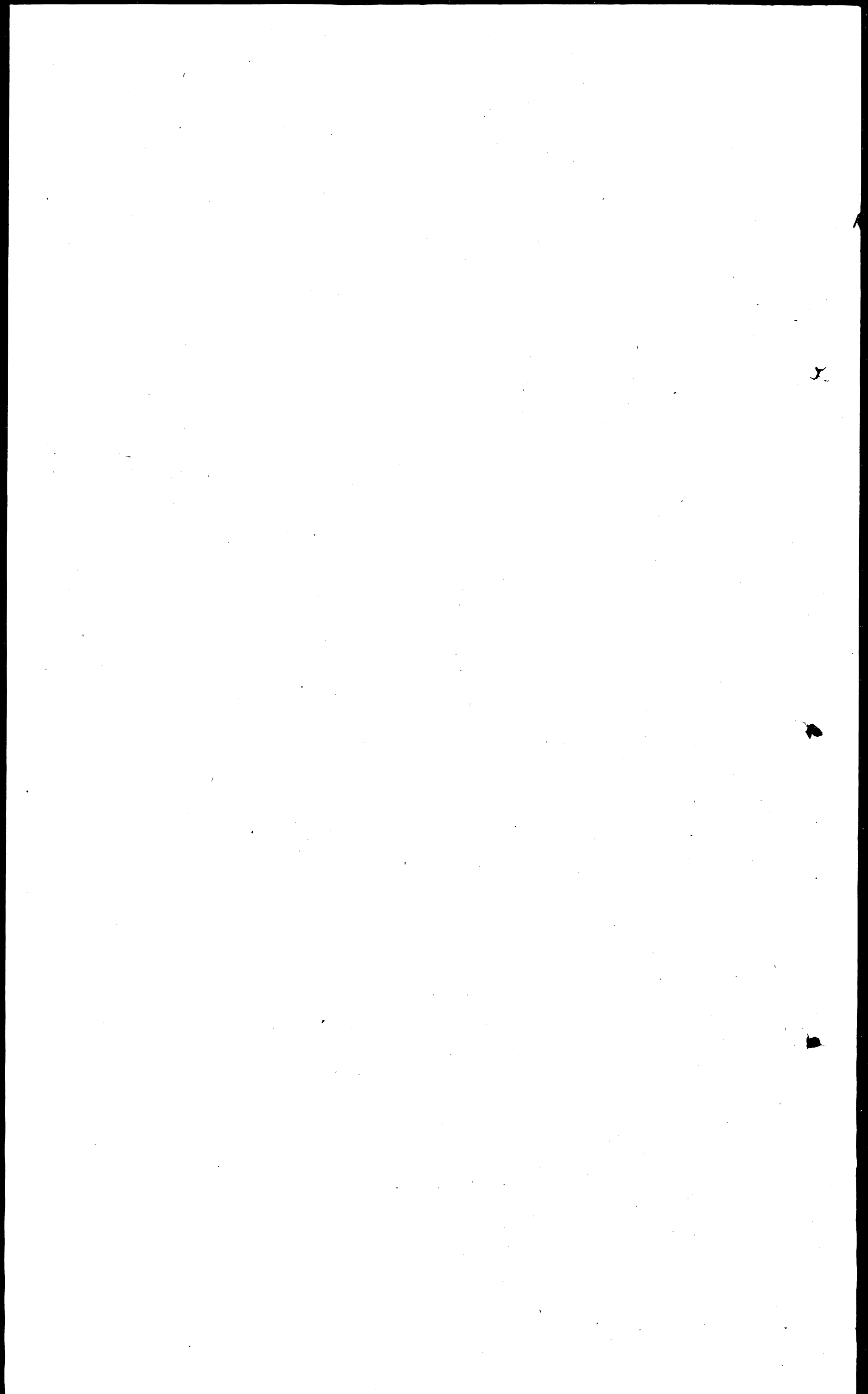
	Size of herd						
	Up to 10 cows	10.1-20.0	20.1-30.0	30.1-40.0	40.1-50.0	50.1 and over	All herds
(a) On farms with milking machines							
Number of herds	-	26	50	47	36	48	207
Number of cows	-	423.34	1,263.94	1,547.58	1,599.38	3,173.85	8,108.09
Average per cent of dry cows	-	29.54	24.23	22.16	21.28	23.26	22.96
Average yield per cow per day (gallons)	-	1.76	1.48	1.68	1.66	1.50	1.56
Costs per gallon	-	d.	d.	d.	d.	d.	d.
Foods	-	11.13	10.69	10.56	10.10	10.56	10.52
Labour	-	4.45	4.48	4.48	4.09	3.93	4.19
Miscellaneous expenses	-	2.98	2.66	2.63	2.15	2.00	2.31
Herd replacement	-	1.12	1.25	1.22	1.07	2.02	1.49
Gross farm cost	-	19.68	19.08	18.89	17.41	18.51	18.51
Credits	-	1.16	1.21	1.17	1.05	1.12	1.13
Net farm cost	-	18.52	17.87	17.72	16.36	17.39	17.38
(b) On farms without milking machines							
Number of herds	14	78	39	18	10	9	168
Number of cows	109.61	1,170.31	974.41	621.97	440.39	572.57	3,889.26
Average per cent. of dry cows	19.47	17.25	19.25	18.18	20.77	16.15	18.20
Average yield per cow per day (gallons)	1.62	1.54	1.58	1.60	1.58	1.61	1.57
Costs per gallon	d.	d.	d.	d.	d.	d.	d.
Foods	9.96	10.11	9.78	10.59	10.40	10.46	10.17
Labour	6.66	5.14	5.22	5.55	4.57	5.01	5.19
Miscellaneous expenses	2.43	2.16	2.12	2.11	2.07	1.83	2.09
Herd replacement	1.67	1.16	1.22	1.22	0.84	2.10	1.30
Gross farm cost	20.72	18.57	18.34	19.40	17.88	19.40	18.75
Credits	1.29	1.23	1.16	1.09	1.01	0.91	1.12
Net farm cost	19.43	17.34	17.18	18.31	16.87	18.49	17.63

Table 19. Costs of milk production in the wholesale group: winter period 1936-7 to 1938-9, 1943-4 and 1944-5.

Winter periods	1936-7 to 1938-9			1943-4			1944-5					
Number of farms	409			375			354					
Cost per cow:	£	s.	d.	£	s.	d.	£	s.	d.			
Purchased foods	5	6	6	4	8	6	5	0	6			
Home-grown foods	4	6	1	11	13	7	11	7	1			
Grazing	-	8	6	-	8	9	-	9	3			
Total foods	10	1	1	16	10	10	16	16	10			
Labour	3	0	7	5	10	8	5	18	4			
Miscellaneous	1	14	10	2	14	3	2	17	2			
Gross farm cost ¹	14	16	6	24	15	9	25	12	4			
Credits	1	6	5	1	12	9	1	13	3			
Net farm cost ¹	13	10	1	23	3	0	23	19	1			
Yield per cow per day (gallons)	1.59			1.43			1.49					
Net farm cost per gallon ¹ (pence)	11.19			21.41			21.25					
Foods consumed:	cwt.	£	s.	d.	cwt.	£	s.	d.	cwt.	£	s.	d.
Per Cow												
Concentrates:												
Purchased	13.25	5	3	4	5.88	3	16	2	6.6	4	10	6
Home-grown	0.55	-	3	7	4.94	3	0	1	5.0	3	0	5
Total	13.80	5	6	11	10.82	6	16	3	11.6	7	10	11
Hay:												
Purchased	0.33	-	1	4	0.32	-	3	2	0.3	-	2	10
Home-grown ²	16.72	3	0	9	15.33	4	2	4	14.4	3	19	3
Total	17.05	3	2	1	15.65	4	5	6	14.7	4	2	1
Straw ²	1.82	-	3	5	5.81	-	16	2	6.8	-	19	9
Roots and green fodder:												
Purchased	?	-	1	10	4.92	-	9	2	1.5	-	2	11
Home-grown	?	-	18	5	51.71	3	15	2	44.0	3	5	9
Per Gallon	lb.	d.		lb.	d.		lb.	d.				
Concentrates	5.33	4.43		4.67	6.30		4.78	6.70				
Hay ²	6.59	2.57		6.76	3.96		6.08	3.63				
Straw ²	0.71	0.14		2.51	0.75		2.84	0.88				
Roots and green fodder	?	0.84		24.44	3.90		18.86	3.03				

¹. Excluding herd replacement

². The figures for 1943-4 and 1944-5 are not strictly comparable with those of earlier years.



APPENDIX II

Method of Costing

The method of costing all items except home-grown hay and straw has remained the same throughout the period of the Oxford reports, 1934-5 to 1943-4. New methods were introduced in the revised Scheme of June 1947, but this is outside the range of the series.

Costs refer only to the process of production of milk on the farms and do not include transport or distribution costs. No charge is made for the cost of management or for interest on capital. The value of the dairy herd, of other dairy stock¹ and of equipment is given, the original valuation being that of a professional valuer or made in consultation with the farmer, but it does not enter directly into net farm costs. Rent is dealt with in a similar way but is an actual component of grazing charges. Net farm costs are made up of foods, labour, herd replacement and miscellaneous expenses, from which credits have been deducted for calves born in herd and for manurial residues of feeding-stuffs.

Foods

Purchased foods were charged to cows at their purchase price delivered on the farm. Home-grown foods, other than hay and straw and grazing, were valued according to feeding-values on the farm², in terms of certain purchased foods as reported monthly in the Journal of the Ministry of Agriculture.³ Hay and straw were valued by this method until December 1942 but since then at average cost of production, average feeding values for the three years 1936-7 to 1938-9 being taken as the base and adjusted in accordance with changes in the costs of various production factors (the "cost index" method). Grazing charges were based on comprehensive costs, including rent and labour, ascertained for each farm.⁴

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- ¹ The only reference of any kind in the costs to "other dairy stock."
 - ² At the door of the cowshed or feeding-house or in a position sufficiently adjacent for the cowman to handle them.
 - ³ A detailed explanation is given in the Journal of the Ministry of Agriculture for July 1936.
 - ⁴ Under the Scheme of 1947 the charges for all home-grown foods are to be based on the cost of production, which will be derived, eventually, from cost investigations carried out by the survey method on the farms in the sample. This method does not apply during the period under review.

Labour

All labour, both paid and "unpaid", used in the process of milk production, and in that process only, is included in the cost, but only dairy labour is covered in the "labour" item. Cost of work on the land is entered in cost of grazing, etc. The cost of paid labour was entered at the wages paid, including war-time allowances and insurances. Where no wage payment was made family labour, i.e. the manual labour of the farmer, the members of his family and relatives, was assessed on the basis of time worked at the rates of a corresponding class of paid worker.

Herd replacement

To determine the cost of depreciation on cows the normal practice was followed of taking the difference between (i) the valuation of the cows at the beginning of the year plus the value of incoming cows during the year and (ii) the values of outgoing cows plus the valuation of the herd at the end of the year. Transfers of live-stock into or out of the herd during the year were entered as follows: (1) purchases and sales at the prices paid or received; (2) home-bred heifers and other heifers bulled on the farm and nurse cows transferred back, at their estimated farm value at the time of transference; (3) cows transferred out for separate fattening or as nurse cows at their estimated value at the time of transference; (4) carcasses at the price received. Money received as compensation under insurance policies or under the Diseases of Animals Acts was credited also.

Miscellaneous expenses

Miscellaneous expenses cover all costs incurred in connexion with the herd for (i) veterinary services, medicines and disinfectants, (ii) general dairy expenses, (iii) milking machines, (iv) current expenses for repairs and upkeep of equipment, and (v) consumable dairy stores. Depreciation of milking machines, dairy equipment and other farm equipment especially used for the cows is included and was calculated on the basis of the scales of depreciation laid down by the Inland Revenue Authorities for Income Tax purposes.

The upkeep of bulls, and service fees (debit or credit) are other items included in this category, the charge for bulls being the costs of feeding and labour and of depreciation determined on the differences in value of the animals between the beginning and end of the year. In addition charges are made for cowsheds and dairy buildings, arrived at by the Advisory Economist in consultation with each farmer but in general standardised at 10/- per annum for each stall or £1 per stall in the case of improved buildings, and for the share borne by milk production of the overhead expenses of the farm, including upkeep and maintenance of roads, hedges, etc., insurances, office expenses and similar items, taken in the proportion which the labour cost in milk production bore to the total labour cost of the whole farm.

Credit for calves and manurial residues

Certain credits for calves and for manurial residues from feedingstuffs are made against costs. Of the calves born, those sold immediately were credited at the market price less the cost of marketing, and those retained for rearing at their estimated value at the farm at 4 days old. The value of the manure was taken as the current manurial value of purchased foods, home-grown corn and meal, and hay, according to the rates prescribed in the tables of Voelcker and Hall, but reduced by 50 per cent. because of the difficulties in practice of realising the value of the manurial constituents of the foods as set out in the table.

