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EDINBURGH AND EAST OF SCOTLAND COLLEGE OF AGRICULTURE

(DEPARTMENT OF ECONOMICS)

Milk
Cost of
production

INTERIM REPORT

ON

COST OF MILK PRODUCTION, SUMMER, 1946

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I. INTRODUCTION.

This second interim report on the cost of milk production covers the Summer Period, viz. the six months from 1st April to 30th September 1946 inclusive, in the first year of the renewed investigation. It carries our inquiry a stage beyond the earlier report* covering the six winter months 1st October 1945-31st March 1946. The records for 86 herds are embodied in the summaries and are mainly the same herds as for the winter period. There were, however, three farmers who found it impossible to complete the summer records, but on the other hand, six others came forward with completed records and more than made up this defection.

II. GENERAL DESCRIPTION OF FARMS AND HERDS STUDIED.

Location and size of herds. The general size and geographical distribution of herds compared with the winter period therefore has not materially altered except in so far as the minor changes referred to above have had effect. The one large herd in Kinross and Clackmannan included in the earlier period has been replaced by a small one of under 20 cows, while Angus now has one herd fewer and East Perth one more, the latter being a large-sized herd of over 100 cows. Other counties have exactly the same herds with the addition of two in Fife and one in Midlothian. The over-all average size of herd has changed very little, and worked out at 43 cows for the summer period as against 45 for the winter period.

Type and Size of Farms. There is little to add to the remarks of our previous report on this aspect, as generally the farms are identical and any changes have been mainly in the Dairy Farm groups around the 200 acre size. The range in farm size is the same and the average size of 304 acres shows only little deviation caused by the slightly different sample of farms. The average rent for these farms is £349, which is 23/- per acre. When the rough grazings are converted to their equivalent of arable land, the "adjusted acreage" per farm is reduced to an average of 256 acres and the rent is increased to 27/4d. per acre.

Type and Composition of Herds. Fuller information on this point will be given in the report of the full year's costs, which is now in preparation. From the many visits paid to these farms it has been gathered however that more farmers are going in for better bulls, and are keeping more closely to one breed of cows. The Ayrshire is the most popular breed more particularly because of its well-known freedom from tuberculosis, but the Friesian is gaining in popularity again as more herds become attested and the fear of too many reactors in the herd is dispelled. Few Shorthorn herds are included in our sample: the predominance of beef strains of this breed make some farmers rather doubtful of the milking capacity of any replacement stock introduced into the herd.

The costs herein presented relate to a total of 3715 cows, including 786 (or 21%) dry cows. There were also just a small number of cows with suckling calves, but in most cases these cows were drying off, and were not being used as nurse cows for the whole lactation. The herd size ranges from 7 cows to 145 with an average, as already stated, of 43 cows for the 86 herds studied. The percentage of dry cows has proved to be smaller than in the winter period, and there are not the same number of herds with high percentages. One herd has as many as 47% of dry cows, whilst on the other hand, there have again been the Town Dairies with no dry cows at all.

Quality of Milk. Although all the three main grades of milk are still well represented in our herd sample, there have been quite a few herds changing over to attested stocks and so producing a higher grade of milk. The 86 farms consist of 20 (i.e. 23%) producing ordinary or non-graded milk, 19 (i.e. 22%) producing standard milk including standard attested and 47 (i.e. 55%) producing tuberculin-tested or certified milk. Well over half the herds are now attested and most of

* "Interim Report on Cost of Milk Production, Winter 1945/6" (June 1946)

of these produce the T.T. Attested grade of milk.

Throughout the whole year 9 herds have been hand-milked, all the rest being machine-milked.

The milk has been mainly sold wholesale either through the Scottish Milk Marketing Board or under a producer-wholesaler licence, but our sample of farms has again included roughly 25% of the producer-retailer class, retailing the major portion of their production.

Milk Yield per cow. The milk production per cow averaged 349 gallons for the six months Summer Period, and was 69 gallons higher than the yield for the winter period. Once again there was a great variation in yields from the highest of 556, to the lowest of 203 gallons per cow for the six months. These figures are calculated on the total number of cows in the herd and not only on the in-milk cows.

In the table below the concentration of herds is around 350 gallons with an equal number of herds above and below the two most common size-groups.

TABLE I. - Milk Yield per cow per farm: Summer 1946 (6 mos.).

	Under 250 Galls.	251 to 300 Galls.	301 to 350 Galls.	351 to 400 Galls.	401 to 450 Galls.	451 to 500 Galls.	Over 500 Galls.	Total
No. of Herds in group	9	9	27	23	12	3	3	86

III. COSTS OF PRODUCTION.

Preparation of costs data. The data have been most carefully compiled for each individual farm on a comparable basis. This allows comparisons between the farms and also with other Colleges in Great Britain undertaking a similar inquiry. In this Summer Period we have again adhered to certain principles as set out below.

(i) Winter and Summer Periods.

The year has been divided into two six-monthly periods viz:-

Winter 1st October to 31st March inclusive

Summer 1st April to 30th September inclusive.

(ii) Home Grown Foods have again been charged at the prices used during the winter period, which can be seen by reference to the previous report. Most of the foods were consumed during April and the beginning of May, which were virtually winter months as far as feeding was concerned.

Grazing comes under this heading and was calculated individually for each farm. The area grazed by the herd whether in milk or dry was costed, for which purpose the main items of rent, manures, manual, horse and tractor labour were ascertained. To these was added a further charge for overheads, calculated at agreed rates. All the grazing costs for the year were charged in this period.

(iii) Labour.

Any labour which may be regarded as a cost of distribution as distinct from/

from production (e.g. bottling milk, sterilising bottles etc.) has not been charged. The milk is really costed up to the point where it passes "over the cooler and into cans, where the farmer provided the cans".

Unpaid family labour, viz. manual work undertaken by the farmer and/or his wife or any member of his household, has been charged at rates locally current for equivalent hired labour; appropriate adjustments have been made for overtime work.

(iv) Miscellaneous Costs.

These comprise three elements viz.:-

(a) Expenses directly chargeable to the dairy herd or necessarily incurred in milk production e.g. bull upkeep, veterinary fees and medicines, consumable dairy stores, coal, milk recording fees etc.

(b) Repairs, depreciation and maintenance of dairy equipment; and

(c) Overheads i.e. an appropriate share of certain general farm expenses which has been calculated at the rate of 5/- per £ of direct labour bill incurred on milk production. The basis upon which this item is calculated is in keeping with certain tentative but not necessarily final recommendations made by the Scottish Conference of Agricultural Economists.

(v) Herd Maintenance (or "Cow Replacement").

This important but fluctuating item of cost has been temporarily ignored in the preparation of our Interim Report, on the grounds that it can only properly be dealt with when we have detailed information covering a whole year.

(vi) Items excluded.

The following items have not been included as items of cost:-

Managerial or supervisory work.

Milk Haulage, and other costs of distribution.

Interest on capital.

(vii) Credits.

From the GROSS COSTS of milk production, credits have been deducted for the following items so as to arrive at the NET COSTS per cow and per gallon:-

Calves sold or retained

Unexhausted manurial residues.

Both these items have been ascertained on an agreed basis.

SUMMER MILK COSTS

For 86 herds studied the average costs are set out below.

TABLE II. - Costs per gallon and per cow (Provisional)* /

TABLE II. - Costs per gallon and per cow (Provisional)*

	Per Gallon d.	Per Cow £ s. d.	%
<u>FOODS</u> - Purchased	3.64	5. 5.11	22
- Home Grown	2.33	3. 7. 9	14
- Grazing	3.12	4.10. 7	18
- Total	9.09	13. 4. 3	54
<u>LABOUR</u> - Hired	3.20	4.13. 1	19
- Family	.53	.15. 6	3
- Farmer & Wife	.77	1. 2. 3	5
Total	4.50	6.10.10	27
<u>MISCELLANEOUS COSTS</u>	3.15	4.11. 9	19
GROSS COSTS	16.74	24. 6.10	100
Less <u>CREDITS</u> for Calves) U.M.R.)	.87	1. 5. 5	-
NET COSTS	15.87	23. 1. 5	-

* Excluding Herd Maintenance (i.e. "Cow Replacement")

Foods including grazing account for over one half of the gross costs; even excluding grazing, well over one-third of the gross costs consist of either purchased or home-grown foods. The grazing on the other hand only amounts to 18% of the total costs although it provides about 4/5ths of the food needed to keep the cows. Compared with the winter period, the food costs in the summer are much lower. The difference of approximately £6 per cow accounts for the main variation between the gross and net costs per cow for the two periods. The amounts of concentrates fed were not of course as great as in the winter period, and averaged 2.16lb. per gallon of milk produced. This was made up of the rationed allowance of purchased foods, some home-grown corn and also in a few cases, dried grass meal. During the best grazing months viz. late May and June, July and August, many herds had no additional feeding, as all available concentrates were used by the end of the winter period, or were being stored for the ensuing autumn and winter months.

Labour Costs per cow were slightly higher. Owing to the reduction in the length of the working week by two hours, many dairymen received higher weekly wages to bring them into line with other workers. Any reduction of time spent in milking, feeding and attending to the dairy herd during the summer as compared with the winter is not reflected in our costs as the general custom is to pay the workers for the job, and not for the time taken. Thus the cash wage payments are the same as in the winter plus a small amount due to the aforementioned increase.

Labour Costs per gallon were, however, lower than in the winter due to the higher summer production per cow, the difference of nearly 1d. being shared by farmer and family workers as well as employees. (It will be noticed that in this report, family workers whether paid or unpaid, have been classified separately instead of being combined with the employees.)

Miscellaneous Costs remained almost the same as in the winter period. This result is quite understandable, as most of these expenses are steady throughout the year.

Credits depend on the number of calves born, and, since unexhausted manurial residues also are taken into account, partly on the amount of foods fed to the dairy cows. These two items were rather smaller than in the winter period, thus having the effect of reducing the credits.

Total/

Total net costs in the summer period average nearly 1/4d. per gallon, and just over £23 per cow, the net cost per gallon ranging between 8.86d. and 31.24d.; the net cost per cow ranging between £10.6.4d. and £48.10.11d. The figures in Table III below will give a picture of the costs per cow and per gallon for the herds concerned.

TABLE III. - Distribution of Herds according to Cost per Gallon of milk produced and Cost per Cow (6 mos. 1st April-30th September 1946.)

Net Cost Per Gallon								
	Under 10d.	d. 10-15	d. 15-20	d. 20-25	d. 25-30	d. 30-35	Over 35d.	Total
No. of Herds	2	39	30	8	6	1	-	86
Net Cost Per Cow (6 mos.)								
	Under £10	£ 10-15	£ 15-20	£ 20-25	£ 25-30	£ 30-35	Over £35	Total
No. of Herds	-	5	22	33	17	7	2	86

The majority of the herds produce summer milk at a cost of from 10d. to 20d. per gallon, and it costs from £15 to £30 to keep a cow for the six summer months. The costs vary between wide limits.

The average yield per cow of 349 gallons for the six summer months is quite good under present conditions, especially since a good proportion of the herds are producing much of their total output in the winter months. Estimated revenue from this yield might seem to leave quite a good profit, but it must be remembered that no allowance has been made for herd maintenance up to this stage of the ascertained costs. The prices in the coming year commencing 1st October 1946 show an increase over the ones ruling during the period covered by our enquiry, but in view of the rise in labour costs and other expenses the production of milk could not be expected to be more profitable except perhaps with the higher-yielding and more economical herds.

The weather conditions in the early summer were very bleak and dry, but the wet season which followed was the saviour of most of the crops, including the grazing. Our grim outlook at the time of the last report has, fortunately, been partly dispelled, but it remains to be seen how dairy farmers can contrive to get through the present winter with the limited feeding stuffs now available.

ACKNOWLEDGMENTS.

We acknowledge the valuable assistance given us by the dairy farmers who have supplied the necessary records and other information, and have invariably given us considerate attention on the occasion of our visits.

Many of these farmers have also furnished additional valuable data on the costs of growing their home-produced foods which will be utilized in our milk costs work for the following year.

Each farmer will receive along with this report a copy of his own records for this summer period and details of his costs for the whole year: at a later date a report on the full year's costs also will be issued.

D.W.
J.R.P.
J.A.M.

3rd January, 1947.