Milk Cost of production O.S.

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(Department of Economics).

INTERIM REPORT

ON

COST OF MILK PRODUCTION, SUMMER 1952.

BY

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RECENT PUBLICATIONS.

FINANCIAL RESULTS OF EAST OF SCOTLAND FARMS:-

Group	1947-48	1948-49	1949-50	1950-51
	-- No. of farms --			
1. Hill sheep farms 2. Stock-rearing farms	48	54	52	53
3. Stock-rearing and feeding farms 4. Arable farms 5. Dairy farms	143	184	175	178
	191	238	227	231

COSTS OF MILK PRODUCTION:- 1945/6, 1946/7, 1947/8, 1948/9, 1949/50, 1950/51.

ECONOMICS OF LIVESTOCK PRODUCTION:-

(a) Winter Fattening of Sheep, 1947/8, 1948/9, 1949/50.
(b) Winter Fattening of Cattle, 1947/8, 1948/9, 1949/50.
(c) Commercial Egg Production, 1949/50, 1950/51, 1951/52.

ENTERPRISE COSTS:- Economics of Silage Making in East of Scotland, 1950, 1951.

Inquiries regarding the above publications should be addressed to either the Secretary of the College, or the Provincial Agricultural Economist.

I. INTRODUCTION.

This interim report sets out the costs of milk production for the Summer Period 1952 which covers the six months from 1st April to 30th September 1952. Records were completed for 63 herds, one less than for the Winter Period.

II. GENERAL DESCRIPTION OF FARMS AND HERDS STUDIED.

Herd Size. The herd size studied varied greatly between farms, the smallest herd costed having an average size over the year of 6 cows while the largest had an average size of 148 cows. As in earlier years, the tendency towards a slightly smaller herd size during the summer period than during the winter was again noticed: during the six summer months the average herd size had fallen to 48 cows as compared with an average size of 49 cows for the preceding winter period of the same year.

Farm Type and Size. The size of farm also varied greatly from a town dairy with 25 acres to a large farm of 912 acres of which 352 acres were rough grazing. The average size of farm was 257 acres of which 32 acres were rough grazing while the rent for this "average farm" remained unchanged at approximately 28/9d. per acre.

Composition of Herd. During the summer period, the proportion of dry cows kept by the average herd fell from 21.3 per cent. in 1951 to 19.5 per cent. in 1952, as compared with 25.8 per cent. dry cows per herd in winter 1951-52 - an indication of a trend towards greater summer production in this area. The proportion of dry cows in the individual herds again showed a wide variation from the lowest of 4 per cent. to the highest of 50 per cent. A total of 3045 cows were costed compared with 3213 during the previous summer and of this total only 15 were temporarily suckling calves. Since there was but little change in the sample there was also little change in breed, pedigree status or quality of stock.

Grade of Milk. Of the 63 herds costed 58 (i.e. 92 per cent.) were producing the highest grade of milk viz., Certified or Tuberculin Tested. Of the five remaining herds, three produced Standard milk while only two herds produced Ordinary or Non-Graded Milk. The Scottish Milk Marketing Board bought most of the milk produced wholesale from the farm although eighteen farmers still maintained a retail trade.

Method of Milking and Housing. Only one farmer still hand milked his cows, all the other herds being machine milked; autorecorders were used on 13 of the farms. Byres were still the most common means of housing the herds as only five herds were kept in courts and two outside.

Breeds. The most popular breeds were the Ayrshire and the Friesian and only a very few farmers still had mixed herds made up of different breeds or cross bred cows. Only 17 of the 63 herds had not yet begun to record their production.

III. YIELDS.

A marked feature of this investigation since it commenced seven years ago has been the conscious striving for better herd management and higher yields by co-operators. Due partly to this and partly to the better season during the summer of 1952 - a particularly good grazing season for the East of Scotland dairy farmer - the average milk yield rose from 391 gallons per cow in summer 1951 to 416 gallons during the period under review - an increase of $6\frac{1}{2}$ per cent. This marked a good recovery from the slight fall in yields noted during summer 1951 and it is interesting to note that it was also 68 gallons higher than during the preceding winter period.

TABLE I./

Table I. below shows the herds grouped according to milk yield per cow per herd.

TABLE I. - MILK YIELD PER COW PER HERD FOR 6 MONTHS. SUMMER 1952 c.f., SUMMER 1951.

	Under 201 Galls.	201 to 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 1952.	-	-	3	7	12	26	11	4	63
1952 Percentages	-	-	5	11	19	41	18	6	100
1951 Percentages	-	5	3	22	25	27	12	6	100

Naturally there was a great divergence between the lowest and highest average milk yields, the range being from 290 gallons per cow per herd to 524 gallons per cow per herd, although the average yield was 416 gallons per cow, an increase of 25 gallons over summer 1951. Upon examination of the table it can be seen that there has been a general upward movement in the grouping of the herds according to yield. During summer 1951, 30 per cent. of the herds had an average yield of less than 350 gallons per cow but by summer 1952 this had fallen to 16 per cent. The largest group was still that of herds whose production ranged from 401 - 450 gallons per cow but 41 per cent. of the total were in that group in summer 1952 compared with 27 per cent. the previous summer. In summer 1952 practically two-thirds of the herds costed were producing 400 gallons per cow or more during the six months; in the previous summer less than half were in that category.

IV. COSTS OF PRODUCTION.

Preparation of Costs data. Every care has been taken to ensure the utmost comparability of the data not only between different farms, but also between our own and other colleges in Great Britain.

The following principles have been adhered to.

(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) Purchased Foods.

All foods purchased whether concentrates or roughages have been charged at cost (including haulage to the dairy premises).

(iii) Home Grown Foods.

These have been charged at prices intended to cover costs of production including carting to a point within close proximity to the dairy premises. Costs were completed for most of the grain, fodder and root crops in 1951 by the Economics Department as a whole. From this and other information the following average/

average prices were derived, which include milling charges in the case of corn crops:-

	Price per ton £.	s.	d.		Price per ton £.	s.	d.
Oats)including	17	5	-	Swedes & Turnips	2	5	-
Beans)grinding,	24	5	-	Mangolds	2	5	-
Mashlum)etc.	18	15	-	Kale	1	18	4
Hay, Rotation	7	-	-	Cabbage	1	18	4
Straw, fed	3	-	-	Silage (Grass)	2	8	4
				Silage (Arable)	2	15	-

No charge has been made for straw used as litter.

Variations from the averages were made in the light of ascertained costs of individual farms, or because of their special circumstances.

(iv) Labour.

Any labour which may be regarded as a cost of distribution as distinct from production (e.g., bottling milk, sterilising bottles, etc.) has not been charged. The milk is really costed up to the point where it is in the wholesale container at the pick up point. For milk sold retail, costings are up to and including cooling.

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

(v) 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 5/9d. per £. of the direct labour bill incurred on milk production. The basis upon which this item is calculated is in keeping with the recommendations made by the Scottish Conference of Agricultural Economists. Incidentally this is the biggest element in the composition of miscellaneous costs.

(vi) 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. Some guidance as to the probable cost of this item may be found in the six published annual reports. The average cost over the six years was 1.82d. per gallon of milk produced or £2.15. 1d. per cow for the Summer Period.

(vii) 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.

(viii)/

(viii) 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 1952.

The average costs for the 63 herds included in the investigation are set out in Table II. below.

TABLE II. - COSTS PER COW AND PER GALLON (Provisional) ≠ .
AVERAGE YIELD PER COW 416 GALLONS.

Items	Per Cow		Per Gallon	Per Cent
	£. s. d.		d.	
FOODS - Purchased	8. 9. 4		4.88	23
- Home Grown	4. 11. 2		2.63	13
- Grazing	7. 5. 4		4.19	20
TOTAL	20. 5. 10		11.70	56
LABOUR- Hired	7. 2. 3		4.10	20
- Family	- 5. 11		.17	1
- Farmer & Wife	1. 8. 7		.82	4
TOTAL	8. 16. 9		5.09	25
MISCELLANEOUS COSTS	7. 1. 3		4.07	19
GROSS COSTS	36. 3. 10		20.86	100
Less: CREDITS for Calves) U.M.R.)	2. -. 5		1.16	-
NET COSTS	£34. 3. 5		19.70d.	-

≠ Excluding Herd Maintenance (i.e. Cow Replacement.)

As compared with the previous summer period, these figures clearly show the trend towards rising costs per cow through increased costs of food and labour. That dairy farmers are doing their utmost to offset this rise is shown by the increased milk yield which resulted in a proportionately smaller rise in the cost per gallon.

FOOD. The continued rise in the cost of purchased concentrates is reflected in the increased proportion accounted for by purchased foods in the total feeding stuffs bill. It is rather surprising to note that home-grown foods have decreased their proportion as last year it seemed that farmers were trying to cut down their concentrates bills by using more home-grown feeding stuffs, whether or not this trend has been deliberately reversed is a matter for speculation. Total feeding stuffs have increased in cost by just over £1. to £20. 5.10d. but increased yield has meant that the cost per gallon of food has actually decreased and this is borne out by the percentage figures of gross costs/

costs which show that during summer 1952 feeding stuffs accounted for only 56 per cent. of gross costs as compared with 57 per cent. the previous summer.

LABOUR. The greatest proportionate rise in cost during this period was that of labour costs, which rose by 22/- per cow over the previous summer period - a rise equivalent to 14 per cent. from summer 1951. Part of the rise was due to increases in the wages paid to labour and reflected rising wage rates paid to workers whether decreed by statute or otherwise. Possibly another part of the rise was due to the change in the sample, as almost half of it can be attributed to the labour of the farmer and wife, and the charge for this labour was only increased by 1d. per hour over summer 1951. The rise in the labour bill for dairy farms is emphasised by the percentage figures of gross costs. Labour now accounts for 25 per cent. of total gross costs as compared with 23 per cent. in the previous year; in fact labour is the only item of costs which increased proportionately to gross costs.

MISCELLANEOUS COSTS. per cow also showed a tendency to increase over the period but to decrease when translated into terms of "per gallon" and per cent.

CREDITS are also slightly higher per cow and per gallon than for the previous summer period.

The total net cost per cow averaged £34. 3. 5d. for the six months an increase of £2. 5.11d. or 7 per cent. over the previous summer six months. This increase was partly offset by the increased yield per cow which rose by fully 6 per cent., and insured a rise of only approximately 1 per cent. in the cost per gallon. This compares very favourably with summer 1951 as during that period the cost rose by 2d. per gallon due in the greater part to a fall in the average yield per cow.

The following table shows the herds grouped according to their costs per gallon of milk produced, and their costs per cow in the herd.

TABLE III. - DISTRIBUTION OF HERDS ACCORDING TO COST PER GALLON OF MILK PRODUCED AND COSTS PER COW, SUMMER 1952.

	Net Cost Per Gallon						Total Number of Herds
	Under 12d.	d. 12-15	d. 15-18	d. 18-21	d. 21-24	Over 24d.	
No. of Herds	3	9	12	15	11	13	63
	Net Cost Per Cow						Total Number of Herds
	Under £25	£. 25-30	£. 30-35	£. 35-40	£. 40-45	Over £45	
No. of Herds	8	14	15	12	10	4	63

Approximately 20 per cent. of the farms costed produced milk at under 1/3d. per gallon during the summer but at the other end of the scale 20 per cent. were unable to produce milk at less than 2/- per gallon. The majority of the herds costed were producing milk off the grass at from 1/3d. to 2/- per gallon, a range which is slightly wider than the last summer period. The figures of costs per cow show a very marked movement towards higher cost groups; for example only 8 herds had a cost of production lower than £25. per cow this summer compared with 15 herds last summer, and 14 had a higher cost than £40. this summer compared with but 10 last summer.

Nevertheless, the overall results this summer are more encouraging than those of last summer when the cost per gallon of milk rose by 11 per cent. and the price per gallon rose by only 5 per cent. This summer, as already stated,/

stated, the rise in the yield of milk per cow resulted in a very much smaller rise in the cost per gallon, a rise in the region of only 1 per cent. while the average wholesale price showed a rise of 6 per cent. over the previous period. Thus despite the continued trend of rising costs, these were offset by higher milk yields per cow, which, for the period under review, were instrumental in restoring to some degree the profitability of milk production.

V. THE WINTER AND SUMMER FEEDING OF DAIRY COWS.

Table IV. sets out the food consumption per cow for the six summer months ended 30th September last compared with those for the preceding winter period, i.e., for the six months ended 31st March 1952.

TABLE IV. - FOOD CONSUMPTION PER COW - WINTER AND SUMMER PERIODS.

	Average of 64 farms Winter 1951-52	Average of 63 farms Summer 1952
	Cwt. per Cow	Cwt. per Cow
Concentrates		
Purchased	7.44	4.29
Home Grown	5.09	1.92
Total	12.53	6.21
Dried Grass	.68	.11
Hay	14.18	4.07
Straw	7.68	1.66
Draff	8.95	3.84
Roots	34.43	7.87
Green Fodder & Oat Sheaves	12.19	1.18
Silage	10.36	2.03
TOTAL	101.00	26.97
Concentrates fed (lb. per Gallon)	4.12lb.	1.72lb.

While examining this table the most important factor to bear in mind is that the summer food ration is augmented by grazing for which the average cost per herd was £7. 5. 4d. per cow. From the table however it can be seen that, all told, farmers need to feed only approximately one quarter as much to their cows in summer as in winter, although the in-take of concentrates is only halved. The higher milk yield in summer (416 gallons compared with 348 gallons) was achieved with only 1.72lb. of concentrate feeding per gallon compared with 4.12lb. per gallon in winter - another way of saying how valuable a food summer grass is.

ACKNOWLEDGMENTS.

Grateful acknowledgment is made of the assistance of the dairy farmers who supplied the information necessary to complete this investigation, and who always gave the investigators considerate attention on the occasion of their visits. Many of these farmers have again given cost records for some of the home-grown fodder crops and these will be utilised in the current Milk Costs year.

Each farmer will receive a copy of his own records for the 1951 Summer Period along with this report; the full year's records and the report on the full year's costs will be circulated as soon as possible.