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Cattle -
Cost of
Production O.S.

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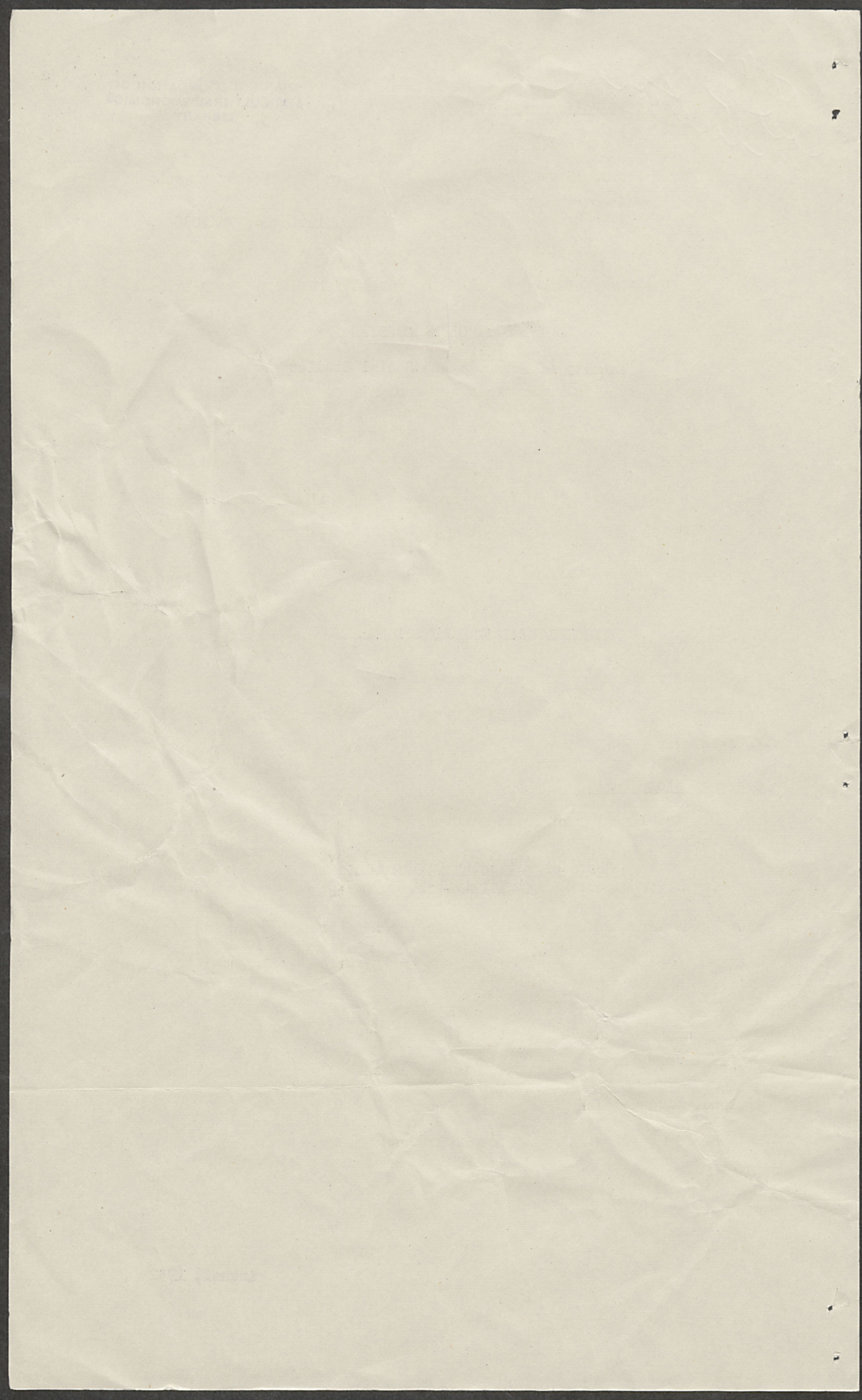
UNIVERSITY OF MANCHESTER

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AGRICULTURAL ECONOMICS DEPARTMENT

Costs of Fattening Cattle in Yards
Winter 1951-52

August, 1952



Costs of Fattening Cattle in Yards on Shropshire Farms
Winter 1951-52.

This report deals with the costs of fattening cattle on a sample of twenty-two Shropshire farms during the winter of 1951-52, the third successive winter in which fattening costs have been obtained. The present sample includes the sixteen farmers who supplied information in 1950-51, together with six new co-operators.

The costed farms are typical of winter fattening farms in Shropshire which, with only a few exceptions, are found in a narrow belt in the centre of the county extending from Newport and Shifnal in the east to a few miles beyond Shrewsbury in the west, mostly on the northern side of the River Severn. This is an area of free working soils farmed mainly in large arable farms of between 300 and 400 acres each. The chief crops grown are wheat, barley, potatoes - both early and maincrop - and sugar beet. Although dairying has been introduced into the area, and of recent years pigs have become important, winter fattening of cattle and sheep is still the main livestock enterprise. Average crop yields on these farms are very high and in the country as a whole their general level of profitability is only bettered by farmers in the Fen district.

Costs of Store Cattle

The total number of cattle included in this inquiry is 1524. Of this number 1171 or 77% were purchased in October, November or December 1951 and the remainder were either purchased earlier in the year and grazed for a few months, or were bred on the farm. The home bred animals and those coming off the grass were revalued at current market prices when they entered the yards.

Amongst the cattle bought in the last three months of 1951 were 378 imported Irish stores, purchased in most cases by the individual farmers in Ireland. These Irish cattle were considerably heavier than the others, with an average weight per head for bullocks and heifers of 10.9 cwt. Including transport and commission their average cost was £62 per head, or about £5.13.0d per cwt. These cattle are tattooed and when graded sell for 5/- per cwt less than the price of home-bred animals of corresponding grades and classes. The Irish cattle were kept for an average of 120 days each, compared with an average of 151 days for all the costed cattle.

Table I

Numbers, Weights and Prices of various types of Store
Animals on entering the Yards

Type of Animal	Number	Estimated Liveweight per animal	Price per Animal(a)			Price per live cwt.		
			cwts.	£	s	d	£	s
Steers	1034	10.16	56	15	3	5	11	9
Heifers	371	8.45	44	15	3	5	5	11
Cow Heifers	99	8.10	55	8	3	5	10	10
Cows	5	9.70	50	0	0	5	3	1
Calves	3	3.00	15	0	0	5	0	0
Cows with calves	6 + 6	14.50	60	0	0	4	2	9

(a) Price on farm, including transport if any.

The weights shown in Table I have mostly been obtained from invoices, since the majority of the cattle were bought over a market weighbridge. In the case of home-bred or summered cattle, an estimate of the live weight has been made by the farmer. Although weights as such do not enter into the costs of fattening, live weight gains during the fattening period do provide a measure of the relative efficiency of the fattening enterprise - see Appendix III.

Grading Returns

Between 77% and 78% of the fat cattle were graded Super-special or special. This figure is an improvement on the grading of the 1950-51 sample, the respective figures being, for steers 78% in 1950-51 and 77% in 1951-52, and for heifers, 72% in 1950-51 and 78% in 1951-52. Some of the individual results were quite outstanding. On three farms with 139, 45, and 10 cattle respectively, all the animals graded super-special or special, and on several other farms over 90% of the cattle graded in the two top grades. The proportion of steers, and heifers placed in each grade, are shown in Table 2.

Table 2

Grading Standards of 1012 Steers and 445 Heifers
sold Fat

Grading Standard	Steers	Heifers(a)
	per cent	per cent
Super Special	47	45
Special	30	33
A+	16	18
A	4	3
A-	1	$\frac{1}{4}$
D+	1	$\frac{1}{4}$
B and B-	1	$\frac{1}{2}$
Total:	100	100

(a) Heifers and Cow-Heifers together.

Disposals and Returns

Apart from the seven cattle that died, only 49 were ungraded at the end of the costing period. Of these, a few were in calf, but the majority were due to be sold fat after a period of summer grazing. Details of the numbers sold, average returns per beast and per net live hundredweight are given in Table 3.

Table 3

Disposal of Yarded Cattle, showing Weights and
Prices of Graded Animals

Disposal Group.	Number	Average net Liveweight per animal	Average Price obtained per animal			Average price per net Live weight.		
			£	s	d	£	s	d
Graded:		cwt	£	s	d	£	s	d
Steers	1012	12.35	83	16	6	6	15	9
Heifers	365	10.29	69	15	10	6	15	8
Cow-Heifers	83	10.28	72	13	7	7	1	5
Cows	8	11.12	47	12	7	4	5	8
Retained	49	7.82	50	18	9	-	-	-
Deaths	7	-	-	-	-	-	-	-

Yard Feeding Costs

The average costs shown in the tables of this report are the averages of twenty two individual costs. This means that equal weight has been given to each farm, irrespective of the number of cattle fed or the proportion of those costed. The average number of cattle costed on each farm was 69, but on at least three farms bunches of home-bred cattle were omitted from the costs.

The average costs, returns and profits per animal are shown in Table IV. The proportion of total cost accounted for by the cost of the store animal is the same as for 1950-51, slightly more than two-thirds, while yarding expenses accounted for rather less than one-third. 36% of the yarding expenses were for food, 12% were for manual labour and the balance consisted of horse and tractor labour, veterinary charges, transport to grading centre, overheads, and a small item for cattle losses. No charge was made for rent of buildings and yards, managerial expenses or interest on capital.

Sixteen of the costed farms showed a margin over costs of between 1/6d and £14.13.3d per head and six farms showed a loss of between £1.18.1d and £6.1.3d per head.

Table IV

Average Costs, Returns and Profits per Beast of Cattle Fattening in Yards on Twenty-two Shropshire Farms. 1951-52

<u>COSTS</u>	£	s	d	£	s	d
Total Foods (a)	21	7	7			
Less Manurial Residues	<u>2</u>	<u>0</u>	<u>2</u>			
Net Foods:				19	7	5
Manual Labour	2	14	7			
Horse & Tractor	<u>8</u>	<u>5</u>				
Total Labour				3	3	0
Miscellaneous					4	6
Overheads					16	5
Losses of Cattle					<u>2</u>	<u>3</u>
Total Yarding Cost				23	13	7
Store Cost				52	14	11
TOTAL COSTS				76	8	6
RETURN				79	11	8
PROFIT				3	3	2

(a) See Appendix II for details of the foods fed.

General Observations.

The liveweight gain per day, at 1.55 lb, was rather less than that recorded in 1950-51, but since the cattle were kept for ten days longer, the total liveweight gain per beast of 234 lb was 10 lb greater. The steers and heifers were graded out at heavier weights than in the previous year.

There was little difference between the two years in the quantities of food fed per beast per day. Whilst consumption of beet pulp, both pressed and dry, rose slightly, consumption of home-grown corn, purchased cake, dried grass and roots fell. Total consumption of food per beast over the period showed an increase, as would be expected since the cattle were kept for a longer period.

The average results show that the profit of £1 per beast fed in 1950-51 has increased to £3.3.0d per beast in 1951-52. This rather more favourable result would not have been realised but for the substantial increase in price obtained as a result of the 1952 Price Review negotiations. The price for steers and heifers graded SS, S or A+ rose by 9/- per cwt, and for grades A and A- by 3/6d per cwt. The majority of the cattle included in this report were sold after these increases became effective, and cases were recorded of cattle held back from grading in March to take advantage of any increase gained. On the other hand, the price for cow heifers graded fell by 4/- per cwt as a result of the Price Review and this somewhat unexpected decrease in price will certainly mean changes in management on one or two farms hitherto specialising in fattening cow heifers.

In previous years, the method of costing fat cattle has been criticised by many farmers because of the low values used for home-grown foods. The values used are the average costs of production obtained from farms co-operating in the Milk Investigation Scheme and it is most likely that such values are already higher than the actual costs of production on these mainly arable farms with their large fields and highly mechanised methods. If, however, on the assumption that all the home-grown foods used would have found a market at prevailing prices, market values had been placed on these home-grown foods the cost per beast would have been £9 more and the result a loss of £6 per head instead of a profit of £3.

A fattening beast kept for five months during the winter would be expected to produce at least 5 tons of farm yard manure during that period. Assuming

that no value was placed on the straw used for bedding, the cost per ton of farm yard manure produced would be 8/- the manurial residues of the food fed having been calculated at £2.0.2d per head. However, if the food utilised by the cattle is charged at sale value, a loss of £6 must be added to the £2.0.2d, resulting in a cost of 32/- per ton for the farm yard manure. At present day prices, and without taking into account fertiliser subsidies, it would cost about 26/- to purchase fertilisers equal in unit value to one ton of farm yard manure, but without, of course, the same physical values. When the extra cost of applying farm yard manure is considered in comparison with the cost of applying fertilisers it is clear that the cost per unit is far higher in the case of farm yard manure.

On these results the farmer who fattens cattle in yards accepts either a high cost for farm yard manure or a return from the crops fed to cattle which is much lower than the market price. In either case he foregoes profit and it is surprising that so many first class farmers should be prepared to do so. Other forms of livestock would seem to offer the possibility of a direct profit as well as producing farm yard manure, while a few farmers are demonstrating that they can, in the short run at least, maintain fertility by growing leys solely for green manuring. But the disadvantages of fattening cattle may be more apparent than real. They fit well into the farming system and on these fertile arable farms, where, at prevailing prices crops give a good return there is little financial inducement to alter the existing methods of maintaining soil fertility. On a number of farms too it would not be possible to switch from fat cattle production to milk or fat pig production without a considerable reorganisation of both buildings and labour. Because of the greater dependance of dairy stock on home-grown foods the acreage of cash crops might have to be cut and it is doubtful whether returns from the farm as a whole would be any greater. In the case of fattening pigs for which much of the food can be purchased, this problem does not arise. For both of these enterprises, however, more labour would be needed during the summer and autumn months, a period when fat cattle need no labour and crop work is at its peak. Unfortunately, there is insufficient information available to be able to compare returns from these alternative methods of maintaining soil fertility and since

in the meantime the present system meets an undoubted need for more meat, it seems preferable to maintain it on these farms.

In conclusion, may we thank all the farmers, bailiffs and cowmen who have so willingly supplied the information necessary to produce this report.

APPENDIX I

Home-Grown Foods

The following charges, based on the Provincial Average crop production costs for 1951 collected in connection with the Milk Investigation Scheme, have been made for home-grown foods.

	<u>Per Ton</u>		
	£	s	d
Meadow Hay	6	16	8
Seeds Hay	5	17	6
Oats: Grain	13	18	4
Straw	3	5	0
Mixed Corn: Grain	13	8	4
Straw	3	2	1
Mangolds	1	15	5
Swedes	2	10	0
Kale	1	8	4
Grazing - 7½d per beast per day			

Other Home-Grown foods have been charged as follows:-

	<u>Per Ton</u>		
	£	s	d
Beet Tops	2	3	4
Potatoes	7	8	4

No charge has been made for litter straw.

<u>Purchased Foods</u> -	Charged at Cost on Farm
<u>Labour</u> - Manual -	Stockmen charged at the actual rates paid on the co-operating farms. Other labour was charged at 2/8d per hour for ordinary time in the case of males of 21 years and over, and other categories and overtime work have been charged at the appropriate rates.
Horse -	Charged at 1/3d per hour.
<u>Miscellaneous</u>	This charge includes transport to the grading centre, veterinary costs and all other incidentals. Transport, if any, of store beasts, has been included in the purchase price of store cattle.
<u>Overheads</u>	Charged at 6/- per £1 spent on direct manual labour.
<u>Manurial Residues</u>	Charged in accordance with the recommendation of the Third Report (1951) of the Scottish Standing Committee on Residual Values.
<u>Losses of Cattle</u>	This is the purchase value of the beasts and a charge for feeding up to the time of death apportioned over the remaining beasts.

APPENDIX II

Average Number of Feeding Days, Quantities and Cost of Food, per Beast on each of Twenty-two Farms

Average Feeding Days.	Pressed Beet Pulp	Roots incl. Kale, Beet Tops.	Hay	Straw	Dried Grass	Corn and Pulses	Dried Beet Pulp	Purchased Cake.	Grazing			Gross Food Costs			Manurial Residues			Net Food Costs.		
									£	s	d	£	s	d	£	s	d	£	s	d
No.	Cwt	Cwt	Cwt	Cwt	Cwt	Cwt	Cwt	Cwt	£	s	d	£	s	d	£	s	d	£	s	d
168	-	91.3	10.5	5.8	-	9.00	-	-	-	-	-	20	4	9	2	1	3	18	3	6
158	16.4	41.6	6.5	8.5	0.2	4.23	2.83	-	-	-	-	15	14	0	1	8	0	14	6	0
153	23.8	34.9	11.1	6.9	-	-	4.0	-	-	18	1	17	2	0	1	8	9	15	13	3
150	-	60.9	7.3	8.4	-	3.49	4.10	-	-	7	8	16	4	10	1	8	2	14	16	8
145	-	81.5	9.0	6.4	-	7.74	-	-	-	-	-	18	5	5	1	15	7	16	9	10
150	4.1	66.1	10.5	9.2	-	8.18	3.90	0.58	-	3	9	21	2	4	2	16	8	18	5	8
154	6.1	41.7	8.5	1.6	-	2.55	8.08	-	-	7	3	17	14	8	1	7	7	16	7	1
166	12.5	40.1	15.5	4.0	-	6.25	1.94	0.08	-	14	2	17	17	7	2	1	4	15	16	3
184	6.7	172.2	5.5	4.5	3.06	2.29	2.29	-	-	4	6	26	13	0	2	13	8	23	19	4
142	24.8	14.1	10.6	-	-	8.45	5.63	0.07	-	-	-	19	12	3	1	14	4	17	17	11
166	36.7	29.9	10.7	-	-	2.06	12.30	2.22	-	-	-	27	7	9	2	2	10	25	4	11
91	31.7	-	6.4	-	-	-	2.26	2.75	-	9	0	12	17	9	-	19	5	11	18	4
142	4.9	57.1	11.8	2.8	-	6.13	11.42	-	-	2	10	24	10	2	2	0	11	22	9	3
210	48.6	-	15.9	6.1	-	3.75	6.35	-	-	9	8	23	7	8	1	19	7	21	8	1
77	31.0	-	7.7	-	-	0.73	2.06	-	-	12	0	11	1	6	1	0	6	10	1	0
137	15.2	33.8	10.7	3.7	0.54	5.49	3.17	0.55	-	-	-	17	13	4	1	14	8	15	18	8
149	25.7	38.6	15.4	-	-	6.50	6.49	-	-	-	-	22	15	8	2	6	6	20	9	2
86	21.2	10.9	9.7	2.3	-	0.67	3.34	1.34	-	7	2	14	10	7	1	3	9	13	6	10
197	-	23.1	14.3	6.1	-	7.66	7.57	-	-	12	4	29	15	11	2	15	9	27	0	2
173	46.0	37.0	7.7	7.7	-	-	4.80	6.17	-	-	-	29	10	3	1	17	4	27	12	11
187	13.9	48.6	32.0	2.1	-	6.20	16.05	-	-	4	4	35	14	11	3	12	11	32	2	0
146	22.0	96.7	26.4	-	-	7.69	5.69	-	-	-	-	30	11	3	3	13	9	26	17	6
Average on 22 farms																				
151	17.8	46.4	12.0	3.9	0.17	4.50	5.19	0.63	-	5	11½	21	7	7	2	0	2	19	7	5

APPENDIX III

Average Costs and Returns per Beast on each of Twenty-two Farms

Store Cost	Disposal Price	Gross Feeders Margin	Net Food Costs	Labour	Miscellaneous.	Losses of Cattle	Over-heads	Total Yarding Cost	Profit or Loss	Live-weight gain(a)	Live-weight gain per day	Yarding Cost per lb. live-weight.
£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	lbs	lbs	s d
48 16 10	86 0 10	37 4 0	18 3 6	3 4 11	-	-	16 11	22 5 4	+14 18 8	386	2.3	1 2
50 15 8	81 3 5	30 7 9	14 6 0	3 15 5	5 1	-	1 1 11	19 8 5	+10 19 4	205	1.3	1 11
57 17 10	87 12 3	29 14 5	15 13 3	2 11 2	6 6	-	12 4	19 3 3	+10 11 2	195	1.3	2 0
57 11 9	88 17 4	31 5 7	14 16 8	5 2 5	6 3	-	1 5 3	21 10 7	+ 9 15 0	305	2.03	1 5
46 15 0	76 4 10	29 9 10	16 9 10	3 1 4	-	13 11	16 8	21 1 9	+ 8 8 1	256	1.8	1 8
50 3 0	81 4 11	31 1 11	18 5 8	3 16 4	-	-	1 0 0	23 2 0	+ 7 19 11	300	2.0	1 7
60 3 11	87 7 3	27 3 4	16 7 1	2 4 7	5 0	-	12 0	19 8 8	+ 7 14 8	169	1.1	2 3
49 18 9	77 12 1	27 13 4	15 16 3	3 6 10	-	-	19 2	20 2 3	+ 7 11 1	217	1.3	1 10½
46 15 6	83 1 10	36 6 4	23 19 4	5 2 2	4 0	-	1 4 3	30 9 9	+ 5 16 7	304	1.6	2 1
55 2 3	81 5 8	26 3 5	17 17 11	2 7 4	5 6	-	13 8	21 4 5	+ 4 19 0	239	1.7	1 9
36 14 2	68 13 9	31 19 7	25 4 11	2 14 10	8 1	11 0	15 0	29 13 10	+ 2 5 9	291	1.75	2 0½
65 3 9	80 12 5	15 8 8	11 18 4	1 2 8	3 0	-	6 0	13 10 0	+ 1 18 8	169	1.9	1 7
62 18 3	91 11 10	28 13 7	22 9 3	3 10 0	3 0	-	18 7	27 0 10	+ 1 12 9	265	1.9	2 0
42 12 1	68 10 3	25 18 2	21 8 1	2 10 11	3 5	-	15 3	24 17 8	+ 1 0 6	273	1.3	1 10
66 0 4	78 10 10	12 10 6	10 1 0	1 4 11	1 11	-	6 2	11 14 0	+ 16 6	133	1.73	1 9
57 7 2	77 6 1	19 18 11	15 18 8	2 19 4	2 9	-	16 8	19 17 5	+ 1 6	164	1.2	2 5
58 19 5	82 6 3	23 6 10	20 9 2	3 11 8	4 10	-	19 3	25 4 11	- 1 18 1	134	0.90	3 9
59 15 3	71 4 7	11 9 4	13 6 10	1 11 4	1 7	-	8 10	15 8 7	- 3 19 3	105	1.24	2 11
39 11 11	69 2 10	29 10 11	27 0 2	5 0 5	1 5 11	-	1 3 4	34 9 10	- 4 18 11	241	1.2	2 2½
45 0 0	71 15 11	26 15 11	27 12 11	2 18 4	3 6	5 0	16 5	31 16 2	- 5 0 3	292	1.7	2 2
48 9 8	80 18 3	32 8 7	32 2 0	4 8 3	-	-	19 7	37 9 10	- 5 1 3	308	1.6	2 7
53 16 1	79 14 0	25 17 11	26 17 6	3 0 5	8 11	19 1	13 3	31 19 2	- 6 1 3	199	1.4	3 2
Average of 22 farms												
52 14 11	79 11 8	26 16 9	19 7 5	3 3 0	4 6	2 3	16 5	23 13 7	+ 3 3 2	234	1.56	2 1

(a) Calculated on Ministry of Food weight plus 28 lbs

APPENDIX IV

Average Consumption of Foods per Day per Beast and number of grazing days per beast on each of Twenty-two farms

Feeding Days per Beast	Pressed Beet Pulp	Roots, incl. kale, Beet Tops	Hay	Straw	Dried Grass	Corn and Pulses	Dried Beet Pulp	Purchased Cake	Grazing Days per Beast
No.	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	No.
168	-	60.99	7.00	3.84	-	6.00	-	-	-
158	11.65	29.52	4.60	6.00	0.14	3.00	2.01	-	-
153	17.34	25.45	8.09	5.05	-	-	2.92	-	28
150	-	45.46	5.44	6.25	-	2.61	3.06	-	12
145	-	63.19	7.00	4.93	-	6.00	-	-	-
150	3.04	49.37	7.80	6.87	-	6.10	2.91	0.43	6
154	4.42	30.26	6.17	1.15	-	1.85	5.86	-	12
166	8.43	27.02	10.47	2.70	-	4.21	1.31	0.05	23
184	4.08	104.61	3.35	2.76	1.85	1.39	1.39	-	7
142	19.50	11.09	8.32	-	-	6.66	4.43	0.055	-
166	24.70	20.07	7.23	-	-	1.39	8.28	1.50	-
91	39.07	0.0	7.91	-	-	3.39	2.78	-	14
142	3.86	45.04	9.33	2.24	-	4.84	9.01	-	4
210	25.90	-	8.50	3.25	-	2.00	3.39	-	15
77	45.08	-	11.23	-	-	1.06	3.00	-	19
137	12.45	27.68	8.80	2.99	0.44	4.50	2.60	0.45	-
149	19.29	28.93	11.58	-	-	4.88	4.87	-	-
86	27.58	14.17	12.58	2.98	-	0.87	4.35	1.75	11
197	-	13.10	8.10	3.44	-	4.35	4.30	-	20
173	29.83	23.96	5.00	5.00	-	-	3.11	4.00	-
187	8.28	29.05	19.11	1.26	-	3.71	9.59	-	7
146	16.93	74.26	20.28	-	-	5.91	4.37	-	-
Average of 22 farms									
151	14.61	32.87	9.00	2.76	0.11	3.40	3.80	0.37	8

