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cattle - cost of prod.

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**BEEF PRODUCTION FROM
OLDER CATTLE**
Costs and Returns of Grass and
Yard Fattening

R. EVANS

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UNIVERSITY OF NEWCASTLE UPON TYNE
DEPARTMENT OF AGRICULTURAL ECONOMICS

AGRICULTURAL ENTERPRISE STUDIES IN ENGLAND AND WALES.

University departments of Agricultural Economics in England and Wales have for many years undertaken economic studies of crop and livestock enterprises, receiving financial and technical support from the Ministry of Agriculture, Fisheries and Food.

The departments in different regions of the country conduct joint studies of those enterprises in which they have a particular interest. This community of interest is recognised by issuing enterprise studies reports prepared and published by individual departments in a common series entitled "Agricultural Enterprise Studies in England and Wales".

Titles of recent publications in this series and the addresses of the University departments are given at the end of the report.

ACKNOWLEDGEMENTS.

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CONTENTS.

	<u>Page.</u>
Introduction.	1.
Grass Fattening - 1973 and 1974.	2.
Grass Fattening - 1976 - Projected Results.	8.
Yard Fattening - 1973/74 and 1974/75.	10.
Yard Fattening - 1976/77 - Projected Results.	16.
 <u>Appendix:</u>	
1. Extended Analyses of Feeder's Margin and Direct Costs for Yard Fattening - Winters of 1973/74, 1974/75 and 1976/77 (Projected results).	19.

INTRODUCTION.

The results presented in this report relate to two studies of beef production from older cattle. The first study dealt with fattening off grass during the summers of 1973 and 1974, and the second with yard fattening over the winters of 1973/74 and 1974/75.

Fattening cattle for slaughter at two years and over is an important sector of the beef industry, particularly in Northumberland. However, when setting up the studies, it became evident that there was a trend towards finishing cattle at earlier ages and that some farmers were turning away from the traditional fattening systems to breeding and rearing cattle while other farmers were rearing stores. These aspects influenced the establishment of a sample of co-operators operating an appropriate fattening system and the number of farms available for each study was comparatively small though based on a random sample of beef producers. For the summer fattening study, 19 farmers co-operated in 1973 and 14 in 1974 while the yard fattening study related to 28 farms in 1973/74 and 18 in 1974/75. In the latter case the change of policy from yard fattening to maintaining cattle in store condition over the winter to be turned out to grass, was particularly pronounced. This may in part have been due to the fall in fat cattle prices during the summer of 1974 and some farmers appeared to be reluctant to buy older cattle for fattening, tending to look for smaller, younger cattle.

The report is in two parts, Section 1 summer fattening 1973 and 1974 and Section 2 yard fattening 1973/74 and 1974/75.

The publication of the report was unfortunately delayed and the opportunity was therefore taken to project forward the results to cover the summer of 1976 and the winter of 1976/77. It was assumed that no marked changes had taken place in management and, in the case of the summer study, the length of the grazing season. The updated results are given in the appropriate section.

SECTION 1. SUMMER FATTENING 1973 AND 1974.

The sample farms were located in Northumberland. Between years a number of farms had ceased grass fattening of older cattle (2 years or over). These farms were excluded from the 1974 survey, and a further 4 farms added. The sample was therefore not strictly identical in the two years. The study related to 1379 cattle in 1973 and 1057 in 1974.

Land Use.

General features of the pattern of land use are shown in Table 1.1.

TABLE 1.1. Land Use on the Sample Farms 1973 and 1974.

<u>Land Use Per Farm:</u>	1973		1974	
Number of Farms:	19		14	
	Acres	%	Acres	%
Wheat	3	1.0	17	5.1
Barley	45	14.5	46	13.7
Oats	8	2.6	10	2.9
Forage Crops	11	3.5	12	3.6
Fallow	-	-	3	0.9
Total Arable:	67	21.6	88	26.2
Temporary Grass	61	19.7	65	19.4
Permanent Grass	146	47.1	147	43.9
Rough Grazing	28	9.0	27	8.1
Buildings, Roads, etc.	8	2.6	8	2.4
Total Acres (Actual):	310	100.0	335	100.0
Total Adjusted Acres:	282		308	
Net Field Rent per Adjusted Acre	£ 4.9		4.7	

Fertilizer Application.

The average level of fertilizer treatment is given in the next table. The data are shown in terms of plant nutrients of units of N. P. and K. per acre.

TABLE 1.2. Application of Fertilizer to the Grass Grazed.

Units per Acre	1973		1974	
	All Grass	Treated Area	All Grass	Treated Area
Nitrogen (N)	7.4	44.9	3.5	64.3
Phosphate (P)	34.4	160.0	27.4	132.5
Potash (K)	4.5	32.7	0.8	26.3

The most important source of plant nutrient was basic slag, which was applied to about one quarter of the total grazing area in both years. Compound fertilizer was applied to 14 per cent of this area in 1973 but only 3 per cent in 1974. The application of straight nitrogenous fertilizer to the grassland was negligible in both years.

Feeding Period and Stocking Rate.

The costed cattle were fattened on the traditional permanent pastures, temporary leys being grazed mainly by other livestock. The average feeding period was 18 weeks per head in 1973 and 16 in 1974, the range being between 10 and 36 weeks in 1973 and 12 and 30 weeks in the following year. The average stocking rate was about three quarters of an acre (adjusted) per beast in both years, ranging between 0.59 and 1.67 in 1973 and 0.38 and 2.4 in 1974.

Source of Cattle.

Table 1.3 shows the sources from which the costed cattle were drawn.

TABLE 1.3. Source of Costed Cattle.

	1973		1974	
	No.	%	No.	%
Transfers In (Already on farm)	484	35.1	532	50.3
Private Purchase	124	9.0	67	6.3
Markets - Acklington	49	3.6	59	5.6
Hexham	204	14.8	123	11.6
Scots Gap	476	34.5	276	26.2
So.W.Scotland	42	3.0	-	-
Total:	1379	100.0	1057	100.0

A high proportion of the costed cattle were already on the farm and were transferred into the fattening enterprise. These animals included home-bred stores, purchased calves reared and stores purchased the previous autumn. In a few cases small numbers of yarded cattle intended for winter fattening were turned out to finish off grass. Purchases from private sources included direct imports from Ireland. Of the cattle purchased through auction markets about 60 per cent were from one local market (Scots Gap) in both years.

Breeds, Movements Month by Month and Market Outlet.

The various breeds and crosses of the cattle costed are given in Table 1.4. The number of cattle bought and sold is shown in Table 1.5, and Table 1.6 indicates the markets through which the fat cattle were sold.

TABLE 1.4. Breeds of Costed Cattle.

Breeds and Crosses:	1973		1974	
	No.	%	No.	%
<u>Steers</u> - Irish	453	32.8	313	29.6
Friesian	168	12.2	112	10.6
Hereford Cross	107	7.8	126	11.9
Charolais Cross	6	0.4	15	1.4
A.Angus Cross	37	2.7	125	11.8
Other	132	9.6	48	4.6
Total Steers	903	65.5	739	69.9
<u>Heifers</u> - Irish	455	33.0	290	27.4
Hereford Cross	19	1.4	9	0.9
Charolais Cross	2	0.1	16	1.5
A.Angus Cross	-	-	3	0.3
Total Heifers	476	34.5	318	30.1
Total Cattle	1379	100.0	1057	100.0

A high proportion of all costed cattle were of Irish origin and, although they are shown as equivalent to a breed in the above table, they comprised various crosses though the majority had been sired by a Hereford bull.

TABLE 1.5. Entries and Disposals - Number of Cattle per Month.

	1973			1974		
	Purchases & Trans. In.	Sales & Trans. Out.	Net Total End of Month.	Purchases & Trans. In.	Sales & Trans. Out.	Net Total End of Month.
January	167		167			
February	288		455			
March	137		592	101		101
April	315		907	417		518
May	195	1	1101	282	32	768
June	143	108	1136	77	125	720
July	88	161	1063	65	182	603
August	13	198	878	66	130	539
September	29	163	744	49	96	492
October	4	230	518		73	419
November		356	162		252	167
December		123	39		141	26
January		39			26	
Total:	1379	1379	-	1057	1057	-

The turnover of cattle was at a faster rate in 1974 than in the previous year. Disposals by the end of August 1974 amounted to 44 per cent compared with 34 per cent in 1973 and by the end of September the proportions were 54 and 46 per cent respectively. Of the total number of cattle included in the study each year between 12 and 13 per cent were transferred out, the majority being yarded to either fatten or to be maintained in store condition and turned out to grass again in the following spring.

TABLE 1.6. Disposal of Fat Cattle - Market Outlet.

	1973		1974	
	No.	%	No.	%
Market - Acklington	171	14.2	159	17.4
Alnwick	27	2.2		
Belford	43	3.5		
Berwick			10	1.1
Hexham	5	0.4		
Ponteland	241	20.0	159	17.4
Rothbury	51	4.2	17	1.9
Tyneside	526	43.5	325	35.5
Wooler	3	0.3	12	1.3
Private and Deadweight Sales	141	11.7	233	25.4
Total Fat Cattle	1208	100.0	915	100.0

Market Attendance.

An important factor in this type of enterprise is the process of buying and selling. The cost of this is accounted for in calculating the profitability of the enterprise which is given in Table 1.9. Attendance at auction markets in terms of hours spent by the farmer and vehicle miles travelled is illustrated in Table 1.7.

TABLE 1.7. Attendance at Markets.* Per Farmer.

	1973		1974	
	Average	Range	Average	Range
Number of Visits to Market	14.7	2 to 96	14.4	1 to 75
Hours spent on Marketing	55.5	6 to 384	55.8	4 to 300
Vehicle Miles Travelled	516.0	36 to 2880	457.0	24 to 2250

* Includes only those farmers who attended markets.

The average number of visits and hours spent attending markets were similar in both years but there was a wide range between individuals. Attendance depended on the movement pattern of the cattle in and out of the enterprise. In 1974 two farmers did not attend markets and relied upon private purchases and sales. In 1973 up to 48 days (of 8 hours) were spent on marketing compared with 38 in 1974. The average mileage travelled was lower by 60 miles in 1974 but in both years there was a wide variation.

Tending Cattle.

The labour and tractor hours involved in attendance on the cattle were not important cost factors.

TABLE 1.8. Labour and Tractor Hours per Head.

	1973		1974	
	Average.	Range.	Average.	Range.
Man	2.97	0.55 to 8.30	1.90	0.57 to 3.97
Tractor	0.79	Nil to 2.77	0.21	Nil to 1.07

Financial Results.

The average grazier's margin, direct costs and gross margin are given for the two years in Table 1.9. It is important to note that in calculating live weight gain as indicated in the table, the weights of cattle entering the enterprise and those transferred out were estimated. The live weight gains shown are therefore subject to some margin of error. The weights of cattle sold through the fat market were noted from market returns and dead weights were converted to live weights.

The proportion of cattle transferred into the enterprise was higher in 1974 (Table 1.3). In the early months of 1974, there were marked fluctuations in store prices, and cattle purchased during this period were valued in at the current market prices prevailing in April, costs incurred previously being ignored.

Over the two years, about one third of the total cattle included in the study were heifers. An allocation of variable costs relating directly to these cattle was not available and a distinction between the results for steers and heifers was therefore not made, apart from a comparison of grazier's margins which is shown in Table 1.10. Where reference is made to purchases and sales, they include transfers in and transfers out respectively. The latter were valued according to market price. All weights quoted are live weights.

TABLE 1.9. Grazier's Margin, Direct Costs & Gross Margin per Head.

	1973		1974	
Number of Farms	19		14	
Number of Cattle Costed	1379		1057	
<u>Returns and Margins:</u>	Cwts.	£	Cwts.	£
Sales	9.78	176.35	10.22	179.05
Purchases	7.88	160.32	8.56	153.80
Grazier's Margin:	1.90	16.03	1.66	25.25
<u>Direct Costs:</u>				
Feeds - Concentrates		0.68		0.10
Hay		2.00		0.88
Other				0.01
Grazing		6.83		6.37
Veterinary & Medicines		0.09		0.09
Labour *		2.05		1.62
Tractor		0.44		0.15
Haulage		1.13		0.88
Marketing		0.81		0.96
Other		0.12		
Total Direct Costs:		14.15		11.06
Gross Margin:		1.88		14.19

* Includes 15 per cent allowance for overheads.

The higher grazier's margin in 1974 resulted from a change in the ratio between cost and sale price. For example in 1973 cost price of stores averaged £2.32 per cwt. more than the average price per cwt. received for fat cattle compared with £0.45 per cwt. in 1974. In both years there was a wide range in these margins for individual farms. In 1973 grazier's margin was from a negative of £7.28 per head to a positive one of £33. The range in 1974 was between £12.53 and £54.13 per head.

In both years the main item of direct costs was grazing. The lower level of these costs in 1974 and for feeding and labour was due to the later start of the costing period. In 1973 total direct costs accounted for 88 per cent of grazier's margin compared with 44 per cent in 1974.

With the higher grazier's margin and lower direct costs in 1974 the resulting gross margin per head was much higher than in 1973. Reference to individual results indicate a marked variation in both years. In 1973, negative gross margins were evident on 10 farms and for 9 farms positive margins ranged between £0.68 and £21.84 per head. In 1974 only one farm showed a negative gross margin of £5.80 per head. Gross margins on the remaining farms were between £2.30 and £38.86 per head.

TABLE 1.10. Grazier's Margin - Steers and Heifers per Head.

	1973				1974			
	Steers		Heifers		Steers		Heifers	
Number of Farms	19		6		14		4	
Number of Cattle	903		476		739		318	
	Cwts.	£	Cwts.	£	Cwts.	£	Cwts.	£
Sales	10.22	184.65	8.96	160.59	10.58	185.78	9.38	163.40
Purchases	8.22	167.94	7.25	145.86	8.69	159.84	8.24	139.74
Grazier's Margin:	2.00	16.71	1.71	14.73	1.89	25.94	1.14	23.66

Financial Results 1976.

The results of the 1974 study shown in Table 1.9 were updated using estimates of changes in livestock prices and costs. The same levels of physical inputs, management and liveweight gain as 1974 were assumed.

TABLE 1.11. Grazier's Margin, Direct Costs & Gross Margin per Head.
1974 and 1976.

	Cwts.	1974 Actual. £	1976 Estimated. £
<u>Returns and Margins:</u>			
Sales	10.22	179.05	298.42
Purchases	8.56	153.80	238.65
Grazier's Margin:	1.66	25.25	59.77
<u>Direct Costs:</u>			
Feeds - Concentrates		0.10	0.12
Hay		0.88	1.58
Other		0.01	0.02
Grazing		6.37	10.15
Veterinary/Medicines		0.09	0.13
Labour *		1.62	2.82
Tractor		0.15	0.46
Haulage		0.88	1.76
Marketing		0.96	1.44
Other			0.13
Total Direct Costs:		11.06	18.61
Gross Margin:		14.19	41.16

* Includes 15 per cent allowance for overheads.

The average sale price of the cattle increased between the two years by £11.68 per cwt. but the cost of the stores also increased by almost £10 per cwt. In contrast to the situation in 1973 and 1974 when the cost per cwt. of store cattle exceeded sale price, in 1976 the latter was £1.32 per cwt. more than cost price. The estimate of grazier's margin more than doubled between years. Grazier's margin comprises two components

(a) the increase in price realised for the original weight of the animal and (b) the value of live weight gain during the grazing season. In 1974, liveweight gain realised £29.08 per head which offset a loss of £3.83 incurred on the store cattle, leaving a grazier's margin of £25.25. On the other hand, in 1976 the store cattle increased £11.30 per head in value which, added to the value of liveweight gain of £48.47, produced the higher grazier's margin evident in 1976.

Direct costs in 1974 accounted for 44 per cent of grazier's margin compared with about 33 per cent in 1976. The resulting estimated gross margin per head was considerably higher (almost three times) than that in 1974.

SECTION 2. YARD FATTENING 1973/74 and 1974/75.

The sample in 1973/74 was located on 17 farms in Northumberland, 5 in Durham, 6 in Cumbria and related to 2042 cattle of which 224 were heifers. In 1974/75, 9 farms in Northumberland and 2 in Cumbria were not included in the study because of a change in management policy. In this year results for 937 steers and 141 heifers were recorded.

Land Use.

TABLE 2.1. Land Use on the Sample Farms 1974 and 1975.

Land Use per Farm:	1974		1975	
	26		18	
Number of Farms	Acres.	%	Acres.	%
Wheat	29	6.7	38	8.5
Barley	107	24.9	105	23.5
Oats	17	4.0	17	3.8
Potatoes & Forage	18	4.2	16	3.6
Total Arable:	171	39.8	176	39.4
Temporary Grass	95	22.1	110	24.7
Permanent Grass	129	30.0	129	28.9
Rough Grazing	31	7.2	27	6.1
Buildings, Roads, etc.	4	0.9	4	0.9
Total Acres (Actual):	430	100.0	446	100.0
Total Adjusted Acres:	407		423	
Net Field Rent per £: Adjusted Acre	6.2		7.2	

1974 - Data not available on two farms.

Feeding Period.

The accommodation used for fattening the costed cattle varied but the majority were housed in covered yards. The average feeding period in 1973/74 was 19 weeks and ranged from 8 to 26 weeks. In 1974/75 it was shorter, averaging 16 weeks with a range of 12 to 19 weeks. The feeding period was 20 weeks and over for 40 per cent of the cattle in 1973/74 compared with 24 per cent in 1974/75.

Source of Cattle.

The origin of a large proportion of the cattle was not available. 70 per cent of the store cattle in 1973/74 and almost all in 1974/75 were transferred in, comprising in the main, purchased stores of varying ages and calves purchased 12 to 18 months previously reared on the farm. Of the cattle purchased within the costing period in 1973/74, the main source was Cumbrian markets which accounted for 16 per cent of the total incoming cattle.

Breeds.

TABLE 2.2. Number and Breeds of Costed Cattle.

<u>Breeds & Crosses:</u>	1973/74		1974/75	
	No.	%	No.	%
Steers - Friesian	1050	51.4	572	53.1
Hereford Cross	325	15.9	148	13.7
A.Angus Cross	130	6.3		
Charolais Cross	277	13.6	74	6.8
Other	36	1.8	143	13.3
Total Steers:	1818	89.0	937	86.9
Heifers - Hereford Cross	121	5.9	38	3.5
A.Angus Cross	103	5.1		
Charolais Cross			53	4.9
Others			50	4.7
Total Heifers:	224	11.0	141	13.1
Total Cattle:	2042	100.0	1078	100.0

In both years Friesian cattle were the most popular breed, the majority being silage fed. The preference for Friesians may have been due to their ready availability as calves and stores and their suitability for intensive grassland and silage feeding systems. In 1973/74, silage fed steers accounted for 72 per cent of total steers and in 1974/75 88 per cent. On average the store weight of the silage fed steers was estimated to be lower than that of those on traditional fodder. The average weight of all store cattle was estimated to be 8.63 cwt. per head in 1973/74 and 8.23 cwt. in the following year.

TABLE 2.3. Entries and Disposals - Number of Cattle per Month.

	1973/74			1974/75		
	Purchases & Trans. In.	Sales & Trans. Out.	Net Total End of Month.	Purchases & Trans. In.	Sales & Trans. Out.	Net Total End of Month.
September	128		128			
October	391		519	602		602
November	1478	13	1984	457	7	1052
December	38	156	1866	12	122	942
January	7	356	1517	7	254	695
February		245	1272		232	463
March		347	925		182	281
April		480	445		145	136
May		271	174		105	31
June		174	-		31	-
Total:	2042	2042	-	1078	1078	-

The September entries in 1973/74 related to cattle purchased early and grazed before yarding. In the first year almost one third of the cattle had been disposed of by the end of February, compared with 57 per cent in 1974/75. Transfers out in 1973/74 amounted to 100 cattle, over half of which were on two farms but in the following year only 5 cattle were transferred out. There was only one death in the first year.

The markets through which the cattle were sold are shown in Table 2.4 which reflects the wider geographical dispersion of the farms in this sample.

TABLE 2.4. Disposal of Fat Cattle - Market Outlets.

Markets:	1973/74		1974/75	
	No.	%	No.	%
Acklington	214	11.0	91	8.5
Belford	83	4.3	43	4.0
Berwick	35	1.8	38	3.6
Darlington	44	2.3	69	6.4
Hexham	28	1.4	23	2.1
Longtown	46	2.4		
Morpeth	63	3.2	54	5.0
Penrith	26	1.3		
Rothbury	38	2.0		
Tow Law			7	0.6
Tyneside	311	16.0	89	8.3
Wigton	34	1.8	170	15.8
Whitehaven	31	1.6	33	3.1
Wooler			36	3.4
Private & Deadweight Sales	988	50.9	420	39.2
Total Fat Cattle:	1941	100.0	1073	100.0

Market Attendance.

The number of visits, hours spent and vehicle miles travelled in marketing is given in Table 2.5. The data refers only to those farmers attending markets. In 1973/74 four farmers, and in 1974/75 two farmers, did not attend markets to either buy or sell cattle but relied on private transactions.

TABLE 2.5. Attendance at Markets - per Farmer.

	1973/74		1974/75	
	Average	Range	Average	Range
Number of Visits to Market	8.6	4 to 27	11.8	4 to 31
Hours Spent on Marketing	39.7	16 to 111	48.5	21 to 100
Vehicle Miles Travelled	355	50 to 2600	244	72 to 732

Tending Cattle.

Attendance on cattle in terms of labour and tractor hours is shown in Table 2.6, and the time spent tending silage fed steers compared with non silage fed steers is indicated in Table 2.7. The hours noted as "other" relate to the time spent on periodic cleaning out of yards and boxes.

TABLE 2.6. Labour and Tractor Hours per Head.

1973/74	Steers.			Heifers.			All Cattle.		
	Ave.	Range.		Ave.	Range.		Ave.	Range.	
Man-Routine	4.61	2.05	to 13.95	4.77	3.63	to 6.00	4.63	2.05	to 13.95
Other	0.78	0.19	to 2.50	0.77	0.62	to 2.42	0.78	0.19	to 2.50
Tractor-Routine	1.63	Nil	to 3.96	Nil	Nil		1.45	Nil	to 3.96
Other	0.79	0.19	to 2.45	0.77	0.62	to 2.42	0.79	0.19	to 2.50
1974/75									
Man-Routine	4.94	1.37	to 12.95	4.80	4.30	to 5.10	4.93	1.37	to 12.95
Other	0.80	Nil	to 2.25	0.67	0.60	to 0.83	0.78	Nil	to 2.25
Tractor-Routine	2.17	Nil	to 6.47	0.13	Nil	to 0.38	1.91	Nil	to 6.47
Other	0.80	Nil	to 2.25	0.67	0.60	to 0.83	0.78	Nil	to 2.25

TABLE 2.7. Labour & Tractor Requirements - Silage & Non Silage Fed Steers - Hours per Beast.

1973/74	Silage Fed Steers.		Non Silage Fed Steers.	
	Average.	Range.	Average.	Range.
Man - Routine	3.88	2.05 to 7.87	6.49	3.05 to 13.95
Other	0.73	0.19 to 2.36	0.89	0.42 to 2.50
Tractor - Routine	1.76	Nil to 3.96	1.32	Nil to 3.26
Other	0.73	0.19 to 2.36	0.93	0.42 to 2.45
1974/75				
Man - Routine	4.17	1.37 to 9.00	10.53	9.21 to 12.95
Other	0.71	Nil to 2.25	1.44	1.07 to 2.18
Tractor - Routine	2.18	Nil to 6.47	2.08	Nil to 5.20
Other	0.71	Nil to 2.25	1.44	1.07 to 2.18

Financial Results.

The following tables present the financial results of the winter fattening study for 1973/74 and 1974/75. These tables show feeders margin, direct costs and gross margin per head and further analyses are given in Appendix I. As in the summer fattening study, the weights of cattle entering the enterprise were estimated.

TABLE 2.8. Feeder's Margin, Direct Costs & Gross Margin per Head.
All Cattle. 1973/74 & 1974/75.

Number of Farms Number of Cattle	1973/74		1974/75	
	28		18	
	2042		1078	
	Cwts.	£	Cwts.	£
Sales	10.24	188.85	10.04	220.92
Purchases	8.63	158.37	8.23	103.78
Feeder's Margin:	1.61	30.48	1.81	117.14
Direct Costs - Feed		32.26		31.66
Other Costs		12.43		14.98
Total Costs:		44.69		46.64
Gross Margin:		-14.21		70.50

The difference between sale price and purchase price per cwt. was much greater in the second year when stores were cheaper (at £12.61 per live cwt. compared with £18.35 in 1973/74) and sale price increased (from £18.44 to £22.00 per cwt.). This improved ratio between sale and cost price per cwt. together with higher liveweight gain resulted in higher feeder's margin in 1974/75. The increase in value of store weight accounted for £77 per head of this margin. Although other costs per head increased between years, there was little change in feed costs. The resultant gross margin in 1974/75 was £70.50 per head compared with a loss of £14.21 in 1973/74.

TABLE 2.8. Feeder's Margin, Direct Costs & Gross Margin per Head.
Steers & Heifers. 1973/74 & 1974/75.

No. of Farms No. of Cattle	1973/74				1974/75			
	Steers.		Heifers.		Steers.		Heifers.	
	27		4		16		3	
	1818		224		937		141	
	Cwts.	£	Cwts.	£	Cwts.	£	Cwts.	£
Sales	10.46	192.81	8.46	156.73	10.18	225.42	9.11	191.08
Purchases	8.74	159.88	7.66	146.14	8.30	102.25	7.78	113.97
Feeder's Margin:	1.72	32.93	0.80	10.59	1.88	123.17	1.33	77.11
Direct Costs:								
Feed		34.83		11.38		34.33		13.96
Other Costs		12.81		9.38		15.42		11.98
Total Costs:		47.64		20.76		49.75		25.94
Gross Margin:		-14.71		-10.17		73.42		51.17

Only four of the sample farms in 1973/74 and three in 1974/75 fattened heifers, the numbers involved being comparatively small. In both years the heifers returned lower feeder's margin but total costs were appreciably lower than for steers. For both groups negative gross margins were recorded in 1973/74, with steers showing a greater loss at £4.54 per head. In the following year the gross margin for the steers was £22.25 more than for the heifers.

TABLE 2.9. Feeder's Margin, Direct Costs & Gross Margin per Head.
Steers - Silage Fed & Non Silage Fed - 1973/74 & 1974/75.

Type of Feeding:	1973/74				1974/75			
	Silage.		Non Silage.		Silage.		Non Silage.	
No. of Farms	14		13		12		4	
No. of Cattle	1308		510		823		114	
	Cwts.	£	Cwts.	£	Cwts.	£	Cwts.	£
Sales	10.35	191.18	10.74	196.97	10.08	223.16	10.84	241.69
Purchases	8.58	153.61	9.16	175.95	8.20	100.95	9.00	111.59
Feeder's Margin:	1.77	37.57	1.58	21.02	1.88	122.21	1.84	130.10
Direct Costs:								
Feed		35.55		32.97		34.05		36.35
Other Costs		12.64		13.21		14.51		21.99
Total Costs:		48.19		46.18		48.56		58.34
Gross Margin:		-10.62		-25.16		73.65		71.76

In comparing the results between years and types of feeding systems, the comparatively small numbers of cattle should be borne in mind.

Sale price per cwt. in 1973/74 was similar in both groups, but the cost of the silage fed steers was £1.30 per cwt. lower. These cattle showed a higher feeder's margin per head of £16.55. After accounting for direct costs, both groups recorded negative gross margins, the loss in the non silage group being more than double that in the other group. Concentrate feed was a major part of total costs in both groups. Labour on the non silage fed steers was 19 per cent of total costs compared with 9 per cent on the silage fed steers.

In 1974/75 the difference between sale and cost price per cwt. in the two groups was similar at almost £10. The higher margin on traditionally fed cattle of £7.89 per head was produced at higher costs with the effect that gross margin on silage fed steers was better by £2 per head. As in the previous year a major proportion of total costs was for concentrate feed, with cost of labour accounting for 12 per cent on the non silage fed steers and 7 per cent on the silage fed steers.

Between years, feeder's margin in both groups increased substantially. Total costs for the silage fed steers showed little change, but increased by 26 per cent for the non silage fed steers.

Financial Results 1976/77.

As in the summer study the opportunity was taken to update the results of the second year of the yard fattening study. Changes in livestock prices and costs were estimated and levels of physical inputs, management and liveweight gain were assumed to be the same. The estimated results, with those for 1974/75 for all cattle are shown in Table 2.10 and for the two groups of steers in Table 2.11. Further analyses are given in Tables 3 and 4 of Appendix I.

TABLE 2.10. Feeder's Margin, Direct Costs & Gross Margin per Head.
All Cattle - 1974/75 & 1976/77.

	Cwts.	1974/75 Actual £	1976/77 Estimated £
Sales	10.04	220.92	298.09
Purchases	8.23	103.78	238.67
Feeder's Margin:	1.81	117.14	59.42
Direct Costs - Feed		31.66	47.08
Other Costs		14.98	25.52
Total Costs:		46.64	72.60
Gross Margin:		70.50	-13.18

Between the two time periods estimated feeder's margin fell by about one half due mainly to the cost of stores more than doubling in price. In 1974/75 the difference between sale and cost price per cwt. was £9.38 but in 1976/77 it was less than £1.00. With an increase in total costs of well over 50 per cent, gross margins declined substantially between the years.

TABLE 2.11. Feeder's Margin, Direct Costs & Gross Margin per Head.
Steers - Silage & Non Silage Fed - 1974/75 & 1976/77.

Type of Feeding	1974/75 (Actual)		1976/77 (Estimated)	
	Silage £	Non Silage £	Silage £	Non Silage £
Sales	223.16	241.69	299.98	322.60
Purchases	100.95	111.59	237.80	261.00
Feeder's Margin:	122.21	130.10	62.18	61.60
Direct Costs - Feed Other Costs	34.05	36.35	51.12	50.52
	14.51	21.99	24.54	38.11
Total Costs:	48.56	58.34	75.66	88.63
Gross Margin:	73.65	71.76	-13.48	-27.03

Sale price increased by £74 per head for the silage fed steers and £78 for the non silage fed steers. Cost of stores, however, rose significantly by £138 and £149 per head respectively. The result was that feeder's margin in both groups declined by more than a half. This coincided with increased direct costs of over 50 per cent, and gross margins fell substantially.

SUMMARY.

Although the data in this report may now be considered historical, the results demonstrate the vulnerability of the cattle enterprise to market price fluctuations. In both studies feeder's margin depended largely upon the relationship between cost and sale price. Where cost per cwt. of the store cattle exceeded sale price per cwt., this represents in effect a decline in value over the feeding period. Feeder's margin was therefore dependant on the value of the liveweight gain less direct costs. This situation occurred in the summer fattening studies of 1973 and 1974. In 1976 sale price per cwt. was more than cost price per cwt. of the stores. The estimated results for that year indicate that the value of stores increased and therefore made a positive contribution to feeder's margin.

In each of the winter fattening studies fat price per cwt. was more than store price per cwt. Over the winter of 1973/74 the difference between fat and store price was small and in this year the yarded cattle recorded a negative gross margin of £14.21. The sale price was £18.44 per cwt. and to just cover direct costs a price of £19.83 would have been required, or conversely a cost price for stores paid of £16.70 per cwt. instead of £18.35. Similarly in 1976/77, a higher sale price per cwt. or a lower cost price was required for feeder's margin to cover direct costs. In these two years direct costs were not met by feeder's margin.

Over the period of the survey production costs have continued to rise accentuating the problem in years when feeder's margins were low. Market prices prevailing at the time of purchase and sale of cattle are the major factors in determining the viability of these two types of enterprise.

APPENDIX I.

TABLE 1.

Feeder's Margin, Direct Costs and Gross Margin per Head.

WINTER 1973/74.

	Silage Fed Steers.		Non Silage Fed Steers.		Heifers.		All Cattle.	
	14 1308		13 510		4 224		28 2042	
Number of Farms								
Number of Cattle								
	Cwts.	£	Cwts.	£	Cwts.	£	Cwts.	£
Sales	10.35	191.18	10.74	196.97	8.46	156.73	10.24	188.85
Purchases	8.58	153.61	9.16	175.95	7.66	146.14	8.63	158.37
Feeder's Margin:	1.77	37.57	1.58	21.02	0.80	10.59	1.61	30.48
<u>Direct Costs:</u>								
Feed - Concentrates	6.8	20.04	7.9	23.79	2.1	6.24	6.6	19.46
Silage	86.6	11.01			5.4	0.76	56.0	7.14
Hay	0.3	0.13	13.3	5.73	7.2	2.69	4.3	1.81
Roots	0.2	0.02	15.7	1.82	11.8	1.45	5.3	0.63
Other	3.3	4.35	5.4	1.63	1.0	0.24	3.6	3.22
Total Feed:		35.55		32.97		11.38		32.26
Labour (Incl.15% overheads)	Hrs.		Hrs.		Hrs.		Hrs.	
Tractor	4.61	3.44	7.38	5.52	5.54	4.14	5.41	4.03
Haulage	2.49	1.74	2.25	1.57	0.77	0.54	2.24	1.57
Marketing		0.71		0.81		0.58		0.72
Veterinary/Medicines		0.65		0.77		0.55		0.67
Bedding Straw		0.42		0.24		0.18		0.35
Housing & Equipment	Cwts.		Cwts.		Cwts.		Cwts.	
Bedding Straw	13.9	2.79	4.6	2.31	8.9	1.77	12.8	2.56
Housing & Equipment		2.89		1.99		1.62		2.53
Total Costs:		48.19		46.18		20.76		44.69
Gross Margin:		-10.62		-25.16		-10.17		-14.21

APPENDIX 1.

TABLE 2.

Feeder's Margin, Direct Costs and Gross Margin per Head.

WINTER 1974/75.

	Silage Fed Steers.		Non Silage Fed Steers.		Heifers.		All Cattle.	
Number of Farms	12		4		3		18	
Number of Cattle	823		114		141		1078	
	Cwts.	£	Cwts.	£	Cwts.	£	Cwts.	£
Sales	10.08	223.16	10.84	241.69	9.11	191.08	10.04	220.92
Purchases	8.20	100.95	9.00	111.59	7.78	113.97	8.23	103.78
Feeder's Margin:	1.88	122.21	1.84	130.10	1.33	77.11	1.81	117.14
<u>Direct Costs:</u>								
Feed - Concentrates	7.4	22.06	7.5	22.79	2.0	6.29	6.7	20.07
Silage	68.6	11.15			6.9	1.37	53.2	8.69
Hay	0.7	0.36	14.9	9.29	7.6	3.74	3.1	1.75
Roots	0.7	0.13	23.3	3.89	13.6	2.16	4.8	0.79
Other	1.7	0.35	1.9	0.38	2.0	0.40	1.8	0.36
Total Feed:		34.05		36.35		13.96		31.66
Labour (Incl. 15% Overheads)	Hrs.		Hrs.		Hrs.		Hrs.	
Tractor	4.88	4.49	11.97	11.02	5.47	5.04	5.71	5.25
Haulage	2.89	2.47	3.52	2.95	0.80	0.67	2.69	2.29
Marketing		0.56		1.07		1.07		0.68
Veterinary/Medicine		0.81		1.95		1.11		0.97
Bedding Straw		0.70		0.10		0.19		0.57
Housing & Equipment	Cwts.		Cwts.		Cwts.		Cwts.	
Housing & Equipment	7.3	1.56	12.1	2.44	11.1	2.23	8.3	1.75
Housing & Equipment		3.92		2.46		1.67		3.47
Total Costs:		48.56		58.34		25.94		46.64
Gross Margin:		73.65		71.76		51.17		70.50

APPENDIX 1.

TABLE 3.

Feeder's Margin, Direct Costs and Gross Margin per Head.

WINTER 1976/77
ESTIMATED.

	Silage Fed Steers.		Non Silage Fed Steers.		Heifers.		All Cattle.	
	Cwts.	£	Cwts.	£	Cwts.	£	Cwts.	£
Sales	10.08	299.98	10.84	322.60	9.11	266.19	10.04	298.09
Purchases	8.20	237.80	9.00	261.00	7.78	225.62	8.23	238.67
Feeder's Margin:	1.88	62.18	1.84	61.60	1.33	40.57	1.81	59.42
<u>Direct Costs:</u>								
Feed - Concentrates	7.4	31.73	7.5	33.02	2.0	9.24	6.7	28.92
Silage	68.6	17.94			6.9	1.80	53.2	13.91
Hay	0.7	0.51	14.9	10.83	7.6	5.53	3.1	2.25
Roots	0.7	0.18	23.3	5.83	13.6	3.40	4.8	1.20
Other	1.7	0.76	1.9	0.84	2.0	0.89	1.8	0.80
Total Feed:		51.12		50.52		20.86		47.08
Labour (Incl.15% Overheads)	Hrs.		Hrs.		Hrs.		Hrs.	
Tractor	4.88	7.32	11.97	17.96	5.47	8.21	5.71	8.57
Haulage	2.89	5.03	3.52	6.12	0.80	1.39	2.69	4.68
Marketing		1.12		2.14		2.14		1.36
Veterinary/Medicines		1.18		2.83		1.61		1.41
Bedding Straw		1.01		0.14		0.27		0.82
Housing & Equipment	Cwts.		Cwts.		Cwts.		Cwts.	
	7.3	3.24	12.1	5.38	11.1	4.93	8.3	3.69
		5.64		3.54		2.40		4.99
Total Other Costs:		24.54		38.11		20.95		25.52
Total Costs:		75.66		88.63		41.81		72.60
Gross Margin:		-13.48		-27.03		-1.24		-13.18

APPENDIX I.

TABLE 4.

Feeder's Margin, Direct Costs and Gross Margin per Head.

WINTER 1976/77
ESTIMATED
METRIC VERSION.

	Silage Fed Steers.		Non Silage Fed Steers.		Heifers.		All Cattle.	
	Kgs.	£	Kgs.	£	Kgs.	£	Kgs.	£
Sales	512	299.98	551	322.60	463	266.19	510	298.09
Purchases	416	237.80	457	261.00	395	225.62	418	238.67
Feeder's Margin:	96	62.18	94	61.60	68	40.57	92	59.42
<u>Direct Costs:</u>								
Feed - Concentrates	376	31.73	381	33.02	102	9.24	340	28.92
Silage	3485	17.94			351	1.80	2703	13.91
Hay	36	0.51	757	10.83	386	5.53	157	2.25
Roots	36	0.18	1184	5.83	691	3.40	244	1.20
Other	86	0.76	97	0.84	102	0.89	91	0.80
Total Feed:		51.12		50.52		20.86		47.08
Labour (Incl.15% Overheads)	Hrs.		Hrs.		Hrs.		Hrs.	
Tractor	4.88	7.32	11.97	17.96	5.47	8.21	5.71	8.57
Haulage	2.89	5.03	3.52	6.12	0.80	1.39	2.69	4.68
Marketing		1.12		2.14		2.14		1.36
Veterinary/Medicines		1.18		2.83		1.61		1.41
		1.01		0.14		0.27		0.82
Bedding Straw	Kgs.		Kgs.		Kgs.		Kgs.	
Housing & Equipment	371	3.24	615	5.38	564	4.93	422	3.69
		5.64		3.54		2.40		4.99
Total Other Costs:		24.54		38.11		20.95		25.52
Total Costs:		75.66		88.63		41.81		72.60
Gross Margin:		-13.48		-27.03		- 1.24		-13.18

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