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Cattle - Feeding

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FATTENING OLDER CATTLE ON GRASS

H.W.T. Kerr
P.H. Pitchford

Agricultural Enterprise Studies in England and Wales, Economic Report No. 40

APRIL 1976

UNIVERSITY OF NOTTINGHAM

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Price 65p

APRIL 1976

ACKNOWLEDGEMENTS

We would like to thank the farmers who so kindly assisted us with this study.

The analysis of the data was carried out by Mrs Mavis Smith and Mrs Margaret Davey. Mrs Wendy Allen typed the final script for publication, and its several previous drafts.

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. In this work the departments receive financial and technical support from the Ministry of Agriculture, Fisheries and Food.

A recent development is that departments in different regions of the country are now conducting joint studies into those enterprises in which they have a particular interest. This community of interest is being recognised by issuing enterprise reports in a common series entitled "Agricultural Enterprise Studies in England and Wales", although the publications will continue to be prepared and published by individual departments.

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

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FATTENING OLDER CATTLE ON GRASS

by

H.W.T. Kerr & P.H. Pitchford

1. INTRODUCTION

1.1 The Aim of the Study

This study is concerned with cattle finished on grass at over two years of age and covered the two years of 1973 and 1974. Although there has been a trend lately towards fattening cattle at an earlier age a large number of cattle are still slaughtered at more than two years old. Investigations conducted by the Ministry of Agriculture indicated that about 38% of the fat cattle slaughtered in the East Midlands between August 1971 and July 1973 were over two years old. A recent study of the role of grass on the arable farms in the East Midlands[1] covering the years 1972 and 1973 showed that a similar proportion of the cattle sold for slaughter from the 69 farms in the sample were also over two years old at the time of sale. Permanent pasture is often used for fattening this type of beast because it is claimed that younger cattle do not generally "do" well on it. Despite a policy of ploughing out old turf over the last ten or fifteen years, a significant acreage of permanent pasture still remains in the traditional fattening areas of Leicestershire and Northamptonshire and all the farms in the sample were located in these two counties.

1.2 The Sample

The sample of farmers was obtained from a random list of producers and of the twenty who eventually took part in both years, eleven were located in Leicestershire and nine in Northamptonshire. Details of the cropping, given for both years in Table 1, show it to have been very stable over the period.

---

(1) Kerr, H.W.T., "Grass on the Arable Farm". Agricultural Enterprise Studies in England and Wales, Report No. 36, University of Nottingham, Department of Agriculture and Horticulture, January, 1976.

TABLE 1 CROPPING

acres

Crops	1973	1974	Average 1973/1974	Per Farm
Wheat	1805	1807	1806	90.3
Barley	2104	2119	2112	105.6
Oats	146	140	143	7.1
Sugar Beet	78	78	78	3.9
Potatoes	50	50	50	2.5
Beans	82	104	93	4.7
Forage Crops	92	97	94	4.7
Fallow	37	35	36	1.8
TOTAL ARABLE	4394	4430	4412	220.6
Temporary Grass	1266	1256	1261	63.1
Permanent Grass	2875	2946	2911	145.5
Rough Grazing	4	4	4	0.2
TOTAL GRASS	4145	4206	4176	208.8
TOTAL CROPS AND GRASS	8539	8636	8588	429.4

Just under half the average farm acreage was in grass of which seventy per cent was down to permanent pasture. Cereals were the main arable crop, only small acreages of sugar beet and potatoes being grown. The size of farm ranged from 14 acres to 730 acres, one third of the farms falling between 400 acres and 500 acres in size.

2. HUSBANDRY

2.1 The System

Traditionally stock were bought in specifically for summer fattening, buying normally commencing in March. The cattle were put straight onto grass and the number bought and the timing of the purchases were both related to the pattern of grass growth. The first batch of fat cattle was usually sold in June after the main peak of grass growth and the selling of finished animals continued throughout the grazing period. In early August more cattle were bought to meet the autumn flush of grass and the aim was to clear all the beasts by the end of the grazing season, so that few, if any, cattle were taken inside for fattening during the winter. Today it is difficult to find the system operating so straight-forwardly. Some animals reared on the farm are brought into the system and some are also carried on for fattening in the winter period. In some cases cattle may be put onto grass early in the year so that they are virtually out-wintered for the first month or two. Similarly cattle may be left on grass until late in the year, but at both times the cattle are offered little supplementary feed. In this study the extension of the production cycle has been treated as part of the system and no attempt has been made to isolate the normal grazing period.

The cattle were set stocked mainly on permanent pasture, but on some farms they also grazed leys, particularly aftermaths, for a period. The grazing area generally received a relatively low level of fertiliser treatment. The average application of nitrogen, phosphate and potash and the average application of each nutrient to the acreage receiving it, is given in Table 2. Nevertheless there was a very wide range of application: whereas about a third of the farmers applied no fertiliser at all, four applied over 200 units of nitrogen per acre and another two over 100 units. Three farmers also applied between 150 and 250 units of phosphate and potash in addition to high levels of nitrogen.

TABLE 2 FERTILISER APPLICATION TO GRASS GRAZED BY OLDER CATTLE

Units per acre

	1973		1974	
	Average on Total Area	Average on Area to which Nutrient Applied	Average on Total Area	Average on Area to which Nutrient Applied
Nitrogen	18.2	29.4	21.6	34.4
Phosphate	3.0	8.4	4.5	13.7
Potash	3.0	8.4	4.5	13.7

Notes: 1973 Six farmers applied no plant nutrient.
Seven farmers applied Nitrogen only.

1974 Eight farmers applied no plant nutrient.
Four farmers applied Nitrogen only.

2.2 Stocking Rate

The monthly pattern of movement on and off the grass is shown in Table 3. The transfers-in are added to the purchases in the month in which they were brought into the system and the transfers-out are added to the sales in the month in which they were removed from it.

The allocation of the forage acreage presented a problem since on occasion other categories of cattle and sheep were grazed on the same area as the older cattle. In this study the allocation has been made by the method suggested by Baker et al, [2] an explanation of which is given in Appendix 1. On this basis the throughput of the system was 1.19 beasts per acre in 1973 and 1.28 beasts per acre in 1974, whereas the average monthly stocking rate for the months from March to November inclusive was 1.4 acres per beast in 1973 and 1.3 acres per beast in 1974.

(2) Baker, H.K., Baker, R.D., Deakins, R.M., Gould, J.L., Hodges, J., & Powell, R.A. Journal of British Grassland Society. Vol. 19, 1964. p. 160.

TABLE 3

PATTERN OF PURCHASES AND SALES

1973 and 1974

1973	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Totals
Purchases & Transfers In	109	427	245	942	394	107	166	113	52	20	23	16	-	2614 (1)
Sales & Transfers Out	-	-	-	2	18	135	334	500	325	305	419	247	328	2613 (2)
Cumulative Total	109	536	781	1721	2097	2069	1901	1514	1241	956	560	329	-	
1974														
Purchases & Transfers In	268	238	672	665	378	18	211	117	88	16	10	-	-	2681 (3)
Sales & Transfers Out	-	-	-	7	29	176	449	426	372	364	528	285	44	2680 (4)
Cumulative Total	268	506	1178	1836	2185	2027	1789	1480	1196	848	330	45	-	

(1) Total of 794 cattle transferred in.

(2) Total of 393 cattle transferred out, one beast died.

(3) Total of 849 cattle transferred in.

(4) Total of 220 cattle transferred out, one beast died.

2.3 The Use of Labour and Machinery

The demand made by the system on the farm's resources of labour and machinery is not great. The average time spent in tending the cattle and the man and tractor hours expended on field work together with the ranges for each are given in Table 4.

TABLE 4 LABOUR

	1973	1974
	hours per beast	
Tending Cattle	1.89	1.77
Range	0.65 to 7.64	0.43 to 11.35
	hours per acre	
Field work	0.24	0.33
Tractors	0.24	0.33
Range	0.05 to 0.65	0.07 to 0. 91

3. MARKETING

3.1 Source and Disposal of Cattle

The source of the cattle purchased in both years is given in Table 5 and the point of disposal of the cattle sold in Table 6.

TABLE 5 SOURCE OF PURCHASED CATTLE

Source	1973		1974	
	Number	Proportion %	Number	Proportion %
Private Purchase	881	48.41	987	53.88
Imported direct from Ireland	46	2.53	54	2.95
Markets:				
Andoversford	22	1.21	-	-
Banbury	497	27.31	314	17.14
Crewe	11	0.60	-	-
Gloucester	41	2.25	157	8.57
Kidderminster	24	1.32	-	-
Leicester	11	0.60	14	0.76
Market Harborough	2	0.11	-	-
Northampton	147	8.08	151	8.24
Rugby	99	5.44	145	7.91
Southam	-	-	10	0.55
Spalding	35	1.92	-	-
Thrapston	4	0.22	-	-
TOTAL	1820	100.00	1832	100.00

In both years about half the cattle were obtained by private purchase. Only those imported directly from Ireland could be identified as Irish cattle although others purchased in the market may have originated from this source.

In 1973 one third of the cattle were sold on the farm either to a dealer or directly to a butcher and in 1974 the proportion was nearly half.

TABLE 6 POINT OF SALE OF CATTLE

Point of Sale	1973		1974	
	Number	Proportion %	Number	Proportion %
Sold on Farm	771	34.73	1112	45.20
Markets:				
Banbury	370	16.67	301	12.24
Kettering	51	2.30	80	3.25
Leicester	351	15.81	483	19.64
London	72	3.24	-	-
Market Harborough	67	3.02	69	2.80
Melton Mowbray	25	1.12	28	1.14
Newark	7	0.31	-	-
Northampton	354	15.95	227	9.23
Olney	20	0.90	6	0.24
Rugby	53	2.39	55	2.24
Thrapston	79	3.56	99	4.02
TOTAL	2220	100.00	2460	100.00

The average monthly prices per live cwt paid for strong stores at Melton Mowbray, the only Midland market for which figures are available, are given in Table 7 and the prices for fat cattle sold in the three main markets to which they were sent are given in Table 8.

TABLE 7 AVERAGE MONTHLY PRICES OF STRONG STORES 8 CWTS AND OVER(1) AT MELTON MOWBRAY MARKET

£ per live cwt

1973	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct
Melton Mowbray	18.13	17.42	18.40	19.04	19.04	18.25	18.00	16.98	17.26
1974									
Melton Mowbray	17.36	17.45	17.02	16.74	N/A	15.70	14.94	13.40	13.00

(1) Average prices of bullocks and heifers of all breeds.

Source: Farmer's Weekly.

TABLE 8 AVERAGE MONTHLY PRICES FOR HEAVY STEERS

11 CWTS AND OVER AT BANBURY, NORTHAMPTON AND LEICESTER

£ per live cwt

1973	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Banbury	19.00	19.26	19.13	18.68	18.66	18.33	18.17	18.40	18.95
Northampton	18.66	19.24	18.92	18.59	18.66	17.98	18.03	18.18	18.78
Leicester	18.59	19.07	18.93	18.51	18.38	17.87	18.06	18.49	18.82
1974									
Banbury	18.63	18.79	18.38	18.27	17.42	16.31	13.84	15.79	17.49
Northampton	17.89	18.32	17.72	17.77	17.85	15.50	13.02	15.58	16.26
Leicester	17.94	18.33	17.75	17.41*	16.75	15.85	13.83	15.05	15.82

* Only one week's figures available.

Source: Farmer's Weekly.

3.2 Farmers' Visits to Market

In view of the importance of buying and selling in this system of production an effort was made to obtain some information about it. Farmers were asked to list the number of visits they made to market and the time spent in buying and selling the animals in the sample, together with an estimate of the distance travelled in visiting markets. The results for both years relating to the 16 farmers who attended markets are summarised in Table 9.

TABLE 9 MARKETING

SIXTEEN FARMERS ATTENDING MARKETS

per farmer

	1973		1974	
	Average	Range	Average	Range
Number of visits made to market	14.7	3 to 35	15.0	1 to 40
Total distance travelled in visiting markets	365.0	42 to 1472	505.4	14 to 3428
Hours spent on marketing	74.8	6 to 170	74.4	5 to 240

It must be emphasized that these figures are estimates but, even so, the results for both years are remarkably similar. Four farmers never went to market, but one considered he spent 120 hours each year with a dealer on the farm. On average 15 visits were made to market by the farmers in both years and just over nine full eight hour days were spent there. A greater mileage was travelled in 1974 than in 1973 but the averages conceal a wide variation as indicated by the ranges also shown in the table.

4. FINANCIAL RESULTS

4.1 Gross Output, Variable Costs and Gross Margin

The average gross output (feeder's margin), variable costs and gross margin of the 20 enterprises taking part in the study are given for both years in Table 10. The forage acreage and hence the forage costs have been allocated by the method referred to earlier and explained in Appendix 1.

TABLE 10 AVERAGE GROSS OUTPUT, VARIABLE COSTS AND GROSS MARGIN

		1973	1974
Throughput, Beasts per Forage Acre		1.19	1.28
Average Weight at Sale	Cwts	10.52	10.49
Average Price	£ per cwt.	18.52	17.60
Proportion of : Steers	%	84	88
: Heifers	%	16	12
Numbers of Animals Costed		2,614	2,681
		£ per beast	
Sales and Value of Transfers Out		192.72	179.41
Less Purchases and Value of Transfers In		168.75	153.19
GROSS OUTPUT (feeder's margin)		23.97	26.22
Variable Costs:			
Feedingstuffs - Homegrown		1.91	1.31
Feedingstuffs - Purchased		0.63	0.48
Vet. and Med.		0.07	0.04
Contract Haulage		0.52	0.55
Miscellaneous		0.03	0.02
Forage Costs(1)		1.54	2.00
TOTAL VARIABLE COSTS		4.70	4.40
GROSS MARGIN		19.27	21.82

	£ per forage acre	
GROSS MARGIN	22.89	27.83

(1) Forage Costs per acre: 1973, £1.83
1974, £2.56

The ranges for the main items are given in Table 11 below.

TABLE 11 RANGE OF GROSS OUTPUT, VARIABLE COSTS AND GROSS MARGIN

	1973	1974
	£ per beast	
Sales & Value of Transfers Out	149.76 to 218.88	159.01 to 201.28
Less Purchases & Value of Transfers In	126.63 to 191.10	113.60 to 175.00
GROSS OUTPUT (feeder's margin)	4.49 to 52.11	4.14 to 54.90
TOTAL VARIABLE COSTS	0.60 to 13.27	0.33 to 13.93
GROSS MARGIN	(-)2.46 to 51.22	(-)0.88 to 54.14

	£ per forage acre	
GROSS MARGIN	(-)2.68 to 81.77	(-)0.37 to 74.24

Despite lower prices for finished cattle the results in 1974 were better than in 1973, because purchase prices were also lower leaving a higher feeder's margin. Although cereal prices were higher, less purchased concentrates and homegrown corn were fed so that concentrate food costs were lower offsetting a rise in contract haulage and forage costs. In addition a smaller acreage was required to support each beast.

Further analysis, which included an examination of the results of those who did well in one year and poorly in the other, showed that the feeder's margin was the most important factor influencing the level of gross margin. Differences in the variable costs arising from different methods of operating the system were of little significance since the level of total variable costs was so low. A group of seven enterprises following more closely the traditional system was also examined and their average results did not differ greatly from those of the whole sample[3].

(3) Gross Margin per forage acre: 1973, £22.75
1974, £24.32

4.2 Fixed Costs

An estimate of the fixed costs that might have been incurred is given in Table 12.

TABLE 12 ESTIMATE OF FIXED COSTS AND NET MARGIN

	1973	1974
	£ per beast	
Labour : Tending Animals (1)	1.63	1.95
Market Travelling Expenses (2)	0.12	0.23
Sub-total per head	1.75	2.18
	£ per forage acre	
Sub-total converted to per forage acre	2.08	2.80
Labour : Field work (3)	0.21	0.36
Tractors : Field work (4)	0.16	0.28
Tractor overheads and share of general equipment	0.16	0.28
General overheads (5)	6.00	7.00
Rent and Rates (5)	9.00	11.00
TOTAL FIXED COSTS	17.61	21.72
GROSS MARGIN	22.89	27.83
NET MARGIN	5.28	6.11

(1) Based on M.A.F.F. Wages Enquiry.
1973 1.89 hrs @ 86p per hr (66p + 30% for overhead labour).
1974 1.77 hrs @ £1.10 per hr (85p + 30% for overhead labour).

(2) 1973 2.23 miles @ 5½p per mile.
1974 3.01 miles @ 7½p per mile.

(3) Based on M.A.F.F. Wages Enquiry.
1973 0.24 hrs @ 86p per hr (66p + 30% for overhead labour).
1974 0.33 hrs @ £1.10 per hr (85p + 30% for overhead labour).

(4) 1973 0.24 hrs @ 65p per hr.
1974 0.33 hrs @ 85p per hr.

(5) Based on average figures for Mixed (without milk) farms of 300 acres and over. East Midlands FMS.

This estimate is based on data obtained from the investigation and on the assumptions noted. A charge is included for travelling expenses incurred by the farmer in attending market for the purchase

and sale of animals in the sample based on the data given in Table 9. No charge however, is made for the farmer's time since this is taken to be a managerial activity.

The result suggests that a net margin, albeit small, could have been made on these cattle in both years, and that the higher gross margin in 1974 was sufficient to cover the increase in fixed costs.

Although the system appears to be one of low input/low output, a heavy investment has to be made in the initial purchase of the cattle. If in 1974 this money had been borrowed at the current rate of 16% and assuming that each animal was on the farm for an average of three months, the net margin would have been absorbed by the service charge:-

£153.19 x $\frac{3}{12}$	=	£38.30 per beast
Interest @ 16%	=	£ 6.12 per beast
	or	£ 7.83 per acre

5. CONCLUSIONS

A comparison of the results for the two years covered by the study shows the system to be remarkably stable despite very different economic circumstances. This is mainly because the purchase price of the beast is related more closely to the end-product price than it is in systems with longer production cycles. A net margin was obtained in both years after deducting estimated fixed costs, but none of it would have been left after charging interest at the 1974 level if all the money required to purchase the cattle had been borrowed. However, as long as part of the farm has to be maintained in permanent pasture few, if any, of the fixed costs would be saved by not carrying a livestock enterprise to utilise it. Therefore, provided an acceptable gross margin can be obtained, this system of livestock production will continue to be practised in these particular circumstances. Buying and selling is an important aspect of the system and it undoubtedly has its attractions for those who enjoy exercising their skills in this direction.

APPENDIX 1

METHOD OF ALLOCATING FORAGE AREA AND COSTS

Generally, fattening cattle were not grazed in the same field at the same time as smaller cattle, although they were often grazed with sheep. In order to ascertain the forage acreage used by the older cattle, the sheep and any smaller beasts which had shared the grazing area with them were converted to the older cattle equivalents given below.

The equivalents used are those suggested by Baker[4], and relate to a dairy cow of 1,000 lbs live weight. The grazing requirement of an older fattening animal has been taken to be the same as that of the dairy cow.

TABLE A SHEEP

Weight of Sheep	No. of Sheep equivalent to one beast over 2 yrs old
40 - 80 lbs l.w.	14
80 - 120 lbs l.w.	10
120 - 160 lbs l.w.	7½
160 - 200 lbs l.w.	6

TABLE B OTHER CATTLE

Age of Beast	Weight	No. of Other Cattle equivalent to one beast over 2 yrs old
0 - 11 months	150 - 450 lbs l.w.	4
11 - 21 months	450 - 750 lbs l.w.	2
21 - 24 months	750 - 1050 lbs l.w.	1½
Over 24 months	Over 1050 lbs l.w.	1

(4) Baker et al. Op Cit.

APPENDIX 2

COMMENT ON ATTEMPT TO ASSESS FUTURE INTENTIONS

An attempt was made to ascertain farmers' future intentions with regard to the size of the grass fattening enterprise. In both years the majority stated that they intended to continue with the same sized enterprise the following year, six saying they intended to change in 1973 and only two in 1974. However, the unreliability of such an assessment for this type of enterprise can be shown by a comparison of farmers' stated intentions in 1973 with their actions in 1974. Of the five who said they intended to expand only two in fact did so whereas the other three reduced their throughput. One said he intended to contract his enterprise but in the event increased it by almost fifty per cent. Of the fourteen who said that they intended to keep the same sized enterprise only four put the same number of cattle through the system in 1974 within a range of ten per cent on either side of their 1973 throughput. It is interesting to note, however, that the total number of cattle carried by these fourteen farmers in 1974 was well within the range of their 1973 throughput.

APPENDIX 3

METRIC VERSION OF TABLES

TABLE 1 CROPPING

hectares

Crops	1973	1974	Average 1973/1974	Per Farm
Wheat	730.5	731.3	730.9	36.5
Barley	851.5	857.5	854.5	42.7
Oats	59.1	56.7	57.9	2.9
Sugar Beet	31.5	31.5	31.5	1.6
Potatoes	20.2	20.2	20.2	1.0
Beans	33.2	42.1	37.6	1.9
Forage Crops	37.2	39.3	38.3	1.9
Fallow	15.0	14.2	14.6	0.8
TOTAL ARABLE	1778.2	1792.8	1785.5	89.3
Temporary Grass	512.4	508.3	510.3	25.5
Permanent Grass	1163.5	1192.2	1177.9	58.9
Rough Grazing	1.6	1.6	1.6	0.1
TOTAL GRASS	1677.5	1702.1	1689.8	84.5
TOTAL CROPS AND GRASS	3455.7	3494.9	3475.3	173.8

TABLE 2 FERTILISER APPLICATION TO GRASS GRAZED BY OLDER CATTLE

Kg/hectare

	1973		1974	
	Average on Total Area	Average on Area to which Nutrient Applied	Average on Total Area	Average on Area to which Nutrient Applied
Nitrogen	22.8	36.9	27.1	43.2
Phosphate	3.8	10.5	5.6	17.2
Potash	3.8	10.5	5.6	17.2

TABLE 7 AVERAGE MONTHLY PRICES OF STRONG STORES 406 Kg AND OVER[1]

AT MELTON MOWBRAY MARKET

pence per live Kg

1973	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct
Melton Mowbray	35.69	34.29	36.22	37.48	37.48	35.92	35.43	33.42	33.97
1974									
Melton Mowbray	34.17	34.35	33.50	32.95	N/A	30.90	29.41	26.38	25.59

(1) Average prices of bullocks and heifers of all breeds.

TABLE 8 AVERAGE MONTHLY PRICES FOR HEAVY STEERS

559 Kg AND OVER AT BANBURY, NORTHAMPTON AND LEICESTER

pence per live Kg

1973	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Banbury	37.40	37.91	37.66	36.77	36.73	36.08	35.77	36.22	37.30
Northampton	36.73	37.87	37.24	36.59	36.73	35.39	35.49	35.78	36.97
Leicester	36.59	37.54	37.26	36.43	36.18	35.17	35.55	36.40	37.04
1974									
Banbury	36.67	36.99	36.18	35.96	34.29	32.10	27.24	31.08	34.42
Northampton	35.21	36.06	34.88	34.98	35.14	30.51	25.63	30.67	32.01
Leicester	35.31	36.08	34.94	34.27*	32.97	31.20	27.22	29.62	31.14

* Only one week's figures available.

TABLE 10 AVERAGE GROSS OUTPUT, VARIABLE COSTS AND GROSS MARGIN

		1973	1974
Throughput, Beasts per Forage Hectare		2.94	3.16
Average Weight at Sale	Kgs	534.44	532.91
Average Price	p per Kg	36.46	34.64
Proportion of : Steers	%	84	88
: Heifers	%	16	12
Numbers of Animals Costed		2,614	2,681
		£ per beast	
Sales and Value of Transfers Out		192.72	179.41
Less Purchases and Value of Transfers In		168.75	153.19
GROSS OUTPUT (feeder's margin)		23.97	26.22
Variable Costs:			
Feedingstuffs - Homegrown		1.91	1.31
Feedingstuffs - Purchased		0.63	0.48
Vet. and Med.		0.07	0.04
Contract Haulage		0.52	0.55
Miscellaneous		0.03	0.02
Forage Costs(1)		1.54	2.00
TOTAL VARIABLE COSTS		4.70	4.40
GROSS MARGIN		19.27	21.82

	£ per forage ha	
GROSS MARGIN	56.56	68.77

(1) Forage Costs per hectare: 1973, £4.52
1974, £6.32

TABLE 11 RANGE OF GROSS OUTPUT, VARIABLE COSTS AND GROSS MARGIN

	1973	1974
	£ per beast	
Sales and Value of Transfers Out	149.76 to 218.88	159.01 to 201.28
Less Purchases and Value of Transfers In	126.63 to 191.10	113.60 to 175.00
GROSS OUTPUT (feeder's margin)	4.49 to 52.11	4.14 to 54.90
TOTAL VARIABLE COSTS	0.60 to 13.27	0.33 to 13.93
GROSS MARGIN	(-)2.46 to 51.22	(-)0.88 to 54.14

	£ per forage hectare	
GROSS MARGIN	(-)6.62 to 202.05	(-)0.91 to 183.45

TABLE 12 ESTIMATE OF FIXED COSTS AND NET MARGIN

	1973	1974
	£ per beast	
Labour : Tending Animals	1.63	1.95
Market Travelling Expenses	0.12	0.23
Sub-total per head	1.75	2.18
	£ per forage ha	
Sub-total converted to per forage hectare	5.14	6.92
Labour : Field work	0.52	0.89
Tractors : Field work	0.39	0.69
Tractor overheads and share of general equipment	0.39	0.69
General overheads	14.83	17.30
Rent and Rates	22.24	27.18
TOTAL FIXED COSTS	43.51	53.67
GROSS MARGIN	56.56	68.77
NET MARGIN	13.05	15.10

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