Sheep - Cost of prod.

UNIVERSITY OF EXETER
Agricultural Economics Unit

Agricultural Enterprise Studies
in England and Wales

Economic Report No. 46

EWE FLOCKS IN ENGLAND

Breeds, lamb production and other aspects of husbandry 1973-74

W.J.K.Thomas

November 1976
Price £1.00

UNIVERSITY OF EXETER
AGRICULTURAL ECONOMICS UNIT
LAFROWDA HOUSE, ST. GERMANS ROAD, EXETER. EX4 6TL

With the Compliments of

Victor H. Beynon

Agricultural Enterprise Studies
in England and Wales
Economic Report No 46
ISSN 0306 - 8900

E W E F L O C K S I N E N G L A N D

Breeds, lamb production and other aspects of husbandry

1973 - 74

W J K Thomas

University of Exeter
Agricultural Economics Unit
Lafrowda House
St German's Road
Exeter EX4 6TL

November 1976

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.

C O N T E N T S

A C K N O W L E D G E M E N T S

The author is particularly grateful to the many farmers who willingly completed the detailed questionnaire on which this study is based.

He is also indebted to agricultural economists in the Ministry of Agriculture, Fisheries and Food and in the other University departments for their help in the survey in various ways. The latter were responsible for despatching questionnaires to and receiving them back from the farmers in their own provinces, and also for clarifying information on some of the completed returns.

Finally he wishes to thank Mrs Ruth Preist for the very competent way she managed the computer aspects of the survey which made it possible to deal with a wide array of information for so many flocks.

None of the above, however, bear any responsibility for the use to which the survey information has been put nor for its presentation in this publication which are the author's concern alone.

Ewe flocks in England 1973-74

Introduction

In an earlier publication[1] in this series the trends in sheep numbers in England and Wales were examined in the post-war period up until the late 1960's. It showed that in England the breeding ewe population at the June 1966 census decreased for the first time for 17 years. Subsequently the national ewe flock and most of the regional ones continued to decline until 1972, the exceptions being the Northern region and Yorkshire and Lancashire region where there were small increases between 1970 and 1971. Between 1972 and 1973 the trend changed and the ewe flock increased in each of the regional flocks. Total ewe numbers in England continued to move up, still gradually, between 1973 and 1974. Because of changes in county and regional boundaries it is not possible to make comparisons between 1974 and earlier years although the indications are that there were larger flocks in every area.

At this period of modest optimism among sheep farmers a postal survey of holdings with ewe flocks in England[2] was undertaken in 1974 to examine various aspects of sheep husbandry. This publication covers some of the main results of that survey. For the purpose of sampling, the holdings with breeding ewes at the June 1973 census were divided into five ewe flock-size-groups and a random sample was drawn with different sampling fractions. The main details are given in Table (i) overleaf.

Questionnaires were sent out during the late spring of 1974[3]. The returned questionnaires were scrutinised and verified before the data was analysed.

---

1 Lowland sheep - Production policies and practices - Economic Report No 1 University of Exeter October 1970

2 A similar survey was undertaken in Wales by the Agricultural Economics Department University College of Wales Aberystwyth

3 Each of the nine University departments of agricultural economics in England was responsible for the despatch and receipt of the questionnaires in its own province before forwarding them to this Unit for analysis

Table (i) Postal survey sampling details

	No of ewes per flock					
	Under 100	100 - 199	200 - 399	400 - 699	700 & over	All flocks
Nos at June 1973 (000)	24.2	9.5	5.5	2.1	1.0	42.2
Sampling fractions (approx)	1/40	1/15	1/10	1/4	1/2	-
Nos selected in sample	645	618	521	477	430	2691
Nos of usable returns	276	305	286	249	122	1238
Effective response rate	42.8	49.4	54.9	52.2	28.4	46.0

The effective response rate of about 50 per cent in some of the flock size-groups must be regarded as reasonably satisfactory for a voluntary postal survey. The poor response by owners of the largest flocks was possibly due in part to the difficulty of completing a fairly detailed questionnaire necessitating frequent reference to records (if available) to supply the information for several hundred sheep.

A small number of questionnaires, in addition to the usable ones, were returned but could not be used for a variety of reasons. A few farmers stated their objection to this (and all other) surveys but, in the main, there were understandable reasons for the non-response. For example, some of the smaller flocks had been sold and the farmer no longer kept sheep; other holdings were let as grass keep and the flock did not belong to the addressee; then the policy of a few sheep farmers was to rear two-tooth ewes (theaves) for sale so they did not have an ewe flock as generally understood. Usable information was available for 1238 flocks, just under 3 per cent of the holdings with ewes at June 1973, but because the sample included proportionally more of the larger flocks about 8 per cent of the ewe population was represented in survey, some 401 thousand.

The information for the nine provinces was analysed separately and in each the information for the different flock size-groups was weighted in order to calculate the figures for 'all flocks'. The weights were the inverse of the working sampling fractions ie the numbers in the population divided by the numbers in the sample. For most of the parameters the flock numbers were used to determine the weights, but where the characteristics of the ewes themselves were concerned, for example breeds, the weights were the number of ewes in the population divided by the number of ewes in the sample.

In presenting the information in the report the nine provinces are grouped giving three subdivisions for the country[1]:

1	West - West Midland	Western	South Western
2	East - East Midland	Eastern	East-Central and South East
3	North - Yorkshire and Northern region		

This is done for convenience but there is also a certain agricultural logic behind the grouping of the provinces, with the exceptions that

a) the West Midland province[2] is extended to include the whole of Lancashire, the northern Pennine parts of which may be more similar to the Western (Pennine) areas of Yorkshire

b) the South East province includes the famous sheep country of the Romney Marsh which is very different from other farming areas in the east of England.

In the analysis of lamb disposals, lambs are classified into the following categories:

a) Fat lambs (or finished or prime lamb) which are sold directly for slaughter, they were further sub-divided according to the time of sale:

i) early fat almbs sold before the end of June
ii) mid-season for sales from June-September
iii) late season for lambs sold from October to the end of December.

It may be noted that a young sheep is called a 'lamb' until the end of the calendar year in which it is born, but with the exception of lambs from out-of-season lambing flocks eg Dorset Horns lambing down late in the year.

---

1 The county composition of each province is given at the end of each section

2 The province covered by the Manchester University department of agricultural economics

b) Fat hoggets - are young sheep sold for slaughter as from 1 January in the year after they are born, again with the exception of the out-of-season lambs mentioned in a). In some flocks the policy is to keep some lambs back for finishing on a fodder crop and sale as hoggets, in others the hoggets comprise some late born lambs or poor 'do-ers' which did not fatten by the end of the year.

c) Store lambs are those which are sold in non-fat condition (ie not finished) for final fattening on other farms. On hill and upland farms it is not usually possible to fatten a large proportion of the lambs and this may also be the situation on lowland farms where the land available for sheep is limited, lambs from these farms will be sold as stores from mid-summer onwards.

d) Breeding lambs - these are mostly ewe lambs reared either for sale but mainly for retention as flock replacements. An occasional ram lamb was included in this category but generally the rearing of ram lambs is a specialist enterprise undertaken where pedigree sheep are kept for the purpose.

e) Other lambs - this residual minority group includes lambs sold with ewes as couples, lambs for home consumption, lambs on hand at the time of the survey or other lambs not categorised.

The information on the disposal of lambs, in particular that on seasonal sales, was used to classify the flocks according to what is described as their 'Main output'. Output is not identical with sales as ewe lambs retained for flock replacements were included in the calculation. A flock was allocated to a main output group if 50 per cent or more of the home-bred lambs[1] were in a particular disposal category.

Fat lamb flocks - at least 50 per cent of all lambs sold fat, then further sub-divided into:

Early fat lamb - at least 50 per cent of all lambs sold fat before the end of June

---

1 The disposals of any purchased lambs were separated from those of the home-bred ones as far as was possible when the sales from both sources were aggregated

Mid season fat lamb - at least 50 per cent all lambs sold fat between July and September

Late season fat lamb - at least 50 per cent of all lambs sold fat between October and end-December

All season fat lamb - flocks in which the sales of fat lambs were spread throughout the season such that they did fall into one of the other groups

Fat-hogget, store lamb, breeding lamb flocks - at least 50 per cent of all lambs in one of these categories

Mixed output - flocks which did not specialise in the production of one category of lamb to the extent of 50 per cent.

It has not been possible to comment on all the statistics presented in this publication and the text has been confined to the more interesting aspects, in particular that on breeds, lamb disposals and flock classification.

Finally it should be mentioned that the survey is restricted to those agricultural holdings which had ewe flocks recorded at the June census. While this comprises the majority of 'sheep-holdings' there are others which have sheep (not necessarily breeders) at times of the year other than June and are not, therefore, covered in a survey based on that date.

Section 1

Ewe flocks in the West of England

The West is one of the three areas into which England has been sub-divided for the purpose of presenting the results of this survey. It comprises three provinces[1], a) the West Midlands which was extended farther northwards than its usual definition by the inclusion of Lancashire, b) a Western group of counties centred on Gloucestershire and c) the South Western peninsula. At the June 1973 census the West of England, as defined, accounted for 36 per cent of the crops and grass acreage and a proportionately greater share of the country's breeding ewe population, some 40 per cent. There were at this time 19.8 thousand agricultural holdings with breeding ewes, 47 per cent of the total in England. Of the holdings with ewes, 60 per cent had flocks of less than 100 ewes and the survey indicated that many of these were on part-time holdings. The survey relates to 496 flocks in the West of England, 2.5 per cent of the total flocks. There were 390 lowland flocks, 99 hill and upland flocks and in seven instances the farmers indicated that they had both a lowland and a hill flock.

Lowland flocks

The lowland flocks in the West were kept on all types of farms thus indicating the facility with which sheep fitted into many farming programmes. The smaller flocks tended to be more associated with dairy farming whereas the larger flocks were commonly found on farms classified in one of the livestock rearing groups or as mixed farms. Between one-fifth and one-sixth of the smallest flocks were kept on part-time holdings and another notable feature is that a significant proportion of the Western flocks were kept on farms in which cropping, including horticulture, was the most important enterprise.

The analysis of the breeds of ewe (Table 1.2) shows that in the West Midland and Western flocks two of the local breeds, the Clun and the

---

1 For the composition of provinces by counties see Appendix A

Kerry, are still kept in significant numbers. These breeds are an intermediate type between the true hill breeds and the lowland ones and were originally bred in a fairly small area in the east of Mid-Wales. They still play an important part in the sheep farming of neighbouring areas but here the multiplicity of cross-bred ewes were more numerous than the pure-breds. Grey face and Masham ewes made up a quarter of the West Midland flocks, while Scottish and Welsh half-breds were also widely kept.

In the Western province, and in the South West the largest number of ewes were described as 'Suffolk crosses', the exact parentage was not recorded and the group must be regarded as a collection of crossbreds rather than as a single one. In the South West, the local breeds were shown to be very important still if not always as pure-breds. Devon Longwools and Devon Closewools, and crosses from them made up about one-third of the total and the addition of Dorset Horns, South Devons and Dartmoor (and their crosses) increased the proportion of local breeds to nearly 50 per cent.

Of the ram breeds used in the flocks in the West, the Suffolk predominated in each of the three regions (Table 1.3). In the West Midlands 87 per cent of the rams were Suffolks and no further comment is needed. In Western flocks, Dorset Down and Hampshire Down rams were popularly used for fat lamb production along with the Suffolk, while Clun rams were fairly widely used partly for breeding flock replacements. Suffolk rams were less frequently used in the South West being replaced by Dorset Downs in many flocks. Rams of the local breeds accounted for minor proportions of the total numbers.

The pattern of breeding of the main breeds of rams and ewes in the Western and South Western flocks (Table 1.4) illustrate how sheep farmers exercised the many options available to them in this respect but it does raise the question whether there is a need for any rationalisation here.

The start of the breeding season, - the date on which the rams are first turned in with the ewes - determines in the main the pattern of events for the rest of the sheep-year (Table 1.5). The choice of this date is, therefore, one of the more important decisions the sheep farmer has to make. While the main breeding season for ewes in the west was

concentrated in the months of August to October, a proportion of the ewes particularly in the South West flocks were put to the ram earlier than this. The latter would lamb down before the end of the year to produce the first supplies of fat lamb in the new season.

Most of the ewe lambs in the Western flocks were bred from in their first year, the majority going to the ram in the period mid-October to November, generally about a month after the main flock. This practice allows the ewe lambs a few more weeks to mature and also means that they lamb down that much later when the weather would normally be milder.

Lambing percentages in the lowland flocks in the West of England (Table 1.6) varied widely from flock to flock. Ignoring the extremes in the range, which may have occurred for reasons of chance eg disease or an infertile ram, the majority of results would lie within three performance groups. In the West Midlands and Western areas the majority range was from 120 to 180 per cent to give an average result of about 150 per cent, or 1½ lambs per ewe. In the South West most flocks performed in the range 100-160 per cent, an overall average of about 130 per cent. Among the factors determining these variations the breed of ewe is most important, the effect of the more prolific crossbred ewes in the West Midland and Western flocks showed to advantage compared with the ewes of local breeds in the South West flocks.

The disposal of lambs represents the end-point in the sheep-year and the manner and timing of their disposal is closely linked with other decisions made earlier on breeding dates, breed of ewe, feeding and so on. The majority of lambs reared in the western lowland flocks were sold directly for slaughter, (Table 1.7) largely as fat lambs but with a proportion being kept back for sale as fat hoggets. There was some variation in these respects between the three provinces. In the West Midland flock three-quarters of the lambs were sold as fat lambs compared with 61 per cent from the Western flocks, correspondingly more lambs from the latter flocks were sold as stores for finishing elsewhere.

The proportions of lambs reared for flock replacements reflect some of the differences in the breed composition of the ewe flock in each province. The prevalence of cross-bred ewes in the West Midlands implies that most of the flock replacements required here would not be home-reared, and less

than 5 per cent of the lambs were used for this purpose. This contrasts with the South Western flocks in which 13½ per cent of the lambs were destined for breeding, mostly on the farms where they were bred.

The seasonal pattern of sales of lambs (also Table 1.7) shows the contributions made to the new season's supply of home-produced lambs. In the South West nearly one-third of the fat lambs were sold in the period up to the end of June, including a small proportion of fat lambs sold before the beginning of April. In the other areas the heaviest sales of fat lambs took place in the mid-season period, July to September. A relatively small proportion of the 1973 lamb crop in the West of England, varying between 7.7 and 11 per cent, was sold as fat hoggets, mainly in January and February. In the Western and South Western areas there is some overlapping of late hogget sales from one lamb-crop and the early fat lamb sales of the following crop.

The predominance of fat lamb production in the sheep farming of the West is also evident in the classification of flocks according to their main output, (Table 1.8) with upwards of 80 per cent of the West Midland and South West flocks being classified in one of the fat lamb groups. A notable feature in the South West was that in many flocks (37.5 per cent) the sales of fat lambs were so spread out throughout the year that the flocks could not be classed in one of the seasonal groups but were included in the residual 'All-season' group. In the Western flocks production was more diverse, with less specialisation on fat lambs, and more on store lambs, while in 1 out of 8 flocks there was no concentration on the production of one type of lamb and they were classified as 'mixed output' flocks.

Hill and upland flocks

In the main the hill and upland flocks, as would be expected, were on livestock rearing farms, although in the West Midlands and South West about one-quarter of the flocks were on farms where dairying was the most important enterprise. In these areas varying proportions of the small flocks were run on part-time holdings.

The ewe breeds (Table 1.17) in the hill and upland flocks represented a mixture of the true mountain breeds and those breeds which are intermediate

between the mountain and lowland ones[1]. For example of the latter, the Clun headed the list of breeds in the West Midlands and Western flocks, followed in the West Midlands (extending to Lancashire in this analysis), by the mountain breeds such as the Swaledale and its crosses, Welsh mountain, Dalesbred and Herdwick. In the Western and South Western areas the intermediate breed, the Devon Closewool, was widely kept as were the hardier Exmoor Horns and in the latter area Scottish Blackface ewes were prevalent on the exposed acres of Dartmoor. While a few ewe breeds comprised the majority in each province a long list of minority breeds were also kept. This was also true as far as the rams were concerned (Table 1.18), in each area Suffolks were the most numerous single breed but only to the extent of making about one-quarter of the total. Then came variously in the different provinces the Clun, Exmoor Horn and Devon Closewool rams used partly to breed the pure-bred flock replacements. These features are again observable in the tables (1.19) showing the pattern of mating of ewes and rams of the main breeds.

Most of the hill and upland ewes were put to the ram in late October and November so that lambing would not start until the end of March with April as the busiest month in this respect. A minority of ewe lambs were put to the ram, the proportion ranged from about a quarter in the West Midlands to 6 per cent in the South West. There was much variation in the lambing percentages obtained (Table 1.21) especially in the West Midlands and the South West where more of the true hill breeds were kept. Many flocks did not achieve a lambing rate of 100 per cent, but also in these areas the ewes in about 1 in 8 of the flocks reared a lamb and a half on average.

In order to minimise their dependence on the unstable store lamb markets hill sheep farmers have, in recent years, been endeavouring to fatten at least a proportion of their lambs. The disposal of lambs analysis (Table 1.22) shows that the farmers in the west were successful in getting between 40 - 50 per cent of the lambs off fat in the later months of the year or as hoggets after the turn of the year. About one-quarter of the lambs in each province were reared for flock replacements and the remaining varying, but still significant, proportions of the total lamb-crop were sold as stores.

---

1 Because of the lack of numbers it was not possible to analyse separately the hill and upland flocks

Other information

The other information presented in the remaining tables for the flocks in both the lowland and hill areas is given for reference purposes, for the degree of variation between the flocks is such that it is not possible to describe briefly the performances of the flocks in respect of the characteristics analysed. On one aspect, however, there was a certain amount of unanimity among the flock owners, for the majority of them in the lowlands and in the hills indicated that they had no intention of making any changes in the policies and practices they adopt towards their flocks (Tables 1.13 and 1.28).

LIST OF TABLES

Table 1.1 Classification of lowland flocks by type of farming and size of flock

West Midland

Type of farming	No of ewes per flock: Under 200	200 - 399	400 & over	All flocks
	% of flocks			
Dairying	54.9	20.0	-	51.4
Livestock rearing	10.1	40.0	43.1	12.9
Mixed	7.0	26.8	29.3	8.9
Cropping	2.0	13.2	-	2.9
Pigs & poultry	3.5	-	27.6	3.6
Part-time	22.5	-	-	20.3
Totals	100.0	100.0	100.0	100.0
Western				
Dairying	22.6	2.9	7.6	19.5
Livestock rearing	23.8	42.9	39.3	26.8
Cropping - cereals	2.4	25.6	21.9	6.2
general	7.3	11.4	7.1	7.8
horticultural	5.0	2.9	-	4.5
Mixed	16.6	14.3	21.7	16.6
Pigs & poultry	5.6	-	2.4	4.7
Part-time	16.7	-	-	13.9
Totals	100.0	100.0	100.0	100.0
South Western				
Dairying	32.8	11.1	6.1	29.8
Livestock rearing	34.2	65.7	70.2	38.5
Mixed	13.9	17.1	23.7	14.5
Cropping	1.8	2.9	-	1.9
Pigs & poultry	-	2.9	-	0.3
Part-time	17.3	-	-	15.0
Totals	100.0	100.0	100.0	100.0

Table 1.2 Ewe breeds in lowland flocks in the West of England

West Midland		Western		South Western	
Breed of ewe	% of ewes	Breed of ewe	% of ewes	Breed of ewe	% of ewes
Clun	17.8	Suffolk Xs	17.3	Suffolk Xs	11.1
Greyface	13.6	Clun	14.7	Devon Closewool Xs	10.7
Masham	11.3	Clun Xs	8.6	Devon Longwool	8.5
Kerry Hill & Xs	10.8	Scottish H-bred	8.6	Devon Closewool	7.0
Welsh H-bred	8.6	Kerry Hill	6.7	Devon Longwool Xs	6.5
Suffolk Xs	6.2	Border Leic'ster Xs	5.3	Border Leic'ster Xs	5.6
Clun Xs	5.9	Welsh H-bred	5.2	Greyface	4.9
Scottish H-bred	5.2	Greyface	4.7	Scottish H-bred	4.5
Welsh Mountain	3.8	Masham	4.6	Dorset Horn	4.3
Dalesbred	2.2	Dorset Horn Xs	2.8	South Devon	4.2
Rough Fell	1.8	Suffolk	2.1	Suffolk x S H-bred	4.0
Suffolk	1.6	Colebred Thornber	2.0	Dorset Horn Xs	3.7
Derbyshire Gritstone	1.2	Suffolk x S H-bred	1.7	Dartmoor	3.4
Suff'k x S H-bred	1.2	Welsh x Suffolk	1.2	Clun	2.6
All others(i)	10.8	Welsh Mountain	1.1	Masham	2.5
Total	100.0	Dorset Horn	1.0	Welsh Mountain	1.8
		All others(i)	12.4	South Devon Xs	1.3
		Total	100.0	Clun Xs	1.2
				All others(i)	12.2
				Total	100.0

(i) Includes breeds and cross-breds accounting for less than one per cent of the total

Table 1.3 Ram breeds in lowland flocks in the West of England

West Midland		Western		South Western	
Breed of ram	% of rams	Breed of ram	% of rams	Breed of ram	% of rams
Suffolk	87.1	Suffolk	56.6	Suffolk	36.6
Hampshire Down	3.0	Dorset Down	12.6	Dorset Down	28.5
Clun	2.7	Hampshire Down	8.9	Dorset Horn	7.3
Teeswater	2.6	Clun	5.6	Hampshire Down	6.3
Cheviot	0.9	Shropshire	2.9	Devon Longwool	4.4
Oxford Down	0.8	Dorset Horn	2.9	Border Leic'ster	2.9
Wensleydale	0.8	Colbred types	1.9	Devon Closewool	2.2
Border Leic'ster X	0.8	Kerry Hill	1.1	Oxford Down	1.7
Dorset Down	0.5	Ryeland	1.0	Suffolk Xs	1.4
Border Leic'ster	0.4	Clun Xs	1.0	South Devon	1.4
Wiltshire Horn	0.2	Oxford Down	1.0	Dorset Down Xs	1.3
Dorset Horn	0.2	Suffolk X	0.9	Dartmoor	1.1
Total	100.0	Southdown	0.9	Clun	0.5
		Border Leic'ster	0.7	All others	4.4
		All others	2.1		100.0
		Totals	100.0		

Table 1.4 Breeding pattern in lowland flocks (ewes x rams[i])

a) Western flocks

Breed of ewe	Breed of ram: Suff'k	Dorset Down	Hampsh. Down	Clun	Dorset Horn	Colbred	South down	Total
	% of ewes							
Suffolk	49	22	21	1	7	-	-	100
Clun	55	5	-	28	1	9	2	100
Clun Xs	72	-	8	9	2	8	1	100
Scottish HB	81	8	-	-	-	-	11	100
Kerry & Xs	40	12	36	1	10	1	-	100
Border Leics X	-	29	71	-	-	-	-	100
Welsh HB	81	11	8	-	-	-	-	100
Greyface	77	15	8	-	-	-	-	100
Masham	100	-	-	-	-	-	-	100
Dorset HXs	9	54	28	-	9	-	-	100
Colbred types	11	67	-	-	-	22	-	100
Suff'k x SHB	40	44	16	-	-	-	-	100
Welsh x Suff'k	61	-	39	-	-	-	-	100
Other X breeds	62	6	27	-	-	5	-	100
All ewes	59	16	13	5	3	3	1	100

(i) Based on sample (unraised) figures No of ewes in analysis 39753

Table 1.4 Breeding pattern in lowland flocks (ewes x rams) (Contd)

b) South Western flocks

Breed of ewe	Breed of ram: Dorset Down	Suff'k	Hampsh. Down	Dorset Horn	Devon LW	Devon CW	Dorset Down X	Border Leic'ter	Total
	% of ewes								
Suffolk X	41	33	18	1	-	-	-	7	100
Devon CW Xs	55	30	4	5	-	3	-	3	100
Devon LW	17	40	-	1	33	-	1	8	100
Devon CW	17	33	-	-	3	44	-	3	100
Devon LWXs	39	47	7	4	2	-	1	-	100
Border Leic's X	70	24	4	1	-	-	-	1	100
Greyface	41	19	19	-	-	-	21	-	100
Scottish HB	16	73	11	-	-	-	-	-	100
Dorset Horn	20	20	-	60	-	-	-	-	100
South Devon	26	57	8	9	-	-	-	-	100
Suff'k x SHB	56	35	9	-	-	-	-	-	100
Dorset Horn X	50	25	5	20	-	-	-	-	100
Masham	60	40	-	-	-	-	-	-	100
Welsh M	-	48	-	18	-	-	-	34	100
All ewes	38	36	8	6	4	3	3	2	100
							No of ewes in analysis		27813

Table 1.5 Dates on which ewes and ewe lambs put to the ram in lowland flocks

Dates	West Midland		Western		South Western	
	% of ewes	% of ewe lambs	% of ewes	% of ewe lambs	% of ewes	% of ewe lambs
May or earlier	-	-	0.5	-	1.6	-
June	-	-	0.9	-	1.4	-
July	-	-	-	-	7.3	0.5
August	8.4	11.4	9.2	0.9	19.4	6.4
Sept 1 - 15	13.7	0.4	8.8	4.5	16.5	5.5
Sept 16 - 30	7.2	4.3	10.6	0.3	12.7	3.7
Oct 1 - 15	38.8	14.3	36.7	16.4	30.0	22.1
Oct 16 - 31	18.2	21.5	24.9	14.4	7.5	14.0
Nov or later	13.7	44.5	7.7	42.1	3.1	28.8
Indeterminate(i)	-	-	0.7	0.3	0.5	-
Not put to ram	-	3.6	-	21.0	-	19.0
	100.0	100.0	100.0	100.0	100.0	100.0

(i) Rams with ewes throughout the year

Table 1.6 Lambing percentages in lowland flocks

West Midland

Lambing percentage(i)	No of ewes per flock: Under 200	200 - 399	400 & over	All flocks
	% of flocks			
Under 100	1	7	-	2
100 - 119.9	9	7	-	8
120 - 139.9	21	21	16	21
140 - 159.9	26	36	41	27
160 - 179.9	26	29	43	26
180 & over	17	-	-	16
Totals	100	100	100	100

Western

Under 100	4	5	2	4
100 - 119.9	7	9	12	8
120 - 139.9	25	43	29	27
140 - 159.9	34	31	42	34
160 - 179.9	24	9	15	22
180 & over	6	3	-	5
Totals	100	100	100	100

South Western

Under 100	5	12	13	6
100 - 119.9	25	21	6	24
120 - 139.9	41	41	43	41
140 - 159.9	22	23	31	22
160 - 179.9	6	3	-	6
180 & over	1	-	7	1
Totals	100	100	100	100

(i) Lambs reared as a percentage of ewes & ewe-lambs put to the ram

Table 1.7 Disposal of lambs from lowland flocks 1973-74

	West Midland		Western		South Western	
Fat lambs sold:	%	%	%	%	%	%
before April	0.1		0.3		1.9	
April - June	25.9		23.9		31.6	
July - Sept	45.3		51.6		38.8	
Oct - Dec	28.7		24.2		27.7	
Total	100.0		100.0		100.0	
Numbers '000	343.8	75.6	552.6	60.8	557.8	70.0
Fat hoggets sold:						
January	40.9		38.1		38.4	
February	41.1		32.4		28.8	
March	15.7		20.6		17.4	
Others(i)	2.3		8.9		15.4	
Total	100.0		100.0		100.0	
Numbers '000	43.3	9.5	100.4	11.0	61.5	7.7
Store lambs sold:						
July or earlier	7.8		4.9		33.1	
August	14.3		39.1		17.0	
September	19.0		23.2		34.1	
October	30.7		11.0		10.6	
November	3.9		9.3		0.3	
Other	24.3		12.5		4.9	
Total	100.0		100.0		100.0	
Numbers '000	35.8	7.9	145.1	16.0	57.3	7.2
Ewe lambs - sold	16.0		22.7		11.3	
- kept	84.0		77.3		88.7	
Total	100.0		100.0		100.0	
Numbers '000	21.3	4.7	99.7	10.9	107.9	13.5
Other lambs '000	10.2	2.3	11.4	1.3	12.8	1.6
Total lambs '000	454.4	100.0	909.2	100.0	797.3	100.0

Table 1.8 Classification of lowland flocks by main output and size of flock

West Midland

Main output	No of ewes per flock: Under 200	200 - 399	400 & over	All flocks
	% of flocks			
Fat lamb:				
Early	29.1	-	-	26.4
Mid-season	26.7	14.2	-	25.3
Late-season	8.7	21.5	41.2	10.2
All season	20.8	28.7	45.1	21.7
All fat lamb	85.3	64.4	86.3	83.6
Fat hogget	-	14.2	-	1.1
Store lamb	10.1	7.3	13.7	10.0
Breeding lamb	2.5	-	-	2.3
Mixed output	2.1	14.2	-	3.0
Totals	100.0	100.0	100.0	100.0

Western

Fat lamb:				
Early	19.3	2.9	2.4	16.5
Mid-season	31.0	8.6	12.2	27.3
Late-season	2.4	8.6	5.0	3.2
All season	13.3	40.0	34.5	17.6
All fat lamb	66.0	60.1	54.1	64.6
Fat hogget	3.0	11.3	4.8	4.1
Store lamb	13.6	17.1	22.1	14.5
Breeding lamb	5.0	2.9	-	4.5
Mixed output	12.4	8.6	19.0	12.3
Totals	100.0	100.0	100.0	100.0

South Western

Fat lamb:				
Early	22.7	8.8	12.7	20.9
Mid-season	17.1	11.8	12.7	16.4
Late-season	7.0	8.8	6.0	7.2
All season	35.7	50.1	43.3	37.5
All fat lamb	82.5	79.5	74.7	82.0
Fat hogget	1.0	2.9	6.0	1.3
Store lambs	5.0	2.9	12.7	5.0
Breeding lambs	5.3	2.9	-	4.9
Mixed output	6.2	11.8	6.6	6.8
Totals	100.0	100.0	100.0	100.0

Table 1.9 Flock replacement rates in lowland flocks

% flock replacements	West Midland	Western	South Western
		% of flocks	
None	29.7	14.1	4.6
1 - 14.9	13.0	21.3	27.8
15 - 19.9	14.6	10.7	21.9
20 - 24.9	9.3	11.8	18.9
25 - 29.9	5.4	12.3	9.1
30 & over	28.0	29.8	17.7
Totals	100.0	100.0	100.0

Table 1.10 Ewe mortality in lowland flocks

% ewe mortality		% of flocks	
Nil	21.4	20.2	15.1
0.1 - 1.9	10.4	11.4	11.9
2.0 - 3.9	34.2	34.8	36.7
4.0 - 5.9	15.2	17.3	17.4
6.0 - 7.9	7.5	7.5	13.0
8.0 & over	10.2	8.6	4.8
Not available	1.1	-	1.2
Totals	100.0	100.0	100.0

Table 1.11 Lamb mortality in lowland flocks

% lamb mortality		% of flocks	
Nil	46.2	37.5	33.6
0.1 - 0.9	7.5	7.1	12.6
1.0 - 1.9	17.9	23.0	19.5
2.0 - 2.9	8.1	11.9	12.0
3.0 - 3.9	0.5	2.3	5.0
4.0 - 4.9	-	7.7	5.5
5.0 & over	10.2	3.1	5.1
Not available	9.6	7.4	6.7
Totals	100.0	100.0	100.0

Table 1.12 Winter feeding of ewes in lowland flocks

Winter feed for ewes(i)	West Midland	Western	South Western
		% of flocks	
Hay & concentrates	29.4	43.1	22.9
Concentrates	26.2	16.5	20.0
Hay only	21.0	8.7	-
Hay & feed blocks	6.0	3.5	3.9
Arable by-products	5.1	4.6	1.3
Hay, roots/fodder	2.1	1.5	1.5
Hay, conc's, roots/fodder	1.5	7.2	5.7
Roots/fodder only	1.1	2.0	14.7
Conc's, roots/fodder	-	1.3	13.7
Other foods	0.7	0.9	5.4
Grazing only	3.2	9.9	9.3
Not stated	3.7	0.8	1.6
Totals	100.0	100.0	100.0

(i) Supplementary feeds to grazing except where grazing only

Table 1.13 Analysis of future intentions of lowland flock owners

Future intention	West Midland	Western	South Western
		% of total intentions	
No change	67.2	67.8	58.1
Increase flock	8.0	8.5	6.2
Decrease flock	4.3	5.2	2.5
Give up sheep	6.4	-	1.4
Earlier lambing	3.9	1.4	1.5
Later lambing	2.6	3.4	9.5
Change ewe breed	2.9	3.7	2.3
Change ram breed	-	3.5	3.2
Consider winter housing	1.0	1.9	2.6
Other	1.1	2.2	6.4
Not stated	2.6	2.4	7.7
Totals	100.0	100.0	100.0

Table 1.14 Ewes grazing per acre in lowland flocks during May

West Midland

Ewes per acre	No of ewes per flock: Under 200	200 - 399	400 & over	All flocks
	% of flocks			
less than 3	27.5	-	14.8	25.2
3 - 4	41.2	20.0	40.1	39.6
5 - 6	16.5	46.8	-	18.5
7 - 8	6.3	20.0	31.1	7.8
9 & over	1.1	6.6	13.0	1.6
Other(i)	7.4	6.6	-	7.3
Totals	100.0	100.0	100.0	100.0

Western

less than 3	24.1	8.5	-	21.0
3 - 4	31.2	20.0	16.4	29.1
5 - 6	25.6	42.8	41.8	28.6
7 - 8	11.0	20.0	32.0	13.1
9 or over	1.8	2.9	4.9	2.1
Other(i)	6.3	5.8	4.9	6.1
Totals	100.0	100.0	100.0	100.0

South Western

less than 3	10.0	8.6	-	9.7
3 - 4	34.7	17.3	17.6	32.3
5 - 6	29.7	51.3	46.6	32.5
7 - 8	9.3	8.6	18.2	9.4
9 or over	4.1	2.8	17.6	4.3
Other(i)	12.2	11.4	-	11.8
Totals	100.0	100.0	100.0	100.0

(i) Sheep grazing with cattle or data not available

Table 1.15 Ewe flocks in the West of England Survey sample details

West Midlands

	No of ewes per flock					
	Under 100	100 - 199	200 - 399	400 - 699	700 & over	All flocks
No of flocks at June 1973	3680	1081	537	178	77	5553
In sample as selected	96	72	49	47	32	296
No of usable replies	41	29	26	21	8	125
% response rate	42.7	40.3	53.1	44.7	25.0	42.2
% sampling fractions	1.1	2.7	4.8	11.8	10.4	2.3
Average nos per flock:						
Ewes	48	135	289	508	1066	-
Ewe-lambs	6	19	51	93	93	-

Western

No of flocks at June 1973	3835	1511	916	277	112	6651
In sample as selected	102	97	90	65	52	406
No of usable replies	30	50	43	38	14	175
% response rate	29.4	51.5	47.8	58.5	26.9	43.1
% sampling fractions	0.8	3.3	4.7	13.7	12.5	2.6
Average nos per flock:						
Ewes	57	143	276	501	946	-
Ewe lambs	8	27	57	101	166	-

South Western

No of flocks at June 1973	4476	1934	918	224	86	7638
In sample as selected	119	125	89	49	37	419
No of usable replies	57	65	44	22	8	196
% response rate	47.9	52.0	49.4	44.9	21.6	46.8
% sampling fractions	1.3	3.4	4.8	9.8	9.3	2.6
Average nos per flock:						
Ewes	62	143	289	540	1020	-
Ewe lambs	14	24	68	113	96	-

Table 1.16 Classification of hill & upland flocks by type of farming and size of flock

West Midland

Type of farming	No of ewes per flock: Under 200	200 - 399	400 & over	All flocks
	% of flocks			
Dairying	31.1	10.0	9.7	25.6
Livestock rearing	28.3	80.0	90.3	42.8
Pigs & poultry	-	10.0	-	1.4
Part-time	40.6	-	-	30.2
Totals	100.0	100.0	100.0	100.0
Western				
Livestock rearing	100.0	85.9	100.0	95.2
Cropping	-	14.1	-	4.8
Totals	100.0	100.0	100.0	100.0
South Western				
Dairying	35.2	12.5	-	23.8
Livestock rearing	40.2	75.0	100.0	58.8
Mixed	6.8	12.5	-	6.8
Part-time	17.8	-	-	10.6
Totals	100.0	100.0	100.0	100.0

Table 1.17 Ewe breeds in hill & upland flocks

West Midland Breed of ewe	% of ewes	Western Breed of ewe	% of ewes	South Western Breed of ewe	% of ewes
Clun	16.7	Clun	17.1	Devon Closewool	23.9
Swaledale Xs	15.0	Devon Closewool	16.5	Exmoor Horn	13.7
Welsh mountain	10.0	Exmoor Horn	14.1	Scottish Bl'face	13.4
Dalesbred	7.8	Cheviot	11.7	Border Leic'ster Xs	9.6
Herdwick	6.4	Welsh mountain Xs	7.7	Devon Closewool Xs	6.1
Derbyshire Grit'	6.4	Welsh H-bred	5.0	Suffolk Xs	6.0
Swaledale	6.0	Dorset Down Xs	4.7	Cheviot Xs	5.7
Welsh x Kerry	4.3	Radnor	3.6	Cheviot	5.1
Kerry & Xs	4.1	Clun Xs	3.6	Scottish H'bred	3.1
Clun Xs	3.8	Border Leic'ster	2.4	Clun	2.4
Welsh H-bred	2.1	Cheviot Xs	2.4	Welsh H'bred	2.1
Radnor	1.9	Suffolk Xs	1.9	Devon Longwool	1.9
Speckleface	1.8	Welsh x Cheviot	1.2	Dartmoor	1.7
Suffolk Xs	1.8	Llanwennog	1.1	Devon Longwool X	1.4
Rough Fell	1.7	All others	7.0	Colbred	1.1
Masham	1.3	Total	100.0	All others	2.8
Lonk & Xs	1.3			Total	100.0
All others	7.6				
Total	100.0				

Table 1.18 Ram breeds in hill & upland flocks

West Midland Breed of ram	% of rams	Western Breed of ram	% of rams	South Western Breed of ram	% of rams
Suffolk	22.4	Suffolk	22.4	Suffolk	26.4
Clun	17.3	Exmoor Horn	11.8	Devon Closewool	18.0
Teeswater	9.0	Clun	11.6	Dorset Down	14.7
Derbyshire Grit'	8.6	Cheviot	11.1	Scottish Bl'face	12.5
Herdwick	6.3	Dorset Down	9.2	Exmoor Horn	9.1
Swaledale Xs	6.1	Devon Closewool	8.9	Border Leic'ster	7.8
Cheviot	5.4	Radnor	6.0	Cheviot	7.1
Dalesbred	3.7	Border Leic'ster	4.2	Ryeland	1.5
Swaledale	3.6	Dorset Horn	2.2	Suffolk Xs	1.2
Welsh Mountain	3.5	Border Leic'ster	2.2	Hampshire Down	1.2
Lonk	2.7	Cadzow types	1.6	All others	0.8
Border Leic'ster	2.3	Hampshire Down	1.1	Total	100.0
Blue-faced Leic'ster	1.6	Cheviot	1.1		
Speckleface	1.2	All others	6.6		
Scottish Bl'face	1.1	Total	100.0		
All others	5.2				
Total	100.0				

Table 1.19 Pattern of breeding (ewes x rams[i]) in hill & upland flocks

a) West Midland

Breed of ewe	Breed of ram: Clun	Suff'k	Herd-wick	Swale-dale x	Tees-water	Derby Grit'	Dales-bred	Welsh Mount'	Total
	% of ewes								
Clun	94	6	-	-	-	-	-	-	100
Welsh Mountain	11	54	-	-	-	-	-	35	100
Swaledale & Xs	-	4	-	63	28	5	-	-	100
Herdwick	-	-	97	-	3	-	-	-	100
Dalesbred	-	-	-	-	34	-	66	-	100
Derby Grit'	-	3	-	-	-	97	-	-	100
Clun Xs	78	22	-	-	-	-	-	-	100
Radnor F	100	-	-	-	-	-	-	-	100
Rough Fell	-	80	-	-	20	-	-	-	100
Kerry & Xs	-	100	-	-	-	-	-	-	100
Suffolk X	88	12	-	-	-	-	-	-	100
Others	7	69	-	-	17	-	-	7	100
All ewes	30	19	11	9	9	8	7	7	100

b) Western

	Suff'k	Chev-iot	Clun	Exmoor Horn	Devon C'wool	Dorset Down	Bord Leic's	X bred ram	Total
Devon C'wool	9	-	-	-	53	22	2	14	100
Cheviot	-	77	-	-	-	5	18	-	100
Exmoor Horn	4	-	-	78	-	-	18	-	100
Clun	-	-	100	-	-	-	-	-	100
B'Leic's X	100	-	-	-	-	-	-	-	100
Welsh H-bred	87	-	13	-	-	-	-	-	100
Clun Xs	54	-	46	-	-	-	-	-	100
Cheviot Xs	85	-	-	-	-	15	-	-	100
Dorset D Xs	-	-	-	-	-	100	-	-	100
Others	13	17	11	-	-	14	-	45	100
All ewes	17	17	15	14	12	11	7	7	100

(i) Based on sample (unraised) figures

Table 1.19 (contd) Pattern of breeding (ewes x rams) in hill & upland flocks

c) South Western

Breed of ewe	Breed of ram: Suff'k	Devon C'wool	Dorset Down	Exmoor Horn	Scottish Bl'face	Border Leic's	Cheviot	Suff'k X	Total
	% of ewes								
Devon C'wool	11	71	1	-	-	14	3	-	100
Exmoor Horn	16	-	-	72	-	12	-	-	100
Scottish Bl'face	4	-	4	-	92	-	-	-	100
Bord Leic's Xs	37	-	63	-	-	-	-	-	100
Cheviot Xs	17	18	-	15	-	-	50	-	100
Suffolk Xs	31	-	69	-	-	-	-	-	100
Welsh H'bred	59	-	41	-	-	-	-	-	100
Cheviot	-	-	-	-	-	50	-	50	100
Devon CW Xs	52	32	-	-	-	16	-	-	100
Clun	-	-	100	-	-	-	-	-	100
Others	58	-	36	-	-	6	-	-	100
All ewes	21	20	19	13	12	8	5	2	100

Table 1.20 Dates on which ewes & ewe lambs put to the ram in hill & upland flocks

	West Midland		Western		South Western	
Dates	% of ewes	% of ewe lambs	% of ewes	% of ewe lambs	% of ewes	% of ewe lambs
August	-	-	-	-	2.1	-
Sept 1 - 15	5.5	-	6.8	-	7.6	-
Sept 16 - 30	2.7	-	-	-	-	-
Oct 1 - 15	15.9	-	22.1	-	34.7	-
Oct 16 - 31	24.8	0.3	36.9	4.8	23.0	1.8
November	51.1	25.5	34.1	17.0	32.6	4.0
Not put to ram	-	74.2	-	78.2	-	94.2
Totals	100.0	100.0	100.0	100.0	100.0	100.0

Table 1.21 Lambing percentages in hill & upland flocks

	West Midland	Western	South Western
Lambing %		% of flocks	
Under 100	26.7	-	32.0
100 - 109.9	13.2	38.9	28.3
110 - 119.9	7.2	21.5	8.0
120 - 129.9	6.7	21.5	12.8
130 - 139.9	19.2	11.3	1.3
140 - 149.9	12.4	6.8	4.3
150 & over	14.6	-	13.3
Totals	100.0	100.0	100.0

Table 1.22 Disposal of lambs from hill & upland flocks 1973-74

	West Midland		Western		South Western	
Fat lambs sold:	%	%	%	%	%	%
Up to June	5.3		3.2		8.1	
July - Sept	49.3		46.3		54.0	
Sept - Dec	45.4		50.5		37.9	
Total	100.0		100.0		100.0	
Fat lambs '000	81.1	32.3	49.9	43.0	60.5	38.0
Fat hoggets sold:						
January	68.6		61.2		35.7	
February	17.3		24.5		50.0	
March	10.5		14.3		14.3	
April	3.6		-		-	
Total	100.0		100.0		100.0	
Fat hoggets '000	19.1	7.6	9.8	8.4	4.2	2.7
Store lambs sold						
July or earlier	24.1		-		21.1	
August	23.2		31.2		20.2	
September	26.3		10.0		40.2	
October	14.4		30.8		14.7	
November	3.4		15.6		3.8	
Later	8.6		12.4		-	
Total	100.0		100.0		100.0	
Store lambs '000	83.5	33.3	25.0	21.6	43.5	27.3
Ewe lambs						
Sold	9.5		8.3		2.7	
Kept	90.5		91.7		97.3	
Total	100.0		100.0		100.0	
Ewe lambs '000	61.2	24.3	29.8	25.7	40.3	25.3
Other lambs '000	6.2	2.5	1.5	1.3	10.7	6.7
Total lambs '000	251.1	100.0	116.0	100.0	159.2	100.0

Table 1.23 Classification of hill and upland flocks by main output

Main output	West Midland	Western	South Western
		% of flocks	
Fat lamb:			
Mid-season	21.1	1.8	6.7
Late season	9.1	6.5	-
All season	12.5	15.2	21.0
All fat-lamb	42.7	23.5	27.7
Fat hogget	6.1	33.7	-
Store lamb	24.5	13.3	25.5
Breeding lamb	8.3	-	13.4
Mixed output	18.4	29.5	33.4
Totals	100.0	100.0	100.0

Table 1.24 Flock replacement in hill & upland flocks

% flock replacements	West Midland	Western	South Western
		% of flocks	
None	24.1	-	4.6
0.1 - 14.9	26.3	40.5	27.8
15 - 19.9	14.5	11.7	21.9
20 - 24.9	4.2	15.2	18.9
25 - 29.9	10.9	19.7	9.1
30 & over	20.0	12.9	17.7
Totals	100.0	100.0	100.0

Table 1.25 Ewe mortality in hill & upland flocks

% ewe mortality		% of flocks	
Nil	7.5	-	14.5
0.1 - 1.9	15.5	11.3	16.6
2.0 - 3.9	34.1	65.2	21.9
4.0 - 5.9	18.4	11.9	17.8
6.0 - 7.9	9.0	11.6	15.8
8.0 - 9.9	1.4	-	-
10.0 & over	14.1	-	13.4
	100.0	100.0	100.0

Table 1.26 Lamb mortality in hill & upland flocks

% lamb mortality		% of flocks	
Nil	18.7	40.5	8.0
0.1 - 0.9	14.7	24.7	12.6
1.0 - 1.9	22.3	14.9	23.3
2.0 - 2.9	20.2	4.8	12.4
3.0 - 3.9	0.5	-	-
4.0 - 4.9	2.8	6.8	2.8
5.0 & over	14.7	-	27.7
No data	6.1	8.3	13.2
	100.0	100.0	100.0

Table 1.27 Winter feeding of ewes in upland & hill flocks

Type of feed (i)	West Midland	Western	South Western
		% of flocks	
Hay & concentrates	32.4	31.8	22.9
Concentrates only	25.6	1.6	20.0
Hay, conc's, roots/fodder	5.7	6.5	5.7
Feed blocks only	4.9	-	-
Hay & feed blocks	3.9	-	3.9
Hay only	2.8	-	-
Concentrates, roots/fodder	2.5	9.6	13.7
Hay, roots/fodder	-	37.3	1.5
Roots/fodder only	-	4.9	14.7
Other feeds	2.0	8.3	6.7
Grazing only	17.7	-	9.3
Not stated	2.5	-	1.6
Totals	100.0	100.0	100.0

(i) Supplementary feeds to grazing except where grazing only

Table 1.28 Analysis of future intentions of hill & upland flock owners

Future intentions	West Midland	Western	South Western
	% of total intentions		
No change	74.9	67.8	65.4
Increase flock	2.6	6.3	10.3
Decrease flock	4.8	-	-
Earlier lambing	1.1	1.6	-
Later lambing	-	-	2.7
Change ewe breed	12.1	4.7	6.6
" ram "	2.5	1.6	-
Consider winter housing	1.4	3.2	2.5
Grow more fodder	-	6.6	-
Other	-	6.6	-
Not stated	0.6	1.6	9.8
Totals	100.0	100.0	100.0

A P P E N D I X A

The West of England

Composition of provinces by counties (old boundaries)

West Midlands (Manchester University)

Cheshire
Lancashire
Shropshire
Staffordshire

Western (Bristol University)

Gloucester
Hereford
Somerset
Warwickshire
Wiltshire
Worcestershire

South Western (Exeter University)

Cornwall
Devon
Dorset

Section 2

Ewe flocks in the East of England

For the purpose of this survey the East of England was defined to include the four provinces,[1] East Midlands, Eastern, East-Central and South Eastern regions, stretching from Lincoln in the north to Kent and Sussex in the south. At the June 1973 census this sub-division of England comprised 46 per cent of the total acreage of crops and grass in the country but only 22 per cent of the total ewe population. Sheep were not, therefore, an important enterprise overall, but the stocking rate varied from less than 4 ewes per 100 acres (crops and grass) in the Eastern region to 32 per 100 acres in the South East where the Romney Marsh forms an unique sheep environment. Information was available for 282 sheep flocks, virtually all lowland ones which represented about 3.2 per cent of the holdings with ewes at June 1973.

Ewe flocks were kept on all types of farms in the east of England (Table 2.1). On dairy farms the flocks were generally in the smallest size groups up to 200 ewes while the majority of the largest flocks were on Cropping (either cereal or general cropping) or on Mixed farms. In the provinces, other than the South East, some 20 per cent or less of the smallest flocks were kept on part-time holdings, but in the South East the proportion was nearly 60 per cent. While this may appear to be a very high percentage, the sample does reflect the fact that there were numerous flocks in the South East with less than 100 ewes (average flock - 43 ewes) recorded at June 1973.

The analysis of the ewe breeds in each province (Table 2.2) shows that the South East is a particular area in this respect, for here the Kent or Romney Marsh ewe, together with cross-bred ewes derived from it, made up 68 per cent of the ewe population. In the other areas Suffolk cross ewes were predominant; with the Suffolk x Scottish Half-bred ewe being very popular, it was numerically most important in the Eastern region where it was followed by the undifferentiated group of Suffolk cross ewes.

Among the ram breeds, Suffolks predominated in three of the eastern areas, overwhelmingly so in the East Midland and Eastern provinces, rather less

---

1 For the composition of the provinces by counties see Appendix B

so in the East-Central one where Dorset Down, Clun and Hampshire Down rams were frequently used. In the South East, of course, the Romney Marsh ram was prevalently used to produce the pure bred flock replacements although the South Down ram used for fat and store lamb production was nearly as popular (Table 2.3).

An interesting analysis (Table 2.4) shows the pairing of the main ewe and ram breeds in the flocks in East Central and South East England[1]. It was established, for example, that the Suffolk cross-bred ewes in the East-Central region were put to several breeds of ram, 34 per cent to Hampshire Downs, 33 per cent to Suffolks, 15 per cent to Cluns and so on. It may be noted that in both areas the great majority of the Scottish Half-bred ewes were put to Suffolk rams, thus producting the very popular cross-bred ewes but also wether lambs suitable for fattening.

The dates on which the ewes were put to the ram in eastern England extended over a long period, from July or even earlier in some flocks right through November, but for most flocks tupping was in October (Table 2.5). Exceptionally in the South-East over 40 per cent of the ewes were put to the ram in November. Also in the South-East few ewe lambs were bred from in their first year whereas in the other areas most of the ewe lambs were mated. This quite significant difference is associated with breed; the late born, slower growing pure-bred Romney Marsh ewe lamb would not be sufficiently mature to breed from.

Lambing percentages varied a great deal within the flocks in each area, so that any average figure calculated would not be very meaningful. The distributions in Table 2.6 suggest that ewe productivity in the east, excluding the South East, was rather less than 1½ lambs reared per ewe put to the ram. In the South East, where 73 per cent of the flocks had lambing percentages of less than 140, the average ewe would be significantly less productive than in the other areas.

The majority of lambs reared in the east of England were sold in a finished (fat) condition directly for slaughter but there were significant differences between the four provinces in the composition of their lamb outputs. These are seen in the analyses of lamb disposals (Table 2.7) and

---

1 In the other Eastern areas this analysis would only confirm the predominance of the Suffolk rams already noted in Table 2.3

in the classification of the flocks according to their main output (Table 2.8). In the East Midlands, for example, more than 70 per cent of 1973 crop was sold as fat lambs, mainly from July to the end of the year. A further 13 per cent was sold as fat hoggets leaving only one-sixth of the lambs for other purposes. These facts are reflected in the output classification, 84 per cent of the flocks were classed as Fat lamb ones and a further 4.5 per cent concentrated on sales of fat hoggets. In the Eastern and East-Central provinces the emphasis on the sales of fat lambs was less but they were still the main concern of most of the sheep farmers, again with the greater numbers of fat lambs sold in the mid-season period, July - September.

The South East again differed from the other eastern areas in that barely one-half (52 per cent) of the lambs were sold directly for slaughter and less than one-half (42 per cent) of the flocks were classified as Fat lamb/Fat hogget ones. Here more than a quarter of the lambs were sold as stores while 19 per cent were reared as flock replacements. This diverse pattern of lamb output overall is also seen in the flock classification table which showed that 1 in 6 of the flocks were in the non-specialist 'Mixed Output' group.

Information on other aspects of the flocks in eastern England is given in Tables 2.9 and 2.14 but it is not possible to comment on all the data presented. A general point could be made that the ewe flocks exhibit as much variability as in other regions. For example in a few flocks ewe mortality (2.10) was nil but, at the other extreme, ewe losses of more than 8 in every 100 was suffered by some flocks in each province.

The distribution of the mortality rates of lambs after weaning (2.11) showed that in the great majority of flocks losses were less than 2 per cent while in some flocks over 5 lambs in every 100 died after weaning. This represents a considerable loss for by this stage most of the costs of production have been met and there is no return. Losses of lambs at any stage, of course, mean that there is no recoupment of the expenses of keeping the ewes for a season which is the major cost in lamb production.

For the lowland flocks in the survey the sheep farmers were asked about the stocking rate of ewes per acre at grass during the month of May (Table 2.14). On many farms this is a difficult time with the pressure on

grazing at its greatest with cattle turned out, sheep numbers at their highest and some fields "shut up" for hay or silage. It was, therefore, a little surprising to find stocking rates of less than 4 ewes per acre on a large proportion of the farms; but in justification it could be observed that many of these are not the mixed livestock farms, typical of the west, and their grassland would, therefore, be geared to a less intensive sheep system.

The fairly cautious and conservative nature of sheep farmers is indicated in the analyses of their intentions towards their flocks (2.13) which showed that a significant proportion of the farmers in each province had no plans to change their sheep policy. While in this survey sample the next biggest group of intentions were to increase the size of flocks, it is of interest to note that the breeding ewe populations in the four areas dropped in the year from June 1974 to 1975, immediately after the survey was carried out. The survey farmers did not appear to be representative of all the sheep-farmers in the east from this point of view.

LIST OF TABLES

Table 2.1 Classification of flocks by type of farming and size of flock

East Midland flocks

Type of farming	No of ewes per flock: Under 200	200 - 399	400 & over	All flocks
	%'s of flocks			
Dairying	16.5	-	-	13.8
Livestock rearing	16.1	50.1	15.6	20.3
Cropping - cereals	19.9	25.0	43.7	21.5
- general	12.6	17.9	18.0	13.4
Mixed	13.2	3.6	22.7	12.4
Pigs & poultry	3.7	3.6	-	3.5
Part-time	18.0	-	-	15.1
Totals	100.0	100.0	100.0	100.0

Eastern flocks

Dairying	13.4	-	-	10.8
Livestock rearing	5.3	37.5	11.1	9.6
Cropping - cereals	5.3	25.0	11.1	8.1
- general	18.7	37.5	22.2	21.1
Mixed	23.9	-	44.5	22.6
Pigs & poultry	13.4	-	11.1	11.6
Part-time	20.0	-	-	16.2
Totals	100.0	100.0	100.0	100.0

East Central flocks

Dairying	22.1	7.7	-	18.1
Livestock rearing	17.7	7.7	34.2	17.6
Cropping - cereals	6.6	53.8	50.0	17.3
- general	-	-	7.5	0.7
Mixed	22.2	30.8	8.3	22.3
Pigs & poultry	15.7	-	-	12.0
Part-time	15.7	-	-	12.0
Totals	100.0	100.0	100.0	100.0

Table 2.1 (Contd)

South Eastern flocks

Type of farming	No of ewes per flock: Under 200	200 - 399	400 & over	All flocks
	%'s of flocks			
Dairying	7.5	5.0	-	6.0
Livestock rearing	5.2	30.0	46.5	15.2
Cropping - cereals	-	5.0	8.7	2.1
- general	2.6	25.0	7.6	7.0
Horticulture	7.5	15.0	5.6	8.5
Mixed	10.4	15.0	31.6	14.2
Pigs & poultry	7.5	-	-	5.2
Part-time	59.3	5.0	-	41.8
Totals	100.0	100.0	100.0	100.0

Table 2.2 Ewe breeds in the East of England

East Midland		Eastern region		East Central		South Eastern	
Breed of ewe	% of ewes	Breed of ewe	% of ewes	Breed of ewe	% of ewes	Breed of ewe	% of ewes
Suffolk Xs	28.2	Suffolk x SHB	20.4	Suffolk Xs	25.1	Romney Marsh	65.4
Masham	13.3	Suffolk Xs	16.6	Scottish H-bred	19.8	Clun	6.7
Greyface	11.4	Clun Xs	16.4	Suffolk x SHB	11.3	Romney Xs	3.9
Scottish H-bred	10.2	Clun	10.7	Swaledale x BF Leics	6.8	Scottish H-bred	3.9
Suffolk x SHB	8.4	Scottish H-bred	10.1	Clun	5.4	Suffolk x SHB	2.9
Suffolk	3.9	Border Leicester	6.4	Welsh H-bred	4.4	Masham	2.5
Border Leicester	3.6	Greyface	2.8	Finn Xs	4.2	Welsh H-bred	2.3
Clun Xs	3.1	Swaledale Xs	2.7	Greyface	3.9	Suffolk Xs	1.7
Kerry and Xs	2.6	Welsh	2.5	Masham	3.5	Romney H-bred	1.6
Clun	2.4	Masham	1.8	B Leicester Xs	3.5	Greyface	1.4
Welsh H-bred	2.2	B Leicester X	1.5	Dorset Horn	3.5	Oldenburgh	1.3
B Leicester Xs	2.2	Welsh H-bred	1.4	Dorset Horn Xs	2.9	Dorset Down	1.1
Blue faced Leicester	0.8	Cheviot	1.1	Suffolk	1.3	Kerry & Xs	1.1
Welsh Mountain	0.6	Romney Xs	0.5	Speckleface	1.2	Southdown	0.8
Romney H-bred	0.6	Dorset Horn Xs	0.5	B Leicester	0.7	Clun Xs	0.7
Welsh x Kerry	0.6			Clun Xs	0.5	Dorset Down X	0.7
				Dorset Down X	0.5		
Others	5.9	Others	6.6	Others	1.5	Others	1.4
Totals	100.0		100.0		100.0		100.0

Table 2.3 Ram breeds in the East of England

Breed of ram	% of rams	Breed of ram	% of rams	Breed of ram	% of rams	Breed of ram	% of rams
Suffolk	85.4	Suffolk	76.1	Suffolk	49.8	Romney Marsh	30.8
Hampshire	4.4	Dorset Down	10.4	Dorset Down	14.2	Southdown	29.0
Dorset Down	2.5	Clun Xs	2.1	Clun	11.9	Dorset Down	20.9
Oxford Down	1.3	Colbred	1.7	Hampshire	11.1	Suffolk	9.6
B Leicester	1.0	Hampshire	1.5	Dorset Horn	4.8	Clun	4.4
Clun	0.8	Suffolk Xs	1.4	Oxford	2.0	Romney Marsh Xs	1.1
Dorset Horn Xs	0.8	Clun	1.3	Wiltshire Horn	1.1	Oldenburgh	0.9
Hybrid	0.6	Dorset Horn Xs	1.2	Ile de France	1.0	Hampshire	0.8
		Southdown	1.0			Cheviot	0.8
						Colbred	0.8
Others	3.2	Others	3.3	Others	1.5	Others	0.9
	100.0		100.0		100.0		100.0

Table 2.4 Breeding pattern of ewes x rams(i)

a) East-Central flocks

Breed of ewe	Breed of ram: Suff'k	Dorset Down	Hamp-shire	Dorset Horn	Ile de France	Clun	Wilt-shire	Oxford	Total
	% of ewes								
Suffolk Xs	33	12	34	5	-	15	-	1	100
Scottish H-bred	84	13	2	-	-	-	-	1	100
Suffolk x SHB	33	39	28	-	-	-	-	-	100
Swaledale x BF Leic	32	68	-	-	-	-	-	-	100
Clun	45	38	-	10	-	7	-	-	100
Welsh H-bred	89	11	-	-	-	-	-	-	100
Finn Xs	36	-	-	-	64	-	-	-	100
Greyface	69	13	15	-	-	-	3	-	100
Masham	17	9	-	-	-	-	74	-	100
B Leicester Xs	68	-	26	6	-	-	-	-	100
Dorset Horn Xs	37	-	13	37	-	-	-	13	100
Dorset Horn	-	-	-	100	-	-	-	-	100
Suffolk	10	90	-	-	-	-	-	-	100
Speckleface	-	-	100	-	-	-	-	-	100
All ewes	47	23	13	6	5	3	2	1	100
							No of ewes in analysis		19153

(i) Based on sample (unraised) figures

b) South Eastern flocks

Breed of ewe	Breed of ram: Romney Marsh	Dorset Down	South-down	Suff'k	Clun	Cheviot	Olden-burgh	Col-bred	Total
	% of ewes								
Romney Marsh	46	21	22	7	-	2	-	2	100
Clun	-	17	30	1	51	-	-	-	100
Romney Xs	-	65	24	1	-	10	-	-	100
Scottish H-bred	-	7	21	72	-	-	-	-	100
Suffolk x SHB	-	14	58	28	-	-	-	-	100
Masham	-	67	33	-	-	-	-	-	100
Welsh H-bred	-	-	90	10	-	-	-	-	100
Suffolk Xs	-	82	18	-	-	-	-	-	100
Romney H-bred	-	68	32	-	-	-	-	-	100
Grey face	-	83	-	17	-	-	-	-	100
Oldenburgh	-	-	-	-	-	-	100	-	100
Dorset Down	-	50	-	50	-	-	-	-	100
Kerry Xs	5	47	48	-	-	-	-	-	100
All ewes	32	26	25	10	2	2	2	1	100
							No of ewes in analysis		36640

Table 2.5 Dates on which ewes and ewe-lambs put to the ram

Dates	East Midland		Eastern	
	% of ewes	% of ewe lambs	% of ewes	% of ewe lambs
July	-	-	2.3	-
August	8.1	1.5	4.1	0.8
September 1 - 15	12.4	3.8	38.4	1.5
" 16 - 30	10.7	6.4	7.9	1.9
October 1 - 15	38.1	25.1	24.6	1.6
" 16 - 31	21.9	36.0	18.4	64.4
November	8.8	3.7	4.3	20.1
Not put to ram	-	23.4	-	9.8
Totals	100.0	100.0	100.0	100.0

Dates	East-Central		South Eastern	
	% of ewes	% of ewe lambs	% of ewes	% of ewe lambs
before July	2.5	-	-	-
July	3.6	-	-	-
August	5.3	-	1.1	-
September 1 - 15	5.5	-	3.6	-
" 16 - 30	-	13.0	1.8	2.0
October 1 - 15	29.4	32.5	15.1	4.6
" 16 - 31	34.6	6.1	35.7	2.6
November	19.1	31.5	42.7	7.5
December	-	4.6	-	-
Not put to ram	-	12.3	-	83.3
Totals	100.0	100.0	100.0	100.0

Table 2.6 Lambing percentages

East Midland

Lambing % (i)	No of ewes per flock: Under 200	200 - 399	400 & over	All flocks
	% of flocks			
Under 120	13.4	7.1	-	12.1
120 - 139.9	29.7	14.3	34.9	28.1
140 - 159.9	19.0	57.2	37.4	24.3
160 - 179.9	26.8	14.3	24.1	25.1
180 & over	11.1	7.1	3.6	10.4
Totals	100.0	100.0	100.0	100.0

Eastern

Under 120	32.0	37.5	38.9	33.1
120 - 139.9	18.7	12.5	11.1	17.4
140 - 159.9	23.6	50.0	33.3	26.7
160 - 179.9	20.1	-	16.7	17.4
180 & over	6.6	-	-	5.4
Totals	100.0	100.0	100.0	100.0

East Central

Under 120	22.2	15.2	8.3	20.0
120 - 139.9	33.3	38.8	41.7	34.7
140 - 159.9	30.1	15.2	11.7	26.4
160 - 179.9	14.4	23.0	30.8	17.1
180 & over	-	7.8	7.5	1.8
Totals	100.0	100.0	100.0	100.0

South Eastern

Under 120	26.1	35.0	28.4	28.0
120 - 139.9	47.4	40.0	42.3	45.4
140 - 159.9	21.3	25.0	15.1	21.0
160 - 179.9	5.2	-	14.2	5.6
180 & over	-	-	-	-
Totals	100.0	100.0	100.0	100.0

(i) Lambs reared as a percentage of ewes & ewe lambs put the ram

Table 2.7 Disposal of lambs 1973 - 74

	East Midland		Eastern		East Central		South Eastern	
Fat lambs sold:	%	%	%	%	%	%	%	%
before April	-		-		0.6		-	
April - June	20.4		34.8		20.4		10.9	
July - Sept	52.9		47.4		47.2		47.9	
Oct - Dec	26.7		17.8		31.8		41.2	
Total	100.0		100.0		100.0		100.0	
Numbers '000	461.4	70.5	114.8	68.6	140.5	59.5	175.2	39.8
Fat hoggets sold:								
January	32.3		46.1		65.2		35.3	
February	28.8		33.8		21.9		35.3	
March	17.1		10.1		9.6		22.1	
Others	21.8		-		0.3		7.3	
Total	100.0		100.0		100.0		100.0	
Numbers '000	85.7	13.1	6.5	3.9	21.9	9.3	55.6	12.6
Store lambs sold:								
July or before	-		31.9		3.9		14.6	
August	28.8		17.4		60.5		12.5	
September	33.7		25.6		20.0		24.9	
October	22.2		19.2		4.9		21.2	
November or later	15.3		5.9		10.7		26.8	
Total	100.0		100.0		100.0		100.0	
Numbers '000	58.1	8.9	21.9	13.1	46.8	19.8	117.7	26.7
Ewe lambs:								
Sold	7.8		22.9		41.1		35.6	
Kept	92.2		77.1		58.9		64.4	
Total	100.0		100.0		100.0		100.0	
Numbers '000	43.5	6.7	21.0	12.6	24.8	10.5	85.0	19.3
Other lambs 000	5.8	0.8	3.1	1.9	2.0	0.9	6.9	1.6
Total lambs 000	654.5	100.0	167.3	100.0	236.0	100.0	440.4	100.0

Table 2.8 Classification of flocks by main output and size of flock

East Midland

Main output	No of ewes per flock: Under 200	200 - 399	400 & over	All flocks
	% of flocks			
Fat lamb:				
Early	5.9	3.6	-	5.4
Mid-season	30.4	39.3	6.0	30.6
Late-season	20.9	3.6	3.6	18.1
All-season	28.8	35.7	41.3	30.1
All fat lamb	86.0	72.2	50.9	84.2
Fat hogget	3.0	10.7	18.0	4.5
Store lamb	4.4	-	21.5	4.5
Mixed output	6.6	7.1	9.6	6.8
Totals	100.0	100.0	100.0	100.0

Eastern

Fat lamb:				
Early	12.0	37.5	11.1	15.1
Mid-season	37.3	25.0	11.1	33.8
Late-season	12.0	-	-	9.7
All season	5.3	25.0	38.9	10.1
All fat lamb	66.6	87.5	61.1	68.7
Store lamb	13.4	-	11.1	11.6
Breeding lamb	6.6	-	-	5.4
Mixed output	13.4	12.5	27.8	14.3
Totals	100.0	100.0	100.0	100.0

Table 2.8 (contd)

East-Central

Main output	No of ewes per flock: Under 200	200 - 399	400 & over	All flocks
	% of flocks			
Fat lamb:				
Early	6.6	7.9	7.5	6.8
Mid-season	25.4	15.2	19.1	23.5
Late-season	11.1	7.9	11.7	10.7
All season	7.9	15.2	50.0	12.6
All fat lamb	51.0	46.2	88.3	53.6
Fat hogget	7.9	7.9	-	7.1
Store lamb	22.2	22.9	4.2	20.7
Breeding lamb	15.7	-	7.5	12.7
Mixed output	3.2	23.0	-	5.9
Totals	100.0	100.0	100.0	100.0

South Eastern

Fat lamb:				
Mid-season	20.6	14.9	8.7	18.0
Late-season	5.5	10.2	5.4	6.2
All-season	13.4	14.9	18.5	14.4
All fat lamb	39.5	40.0	32.6	38.6
Fat hogget	2.8	5.1	5.4	3.5
Store lamb	29.9	34.9	22.9	29.1
Breeding lamb	15.8	5.1	5.5	12.4
Mixed output	13.0	14.9	33.6	16.4
Totals	100.0	100.0	100.0	100.0

Table 2.9 Flock replacement rates

% flock replacements	East Midland	Eastern	East Central	South East
		% of flocks		
None	8.4	32.7	38.5	8.6
1 - 14.9	27.4	30.9	26.5	29.5
15 - 19.9	17.8	16.4	4.6	22.1
20 - 24.9	12.7	6.2	6.3	16.9
25 - 29.9	20.6	-	1.2	7.6
30 & over	23.1	13.8	22.9	15.3
Totals	100.0	100.0	100.0	100.0

Table 2.10 Ewe mortality

% ewe mortality				
		% of flocks		
Nil	14.1	27.0	18.0	17.8
0.1 - 1.9	14.3	33.1	20.5	32.7
2.0 - 3.9	34.2	12.4	28.6	17.2
4.0 - 5.9	19.1	15.9	12.2	19.5
6.0 - 7.9	12.3	0.8	1.7	7.5
8.0 & over	6.0	10.8	19.0	5.3
Totals	100.0	100.0	100.0	100.0

Table 2.11 Lamb mortality

% lamb mortality				
		% of flocks		
Nil	33.7	32.7	30.3	51.9
0.1 - 0.9	15.8	2.0	22.9	16.7
1.0 - 1.9	22.3	27.4	16.6	19.2
2.0 - 2.9	15.6	13.1	11.0	4.0
3.0 - 3.9	5.1	12.0	2.5	1.2
4.0 - 4.9	0.6	0.8	8.5	0.9
5.0 & over	4.8	6.2	7.0	4.4
Not available	2.1	5.8	1.2	1.9
Totals	100.0	100.0	100.0	100.0

Table 2.12 Winter feeding of ewes

Winter feed for ewes[(i)]	East Midland	Eastern	East Central	South Eastern
			% of flocks	
Hay & concentrates	35.3	36.7	36.8	49.8
Concentrates only	24.0	5.4	6.7	13.1
Arable by-products[(ii)]	11.6	26.6	1.1	0.5
Roots/fodder	8.8	5.1	10.6	4.3
Feed blocks[(iii)]	7.0	-	6.7	3.4
Concs, roots/fodder	6.2	-	4.0	3.0
Hay, concs, roots/fodder	2.2	-	2.5	13.9
Hay, roots/fodder	1.6	-	8.5	2.1
Hay only	1.1	9.6	13.5	2.1
Silage	0.6	-	-	-
Total (all feeds)	98.4	83.4	90.4	89.5
Grazing only	1.6	16.6	9.6	10.5
Total	100.0	100.0	100.0	100.0

(i) Supplementary feeds to grazing, except where grazing only

(ii) Feed blocks only or with other feeds and grazing

(iii) Arable by-products only or with other feeds

Table 2.13 Analysis of the future intentions of flock owners

Future intention	East Midland	Eastern	East Central	South Eastern
	% of total intentions(i)			
No change	72.7	44.1	69.6	49.9
Increase flock	12.7	27.9	15.5	22.8
Decrease flock	0.8	-	0.3	6.0
Give up sheep	1.8	-	-	-
Earlier lambing	2.4	12.4	0.6	-
Later lambing	3.5	-	0.3	8.2
Change ewe breed	1.2	6.2	7.0	7.3
Change ram breed	-	3.8	-	1.0
Consider winter housing	1.6	2.1	-	2.0
Other or not stated	3.3	3.5	6.7	2.0
Totals	100.0	100.0	100.0	100.0

(i) A few farmers expressed their intention to make more than one change

Table 2.14 Ewes grazing per acre during May

East Midland

Ewes per acre	No of ewes per flock: Under 200	200 - 399	400 & over	All flocks
		% of flocks		
less than 3	22.2	11.9	15.3	20.8
3 - 4	47.9	36.1	15.3	45.5
5 - 6	20.2	44.0	61.8	24.2
7 - 8	7.5	8.0	7.6	7.6
9 & over	2.2	-	-	1.9
Totals	100.0	100.0	100.0	100.0

Eastern

less than 3	6.8	-	16.7	6.7
3 - 4	61.2	12.5	11.1	51.7
5 - 6	25.2	75.0	61.1	33.9
7 - 8	6.8	12.5	11.1	7.7
9 & over	-	-	-	-
Totals	100.0	100.0	100.0	100.0

East Central

less than 3	21.8	-	-	16.1
3 - 4	23.3	17.9	13.6	21.4
5 - 6	31.5	63.5	31.2	36.2
7 - 8	13.7	9.3	29.6	14.9
9 & over	9.7	9.3	25.6	11.4
Totals	100.0	100.0	100.0	100.0

South Eastern

less than 3	12.1	-	2.1	8.9
3 - 4	44.7	29.5	19.4	38.8
5 - 6	30.2	29.5	57.6	34.1
7 - 8	7.8	17.5	17.4	10.6
9 & over	5.2	23.5	3.5	7.6
Totals	100.0	100.0	100.0	100.0

Table 2.15 Sheep flocks in the East of England
Survey sample details

East Midlands

	No of ewes per flock					
	Under 100	100 - 199	200 - 399	400 - 699	700 & over	All flocks
Nos of flocks at June 73	2825	975	535	151	54	4540
In sample as selected	76	66	50	35	23	250
No of usable replies	34	37	28	15	9	123
% response rate	44.7	56.1	56.0	42.9	39.1	49.2
% sampling fractions	1.2	3.8	5.2	9.9	16.7	2.7
Average nos per flock:						
Ewes	57	145	290	506	1085	
Ewe-lambs	16	27	35	71	131	

Eastern

Nos of flocks at June 73	586	211	120	48	25	990
In sample as selected	15	15	11	11	8	60
No of usable replies	11	5	8	6	3	33
% response rate	73.3	33.3	72.7	54.5	37.5	55.0
% sampling fractions	1.9	2.4	6.7	12.5	12.0	3.3
Average nos per flock:						
Ewes	44	154	253	588	923	
Ewe-lambs	15	14	26	73	113	

East Central

Nos of flocks at June 73	698	291	191	85	28	1293
In sample as selected	18	18	19	21	13	89
No of usable replies	9	9	13	10	6	47
% response rate	50.0	50.0	68.4	47.6	46.2	52.8
% sampling fractions	2.6	3.1	6.8	11.8	21.4	3.6
Average nos per flock:						
Ewes	47	137	286	502	1177	
Ewe-lambs	17	66	72	124	144	

Table 2.15 (contd)

South Eastern

	No of ewes per flock					
	Under 100	100 - 199	200 - 399	400 - 699	700 & over	All flocks
Nos of flocks at June 73	963	438	335	172	116	2024
In sample as selected	25	26	30	38	50	169
No of usable replies	14	12	20	18	19	83
% response rate	56.0	46.1	66.7	47.4	38.0	49.1
% sampling fractions	1.5	2.7	6.0	10.5	16.4	4.1
Average nos per flock:						
Ewes	47	140	295	524	1028	
Ewe-lambs	10	22	62	83	204	

A P P E N D I X B

The East of England

Composition of provinces by counties (old boundaries)

East Midlands (Nottingham University)

- Derbyshire
- Leicester
- Lincoln - Kesteven
- Lincoln - Lindsey
- Northampton
- Nottingham
- Rutland

Eastern Region (Cambridge University)

- Bedford
- Cambridge & Isle of Ely
- Essex
- Greater London (part)
- Hertford
- Huntingdon & Peterborough
- Lincoln - Holland
- Norfolk
- Suffolk

East-Central Region (Reading University)

- Berkshire
- Buckingham
- Hampshire
- Isle of Wight
- Middlesex
- Oxford

South Eastern Region (Wye College, London University)

- Kent
- Surrey
- Sussex - East
- Sussex - West

Section 3

Ewe flocks in the North of England

In this study the North of England was divided into two areas, the first consisted of the three Ridings of Yorkshire (East, West and North)[(i)] and the second comprised the old counties of Cumberland, Durham, Northumberland and Westmorland and is henceforward called 'Northern Region'.[(ii)] At June 1973 there were 2.3 million breeding ewes in the North, 38 per cent of the total flock in England. At the same date there were 13½ thousand agricultural holdings with breeding ewes representing 32 per cent of the total in England. Information from the survey was available for 456 sheep flocks of which 264 were hill & upland and 181 lowland flocks while 11 holdings had both hill & lowland flocks. The survey flocks formed 3.6 per cent of the total but included 7.6 per cent of the ewes.

The survey indicated that many of the lowland flocks with less than 200 ewes were kept on farms where dairying was the most important enterprise but also that a sheep flock was kept on a variety of other types of farm (Table 3.1). The hill and upland flocks were restricted to dairy, livestock rearing and mixed farms. A surprisingly large proportion of the smallest flocks were kept on part-time holdings; these are holdings which are calculated to require a work input of 274 standard man-days or less over a year, but whether some of them are run by a full-time farmer who has no other employment, is not known.

In the hill flocks in both areas the Swaledale breed was overwhelmingly the most predominant one, both among the rams but particularly so among the ewes (Tables 3.2 and 3.3). With the Dalesbred it accounted for 79 per cent of the hill and upland ewes in Yorkshire and with the Scottish Blackface for 68 per cent of the hill ewes in the Northern region. Many other breeds were kept in the hill and upland areas but they were very much in the minority numerically.

In the lowland flocks, three ewe breeds were well represented in both areas, these were the Greyface, Scottish Half-bred and Masham, all cross-breds it should be noted. In the Yorkshire flocks, however, Suffolk-cross ewes were numerically the most important single group in the list but the lack of definition of the precise nature of these crosses does not allow

---

(i) the province covered by the Agricultural Economics Department of Leeds University

(ii) the province of the similar department of Newcastle University

further sub-division in the breed table. Suffolk rams made up more than four-fifths of the total rams in the lowland flocks in both areas. While their main use was as crossing sires for fat lamb production, it is likely that some of their female offspring would be the Suffolk crossbred ewes which were found to be so numerous in Yorkshire.

The start of the breeding season, defined as the date on which the rams were first turned in with the ewes, was much later in the north than in the east and west of England (Table 3.5). For nearly 9 out of 10 hill and upland ewes the breeding season started in November and for a few more it was December. The bulk of lambing in the hill flocks would, therefore, be in April when the weather would be expected to be less severe. Very few of the ewe lambs in hill flocks were bred from in their first year.

In the lowland flocks in the north, mating was well spread out, starting in a very few flocks in July and reaching a peak in October, but substantial numbers of ewes were put to the ram in November. About two-thirds of the ewe lambs in lowland flocks were bred from in their first-year, the majority of them being put to the ram in November, some weeks after the main flock had been covered.

The lambing performances of both hill and lowland ewes were extremely variable (Table 3.6). Lambing percentages of less than 100 were frequent in the large hill flocks and the percentage was less than 120 in over one-half of the hill and upland flocks. In contrast lambing percentages of 160 and over were achieved in about 45 per cent of the lowland flocks.

An analysis of the disposals of lambs and a classification of flocks according to the proportions of lambs sold in different categories and time periods are given in Tables 3.7 and 3.8. Substantially less than one-half of the hill and upland lambs were sold in a finished condition, either as fat lambs or fat hoggets, correspondingly a greater proportion of the lambs were sold as stores or reared for flock replacements, the latter being mainly for home use. The importance of the September and October sheep sales in the north is emphasised by the fact that three-quarters of the store lambs were sold during these two months. About four-fifths of the lowland lambs were fattened, of which about 80 per cent were sold as fat lambs and the remainder as fat hoggets sold primarily in the period January to March.

The classification of flocks according to their main output (Table 3.8) illustrates in another way the points already made regarding lamb disposals. In about three-quarters of the lowland flocks the primary concern was with fat lamb production, with a concentration of selling in the July-September period to classify these flocks as 'mid-season' fat-lamb flocks. Adding in the flocks from which mainly fat hoggets were sold increased the proportion of flocks concerned with finishing lambs to 80 per cent in both areas. The fairly numerous small hill and upland flock in Yorkshire, which concentrated on fat lamb production, led to the overall proportion of fat lamb flocks in this area reaching over one-half. This type of flock was much less predominant in the hills of the Northern region and here most of the flocks did not specialise in one type of output and were thus classified in 'Mixed output' group. Store lamb flocks accounted for over 20 per cent of the hill and upland flocks in the two areas.

Other characteristics of the flocks are presented in the remaining tables (mainly for reference) and it is of interest to note that, in the analysis of the farmers' intentions for the future of their flocks, the vast majority had made no plans to change their policies. A small proportion indicated that they would increase their flocks while a lesser proportion had decided the opposite. In the event it would appear that the 'increase flock' intentions were not in fact put into practice as the ewe population in the two areas declined slightly between June 1974 and 1975.

LIST OF TABLES

Table 3.1 Classification of flocks by type of farming and size of flock

Yorkshire

Lowland flocks

Type of farming	No of ewes per flock: Under 200	200 - 399	400 & over	All flocks
	% of flocks			
Dairying	31.8	10.5	-	29.7
Livestock rearing	3.2	10.5	13.6	4.0
Cropping - cereals	11.0	36.4	27.2	13.3
- general	17.8	15.8	32.0	17.8
Mixed	20.3	26.4	13.6	20.7
Pigs & poultry	0.8	-	13.6	0.8
Part-time	15.1	-	-	13.7
Totals	100.0	100.0	100.0	100.0

Hill & upland flocks

Dairying	32.4	30.7	6.3	27.8
Livestock rearing	10.1	53.7	93.7	32.8
Mixed	4.0	11.6	-	4.9
Part-time	53.5	4.0	-	34.5
Totals	100.0	100.0	100.0	100.0

Northern Region

Lowland flocks

Dairying	43.8	6.4	4.0	38.7
Livestock rearing	22.7	93.6	67.9	30.8
Cropping(i)	3.9	-	12.2	4.0
Mixed	8.8	-	15.9	8.5
Pigs & poultry	2.6	-	-	2.2
Part-time	18.2	-	-	15.8
Totals	100.0	100.0	100.0	100.0

Hill & upland flocks

Dairying	18.5	9.7	-	12.2
Livestock rearing	30.1	85.4	94.2	58.6
Mixed	3.8	4.9	5.8	4.0
Part-time	47.6	-	-	25.2
Totals	100.0	100.0	100.0	100.0

(i) Cropping - cereals and general cropping

Table 3.2 Ewe breeds

Yorkshire

Lowland		Hill & upland	
Breed of ewe	% of ewes	Breed of ewe	% of ewes
Suffolk Xs	28.3	Swaledale	59.1
Masham	20.3	Dalesbred	19.8
Scottish H-bred	12.9	Rough Fell	4.2
Greyface	11.5	Masham	3.1
Suffolk	5.7	Scottish Blackface	2.7
Suffolk x SH-bred	4.2	Swaledale Xs	2.6
Swaledale	3.7	Lonk and Xs	2.3
Cheviot Xs	1.9	Teeswater	0.4
Swaled' x BF Leics	1.8	Greyface	0.4
North Country Cheviot	0.9	Clun Xs	0.4
Clun	0 8	Devon Longwool Xs	0.3
Swaledale Xs	0.6		
Scottish Blackface	0.4	Other	4.7
Other	6.0		
Totals	100.0	Totals	100.0

Northern Region

Lowland		Hill & upland	
Breed of ewe	% of ewes	Breed of ewe	% of ewes
Greyface	37.4	Swaledale	49.7
Scottish H-bred	22.4	Scottish B'face	18.5
Masham	7.2	Rough Fell	11.8
Swaled' x BF Leics	5.9	Swaledale Xs	7.8
Swaledale	4.5	Herdwick	4.1
Cheviot	4.1	Cheviot and Xs	3.1
Suffolk Xs	3.5	Greyface	2.2
Scottish B'face	2.1	Scottish H-bred	0.7
Suffolk x SHB	1.9	Dalesbred	0.5
B Leicester Xs	1.6	Other	2.6
Rough Fell	1.5		
Suffolk	1.0		
Romney H'bred	1.0		
Colbred Thornber	0.8		
Other	5.1		
Totals	100.0	Totals	100.0

Table 3.3 Ram breeds

Yorkshire				Northern Region			
Lowland		Hill & upland		Lowland		Hill & upland	
Breed of ram	% of rams	Breed of ram	% of rams	Breed of ram	% of rams	Breed of ram	% of rams
Suffolk	85.2	Swaledale	36.1	Suffolk	81.7	Swaledale	31.8
Teeswater	2.5	Lonk	14.7	Blue faced Leics	5.4	Blue faced Leics	21.7
Oxford	2.4	Teeswater	14.3	Border Leicester	3.5	Scottish B'face	9.5
Blue faced Leicester	2.3	Dalesbred	13.4	Suffolk X	2.2	Rough Fell	9.1
Suffolk Xs	2.0	Blue faced Leicester	6.7	Teeswater	1.8	Cheviot	6.2
Hampshire	1.2	Suffolk	5.6	Colbred Thornber	1.6	Suffolk	5.2
Swaledale	0.7	Wensleydale	2.2	Dorset Down	1.3	B Leicester	4.6
Dorset Horn Xs	0.7	Scottish B'face	2.0	Cheviot	0.9	Herdwick	4.5
Leicester	0.5	Rough Fell	1.6	Wensleydale	0.6	Teeswater	4.4
		Border Leicester	0.8	English Leicester	0.5	English Leicester	1.3
Other	2.5	Other	2.6	Hampshire	0.3	Wensleydale	0.5
				Other	0.2	Other	1.2
Total	100.0	Total	100.0	Total	100.0	Total	100.0

Table 3.4 Breeding patterns (ewes x rams) in hill & upland flocks[1]

Yorkshire flocks

Breed of ewe	Breed of ram: Swaledale	Teeswater	Dalesbred	Blue f' Leics	Suffolk	Lonk	Scot Bl-face	Wensleydale	Totals
	% of ewes								
Swaledale	65	16	*	13	3	2	*	1	100
Dalesbred	1	24	67	6	-	-	2	-	100
Swaledale Xs	32	26	24	*	-	-	-	18	100
Lonk	36	-	1	-	-	63	-	-	100
Scottish Bl-f	-	-	-	1	-	-	69	30	100
Masham	-	-	-	14	86	-	-	-	100
Teeswater	-	100	-	-	-	-	-	-	100
Other ewes	19	4	8	15	14	-	29	12	100
All ewes	44	17	17	10	4	3	3	2	100
							No of ewes in analysis		38450

Northern Region flocks

Breed of ewe	Breed of ram: Swaledale	Blue f' Leics	Scot B'face	Rough Fell	Herdwick	Teeswater	Cheviot	Suffolk	Totals
Swaledale	72	22	1	-	*	3	1	1	100
Scottish Bl-f	-	33	60	-	-	-	7	-	100
Rough Fell	-	-	-	75	-	16	8	1	100
Swaledale Xs	39	20	26	3	1	2	8	1	100
Herdwick	-	5	-	-	93	-	2	*	100
Greyface	-	-	-	-	-	-	3	97	100
Other ewes	12	1	-	-	32	15	12	28	100
All ewes	43	20	13	8	6	4	3	3	100
						No of ewes in analysis			75967

1 Based on sample (unraised) figures

* less than 0.5 per cent

Note - A similar analysis for ewes and rams in the lowland flocks in these areas would simply confirm the predominant use of Suffolk rams on ewes of many breeds

Table 3.5 Dates on which ewes and ewe lambs were put to the ram

Yorkshire

	Lowland		Hill & upland	
Dates	% of ewes	% of ewe lambs	% of ewes	% of ewe lambs
July	0.3	0.6	-	-
August	12.8	1.8	-	-
September 1 - 15	10.5	1.4	-	-
" 16 - 30	13.5	-	-	-
October 1 - 15	16.6	6.1	3.1	0.3
" 16 - 31	16.2	7.2	10.8	-
November	29.0	41.7	84.6	3.4
December	1.1	2.5	1.5	0.2
Not put to ram	-	38.7	-	96.1
Totals	100.0	100.0	100.0	100.0

Northern Region

Dates				
August	6.0	-	-	-
September 1 - 15	9.3	0.3	-	-
" 16 - 30	4.7	-	-	-
October 1 - 15	31.6	4.9	0.4	-
" 16 - 31	20.2	6.1	4.8	0.5
November	27.7	54.6	93.6	0.4
December	2.1	-	1.2	-
Not put to ram	-	32.7	-	99.1
Totals	100.0	100.0	100.0	100.0

Table 3.6 Lambing percentages in Yorkshire flocks

Lowland flocks

Lambing percentage(i)	No of ewes per flock: Under 200	200 - 399	400 & over	All flocks
	% of flocks			
100 - 119.9	6.5	-	-	5.9
120 - 139.9	14.8	21.0	-	15.3
140 - 159.9	27.5	42.2	13.6	29.1
160 - 179.9	26.6	26.3	59.2	26.6
180 & over	24.6	10.5	27.2	23.1
Totals	100.0	100.0	100.0	100.0

Hill & upland flocks

Under 99.9	8.1	27.0	29.0	15.4
100 - 109.9	15.5	15.3	30.7	18.0
110 - 119.9	12.9	19.3	22.0	15.7
120 - 139.9	20.9	27.0	14.5	21.1
140 - 159.9	13.6	-	1.9	10.4
160 & over	29.0	4.0	1.9	19.4
Totals	100.0	100.0	100.0	100.0

(i) Lambs reared as a % of ewes and ewe lambs put to the ram

Table 3.6 (contd) Lambing percentages in Northern Region flocks

Lowland flocks

Lambing percentages (i)	No of ewes per flock: Under 200	200 - 399	400 & over	All flocks
	% of flocks			
Under 100	2.6	-	-	2.2
100 - 119.9	7.2	6.4	11.9	7.4
120 - 139.9	22.1	6.4	16.3	20.5
140 - 159.9	22.0	49.6	20.0	24.2
160 - 179.9	26.6	31.2	35.9	27.5
180 & over	19.5	6.4	15.9	18.2
Totals	100.0	100.0	100.0	100.0

Hill & upland flocks

Under 100	19.5	29.1	49.5	28.9
100 - 109.9	19.0	14.7	17.7	17.6
110 - 119.9	4.0	14.7	14.1	9.1
120 - 139.9	36.5	19.4	16.3	27.5
140 - 159.9	11.5	14.7	2.4	10.2
160 & over	9.5	7.4	-	6.7
Totals	100.0	100.0	100.0	100.0

(i) Lambs reared as a % of ewes and ewe lambs put to ram

Table 3.7 Disposal of lambs 1973-74

	Yorkshire				Northern Region			
	Lowland		Hill & Upland		Lowland		Hill & Upland	
Fat lambs sold:	%	%	%	%	%	%	%	%
April - June	23.8		0.9		9.0		0.2	
July - September	53.8		44.6		46.8		33.7	
October - Dec	22.4		54.5		45.2		66.1	
Total	100.0		100.0		100.0		100.0	
Numbers '000	341.4	63.5	197.9	36.5	313.5	62.8	232.3	26.7
Fat hoggets sold:								
January	25.8		36.0		44.7		50.0	
February	34.0		51.6		31.8		31.3	
March	25.5		10.0		19.9		15.3	
Others	14.7		2.4		3.6		3.4	
Total	100.0		100.0		100.0		100.0	
Numbers '000	100.3	18.7	25.0	4.6	79.2	15.9	64.6	7.4
Store lambs sold:								
July or before	0.6		3.6		-		-	
August	18.3		25.4		18.8		17.6	
September	33.9		41.3		54.5		43.9	
October	41.1		24.7		20.2		33.3	
Nov or later	6.2		5.0		6.5		5.2	
Total	100.0		100.0		100.0		100.0	
Numbers '000	68.4	12.7	144.7	26.7	55.9	11.2	241.9	27.8
Ewe lambs:								
Sold	20.9		26.8		57.3		36.0	
Kept	79.1		73.2		42.7		64.0	
Total	100.0		100.0		100.0		100.0	
Numbers '000	18.7	3.5	165.5	30.4	44.6	8.9	302.8	34.9
Other lambs '000	8.8	1.6	9.7	1.8	6.2	1.2	27.2	3.2
Total lambs '000	537.6	100.0	542.8	100.0	499.4	100.0	868.8	100.0

Table 3.8 Classification of flocks by main output and size of flock

Yorkshire

Lowland flocks

Main output	No of ewes per flock: Under 200	200 - 399	400 & over	All flocks
	% of flocks			
Fat lamb:				
Early	8.7	15.8	-	9.2
Mid-season	38.9	21.0	-	36.9
Late-season	4.0	10.5	13.6	4.7
All-season	23.6	26.3	13.6	23.7
All fat lamb	75.2	73.6	27.2	74.5
Fat hogget	12.5	10.5	13.6	12.4
Store lamb	9.0	10.5	32.0	9.4
Breeding lamb	2.5	5.4	-	2.7
Mixed output	0.8	-	27.2	1.0
Totals	100.0	100.0	100.0	100.0

Hill & upland flocks

Main output				
Fat lamb:	% of flocks			
Mid-season	33.1	11.6	-	23.3
Late-season	2.1	15.3	8.3	5.7
All-season	26.3	23.0	7.5	22.6
All fat lamb	61.5	49.9	15.8	51.6
Store lamb	28.4	19.4	27.6	26.4
Breeding lamb	2.1	7.7	20.8	6.3
Mixed output	8.0	23.0	35.9	15.7
Totals	100.0	100.0	100.0	100.0

Table 3.8 (contd) Classification of flocks by main output and size of flock

Northern Region

Lowland flocks

Main output	No of ewes per flock: Under 200	200 - 399	400 & over	All flocks
	% of flocks			
Fat lamb:				
Early-season	1.0	-	-	0.8
Mid-season	34.8	18.7	-	31.7
Late-season	14.6	18.7	8.0	14.5
All-season	25.0	37.6	47.6	27.2
All fat lamb	75.4	75.0	55.6	74.2
Fat hogget	7.1	6.2	-	6.7
Store lamb	7.8	-	16.1	7.6
Breeding lamb	-	6.4	-	0.5
Mixed output	9.7	12.4	28.3	11.0
Totals	100.0	100.0	100.0	100.0

Hill & upland flocks

Main output	% of flocks			
Fat lamb:				
Mid-season	10.9	2.5	-	6.2
Late-season	6.0	12.2	3.5	7.0
All-season	21.5	19.5	7.1	17.7
All fat lamb	38.4	34.2	10.6	30.9
Fat hogget	-	-	1.2	0.3
Store lamb	19.0	19.5	28.2	21.2
Breeding lamb	8.1	9.7	14.1	9.9
Mixed output	34.5	36.6	45.9	37.7
Totals	100.0	100.0	100.0	100.0

Table 3.9 Flock replacement rates

% flock replacement	Yorkshire		Northern Region	
	Lowland	Hill & upland	Lowland	Hill & upland
	% of flocks			
Nil	12.7	4.3	10.7	3.7
1 - 14.9	25.9	26.1	11.9	11.5
15 - 19.9	18.9	13.0	12.6	20.0
20 - 24.9	7.6	23.1	12.6	20.3
25 - 29.9	8.9	14.8	12.6	17.3
30.0 & over	26.0	18.7	39.6	27.2
Totals	100.0	100.0	100.0	100.0

Table 3.10 Ewe mortality

% ewe mortality	% of flocks			
Nil	19.3	12.8	27.8	7.7
0.1 - 1.9	5.5	12.4	14.9	12.6
2.0 - 3.9	39.1	27.7	26.7	38.0
4.0 - 5.9	13.6	23.6	12.0	21.0
6.0 - 7.9	10.6	14.1	5.8	13.1
8.0 & over	10.6	9.4	11.2	7.6
Not available	1.3	-	1.6	-
Totals	100.0	100.0	100.0	100.0

Table 3.11 Lamb mortality

% lamb mortality	% of flocks			
Nil	41.0	42.7	38.4	31.3
0.1 - 0.9	16.0	14.7	13.2	25.5
1.0 - 1.9	22.0	20.0	19.2	15.2
2.0 - 2.9	4.8	2.4	5.8	7.4
3.0 - 3.9	1.1	2.5	3.0	5.4
4.0 & over	6.9	6.8	7.2	4.1
Not available	8.2	10.9	13.2	11.1
Totals	100.0	100.0	100.0	100.0

Table 3.12 Winter feeding of ewes

Winter feeds[(i)]	Yorkshire		Northern Region	
	Lowland	Hill & upland	Lowland	Hill & upland
	% of flocks			
Hay & concentrates	25.2	36.0	27.1	33.3
Concentrates only	11.5	16.4	25.6	12.6
Feed blocks[(ii)]	5.5	21.1	15.6	21.2
Hay, conc's, roots/fodder	12.0	0.3	7.8	1.5
Conc's & roots/fodder	5.2	-	5.3	1.0
Hay & roots/fodder	8.0	-	0.9	1.5
Hay only	0.7	18.7	5.3	8.6
Other feeds	15.6	3.2	0.9	1.1
Total (all feeds)	83.7	95.7	88.5	80.8
Grazing only	16.3	4.3	11.5	19.2
Totals	100.0	100.0	100.0	100.0

(i) Supplementary feeds to grazing, except where grazing only

(ii) Feed blocks only or with other feeds and grazing

Table 3.13 Analysis of the future intentions of flock owners

Future intention	Yorkshire		Northern Region	
	Lowland	Hill & upland	Lowland	Hill & upland
	% of total intentions[(i)]			
No change	80.3	85.5	91.3	79.4
Increase flock	11.8	3.7	4.4	12.7
Decrease flock	0.4	4.2	-	-
Give up sheep	0.7	0.3	0.5	1.0
Earlier lambing	-	0.7	0.2	-
Later lambing	4.5	-	2.5	-
Change ewe breed	0.7	0.7	0.7	1.3
Change ram breed	0.2	2.8	-	0.8
Consider winter housing	0.7	2.1	0.2	4.6
Grow more fodder	0.7	-	-	0.2
Other	-	-	0.2	-
Total	100.0	100.0	100.0	100.0

(i) A few farmers expressed their intention to make more than one change

Table 3.14 Ewes grazing per acre in May in lowland flocks

Yorkshire

Ewes per acre	No of ewes per flock: Under 200	200 - 399	400 & over	All flocks
	% of flocks			
Under 3	36.3	-	-	32.8
3 - 4	29.7	42.0	27.2	30.7
5 - 6	27.1	58.0	45.6	29.9
7 - 8	6.9	-	13.6	6.4
9 & over	-	-	13.6	0.2
Totals	100.0	100.0	100.0	100.0

Northern Region

Ewes per acre				
Under 3	55.9	49.8	41.6	54.6
3 - 4	28.7	42.9	42.1	30.4
5 - 6	11.8	7.3	12.4	11.5
7 - 8	2.6	-	3.9	2.6
9 & over	1.0	-	-	0.9
Totals	100.0	100.0	100.0	100.0

Table 3.15 Sheep flocks in the North of England

Survey sample details

Yorkshire flocks

	No of ewes per flock					
	Under 100	100 - 199	200 - 399	400 - 699	700 & over	Totals
No of flocks at June 73	3632	1417	792	293	130	6264
In sample as selected	109	107	86	78	72	452
No of usable replies	40	49	46	45	15	195
% response rate	36.7	45.8	53.5	57.7	20.8	43.1
% sampling fraction	1.1	3.5	5.8	15.4	11.5	3.1
Average nos per flock:						
Ewes	56	144	270	545	872	
Ewe lambs	5	17	43	121	207	

Northern Region flocks

No of flocks at June 73	3536	1603	1138	622	347	7246
In sample as selected	85	92	97	133	143	550
No of usable replies	40	49	58	74	40	261
% response rate	47.1	53.3	59.8	55.6	28.0	47.5
% sampling fractions	1.1	3.1	5.1	11.9	11.5	3.6
Average nos per flock:						
Ewes	47	147	283	482	1261	
Ewe lambs	20	25	54	101	326	

Other recent publications in this series[1]

30 Pig Management Scheme - Results for 1974
R F Ridgeon University of Cambridge January 1975 50p

31 Pig Production - Results of a study in South West England 1973-74
W J K Thomas & A Sheppard University of Exeter February 1975 50p

32 Field Beans - A study in husbandry & economics in England 1973
H W T Kerr (& others) University of Nottingham March 1975 60p

33 Culinary Apples in 1973 - Time to start again
R R W Folley Wye College (London University) 1975 70p

34 Dessert Apples & Pears - 1973 and after
R R W Folley & R B Beattie Wye College (London University) June 1976 £1.25

35 Grass as a Break
J A L Dench (& others) University of Reading March 1976 £1.00

36 Grass on the Arable farm
H W T Kerr University of Nottingham January 1976 90p

37 Pig Management Scheme - Results for 1975
R F Ridgeon University of Cambridge December 1975 65p

38 The Early Strawberry Crop
Helen M Cole University of Exeter February 1976 £1.00

39 Pig Production - Results of a Study in South West England 1974-75
W J K Thomas University of Exeter January 1976 75p

40 Fattening Older Cattle on Grass
H W T Kerr & P H Pitchford University of Nottingham April 1976 65p

41 Oilseed Rape 1975
Susan M Fletcher (& others) University of Reading September 1976 50p

42 The United Kingdom Broiler Industry 1975
Sue Richardson University of Manchester September 1976 £1.50

43[2] Sheep flocks in Wales
University College of Wales Aberystwyth

44[2] Early Potatoes in England & Wales 1975
University College of Wales Aberystwyth

45[2] The Tomato Industry Situation
Wye College University of London

1 For titles of reports 1 - 29 refer to an earlier report in the series

2 To be published shortly

University departments publishing in this series

BRISTOL	Agricultural Economics Research Unit Department of Economics University of Bristol 79 Woodland Road Bristol BS8 1UT
CAMBRIDGE	Agricultural Economics Unit Department of Land Economy University of Cambridge Silver Street Cambridge CB3 9EP
EXETER	Agricultural Economics Unit University of Exeter Lafrowda St German's Road Exeter EX4 6TL
LEEDS	Department of Agricultural Economics The University of Leeds Leeds LS2 9JT
LONDON	School of Rural Economics & Related Studies Wye College (University of London) Nr Ashford Kent TN25 5AH
MANCHESTER	Department of Agricultural Economics Faculty of Economic and Social Studies University of Manchester Manchester M13 9PL
NEWCASTLE	Department of Agricultural Economics The University Newcastle upon Tyne NE1 7RU
NOTTINGHAM	Department of Agriculture and Horticulture The University of Nottingham School of Agriculture Sutton Bonington Loughborough Leics LE12 5RD
READING	Department of Agricultural Economics and Management University of Reading 4 Earley Gate Whiteknights Road Reading RG6 2AR
WALES	Department of Agricultural Economics The University College of Wales School of Agricultural Sciences Penglais Aberystwyth Dyfed SY23 3DD