Analysis of Labour Usage Data From The Farm Business Survey From 2004/05 to 2007/08

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Executive Summary

Background

- From 2004/05 onwards, the Farm Business Survey (FBS) has collected data on labour use at whole farm and enterprise levels, and this wealth of data facilitates research on labour use on farms in England and Wales

- Farm classification can be undertaken on the basis of Standard Labour Requirements (SLRs) and the labour use data provides the opportunity to update the SLR coefficients to reflect contemporary labour use practice on farms

- The majority of labour use studies for England and Wales have been conducted within the Special Study (SS) series in Agricultural Economics, whereby data was collected at enterprise level alone and no attempt was made to capture contractor or overhead labour, and for animal enterprises, labour use was frequently restricted to that used for livestock husbandry alone

- Two labour-specific studies have previously been undertaken in recent decades and within these reports, the analysis of overhead labour is reported; taken together with the SS reports, these previous reports provide a basis for comparison with this current study

- Using labour data for England and Wales, over four years (2004/05 to 2007/08) on 13 crop types and 14 animal enterprises, analysis of direct, contractor and overhead labour is undertaken

- Where sample sizes are sufficient, analysis by Country, EU Region, Farm Size groups, Robust Farm Type classification is undertaken and for England and Wales, labour use performance quartiles are analysed together with the contribution of crop type or animal enterprise labour to total farm business labour

Crop Types

- Total labour use for cereals averages 18.0 hours per hectare, with 70% of this flowing from direct labour; performance group analysis shows that labour economies of size exist and Large Farms, and those in the EU East region, incur lower labour use

- Economies of size are also present in oilseed production, where average labour use is 15.8 hours per hectare, with farm size and regional results broadly in line with those for cereals; the Cereals Robust Farm Type expends the lowest labour on oilseeds of the Robust Farm Type groups

- Contract labour plays a considerable part in the labour use for sugar beet production (11% of total labour), with total labour equating to 33.0 hours per hectare. Labour economies of size are also present for this more specialised production activity

- Field peas and beans require similar labour (15.7 hours per hectare) to their competing break crop of oilseeds, and as noted above for combinable crops, labour economies of size exist

- Labour use in potato production averages 109.1 hours per hectare for maincrop potatoes and 202.0 hours for early potatoes. For maincrop potatoes, labour economies of size are apparent, with considerable variation in labour use per hectare being observed

- The outdoor vegetables crop group covers a variety of individual crops, and consequently there is a large variation in labour use per hectare that averages 282.4 hours per hectare; labour economies of size are restricted to farm size group results

- Vining peas represent a relatively specialised production process, and one that draws more heavily on contractor labour (14% of total) than many crop types; total labour averages 12.0 hours per hectare and labour economies of size are not present in vining pea production

- Across performance groups, average labour use for top and soft fruit varies nine-fold, representing variations in production systems as well as efficiency of labour use; average labour use is 424.5 hours per hectare, with the EU West region recording the lowest regional labour use

- Labour use for hardy nursery stock averages just under 1900 hours per hectare, with extensive variation around this average that demonstrates both labour economies of size and differences in production systems and products for this crop type grouping

- Similar variation in labour use is also found in vegetables grown under glass, with average labour use of approximately 7000 hours per hectare masking the variation in performance group averages that range from more than 19,000 hours per hectare to 1,130 hours per hectare

- By far the most intensive labour use per hectare is recorded for flowers and plants grown under glass, where average labour use is just under 13,000 hours per hectare with considerable variation around this average reflecting different production processes and systems in addition to efficiency of labour use

- Set-aside represents a special case given its non agricultural-productive basis, and managing set-aside requires an average of 2.9 hours per hectare, with the most labour efficient group restricting their labour input to set-aside to 0.5 hours per hectare

Animal Enterprises

- Results for labour use in dairy production show an average 42.5 hours per cow with labour use falling over the four years of interest, and with labour economies of size being present; Wales and the EU North region tend to use lower levels of labour than the East or West

- Labour economies of size are also evident for beef cows, where average labour use is 25.8 hours per cows; Mixed farms demonstrate the lowest labour requirements across Robust Farm Types

- Other cattle require an average of 11.7 hours per animal, with relatively wide variation around this average being due in part to different systems of other cattle enterprises being operated across the range of farm businesses

- Labour use in lowland ewes averages 5.2 hours per ewe, and as with other animal enterprises, labour economies of size are present with the most labour-efficient group using 1.8 hours per ewe; EU North and Wales tend to incur lower labour use in lowland ewe enterprises

- LFA ewes require an average of 3.7 hours per ewe, albeit that clear labour economies of size for this group demonstrate a large variation around this average labour use

- Lowland other sheep enterprises capture a range of individual enterprise types resulting in an average labour use of 2.9 hours per sheep; unlike previous animal enterprises, labour economies of size are not directly evident

- Labour use for LFA other sheep enterprises shows an average labour input of 3.1 hours per sheep with Small Farms expending considerably more labour per ewe than Medium or Large Farms

- Breeding sow labour needs average 28.1 hours per sow, and labour use on these enterprises averages 79% of total farm business labour use; economies of size are evident within this enterprise group and Small Farms expend approximately double the labour input of Large Farms

- Wide variation in labour use in finishing and rearing pigs exists around the average of 2.3 hours per pig place; the average batches of pigs per year is 1.9, however as the labour-efficiency per pig place increases, batches per year falls

- Average labour use for table fowl is 0.0910 hour per bird place, with the average number of batches being 6.1; as flock size increases the labour requirement per bird place falls considerably and the batches per year increases, indicating that there is variation in the production systems contained within this enterprise grouping

- Laying hens enterprise group captures a range of production systems and considerable variation in labour use is evident around the average of 0.364 hours per hen; labour economies of size are noted from both enterprise size and Farm Size group analysis

- A relatively small number of observations for other poultry demonstrates an average labour input of 2.333 hours per bird place with an average of 3.1 batches per year

- Wide variation in labour use for horses is demonstrated with the average of 38.9 hours per horse masking a wide variation over years, Robust Farm Type and farm size groupings

- Labour use for goats averages 12.1 hours per goat, with goat labour accounting for an average of 55% of total farm business labour

Proposed Labour Coefficients

- Proposed Standard Labour Requirements (SLRs) per enterprise are provided on the basis of the average total labour requirements from the analysis undertaken

- In the main part, these SLRs per enterprise are generally greater than the original coefficients and further analysis of these results demonstrate that the

proposed coefficients arguably capture a more rounded account of labour input from direct, contractor and overhead labour together than has previously been the case

Summary and Comparison with Previous Research

- Direct labour typically accounts for 65%-74% of total labour for crop type groups, with overhead labour equating approximating 20%+ of total labour per crop type; horticultural crops tend to have a lower reliance on contractor input whilst sugar beet and vining peas are relatively heavy users of contractor labour

- Overhead labour use in animal enterprises is lower than for crop types and more grass-based enterprises tend to have a greater reliance on contractor labour than the more "intensive" systems found on pig and poultry farms

- Comparison of results from this study with the most comparative recent study (Turner and Fogerty 1994) shows that direct labour has reduced for most crop types and animal enterprises albeit that when examining total labour this current study reports higher labour input than Turner and Fogerty

- This current report proposes SLR coefficients that are, in general, greater than previous estimates, however the more complete data capture of direct, contractor and overhead labour, coupled with the contemporary nature of the data, is argued to make these data the most appropriate available

- The analysis of 2,968 data sets on labour use for agricultural enterprises in England and Wales across 2004/05 to 2007/08 makes this report one of the most comprehensive ever undertaken and the results will be of considerable value to farmers, advisors, researchers and policy makers

1. Introduction

1.1 Background

From 2004/05 onwards, the Farm Business Survey (FBS) has collected considerable additional information beyond the core financial and physical data collection which lies at the heart of the FBS. These data are collected in specific and individual modules that are linked to the core FBS, and represent a substantial improvement in the information held on farm businesses and thus facilitate research from these data. One of these modules, collected annually, is labour use on farms, and the allocation of this labour to specific enterprises on farms. Collection of this labour usage data relies on discussion between the Research Officer (RO) and the farmer / manager to allocate appropriate labour to the enterprises that constitute the farm business. This labour allocation includes the allocation of labour to diversified enterprises, and additionally captures labour use per enterprise as i) direct labour, ii) contract labour and iii) overhead labour. The sum of these three labour allocations provides the overall labour for the particular enterprise. Because the data collected per enterprise is part of the data relating to labour use for the farm business in total, it is thus possible to examine the labour used on an enterprise as a proportion of total farm business labour. From a statistical survey design standpoint, it is possible to allocate farms into size groupings on the basis of their overall labour requirements. Within the FBS this has been achieved by classification of farms on the basis of Standard Labour Requirements (SLRs). The SLR indicates the standard number of full time workers required for the farm business, and this has formed part of the basis for inclusion of farm businesses in the FBS, in that farm businesses with less than 0.5 SLR were deemed too small for inclusion. From 2004/05 to 2007/08 inclusive, the FBS contains labour usage data across four years of the research programme, and across a range of enterprises and crop types. This wealth of data lends itself to providing an update of the SLRs used within the FBS.

Labour use in agriculture has changed considerably over recent decades, as advances in mechanisation have led to a reduced need for labour, and this has enhanced labour productivity for many enterprises (e.g. labour input per tonne of wheat). However, despite substantial advantages in labour productivity, much variation in labour use per enterprise still exists. Previous Special Studies (SS) in Agricultural Economics have incorporated management questions relating to labour use across many enterprises. These studies have typically sought to measure the direct labour used for a particular crop or enterprise; by contrast the FBS seeks to include direct, contractor and overhead labour and thus captures more complete data on labour use on farms. Examples of SS research that incorporated measurement of direct labour are outlined below.

Wilson and Robertson (2000) find that labour use in field peas and beans ranges from 4.6 hours per hectare (winter beans) to 6.3 hours per hectare (winter peas), with the most profitable producers using lower labour per hectare than the least profitable. Analysis of oilseed rape production (Lewis, 1998) shows typical labour use of 5.4 hours per hectare (spring sown crops) to 6.7 hours per hectare (winter sown crops), with labour economies of size also being present. Wilson and Robertson (2001) provide findings for labour use in potato production, with first earlies, second earlies and maincrop potatoes averaging 98, 50 and 56 hours per hectare respectively for direct labour use. Asby and Renwick (2000) note direct labour use in winter wheat production as 11.2 hours per hectare in 1985, 8.6

hours in 1993 and 7.3 hours in 1998, albeit with a growing input from contract labour over this time-frame that is not captured within the direct labour results.

Within animal enterprises, Williams *et al.* (2005) report an average of 11.3 hours per beef cow in lowland systems, excluding labour required for forage. Williams *et al.* note that considerable labour economies of size exist, together with the most profitable producers using less labour per cow than the average or least profitable. Within dairy production, Colman *et al.* (2004) find similar labour economies of size, noting that producers in the 10-39 cows size band used 64 hours per cow, whilst those with greater than 150 cows used an average of 24 hours per cow; as with beef production, labour use for forage was excluded from the analysis. Labour use in lowland sheep production was analysed within Fogerty *et al.'*s (2001) analysis showing that labour for sheep husbandry accounts for 4 hours per ewe on lowland sheep systems. Shepherd (2004a) examines labour use in pig production, noting that for breeder-finisher herds, labour use in 2002/03 was 28 hours per sow, with rearing pigs utilising 0.19 hours per pig sold, and contract finishing using 0.50 hours per pig sold. Shepherd (2004b) provides analysis of direct labour in broiler production, noting that labour use was one of the most variable aspects of broiler production, ranging from 3.3 to 6.9 hours per 1000 birds for conventional systems, and free-range producers using 14.7 hours per 1000 birds. Russell *et al.'*s (2005) examination of egg production shows a range of 129 hours per 1000 hens for cage systems, to 446 hours per 1000 hens for organic systems, with an average of 168 hours per 1000 hens across all systems in the survey. The above reports provide a range of estimates of labour use across enterprises, and within these analyses, the researchers generally note that the most profitable producers frequently use considerably less labour per hectare than the least profitable.

Turner and Fogerty (1994) provide empirical findings of labour use on UK farms, examining labour use across the whole farm, rather than at enterprise level. Turner and Fogerty find that overall farm labour is made up from 77% direct production labour, 22% overheads and 1% from diversification. Presenting the direct labour per enterprise, Turner and Fogerty provide the following results: dairy cows (38.5 hours per cow), beef cows (22.6 hours per cow), other cattle (9.5 hours per animal), breeding sheep (9.5 hours per ewe), breeding sows (26.9 hours per sow), cereals (13.1 hours per hectare [hrs/ha]), oilseed rape (10.8 hrs/ha), peas and beans (19.3 hrs/ha), linseed (10.7 hrs/ha), potatoes (224.3 hrs/ha), sugar beet (33.3 hrs/ha), grassland (5.7 hrs/ha). Across these enterprises, Turner and Fogerty generally note labour economies of size are present, showing large variation in labour use per hectare or per head across size groupings. Tiffin (2003) provides an examination of machinery, building and overhead labour inputs together with contract use in England and Wales. One of the key objectives of the study was to estimate overhead cost coefficients, to be applied to "direct" labour to produce an overall labour usage (or cost) when special studies captured direct labour alone. On the basis of farm types, Tiffin records the following labour overhead cost coefficients: Cereals (0.23), General Cropping (0.189), Dairy (0.11), LFA Cattle and Sheep (0.128), Lowland Cattle and Sheep (0.121), Mixed (0.127), with an average across all farm types of 0.151, indicating that, on average, a cost of +15.1% would need to be added to a direct labour cost in order to capture the overhead labour input to farms in England and Wales.

The review of studies above shows some common themes: First, most studies have sought to capture direct labour only, and not attempted to capture direct, contractor and overhead labour together. Second, the reports often report economies of size in labour use on farms, and frequently note a positive link between labour economies of size and profitability or financial performance

measures. Thirdly, previous estimates show considerable variation between studies, for example Turner and Fogerty (1994) note a direct labour element of 9.5 hours per ewe, whilst Fogerty *et al's* (2001) analysis equates to 4 hours per ewe. Often these different estimates stem from differences in the labour use being measured, for example, measuring husbandry labour alone, or measuring husbandry labour together with labour for forage and other enterprise specific activities. Fourth, estimates of overhead labour vary both across farm type and also across different studies; Turner and Fogerty estimate an average of 22% of total labour as overhead, whilst Tiffin estimates the overhead coefficient to be 15.1% (equating to 17.8% of direct and overhead labour combined). These estimates provide useful benchmarks to compare overhead labour use within this current study.

The presence of four years of labour use data across the large FBS data set provides an excellent opportunity to examine the issues raised above and to examine contemporary labour use data that captures direct, contractor and overhead labour per farm. Additionally, as farm classifications are in part determined by SLR groups, this research opportunity will explicitly facilitate an updating of the SLR coefficients per enterprise upon which FBS classifications have been previously based. The specific aims of this report are detailed in section 1.2 below.

1.2 Aims and Objectives

Building upon the background in section 1.1, this project seeks to analyse England and Wales data from Section P (labour use) of the FBS for 2004/05, 2005/06, 2006/07 and 2007/08 and to determine estimations of SLRs for all Section P enterprises.

Specifically this will involve the following objectives:

(i) Analysing the data to produce annual estimates of labour requirements for all Section P enterprises for each of years, 2004/05, 2005/06, 2006/07 and 2007/08 and to update the table of standard labour coefficients as shown in Appendix 1 in the column headed "proposed coefficient" based on the average over the four years.

(ii) To produce analysis by farm size and type for FBS robust types for England, Wales and the three EU super regions.

(ii) At England and Wales level only, identify the distribution of the labour requirement values for each enterprise in terms of lowest quartile (highest labour requirement), mid two quartiles and upper quartile (lowest labour requirement).

1.3 Structure of the Report

The following Chapter details the data sources and methodological approaches of the study. Chapter 3 presents results and Chapter 4 discusses these results in the context of the objectives of this research, updating the standard labour coefficients and providing concluding comments.

2. Methodology

2.1 Overview

The overall methodology involves analysis of direct, contract, overhead and total labour use for the crop type and animal enterprises, listed below and in Appendix 1, together with analysis of the percentage of total farm business labour accounted for by the particular enterprise for England and Wales, plus analysis by labour use performance groups. This analysis is conducted for each of the years 2004/05, 2005/06, 2006/07 and 2007/08 and additionally for the complete data set aggregating across all years for England and Wales. Where sample size is sufficient, analysis of four quartile groups is undertaken, where performance is defined as high labour use per unit (Q1), medium-high labour use (Q2), medium-low labour use (Q3) and low labour use (Q4). The most labour efficient are thus contained within Q4, whilst the heaviest labour users are contained within Q1. Overall labour use by England, Wales and EU region, together with Robust Farm Type groups and Farm Size groups is also undertaken. Data are weighted using the 'standard' FBS farm weight supplied with the farm level data accounting for the area or animal numbers in each case as appropriate. For data on horse enterprises, an additional analysis has been undertaken for specialist horse farms, whereby this group are not allocated an FBS weight; for this group an un-weighted analysis is undertaken. Data restrictions to maintain confidentiality lead to all data sets containing a minimum of 15 observations per cell; where less than 15 observations exist these data have been withheld as the sample size is not considered to be sufficiently robust.

2.2 Data source

Data for the FBS accounting years 2004/05, 2005/06, 2006/07 and 2007/08 for England and Wales was used as the source of data for this study. Data was largely taken from Section P of the FBS returns with appropriate other measures (e.g. livestock numbers or hectares of crops from Section M, or Section E for a small number of animal enterprises). The crop types and animal enterprises examined are: 1) cereals; (2) oilseeds; (3) sugar beet; (4) field peas and beans; (5) maincrop potatoes; (6) early potatoes; (7) outdoor vegetables and salad; (8) vining peas; (9) top and soft fruit; (10) hardy nursery stock; (11) vegetables grown under glass; (12) flowers and plants grown under glass; (13) set-aside; (14) dairy cows; (15) beef cows; (16) other cattle; (17) ewes and rams [Lowland farms]; (18) ewes and rams [LFA farms]; (19) other sheep [Lowland farms]; (20) other sheep [LFA farms]; (21) sows; (22) finishing and rearing Pigs; (23) table fowl; (24) laying hens; (25) other poultry; (26) horses; (27) goats. Data for the four years, the combined data set ("all" years), for the 27 categories noted, is analysed by year, country, quartile group, EU region, farm size group and robust farm type, together with analysis by country and EU region within these groups. This leads to a requirement for analysis of 2,968 data sets on labour use from the FBS, making this research arguably the most comprehensive contemporary assessment of labour use in agriculture across England and Wales to be undertaken.

2.3 Sampling Frame and Sample Size Summary for England and Wales

All Section P enterprises had to have a non-zero (positive) total labour use for the data to be included in the sampling frame. For example, a return that contained a zero observation for direct labour, but which contained a non-zero positive return for contract labour led to a positive return for total labour for the enterprise in question and thus was valid to be included in the data. Additionally, the Section P enterprise had to record a positive crop area or animal number and have a non-zero FBS weight. The summary of the sample sizes, for England and Wales overall and for each year (and all years) are detailed in Table 2.1. Performance groups, as noted above, were determined on the basis of labour use per hectare or animal.

Table 2.1: Sample Size Summary for England and Wales by Year.

Crop Type / Enterprise	2004/05	2005/06	2006/07	2007/80	All Years
Cereals	907	830	837	871	3445
Oilseeds	361	340	341	363	1405
Sugar Beet	187	166	162	131	646
Field Peas and Beans	285	268	257	218	1028
Maincrop Potatoes	97	94	99	103	393
Early Potatoes	-	-	-	-	23
Outdoor Vegetables and Salad	62	59	66	71	258
Vining Peas	25	22	26	23	96
Top and Soft Fruit	63	58	64	61	246
Hardy Nursery Stock	56	65	61	61	243
Vegetables grown under glass	30	34	39	43	146
Flowers and Plants (glass)	49	66	66	66	247
Set-Aside	509	506	534	458	2007
Dairy Cows	434	402	403	412	1651
Beef Cows	737	741	805	819	3102
Other Cattle	1269	1257	1304	1340	5170
Ewes and Rams (Lowland)	386	358	347	352	1443
Ewes and Rams (LFA)	480	487	512	527	2006
Other Sheep (Lowland)	50	65	70	58	243
Other Sheep (LFA)	20	15	22	23	80
Sows	76	69	72	77	294
Finishing and Rearing Pigs	45	54	50	46	195
Table Fowl	28	45	40	39	152
Laying Hens	50	51	60	69	230
Other Poultry	-	-	-	-	28
Horses	31	70	63	59	223
Goats	-	-	-	-	23

Key: - = < 15 observations.

2.4 Labour Usage, Crop Areas, Animals Numbers and Analysis

In order to compare appropriate measurements from the data it was necessary to establish the definitions of appropriate returns, costs and measurements of interest. Table 2.2 below details the data definitions in relation to the FBS source from Section P.

Table 2.2: Codes and Definitions

Definition	**FBS Codes**
Direct labour (**Direct**)	Section P, Row 1, Column 3:132 as appropriate
Contract labour hours (**Contractor**)	Section P, Row 2, Column 3:132 as appropriate
Overhead labour hours (**Overhead**)	Section P, Row 3, Column 3:132 as appropriate
Total labour hours (**Total Hours**)	Section P, Row 4, Column 3:132 as appropriate
Enterprise labour hours as a percentage of Total labour hours for all enterprises (**% Farm Lab**)	**Total Hours** divided by [Section P, Row 4, Column 99) * 100
Crop Area (hectares [**ha**])	Defined in Appendix 1
Animal Numbers (Animals [as appropriate for enterprise])	Defined in Appendix 1: average animal numbers / animal places

For animal enterprises where the average animal number represents the scale of operation (e.g. for table fowl, where a 5000 bird unit, rearing 25,000 birds per annum), the coefficient presented is the labour use per animal place, rather than the labour required per animal produced. To capture the extent of the throughout of these enterprises, the total number of animals sold was analysed in order to produce a measure of the number of batches of animals reared per year. The number of batches was calculated by dividing the total number sold, by the average animal number. This was undertaken for the following animal categories, with appropriate codes listed detailing data source for animals sold: Finishing and rearing pigs [Section E, Rows 42+45+46+50+51, Column 11]; table fowl [Section E, Rows 57+58+59, Column 11]; other poultry [Section E, Row 60, Colum 11].

The analysis undertaken on the labour usage data is to provide average (weighted means) for labour use per hectare of crop type or per animal (or animal place) for animal enterprise types.

3. Results

3.1 Overview

Table 3.1 provides an overview of the average labour use per hectare for crops / crop types and per head for animal enterprises. Animal enterprises which represent an enterprise which has more than one batch per year (e.g. table fowl) are given as the hours per animal place, and not per animal throughput, as noted above in Chapter 2. As noted in Table 3.1, there is a substantial range of labour requirements per hectare or per animal place. With respect to crop types, the intensive nature of growing flowers and plants under glass results in an average labour use of just under 13,000 hours per hectare, whilst set-aside, being non-productive records the smallest labour requirement of 2.9 hours per hectare. With respect to animal enterprises, labour requirements range from 42.5 hours per cow for dairy production, to 0.091 hours per bird place for table fowl.

Table 3.1: Overview of Total Labour Usage per Enterprise or Crop Type

Crop Type	Total labour hours per hectare		**Animal Enterprise**	Total labour hours per animal place
Cereals	18.0		Dairy Cows	42.5
Oilseeds	15.8		Beef Cows	25.8
Sugar Beet	33.0		Other Cattle	11.7
Field Peas and Beans	15.7		Ewes and Rams (Lowland)	5.2
Maincrop Potatoes	109.1		Ewes and Rams (LFA)	3.7
Early Potatoes	202.1		Other Sheep (Lowland)	2.9
Outdoor Vegetables and salad	282.4		Other Sheep (LFA)	3.1
Vining Peas	12.0		Sows	28.1
Top and Soft Fruit	424.5		Finishing and Rearing Pigs	2.3
Hardy Nursery Stock	1,883.6		Table Fowl	0.091
Vegetables under Glass	6,990.8		Laying Hens	0.364
Flowers and Plants under Glass	12,794.4		Other Poultry	2.333
Set-Aside	2.3		Horses	38.9
			Goats	12.1

3.2 Results by Crop Type

Whilst Table 3.1 provides overall averages for labour use across crop and enterprise types, these average data mask extensive variation across individual farm businesses and also across farm types, regions and farm size groupings. Tables 3.2 to 3.79 provide details of this variation across farm types, regions and farm size groups, together with analysis of variation in labour usage by efficiency of labour use performance quartiles. As noted in Chapter 2, results are provided where a minimum of 15 observations per data cell exist; where less than 15 observations are found, the results are not presented as in those cases the sample size is not considered to be sufficiently robust.

3.2.1 Cereals

The average labour use for cereals is presented in Tables 3.2 to 3.4 inclusive. Average labour use for cereals (Table 3.2) is 18.0 hours per hectare (hrs/ha), with the greatest average labour use occurring in 2007/08 (18.5 hrs/ha), arguably linked to the wet harvest conditions of 2007 leading to greater labour needs to complete harvest operations. Direct labour, at 12.6 hrs/ha contributes 70% of total labour requirements for cereals, whilst contract and overhead labour respectively contribute 8% and 22% towards the labour use for cereals. Overall, cereals accounts for just over 40% of total farm labour use on farms where cereals are grown.

Examining the performance quartile analysis shows the large range in performance, with the quartile with the highest labour use (Q1) incurring approximately 35 hrs/ha, in contrast to the 9 hrs/ha for the most efficient labour quartile (Q4). The results by quartile group in Table 3.2 suggest that the performance groups Q3 and Q4 grow larger areas of cereals than Q1 and Q2, and it is informative to note that cereals labour for Q4 represents, overall, 33% of total farm labour - the lowest of the performance quartiles.

Table 3.2: Cereals Labour Use – Average and Performance Quartiles

Category	Measure	2004/05	2005/06	2006/07	2007/08	All
All	Direct	12.2	12.6	12.3	13.5	12.6
	Contractor	1.3	1.2	1.4	1.5	1.4
	Overhead	4.2	4.5	3.8	3.5	4.0
	Total Hours	17.7	18.3	17.5	18.5	**18.0**
	% of Farm Lab	41.7	40.5	38.7	41.0	40.5
	Crop Area (ha)	76.3	69.2	69.4	70.8	71.5
	No. in sample	*907*	*830*	*837*	*871*	*3445*
Q1	Direct	25.0	25.4	25.8	27.8	26.0
	Contractor	1.8	1.6	1.6	2.3	1.8
	Overhead	7.3	7.8	6.7	5.9	7.0
	Total Hours	31.1	35.0	34.2	36.0	34.8
	% of Farm Lab	46.8	46.4	42.6	51.3	47.0
	Crop Area (ha)	40.9	39.6	39.5	43.0	40.6
	No. in sample	*227*	*208*	*209*	*218*	*861*
Q2	Direct	14.8	15.4	14.8	15.5	15.1
	Contractor	1.4	0.8	1.3	1.5	1.3
	Overhead	5.3	5.3	4.7	4.0	4.8
	Total Hours	21.5	21.5	20.7	21.0	21.2
	% of Farm Lab	46.6	46.0	41.2	41.8	44.3
	Crop Area (ha)	69.8	63.7	63.8	60.1	64.4
	No. in sample	*227*	*207*	*209*	*217*	*861*
Q3	Direct	10.0	9.9	10.1	10.8	10.2
	Contractor	0.9	1.2	1.2	1.2	1.1
	Overhead	4.0	4.3	3.6	3.2	3.7
	Total Hours	15.0	15.3	14.9	15.1	15.1
	% of Farm Lab	43.5	41.3	41.7	40.3	41.6
	Crop Area (ha)	114.6	94.7	87.7	99.8	99.2
	No. in sample	*226*	*207*	*209*	*218*	*861*
Q4	Direct	5.6	5.7	5.3	6.0	5.7
	Contractor	1.4	1.3	1.6	1.6	1.4
	Overhead	1.9	2.1	1.7	1.8	1.9
	Total Hours	9.0	9.3	8.6	9.4	9.0
	% of Farm Lab	33.1	31.5	31.4	34.5	32.5
	Crop Area (ha)	91.1	88.1	93.3	85.9	89.5
	No. in sample	*227*	*208*	*209*	*218*	*861*

Q1 to Q4 refer to labour use performance quartiles

Table 3.3 provides results by England, Wales, EU regions, and by farm size groupings within regions where feasible. The East region, dominated by more specialist cereal growers records the lowest overall labour use of 17.3 hrs/ha, whilst Wales records the highest labour use of 28.4 hrs/ha. Table 3.3 demonstrates that as average farm size increases, labour use per hectare decreases for Cereals, ranging from 26.5 hrs/ha (Small Farms) to 15.9 hrs/ha (Large Farms). Regional variation exists within these farm size groupings, with Large Farms in the East recording the lowest labour usage in cereal production of 15.5 hrs/ha.

Table 3.3: Cereals Labour Use by Region and Farm Size

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
All		17.7	18.3	17.5	18.5	**18.0**
	Q1	31.1	35.0	34.2	36.0	34.8
	Q2	21.5	21.5	20.7	21.0	21.2
	Q3	15.0	15.3	14.9	15.1	15.1
	Q4	9.0	9.3	8.6	9.4	9.0
England		17.6	18.3	17.3	18.4	17.9
	North	16.9	18.1	16.4	18.7	17.6
	East	17.2	17.7	16.9	17.4	17.3
	West	20.5	21.2	20.1	21.9	20.9
Wales		26.2	26.8	34.7	27.2	28.4
FSS		23.4	27.6	26.2	28.3	26.5
	FSS England	22.5	27.5	25.2	28.6	26.1
	FSS North	21.2	25.8	24.9	28.8	25.2
	FSS East	23.8	28.5	26.6	30.4	27.7
	FSS West	23.0	28.2	23.9	26.6	25.5
	FSS Wales	36.3	30.0	41.5	25.0	32.8
FSM		23.2	22.7	21.9	24.0	23.0
	FSM England	23.2	22.7	21.8	23.9	22.9
	FSM North	20.1	20.6	19.8	21.2	20.4
	FSM East	23.7	22.1	21.8	24.7	23.2
	FSM West	25.1	25.0	24.0	25.0	24.8
	FSM Wales	22.2	25.8	31.1	28.8	27.1
FSL		15.9	16.3	15.5	16.2	15.9
	FSL England	15.8	16.2	15.5	16.1	15.9
	FSL North	15.0	15.8	14.4	16.7	15.5
	FSL East	15.7	16.1	15.3	15.2	15.6
	FSL West	18.0	17.8	17.7	20.0	18.4
	FSL Wales	23.5	25.4	-	27.1	25.9

FSS, FSM and FSL refer to Small, Medium and Large farm size groups respectively; Q1 to Q4 refer to labour use performance quartiles

Table 3.4 examines labour use by Robust Farm Type. The lowest labour use by farm type is recorded by General Cropping averaging 17.4 hrs/ha, followed by Horticulture and Cereals averaging 17.5 and 17.7 hrs/ha respectively. The highest labour use per hectare for Cereals is recorded by LFA Grazing Livestock, at 28.2 hrs/ha. As noted in Table 3.4, considerable variation exists across England, Wales and the EU regions exists within the Robust Farm Types, however, it should be noted that often relatively small sample sizes (<30) are present for certain data cells.

Table 3.4: Cereals Labour Use by Robust Type

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
Cereals	All	17.5	18.0	16.9	18.5	17.7
	England	17.5	17.9	16.9	18.5	17.7
	North	18.0	17.4	17.2	19.8	18.2
	East	17.2	17.9	16.6	17.5	17.3
	West	18.6	19.1	18.2	21.4	19.4
	Wales	-	-	-	-	-
General Cropping	All	16.9	18.3	17.3	17.2	17.4
	England	16.9	18.3	see All	17.2	17.4
	North	16.4	19.8	14.9	17.7	17.1
	East	16.3	17.5	17.4	16.7	16.9
	West	22.8	23.8	22.6	20.5	22.4
	Wales	-	-	-	-	-
Horticulture	All	16.1	20.8	-	17.1	17.5
	England	-	-	-	-	see All
	North	-	-	-	-	-
	East	-	-	-	-	15.9
	West	-	-	-	-	-
	Wales	-	-	-	-	-
Specialist Pigs	All	-	-	-	-	13.0
	England	-	-	-	-	see All
	North	-	-	-	-	15.6
	East	-	-	-	-	12.3
	West	-	-	-	-	
	Wales	-	-	-	-	-
Specialist Poultry	All	-	-	-	-	27.7
	England	-	-	-	-	-
	North	-	-	-	-	-
	East	-	-	-	-	-
	West	-	-	-	-	-
	Wales	-	-	-	-	-
Dairy	All	22.6	21.5	20.9	22.3	21.8
	England	22.3	21.2	20.5	22.0	21.5
	North	19.5	22.3	13.3	13.6	17.0
	East	22.1	19.8	22.7	21.9	21.8
	West	24.7	22.2	21.8	29.2	24.6
	Wales	27.7	-	-	29.4	29.1
LFA Grazing Livestock	All	25.0	27.8	30.7	29.6	28.2
	England	24.6	-	19.9	26.1	23.6
	North	-	-	16.7	25.7	21.7
	East	-	-	-	-	-
	West	-	-	-	-	26.4
	Wales	25.5	30.3	38.7	32.6	31.8
Lowland Grazing Livestock	All	21.1	24.4	21.5	20.7	21.8
	England	19.2	23.8	20.5	20.1	20.7
	North	15.4	19.8	17.8	18.5	17.5
	East	-	-	15.8	-	16.4
	West	22.9	26.9	24.6	22.3	24.0
	Wales	30.9	27.6	26.1	24.5	27.5
Mixed	All	18.9	18.4	18.3	19.3	18.7
	England	18.8	18.3	17.9	19.1	18.5
	North	13.3	15.4	15.8	18.0	15.6
	East	20.5	17.0	16.5	18.1	21.5
	West	20.6	23.1	21.2	21.2	21.5
	Wales	-	-	-	-	33.0

Results are only presented for farm types where the sample size is greater than or equal to 15.

3.2.2 Oilseeds

Labour use results for oilseeds are presented in Tables 3.5 to 3.7 inclusive. Table 3.5 shows that, on average, the greatest labour use per hectare for oilseeds occurred in 2007/08, following the pattern observed for cereals in Section 3.2.1, resulting from the wet harvest conditions of 2007. On average, across the four years examined, labour use for oilseeds averages 15.8 hrs/ha. Oilseed labour use accounts for just over 19% of total farm labour on farms where oilseeds are grown, with direct, contract and overhead labour contributing approximately 71%, 8% and 22% of total labour use for oilseeds. Performance quartile analysis shows that average labour use ranges from 33.6 hrs/ha (Q1) to 8.3 hrs/ha (Q4). As noted for labour use in cereals, Q3 and Q4 groups typically grow larger areas of Oilseeds than Q1 and Q2.

Table 3.5: Oilseeds Labour Use – Average and Performance Quartiles

Category	Measure	2004/05	2005/06	2006/07	2007/08	All
All	Direct	10.6	10.8	10.7	12.5	11.2
	Contractor	1.3	1.2	1.1	1.2	1.2
	Overhead	3.5	3.8	3.5	3.2	3.5
	Total Hours	15.3	15.8	15.3	16.9	**15.8**
	% of Farm Lab	17.0	20.7	20.1	19.4	19.2
	Crop Area (ha)	40.1	46.8	46.7	45.3	44.6
	No. in sample	*361*	*340*	*341*	*363*	*1405*
Q1	Direct	20.1	19.2	21.1	23.9	25.2
	Contractor	1.9	1.6	1.3	1.3	1.5
	Overhead	6.3	7.2	7.4	6.4	6.9
	Total Hours	28.2	27.9	29.8	31.6	33.6
	% of Farm Lab	17.3	20.2	20.1	20.5	15.6
	Crop Area (ha)	24.8	31.8	26.0	26.1	27.0
	No. in sample	*90*	*85*	*85*	*91*	*351*
Q2	Direct	12.4	12.9	12.8	15.1	13.5
	Contractor	0.9	1.2	1.0	0.9	1.0
	Overhead	1.2	4.2	4.2	3.4	3.9
	Total Hours	15.5	18.4	18.1	19.4	18.4
	% of Farm Lab	16.6	21.0	19.0	19.7	18.8
	Crop Area (ha)	36.6	40.4	38.5	44.0	39.8
	No. in sample	*90*	*85*	*85*	*90*	*351*
Q3	Direct	9.4	9.5	9.9	11.2	9.8
	Contractor	0.9	0.6	0.7	0.7	0.8
	Overhead	3.0	3.4	2.9	2.6	3.0
	Total Hours	13.3	13.6	13.4	14.6	13.6
	% of Farm Lab	19.1	23.7	21.3	18.9	21.5
	Crop Area (ha)	54.1	68.0	64.5	52.8	60.3
	No. in sample	*90*	*85*	*85*	*91*	*351*
Q4	Direct	5.0	4.8	4.7	5.7	5.0
	Contractor	1.6	1.6	1.4	1.7	1.6
	Overhead	1.8	1.6	1.5	1.9	1.7
	Total Hours	8.4	8.1	7.7	9.3	8.3
	% of Farm Lab	14.7	18.6	16.6	18.9	16.8
	Crop Area (ha)	46.7	51.7	59.1	63.8	55.3
	No. in sample	*91*	*85*	*86*	*91*	*352*

Q1 to Q4 refer to labour use performance quartiles

Table 3.6 presents results for England, Wales, the EU regions and by Farm Size groups. The small number of farms growing cereals in Wales results in the average for England (15.8 hrs/ha) being unchanged from the average for the England and Wales sample despite the average labour use for Wales being 26 hrs/ha. Across the EU regions, the East records the lowest labour use (15.3 hrs/ha), followed by the North (17 hrs/ha). The influence of farm size groups is apparent from Table 3.6, where the labour use per hectare is inversely related to farm size, with Large Farms averaging 14.7 hrs/ha in contrast to the 21.2 hrs/ha for Small Farms.

Table 3.6: Oilseeds Labour Use by Region and Farm Size

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
All		15.3	15.8	15.3	16.9	**15.8**
	Q1	28.2	27.9	29.8	31.6	33.6
	Q2	15.5	18.4	18.1	19.4	18.4
	Q3	13.3	13.6	13.4	14.6	13.6
	Q4	8.4	8.1	7.7	9.3	8.3
England		15.3	15.8	15.2	16.8	15.8
	North	15.0	15.7	17.1	19.5	17.0
	East	15.3	15.5	14.5	15.9	15.3
	West	16.1	18.7	18.2	18.9	18.0
Wales		-	-	-	-	26.0
FSS		-	-	-	-	25.1
	FSS England	-	-	-	-	24.3
	FSS North	-	-	-	-	-
	FSS East	-	-	-	-	-
	FSS West	-	-	-	-	-
	FSS Wales	-	-	-	-	-
FSM		20.5	20.3	20.4	24.1	21.2
	FSM England	20.5	see FSM	20.4	24.0	21.2
	FSM North	14.9	19.6	27.4	31.5	22.7
	FSM East	22.2	20.1	18.7	21.9	20.7
	FSM West	21.2	-	19.3	-	21.5
	FSM Wales	-	-	-	-	-
FSL		14.3	14.9	14.1	15.5	14.7
	FSL England	14.3	14.9	14.1	15.5	14.7
	FSL North	15.1	13.9	14.2	16.1	14.9
	FSL East	14.2	14.7	13.9	15.0	14.5
	FSL West	14.5	18.2	16.5	17.8	16.7
	FSL Wales	-	-	-	-	-

FSS, FSM and FSL refer to Small, Medium and Large farm size groups respectively; Q1 to Q4 refer to labour use performance quartiles

Oilseed labour use by Robust Farm Type is presented in Table 3.7. Cereals and General Cropping farms record similar labour use for oilseeds at 15.7 and 15.8 hrs/ha respectively. It is instructive to note that whilst the East region records the lowest labour use per hectare within these farm type groups, the lowest labour use per hectare by robust farm type is recorded for Mixed farms, in the East, at 14.7 hrs/ha across the four years of data presented.

Table 3.7: Oilseeds Labour Use by Robust Type

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
Cereals	All	15.1	15.3	15.3	17.0	15.7
	England	15.0	15.3	15.3	17.0	15.7
	North	15.3	15.2	17.9	19.7	17.1
	East	15.1	15.0	14.6	16.1	15.2
	West	14.6	18.3	16.9	18.6	17.1
	Wales	-	-	-	-	-
General Cropping	All	15.6	17.0	14.9	16.0	15.8
	England	see All	see All	see All	15.9	15.8
	North	-	-	-	18.6	16.6
	East	15.8	16.9	15.0	15.2	15.6
	West	-	-	-	-	16.5
	Wales	-	-	-	-	-
Dairy	All	-	-	-	-	20.5
	England	-	-	-	-	see All
	North	-	-	-	-	-
	East	-	-	-	-	21.5
	West	-	-	-	-	-
	Wales	-	-	-	-	-
Mixed	All	16.2	16.8	15.9	17.7	16.6
	England	16.2	16.7	15.5	see All	16.5
	North	14.3	-	-	-	17.1
	East	14.8	15.7	12.6	15.7	14.7
	West	-	-	-	-	22.0
	Wales	-	-	-	-	-

Results are only presented for farm types where the sample size is greater than or equal to 15.

3.2.3 Sugar Beet

Table 3.8 provides labour use per hectare data for sugar beet. Direct labour for Sugar beet at 21.5 hrs/ha accounts for 65% of the total labour in Sugar beet production, which, on average is 33 hrs/ha. Contract and overhead labour account for 11% and 24% respectively. Overall, Sugar Beet labour requirements account for approximately 19% of total farm business labour requirements. Considerable variation across performance quartiles exists, with the largest labour use averaging 63.2 hrs/ha for performance group Q1, whilst performance group Q4 expends just under 13 hrs/ha on sugar beet production. Performance group Q4 grows the largest average area of sugar beet across these groups, indicating a degree of economies of size in labour use within sugar beet production.

Table 3.8: Sugar Beet Labour Use – Average and Performance Quartiles

Category	Measure	2004/05	2005/06	2006/07	2007/08	All
All	Direct	19.5	21.9	23.7	21.6	21.5
	Contractor	4.2	4.0	3.7	2.4	3.6
	Overhead	8.0	9.3	7.4	6.3	7.8
	Total Hours	31.6	35.4	34.7	30.3	**33.0**
	% of Farm Lab	18.7	19.5	18.1	19.0	18.8
	Crop Area (ha)	25.9	23.9	21.4	29.1	24.8
	No. in sample	*187*	*166*	*162*	*131*	*646*
Q1	Direct	39.1	39.7	48.9	50.1	43.0
	Contractor	5.5	6.7	5.0	1.8	5.1
	Overhead	15.6	15.2	14.5	14.6	15.1
	Total Hours	60.1	61.7	68.4	66.5	63.2
	% of Farm Lab	28.2	26.3	31.8	33.5	28.1
	Crop Area (ha)	18.3	22.1	15.9	18.5	19.4
	No. in sample	*47*	*42*	*41*	*33*	*162*
Q2	Direct	23.6	22.6	26.6	25.8	24.6
	Contractor	4.0	2.9	3.9	4.7	3.7
	Overhead	8.7	11.6	9.3	9.4	9.5
	Total Hours	36.2	37.8	39.8	40.0	38.0
	% of Farm Lab	21.3	22.3	18.6	20.6	21.7
	Crop Area (ha)	23.9	24.5	22.7	29.4	24.9
	No. in sample	*46*	*41*	*40*	*32*	*161*
Q3	Direct	13.7	15.1	17.4	16.0	15.1
	Contractor	4.6	4.7	5.2	3.2	4.7
	Overhead	6.8	6.7	4.1	4.4	5.7
	Total Hours	25.1	26.6	26.8	23.6	25.5
	% of Farm Lab	13.9	16.7	16.3	16.6	15.7
	Crop Area (ha)	29.5	22.5	19.8	23.0	23.6
	No. in sample	*47*	*41*	*40*	*33*	*161*
Q4	Direct	8.4	9.2	7.8	8.3	8.4
	Contractor	3.1	1.6	1.3	1.1	1.6
	Overhead	3.3	3.5	3.1	1.5	2.8
	Total Hours	14.7	14.2	12.2	10.8	12.9
	% of Farm Lab	14.7	12.2	9.2	12.2	12.3
	Crop Area (ha)	33.8	26.9	29.4	50.0	33.7
	No. in sample	*47*	*42*	*41*	*33*	*162*

Q1 to Q4 refer to labour use performance quartiles

Regional and farm size variation in labour use for sugar beet production is presented in Table 3.9. Note that no sugar beet production is recorded in Wales, hence the results for England and Wales combined relate to England data alone. The East region records the lowest labour usage across the three EU regions of England. Changes in sugar beet processing facilities have led to sugar beet being increasingly concentrated in the East region of England. As noted above for Cereals and Oilseeds, there is an inverse relationship between farm size and labour use, with Large Farms recording average labour use of 29.7 hrs/ha in contrast to the 54 hrs/ha for Small Farms. Within the Large Farms category, it is Large Farms in the East that record the lowest labour use per hectare at 28.8 hrs/ha.

Table 3.9: Sugar Beet Labour Use by Region and Farm Size

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
All		31.6	35.4	34.7	30.3	**33.0**
	Q1	60.1	61.7	68.4	66.5	63.2
	Q2	36.2	37.8	39.8	40.0	38.0
	Q3	25.1	26.6	26.8	23.6	25.5
	Q4	14.7	14.2	12.2	10.8	12.9
England		see All	see All	see All	see All	see All
	North	36.3	34.8	35.6	-	35.3
	East	30.6	34.5	33.3	30.4	32.1
	West	-	-	-	-	55.0
Wales		-	-	-	-	-
FSS		-	-	-	-	54.0
	FSS England	-	-	-	-	-
	FSS North	-	-	-	-	-
	FSS East	-	-	-	-	-
	FSS West	-	-	-	-	-
	FSS Wales	-	-	-	-	-
FSM		39.9	40.3	41.6	52.5	42.6
	FSM England	see FSM	see FSM	see FSM	see FSM	see FSM
	FSM North	-	-	-	-	39.6
	FSM East	40.9	40.2	42.1	see FSM	43.5
	FSM West	-	-	-	-	-
	FSM Wales	-	-	-	-	-
FSL		28.7	33.3	31.7	25.7	29.7
	FSL England	see FSL	see FSL	see FSL	see FSL	see FSL
	FSL North	-	-	-	-	30.7
	FSL East	27.6	32.4	30.0	25.7	28.8
	FSL West	-	-	-	-	63.6
	FSL Wales	-	-	-	-	-

FSS, FSM and FSL refer to Small, Medium and Large farm size groups respectively; Q1 to Q4 refer to labour use performance quartiles

Table 3.9 presents labour use by Robust Farm type. The relatively small sample of Horticulture farms growing sugar beet record the lowest labour usage (22.6 hrs/ha), with Cereals farms using 31.5 hrs/ha in the production of sugar beet, through to 34.9 hrs/ha for Mixed farms.

Table 3.10: Sugar Beet Labour Use by Robust Type

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
Cereals	All	29.6	32.8	33.0	30.7	31.5
	England	see All	see All	see All	see All	see All
	North	-	-	-	-	38.4
	East	28.0	32.2	29.9	see All	30.2
	West	-	-	-	-	-
	Wales	-	-	-	-	-
General Cropping	All	32.0	36.7	35.5	30.1	33.4
	England	see All	see All	see All	see All	see All
	North	-	-	-	-	34.2
	East	31.1	35.4	34.8	30.2	32.6
	West	-	-	-	-	54.0
	Wales	-	-	-	-	-
Horticulture	All	-	-	-	-	22.6
	England	-	-	-	-	see All
	North	-	-	-	-	-
	East	-	-	-	-	-
	West	-	-	-	-	-
	Wales	-	-	-	-	-
Mixed	All	-	-	-	-	34.9
	England	-	-	-	-	see All
	North	-	-	-	-	-
	East	-	-	-	-	36.8
	West	-	-	-	-	-
	Wales	-	-	-	-	-

Results are only presented for farm types where the sample size is greater than or equal to 15.

3.2.3 Field Peas and Beans

Often regarded as variable crops in terms of yield stability, field peas and beans compete with oilseeds in many combinable cropping rotations. Table 3.11 shows that the average labour use for peas and beans is 15.7 hrs/ha, which compares with 15.8 hrs/ha for oilseed (Table 3.5), suggesting there is no discernible difference in labour requirements between these crop types. Direct labour for peas and beans (10.9 hrs/ha) accounts for 69% of total pea and bean labour, with contract and overhead labour accounting for 7% and 23% respectively. Field peas and beans account for just under 10% of total farm business labour on farms where these crops are grown. The labour use across performance quartiles shows an inverse relationship between labour use per hectare and crop area, with the most labour-efficient (Q4) incurring 7.5 hrs/ha across an average of 28 hectares in comparison to Q1 incurring 30.6 hrs/ha over an average of approximately 16 hectares.

Table 3.11: Field Peas and Beans Labour Use – Average and Performance Quartiles

Category	Measure	2004/05	2005/06	2006/07	2007/08	All
All	Direct	10.0	11.0	11.4	11.5	10.9
	Contractor	1.1	0.9	1.3	1.3	1.1
	Overhead	3.6	3.7	3.8	3.3	3.6
	Total Hours	14.8	15.6	16.6	16.1	**15.7**
	% of Farm Lab	10.3	8.8	10.1	8.9	9.5
	Crop Area (ha)	24.0	22.5	22.1	21.8	22.6
	No. in sample	*285*	*268*	*257*	*218*	*1028*
Q1	Direct	20.5	24.0	24.0	21.1	22.4
	Contractor	1.1	1.4	1.3	2.4	1.5
	Overhead	6.2	6.4	8.3	6.1	6.6
	Total Hours	27.8	31.8	33.6	29.6	30.6
	% of Farm Lab	11.3	12.5	15.9	15.0	13.6
	Crop Area (ha)	15.8	16.4	15.7	13.9	15.8
	No. in sample	*71*	*67*	*64*	*55*	*257*
Q2	Direct	9.5	12.3	12.3	12.9	11.4
	Contractor	1.2	0.5	0.9	0.9	1.1
	Overhead	1.3	1.0	4.4	3.4	4.0
	Total Hours	15.0	16.8	17.6	17.2	16.5
	% of Farm Lab	12.4	10.2	9.9	8.2	9.9
	Crop Area (ha)	29.6	20.9	21.4	26.1	23.5
	No. in sample	*71*	*67*	*64*	*54*	*257*
Q3	Direct	7.2	7.7	8.0	8.6	7.9
	Contractor	1.4	0.9	1.8	1.3	1.0
	Overhead	3.2	3.8	2.7	2.4	3.2
	Total Hours	11.8	12.5	12.6	12.3	12.2
	% of Farm Lab	8.4	8.0	9.7	7.5	8.8
	Crop Area (ha)	23.5	26.1	24.3	22.4	24.8
	No. in sample	*71*	*67*	*64*	*54*	*257*
Q4	Direct	5.3	4.9	5.0	5.0	5.0
	Contractor	0.9	0.9	1.2	0.9	1.0
	Overhead	1.5	1.6	1.3	1.6	1.5
	Total Hours	7.7	7.4	7.6	7.5	7.5
	% of Farm Lab	8.7	5.9	6.5	6.3	6.9
	Crop Area (ha)	29.1	27.2	28.3	28.4	28.0
	No. in sample	*72*	*67*	*65*	*55*	*257*

Q1 to Q4 refer to labour use performance quartiles

Field pea and bean labour use by region and farm size, as detailed in Table 3.12, shows that within England, the East region records the lowest labour use per hectare at 15.2 hrs/ha. Note that there are insufficient observations to provide an average labour use for peas and beans in Wales. Farm size analysis is somewhat dominated by Large Farms, which, as noted for other crop types previously presented, shows that Large Farms expend the lowest labour per hectare (14.1 hrs/ha), contrasting with Small Farms (28.9 hrs/ha) and Medium Farms (21.3 hrs/ha). Farms in the East, within these farm size categories, on average record the lowest labour usage per hectare.

Table 3.12: Field Peas and Beans Labour Use by Region and Farm Size

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
All		14.8	15.6	16.6	16.1	**15.7**
	Q1	27.8	31.8	33.6	29.6	30.6
	Q2	15.0	16.8	17.6	17.2	16.5
	Q3	11.8	12.5	12.6	12.3	12.2
	Q4	7.7	7.4	7.6	7.5	7.5
England		14.7	15.6	16.5	16.1	15.2
	North	15.5	15.3	15.6	19.9	16.8
	East	14.5	15.3	16.2	14.8	15.2
	West	15.5	18.2	19.9	17.9	17.9
Wales		-	-	-	-	-
FSS		-	-	-	-	28.9
	FSS England	-	-	-	-	-
	FSS North	-	-	-	-	26.7
	FSS East	-	-	-	-	-
	FSS West	-	-	-	-	-
	FSS Wales	-	-	-	-	-
FSM		21.1	20.3	20.8	20.2	21.3
	FSM England	21.2	20.3	see FSM	see FSM	20.7
	FSM North	-	-	-	-	17.9
	FSM East	21.9	21.5	20.9	20.0	21.3
	FSM West	-	-	22.5	-	20.9
	FSM Wales	-	-	-	-	-
FSL		13.1	14.2	15.0	14.3	14.1
	FSL England	13.0	14.1	15.0	14.3	14.1
	FSL North	11.8	13.4	15.1	19.0	15.3
	FSL East	12.9	13.7	14.8	13.1	13.6
	FSL West	15.0	17.6	17.0	15.3	16.2
	FSL Wales	-	-	-	-	-

FSS, FSM and FSL refer to Small, Medium and Large farm size groups respectively; Q1 to Q4 refer to labour use performance quartiles

Labour use by Robust Farm Type in Table 3.13 shows that Cereals farms record the lowest average labour use (14.9 hrs/ha) and within this group, the East region achieved the most efficient labour use per hectare (14.2 hours). Lowland Grazing Livestock farms record the greatest labour use across the farm type groupings; this is arguably driven by (smaller) scale of operation and the potential use of field peas and beans as whole-crop feeds for on-farm livestock consumption.

Table 3.13: Field Peas and Beans Labour Use by Robust Type

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
Cereals	All	14.4	15.0	15.0	15.1	14.9
	England	14.3	14.9	15.0	15.1	14.8
	North	16.6	16.2	16.9	20.6	17.8
	East	14.2	14.6	14.3	13.6	14.2
	West	13.7	17.0	-	-	16.0
	Wales	-	-	-	-	-
General Cropping	All	16.4	17.8	18.7	18.4	17.8
	England	see All	see All	see All	see All	see All
	North	-	-	-	-	15.8
	East	16.3	18.5	19.2	17.4	17.8
	West	-	-	-	-	22.6
	Wales	-	-	-	-	-
Dairy	All	-	-	-	-	17.5
	England	-	-	-	-	see All
	North	-	-	-	-	-
	East	-	-	-	-	17.7
	West	-	-	-	-	13.2
	Wales	-	-	-	-	-
Lowland Grazing Livestock	All	-	-	-	-	23.9
	England	-	-	-	-	-
	North	-	-	-	-	-
	East	-	-	-	-	-
	West	-	-	-	-	-
	Wales	-	-	-	-	-
Mixed	All	14.6	15.0	16.0	17.6	15.6
	England	14.5	14.8	see All	see All	15.5
	North	-	-	-	-	10.2
	East	13.1	13.6	12.8	-	13.9
	West	-	-	-	-	20.6
	Wales	-	-	-	-	-

Results are only presented for farm types where the sample size is greater than or equal to 15.

3.2.4 Main Crop Potatoes

Table 3.14 provides the results for labour use per hectare for main crop potatoes. The overall average labour use for this crop is 109.1 hrs/ha, of which 74% is direct labour (81.1 hrs) with contract labour of 6.4 hours accounting for only 6%, and overhead labour (21.4 hrs/ha) accounting for 20%, of total labour. The most labour efficient performance group (Q4) incurs 50.5 hrs/ha, less than one-quarter of the labour expended by the least labour-efficient performance group (Q1) with an average of 261 hrs/ha. The most labour-efficient group (Q4) grow an average of 28 hectares, and average labour use on main crop potatoes represents approximately 28% of total farm business labour use. For the least labour-efficient performance group (Q1), labour use on main crop potatoes accounts for approximately 40% of total farm business labour use.

Table 3.14: Main Crop Potatoes Labour Use – Average and Performance Quartiles

Category	Measure	2004/05	2005/06	2006/07	2007/08	All
All	Direct	78.3	79.0	81.6	85.5	81.1
	Contractor	8.0	8.7	5.2	3.7	6.4
	Overhead	20.8	24.0	24.3	16.9	21.4
	Total Hours	108.0	113.0	111.1	106.1	**109.1**
	% of Farm Lab	38.3	35.7	34.2	34.6	35.8
	Crop Area (ha)	24.5	19.1	18.8	20.3	20.6
	No. in sample	*97*	*94*	*99*	*103*	*393*
Q1	Direct	160.7	196.2	237.7	193.5	206.0
	Contractor	3.9	0.8	6.2	2.8	4.2
	Overhead	29.7	56.8	68.7	39.9	50.9
	Total Hours	194.3	253.9	312.6	236.2	261.0
	% of Farm Lab	40.8	38.6	47.5	33.8	39.6
	Crop Area (ha)	17.1	9.8	6.5	7.0	8.1
	No. in sample	*24*	*24*	*25*	*26*	*98*
Q2	Direct	77.8	81.0	99.1	100.3	93.5
	Contractor	14.6	13.0	6.4	5.9	7.6
	Overhead	22.9	31.9	33.2	22.3	27.4
	Total Hours	115.4	126.0	138.8	128.5	128.5
	% of Farm Lab	38.8	39.5	40.6	37.9	39.4
	Crop Area (ha)	24.3	23.4	21.6	26.0	25.0
	No. in sample	*24*	*23*	*24*	*25*	*98*
Q3	Direct	65.9	57.4	68.5	76.5	65.9
	Contractor	7.0	14.8	7.9	2.6	9.8
	Overhead	20.5	12.2	22.7	15.2	17.0
	Total Hours	93.4	89.2	99.1	94.3	93.7
	% of Farm Lab	38.7	38.7	44.1	39.7	40.1
	Crop Area (ha)	22.7	22.3	24.6	23.1	23.8
	No. in sample	*24*	*23*	*25*	*26*	*98*
Q4	Direct	42.5	35.7	33.1	41.6	38.2
	Contractor	5.7	3.1	1.6	2.2	3.3
	Overhead	14.6	9.6	6.1	5.0	9.0
	Total Hours	62.8	48.3	40.9	48.8	50.5
	% of Farm Lab	36.3	27.8	17.2	27.6	27.6
	Crop Area (ha)	34.9	23.5	26.4	28.1	28.0
	No. in sample	*25*	*24*	*25*	*26*	*98*

Q1 to Q4 refer to labour use performance quartiles

Main crop potato labour use by region and farm size is presented in Table 3.15. Regional analysis shows that the EU West region incurred the lowest average labour use, at 78.2 hrs/ha, albeit that for three of the fours years examined there were insufficient observations to present results for this region. The EU North and East regions average very similar labour usage of approximately 110 hrs/ha. With respect to farm size analysis, only results for Medium and Large farm sizes are presented. Table 3.15 shows that Medium Sized Farms average just under 200 hrs/ha, whilst Large Farms average just over 100 hrs/ha. This large difference in labour input correlates with the larger potato area grown by the most labour-efficient quartile (Q4) in Table 3.14.

Table 3.15: Main Crop Potatoes Labour Use by Region and Farm Size

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
All		108.0	113.0	111.1	106.1	**109.1**
	Q1	194.3	253.9	312.6	236.2	261.0
	Q2	115.4	126.0	138.8	128.5	128.5
	Q3	93.4	89.2	99.1	94.3	93.7
	Q4	62.8	48.3	40.9	48.8	50.5
England		106.9	112.2	110.6	105.8	108.7
	North	-	117.4	132.1	94.5	109.8
	East	107.2	118.5	106.7	111.5	110.6
	West	104.0	-	-	-	78.2
Wales		-	-	-	-	-
FSM		222.3	198.8	188.0	177.0	194.9
	FSM England	-	198.8	187.3	176.1	194.4
	FSM North	-	-	-	-	144.4
	FSM East	-	-	-	-	284.0
	FSM West	-	-	-	-	79.8
	FSM Wales	-	-	-	-	-
FSL		102.0	104.5	103.2	101.4	102.7
	FSL England	see FSL	see FSL	see FSL	101.5	102.7
	FSL North	-	-	75.1	88.6	101.5
	FSL East	101.8	111.9	99.8	108.3	104.9
	FSL West	-	-	-	-	87.5
	FSL Wales	-	-	-	-	-

FSM and FSL refer to Medium and Large farm size groups respectively; Q1 to Q4 refer to labour use performance quartiles; Farm size results are only presented for size groups where the sample size is greater than or equal to 15.

Analysis by Robust Farm Type (Table 3.16) shows that, as expected, potato production is concentrated on General Cropping farms, where average labour use is 108.4 hrs/ha. Relatively small numbers of observations on Dairy and Mixed farms indicates that where potatoes are grown on these farm types that labour use is substantially lower than for General Cropping farms. Cereals farms incur lower labour use (96 hrs/ha) than General Cropping farms, whilst main crop potatoes grown on Horticulture farms is considerably higher at 159.4 hrs/ha.

Table 3.16: Main Crop Potatoes Labour Use by Robust Type

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
Cereals	All	-	-	-	-	96.0
	England	-	-	-	-	-
	North	-	-	-	-	-
	East	-	-	-	-	-
	West	-	-	-	-	-
	Wales	-	-	-	-	-
General Cropping	All	107.4	112.7	107.2	106.7	108.4
	England	see All	see All	see All	see All	see All
	North	-	-	-	94.1	110.0
	East	107.4	116.5	102.9	112.2	109.3
	West	-	-	-	-	-
	Wales	-	-	-	-	-
Horticulture	All	-	-	-	-	159.4
	England	-	-	-	-	see All
	North	-	-	-	-	-
	East	-	-	-	-	170.1
	West	-	-	-	-	-
	Wales	-	-	-	-	-
Dairy	All	-	-	-	-	73.5
	England	-	-	-	-	-
	North	-	-	-	-	-
	East	-	-	-	-	-
	West	-	-	-	-	-
	Wales	-	-	-	-	-
Mixed	All	-	-	-	-	72.6
	England	-	-	-	-	-
	North	-	-	-	-	-
	East	-	-	-	-	-
	West	-	-	-	-	-
	Wales	-	-	-	-	-

Results are only presented for farm types where the sample size is greater than or equal to 15.

3.2.5 Early Potatoes

The number of observations for early potato production across the four years examined is restricted to 23; subsequently analysis of labour use across different groups is limited (Table 3.17). Average labour use for early potatoes is 202 hrs/ha, with direct labour (174.6 hrs/ha) contributing 86% of this total labour usage. Contract labour in early potato production from this sample is confined to an average of 0.5 hrs/ha, only 0.3% of total labour use; overheads contribute 13% (26.8 hrs/ha). Early potato production consumes an average of 40% of total farm business labour. Unfortunately, the small sample size does not permit labour quartile performance to be examined.

Table 3.17: Early Potatoes Labour Use

Category	Measure	2004/05	2005/06	2006/07	2007/08	All
All	Direct	-	-	-	-	174.6
	Contractor	-	-	-	-	0.5
	Overhead	-	-	-	-	26.8
	Total Hours	-	-	-	-	**202.0**
	% of Farm Lab	-	-	-	-	40.0
	Crop Area (ha)	-	-	-	-	28.9
	No. in sample	-	-	-	-	*23*

Table 3.18 indicates a limited analysis of regional variation in labour use for early potato production, with the EU East region of England recording 204 hrs/ha against 202 hrs/ha for the full sample, and approximately 203 hrs/ha for England. The sample of early potato producers is dominated by EU East farmers. Farm size analysis is only possible for the Large Farm Size group; again the average labour use across all groups is just over 200 hrs/ha.

Table 3.18: Early Potatoes Labour Use by Region and Farm Size

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
All		-	-	-	-	**202.0**
	Q1	-	-	-	-	-
	Q2	-	-	-	-	-
	Q3	-	-	-	-	-
	Q4	-	-	-	-	-
England		-	-	-	-	202.8
	North	-	-	-	-	-
	East	-	-	-	-	204.0
	West	-	-	-	-	-
Wales		-	-	-	-	-
FSL		-	-	-	-	202.5
	FSL England	-	-	-	-	202.3
	FSL North	-	-	-	-	-
	FSL East	-	-	-	-	204.6
	FSL West	-	-	-	-	-
	FSL Wales	-	-	-	-	-

FSL refers to Large farm size group; Q1 to Q4 refer to labour use performance quartiles; Farm size results are only presented for size groups where the sample size is greater than or equal to 15.

The majority of early potato producers within this sample fall within the General Cropping farm type, and record an average labour use of just under 210 hrs/ha as noted in Table 3.19.

Table 3.19: Early Potatoes Labour Use by Robust Type

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
General Cropping	All	-	-	-	-	209.0
	England	-	-	-	-	208.0
	North	-	-	-	-	-
	East	-	-	-	-	208.0
	West	-	-	-	-	-
	Wales	-	-	-	-	-

Results are only presented for farm types where the sample size is greater than or equal to 15.

3.2.6 Outdoor Vegetables

Labour use for outdoor vegetables is presented in Table 3.20. Average labour use is 282 hrs/ha, of which 88% (250 hrs/ha) is direct labour, 1% (2.7 hrs/ha) is contract labour and 11% (30.1 hrs/ha) is overhead labour. The more specialist nature of outdoor vegetable production leads labour use on outdoor vegetables to account for 68% of total business labour. The analysis by labour-efficient quartiles shows very large variation from 611 hrs/ha for Q1 to 60 hrs/ha for Q4. This large variation is, arguably, in large part due to the variation in the type and

composition of outdoor vegetables on each farm business rather than due entirely to differences in use from efficiency variations alone. This argument is reinforced by the difference in the amount of labour for outdoor vegetables as a percentage of total farm business labour, with Q4 recording a substantially lower percentage, potentially reflecting reduced specialisation when compared with the other performance groups, particularly Q1 and Q2.

Table 3.20: Outdoor Vegetables Labour Use – Average and Performance Quartiles

Category	Measure	2004/05	2005/06	2006/07	2007/08	All
All	Direct	184.6	230.4	270.6	289.3	249.6
	Contractor	1.9	5.9	2.9	0.9	2.7
	Overhead	29.0	30.0	33.5	26.9	30.1
	Total Hours	215.4	266.3	307.3	317.2	**282.4**
	% of Farm Lab	54.9	62.3	73.5	74.2	67.6
	Crop Area (ha)	27.3	22.1	33.5	30.3	28.4
	No. in sample	*62*	*59*	*66*	*71*	*258*
Q1	Direct	433.9	542.2	551.5	610.1	535.8
	Contractor	0.7	1.2	2.3	0.7	6.4
	Overhead	72.9	74.5	94.2	44.8	68.6
	Total Hours	507.4	617.9	648.0	655.5	610.8
	% of Farm Lab	87.1	89.2	86.9	71.7	82.5
	Crop Area (ha)	15.5	9.9	11.3	13.6	12.1
	No. in sample	*16*	*15*	*17*	*18*	*65*
Q2	Direct	256.1	-	340.2	365.0	326.6
	Contractor	1.3	-	0.6	0.1	1.9
	Overhead	28.3	-	26.2	27.5	31.4
	Total Hours	286.8	-	367.0	392.6	359.9
	% of Farm Lab	69.7	-	83.3	88.7	83.8
	Crop Area (ha)	24.4	-	69.2	52.1	43.2
	No. in sample	*15*	-	*16*	*17*	*64*
Q3	Direct	127.5	171.7	142.1	177.5	152.9
	Contractor	3.6	2.6	6.7	2.0	2.0
	Overhead	25.4	8.3	32.7	30.4	22.5
	Total Hours	156.5	182.6	181.5	210.0	177.3
	% of Farm Lab	54.2	57.1	74.2	76.7	65.9
	Crop Area (ha)	29.4	39.3	50.0	33.0	34.1
	No. in sample	*15*	*15*	*16*	*18*	*64*
Q4	Direct	38.8	42.6	49.0	57.8	45.1
	Contractor	1.6	3.7	3.8	1.5	2.7
	Overhead	9.5	15.4	12.5	10.2	12.5
	Total Hours	49.9	61.7	65.3	69.6	60.3
	% of Farm Lab	26.5	36.4	28.4	38.7	31.2
	Crop Area (ha)	48.5	33.5	20.6	23.0	29.8
	No. in sample	*16*	*15*	*17*	*18*	*65*

Q1 to Q4 refer to labour use performance quartiles

Examining labour use across the EU regions of England, the results in Table 3.21 show that the East region incurs the lowest labour use per hectare at 268 hrs/ha, in comparison to 318 hrs/ha (North) and 354 hrs/ha (West). Farm size analysis indicates that Medium Sized Farms expend an average of 444 hrs/ha against an average of 268 hrs/ha for Large Farms. Within the Large Farm group, those in the East region record the lowest average labour use when examining all data across the four years considered.

Table 3.21: Outdoor Vegetables Labour Use by Region and Farm Size

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
All		215.4	266.3	307.3	317.2	**282.4**
	Q1	507.4	617.9	648.0	655.5	610.8
	Q2	286.8	-	367.0	392.6	359.9
	Q3	156.5	182.6	181.5	210.0	177.3
	Q4	49.9	61.7	65.3	69.6	60.3
England		215.5	266.4	see All	see All	282.5
	North	-	-	-	400.0	318.2
	East	208.0	256.0	301.0	292.6	267.7
	West	-	-	-	356.1	354.3
Wales		-	-	-	-	-
FSM		389.0	-	490.9	397.0	443.8
	FSM England	-	-	-	-	see FSM
	FSM North	-	-	-	-	-
	FSM East	-	-	-	-	431.2
	FSM West	-	-	-	-	501.4
	FSM Wales	-	-	-	-	-
FSL		200.8	230.5	295.5	311.7	268.1
	FSL England	see FSL	see FSL	see FSL	see FSL	see FSL
	FSL North	-	-	-	-	302.8
	FSL East	194.9	232.7	294.1	288.4	257.7
	FSL West	-	-	-	-	314.4
	FSL Wales	-	-	-	-	-

FSM and FSL refer to Medium and Large farm size groups respectively; Q1 to Q4 refer to labour use performance quartiles; Farm size results are only presented for size groups where the sample size is greater than or equal to 15.

Analysis by Robust Type (Table 3.22) shows that General Cropping farms incur lower use per hectare (average of 213) than Horticulture farms of 346 hrs/ha. This substantial difference is likely to result from a combination of differential crops within the outdoor vegetable category typically being grown across these two farm types, together with the General Cropping farms growing larger areas of crops; this latter aspect is noted above as a characteristic of the more labour-efficient (per hectare) groups identified.

Table 3.22: Outdoor Vegetables Labour Use by Robust Type

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
General Cropping	All	162.9	215.2	265.0	216.8	213.0
	England	see All	see All	see All	see All	see All
	North	-	-	-	-	273.6
	East	150.8	170.0	269.5	189.9	193.7
	West	-	-	-	-	274.0
	Wales	-	-	-	-	-
Horticulture	All	324.6	328.7	335.5	374.6	345.6
	England	see All	see All	see All	see All	see All
	North	-	-	-	-	-
	East	316.9	335.7	321.7	344.2	330.7
	West	-	-	-	-	1037.9
	Wales	-	-	-	-	-

Results are only presented for farm types where the sample size is greater than or equal to 15.

3.2.7 Vining Peas

Table 3.23 provides the results of labour use on vining pea enterprises; Table 3.24 shows that all of the observations relate to enterprises in England, with no observations for Wales. The results in Table 3.23 show that on average labour incurred in the production of vining peas is 12 hrs/ha. Of this, only 60% (7.2 hrs/ha) is direct labour, with contract labour accounting for 14% of total labour and overhead labour of 3.0 hr/ha accounting for 25%. On farms where vining peas labour was collected, this accounted for just over 8% of total farm business labour. The labour efficiency (per hectare) groups show a range of 21.4 hrs/ha (Q1) to 4.3 hrs/ha (Q4). Contrasting with results for previous enterprises, there is no substantial difference in crop area across the performance quartile ranges.

Table 3.23: Vining Peas Labour Use – Average and Performance Quartiles

Category	Measure	2004/05	2005/06	2006/07	2007/08	All
All	Direct	8.1	8.6	5.5	7.2	7.2
	Contractor	1.6	1.4	2.5	1.2	1.7
	Overhead	3.9	3.6	2.2	2.6	3.0
	Total Hours	13.5	13.6	10.1	11.0	**12.0**
	% of Farm Lab	7.8	9.2	8.6	7.4	8.2
	Crop Area (ha)	38.2	32.6	38.0	40.4	37.4
	No. in sample	*25*	*22*	*26*	*23*	*96*
Q1	Direct	-	-	-	-	14.1
	Contractor	-	-	-	-	1.7
	Overhead	-	-	-	-	5.6
	Total Hours	-	-	-	-	21.4
	% of Farm Lab	-	-	-	-	11.2
	Crop Area (ha)	-	-	-	-	35.6
	No. in sample	-	-	-	-	*24*
Q2	Direct	-	-	-	-	8.5
	Contractor	-	-	-	-	1.5
	Overhead	-	-	-	-	4.0
	Total Hours	-	-	-	-	14.0
	% of Farm Lab	-	-	-	-	8.7
	Crop Area (ha)	-	-	-	-	42.1
	No. in sample	-	-	-	-	*24*
Q3	Direct	-	-	-	-	4.4
	Contractor	-	-	-	-	1.7
	Overhead	-	-	-	-	1.9
	Total Hours	-	-	-	-	8.0
	% of Farm Lab	-	-	-	-	6.6
	Crop Area (ha)	-	-	-	-	31.2
	No. in sample	-	-	-	-	*24*
Q4	Direct	-	-	-	-	1.8
	Contractor	-	-	-	-	2.0
	Overhead	-	-	-	-	0.6
	Total Hours	-	-	-	-	4.3
	% of Farm Lab	-	-	-	-	6.1
	Crop Area (ha)	-	-	-	-	40.8
	No. in sample	-	-	-	-	*24*

Q1 to Q4 refer to labour use performance quartiles

Labour use for vining peas across EU regions is restricted to a consideration of the labour use in the EU North and EU East regions in Table 3.24. Being dominated by production in the EU East region, the average labour use in the East matches that for England as a whole, whilst the relatively small sample of observations that make up the EU North grouping show no discernible difference in labour use to the average for England. Note that all observations for vining peas are from farms that are categorised as Large Farms.

Table 3.24: Vining Peas Labour Use by Region and Farm Size

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
All		13.5	13.6	10.1	11.0	**12.0**
	Q1	-	-	-	-	21.4
	Q2	-	-	-	-	14.0
	Q3	-	-	-	-	8.0
	Q4	-	-	-	-	4.3
England		see All	see All	see All	see All	see All
	North	-	-	-	-	11.7
	East	13.3	13.6	9.6	11.6	12.0
	West	-	-	-	-	-
Wales		-	-	-	-	-
FSL		see All	see All	see All	see All	see All
	FSL England	-	-	-	-	-
	FSL North	-	-	-	-	-
	FSL East	-	-	-	-	-
	FSL West	-	-	-	-	-
	FSL Wales	-	-	-	-	-

FSL refers to Large farm size group; Q1 to Q4 refer to labour use performance quartiles; farm size results are only presented for size groups where the sample size is greater than or equal to 15.

Vining pea labour use by Robust Farm Type (Table 3.25) shows that the sample size is only sufficient to present data for General Cropping Farms, and that on these farms, the average labour use is 11.5 hrs/ha. The results presented for vining peas demonstrate that the sample is largely focused on Large, General Cropping farms in the EU East region, as would be expected *a priori* with this relatively specialist crop.

Table 3.25: Vining Peas Labour Use by Robust Type

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
Cereals	All	-	-	-	-	-
	England	-	-	-	-	-
	North	-	-	-	-	-
	East	-	-	-	-	-
	West	-	-	-	-	-
	Wales	-	-	-	-	-
General Cropping	All	12.2	12.9	10.4	11.2	11.5
	England	see All	see All	see All	see All	see All
	North	-	-	-	-	11.7
	East	11.9	12.7	10.0	11.8	11.5
	West	-	-	-	-	-
	Wales	-	-	-	-	-

Results are only presented for farm types where the sample size is greater than or equal to 15.

3.2.8 Top and Soft Fruit

Labour use data in top and soft fruit production, as presented in Table 3.26, underlines the range of crops, enterprises and intensity of production present given the large ranges in labour use identified across performance quartiles. Overall, average labour use is 425 hr/ha, derived from 359 hours of direct labour (85%), 6 hours contract labour (1%) and 60 hours of overhead labour (14%). Given the relatively specialised nature of these crops, it is not surprising to note that labour use in top and soft fruit accounts for almost 80% of total farm business labour. Examining the results across the four labour performance quartiles, the heaviest labour users (Q1) expend 942 hrs/ha in production, more than nine times the average of Q4 who incur 101 hrs/ha. This large difference in labour use is almost certainly due in part from differences in the crops produced and the intensity of their production per hectare. It is instructive to note that for the Q4 performance quartile, total labour on top and soft fruit production accounts for almost 65% of total farm business labour, whilst for Q1 this figure is approximately 84%.

Table 3.26: Top and Soft Fruit Labour Use – Average and Performance Quartiles

Category	Measure	2004/05	2005/06	2006/07	2007/08	All
All	Direct	340.5	387.2	329.1	373.7	359.1
	Contractor	3.4	4.2	12.2	4.7	5.8
	Overhead	60.7	68.4	49.1	55.6	59.7
	Total Hours	404.7	459.7	390.4	434.0	**424.5**
	% of Farm Lab	80.4	84.4	74.2	76.2	79.5
	Crop Area (ha)	17.2	17.7	13.0	14.1	15.6
	No. in sample	*63*	*58*	*64*	*61*	*246*
Q1	Direct	916.7	994.4	719.8	915.6	811.4
	Contractor	8.3	8.0	39.2	10.2	13.7
	Overhead	140.0	126.2	105.1	110.9	116.5
	Total Hours	1064.9	1128.5	864.1	1036.7	941.7
	% of Farm Lab	75.0	79.8	82.8	87.0	83.7
	Crop Area (ha)	9.2	7.3	8.9	11.0	10.5
	No. in sample	*16*	*15*	*16*	*15*	*62*
Q2	Direct	342.2	-	352.0	342.4	339.7
	Contractor	0.2	-	5.9	0.4	3.4
	Overhead	71.0	-	44.2	69.1	67.1
	Total Hours	413.4	-	402.2	411.9	410.2
	% of Farm Lab	84.3	-	80.2	81.2	84.3
	Crop Area (ha)	30.1	-	15.4	21.4	25.4
	No. in sample	*16*	-	*16*	*15*	*61*
Q3	Direct	187.8	-	208.5	234.4	221.3
	Contractor	3.2	-	3.7	5.9	3.8
	Overhead	29.3	-	33.7	36.5	37.0
	Total Hours	220.2	-	246.0	276.7	262.2
	% of Farm Lab	89.3	-	72.1	79.1	81.2
	Crop Area (ha)	16.5	-	13.5	16.6	15.6
	No. in sample	*15*	-	*16*	*15*	*61*
Q4	Direct	75.5	105.2	77.8	73.2	83.4
	Contractor	7.8	3.7	2.9	2.4	4.0
	Overhead	12.5	13.6	19.4	11.7	13.9
	Total Hours	95.8	122.5	100.1	87.3	101.4
	% of Farm Lab	64.2	76.4	62.8	51.8	64.5
	Crop Area (ha)	13.0	12.8	16.6	10.1	13.2
	No. in sample	*16*	*15*	*16*	*16*	*62*

Q1 to Q4 refer to labour use performance quartiles

Table 3.27 presents data for top and soft fruit production by region and farm size groups. Data for top and soft fruit relates to exclusively English data, and within this sample, production is dominated by the EU East and West regions. The East region expends an average of 470 hrs/ha, in comparison to approximately 278 hrs/ha in the West. Such differences are unlikely to be due to regional factors alone, but are most certainly influenced by the crop types within this broad crop category. Variation in labour use by farm size groups exists, however when examining labour use by farm size groups across the four years of interest, no discernible patterns emerge, indicating that sample changes across the years make it more difficult to detect patterns in labour use by farm size groups.

Table 3.27: Top and Soft Fruit Labour Use by Region and Farm Size

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
All		404.7	459.7	390.4	434.0	**424.5**
	Q1	1064.9	1128.5	864.1	1036.7	941.7
	Q2	413.4	-	402.2	411.9	410.2
	Q3	220.2	-	246.0	276.7	262.2
	Q4	95.8	122.5	100.1	87.3	101.4
England		see All	see All	see All	see All	see All
	North	-	-	-	-	-
	East	448.6	494.3	436.2	493.3	469.5
	West	247.2	311.1	272.9	272.3	275.7
Wales		-	-	-	-	-
FSS		-	-		-	449.4
	FSS England	-	-	-	-	see FSS
	FSS North	-	-	-	-	-
	FSS East	-	-	-	-	490.7
	FSS West	-	-	-	-	313.0
	FSS Wales	-	-	-	-	-
FSM		707.6	668.7	326.1	280.7	517.8
	FSM England	see FSM	see FSM	see FSM	see FSM	see FSM
	FSM North	-	-	-	-	-
	FSM East	-	-	-	-	780.6
	FSM West	-	-	-	-	242.8
	FSM Wales	-	-	-	-	-
FSL		344.7	399.3	385.1	473.8	394.0
	FSL England	see FSL	see FSL	see FSL	see FSL	see FSL
	FSL North	-	-	-	-	-
	FSL East	357.5	406.1	419.6	516.1	413.2
	FSL West	-	-	-	-	294.4
	FSL Wales	-	-	-	-	-

FSS, FSM and FSL refer to Small, Medium and Large farm size groups respectively; Q1 to Q4 refer to labour use performance quartiles

Labour use by Robust Farm Type (Table 3.28) is dominated by specialist Horticulture farms (as would be expected), with Horticulture farms incurring an average of 416 hrs/ha in contrast to the 474 hrs/ha for General Cropping farms. Once again, large year to year and region to region variation leads to firm conclusions being difficult to establish.

Table 3.28: Top and Soft Fruit Labour Use by Robust Type

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
General Cropping	All	-	-	-	-	474.4
	England	-	-	-	-	see All
	North	-	-	-	-	-
	East	-	-	-	-	569.4
	West	-	-	-	-	-
	Wales	-	-	-	-	-
Horticulture	All	359.6	426.7	416.1	480.1	416.3
	England	see All	see All	see All	see All	see All
	North	-	-	-	-	-
	East	396.0	456.2	449.0	542.9	454.2
	West	247.2	303.5	307.7	-	288.5
	Wales	-	-	-	-	-

Results are only presented for farm types where the sample size is greater than or equal to 15.

3.2.9 Hardy Nursery Stock

Table 3.29 gives details of the labour use in hardy nursery stock production. Overall average labour use is just over 1880 hrs/ha, with 84% of this (1583 hrs) from direct labour, and contract and overhead labour contributing approximately 0.5% and 16% respectively. Labour in this crop type accounts for 69% of total farm business labour. The performance quartile analysis demonstrates (as noted above for other Horticulture types) that there is a wide variation in labour use, dependent in large part, upon the specifics of the crop(s) grown and the production systems in which they are grown. The most intensive labour users (Q1) incur approximately 7,500 hrs/ha which is a sharp contrast to the 215 hrs/ha for the lowest labour users (Q4). The pattern of the area of crop grown across performance quartiles indicates that as crop area increases, the labour use per hectare decreases. This pattern reinforces the commentary that it is variation in crops grown, and across systems within which these are produced, that largely accounts for such variation in labour use per hectare.

Table 3.29: Hardy Nursery Stock Labour Use – Average and Performance Quartiles

Category	Measure	2004/05	2005/06	2006/07	2007/08	All
All	Direct	1263.7	1828.3	1665.8	1797.3	1583.0
	Contractor	10.9	11.4	5.4	1.3	8.5
	Overhead	176.9	377.7	322.8	373.3	292.1
	Total Hours	1451.5	2218.4	1994.0	2172.0	**1883.6**
	% of Farm Lab	60.7	75.0	70.0	75.0	68.7
	Crop Area (ha)	6.2	4.5	3.6	3.3	4.5
	No. in sample	*56*	*65*	*61*	*61*	*243*
Q1	Direct	-	7168.0	6557.6	7026.8	6829.5
	Contractor	-	4.6	6.5	2.2	5.0
	Overhead	-	804.9	721.3	773.3	678.3
	Total Hours	-	7977.5	7282.4	7802.2	7512.8
	% of Farm Lab	-	10.9	93.5	94.9	95.6
	Crop Area (ha)	-	3.9	2.3	2.1	2.4
	No. in sample	-	*16*	*15*	*15*	*61*
Q2	Direct	-	1899.1	2262.9	2319.9	2094.4
	Contractor	-	11.7	12.9	<0.1	16.4
	Overhead	-	721.9	590.1	738.7	663.0
	Total Hours	-	2632.7	2866.7	3058.6	2773.8
	% of Farm Lab	-	71.4	91.4	87.3	83.1
	Crop Area (ha)	-	3.1	2.2	1.9	2.5
	No. in sample	-	*16*	*15*	*15*	*61*
Q3	Direct	-	773.5	648.3	751.0	687.4
	Contractor	-	0.0	0.3	<0.1	0.2
	Overhead	-	176.1	340.4	330.5	245.2
	Total Hours	-	949.6	988.9	1081.6	932.8
	% of Farm Lab	-	84.0	69.5	75.1	78.6
	Crop Area (ha)	-	3.4	4.6	5.5	4.7
	No. in sample	-	*16*	*15*	*15*	*60*
Q4	Direct	-	176.3	298.5	269.4	179.4
	Contractor	-	20.3	3.0	2.9	9.2
	Overhead	-	27.5	34.1	34.0	26.5
	Total Hours	-	224.1	335.6	306.3	215.1
	% of Farm Lab	-	64.3	50.3	59.3	50.2
	Crop Area (ha)	-	12.5	6.6	4.9	11.5
	No. in sample	-	*17*	*16*	*16*	*61*

Q1 to Q4 refer to labour use performance quartiles

Regional and farm size grouping analysis of labour use in hardy nursery stock production (Table 3.30) shows that the observations on hard nursery stock are all drawn from England, and within this sample, growers in the EU West region expend greater labour resources per hectare that those in the EU North and East regions who incur just over 1700 hrs/ha. Farm size analysis shows that, overall, Small and Medium farms have similar labour use profiles across the combined data set covering all four years, but Large Farms generally operate systems which require a lower labour use, approximating 1700 hrs/ha in comparison to the 2500 – 2600 hrs/ha for the remaining farm size groups.

Table 3.30: Hardy Nursery Stock Labour Use by Region and Farm Size

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
All		1451.5	2218.4	1994.0	2172.0	**1883.6**
	Q1	-	7977.5	7282.4	7802.2	7512.8
	Q2	-	2632.7	2866.7	3058.6	2773.8
	Q3	-	949.6	988.9	1081.6	932.8
	Q4	-	224.1	335.6	306.3	215.1
England		see All	see All	see All	see All	see All
	North	-	-	-	-	1721.6
	East	1286.3	2206.8	1690.5	2202.2	1751.7
	West	-	-	-	-	3253.6
Wales		-	-	-	-	-
FSS		-	-	-	-	2543.3
	FSS England	-	-	-	-	see FSS
	FSS North	-	-	-	-	-
	FSS East	-	-	-	-	1954.0
	FSS West	-	-	-	-	-
	FSS Wales	-	-	-	-	-
FSM		3343.9	2206.6	2449.5	2503.5	2611.4
	FSM England	see FSM	see FSM	see FSM	see FSM	see FSM
	FSM North	-	-	-	-	-
	FSM East	-	-	-	-	2396.6
	FSM West	-	-	-	-	3296.8
	FSM Wales	-	-	-	-	-
FSL		1130.2	2238.3	1839.1	1969.9	1683.5
	FSL England	see FSL	see FSL	see FSL	see FSL	see FSL
	FSL North	-	-	-	-	-
	FSL East	1120.6	2211.1	1597.1	2147.8	1636.3
	FSL West	-	-	-	-	3091.2
	FSL Wales	-	-	-	-	-

FSS, FSM and FSL refer to Small, Medium and Large farm size groups respectively; Q1 to Q4 refer to labour use performance quartiles

Labour use analysis by Robust Farm Type (Table 3.31) shows that the sample for hardy nursery stock is dominated by Horticulture farms, and on these businesses labour use is approximately 2660 hrs/ha, nearly 800 hours more than the average for the sample. This discrepancy is accounted for by labour use on General Cropping farms, for hardy nursery stock, of only 270 hrs/ha. These data reflect different production systems and the output of different products from these two broad types of farming systems. With the exception of the EU West region, labour use across the four years of interest is relatively constant.

Table 3.31: Hardy Nursery Stock Labour Use by Robust Type

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
General Cropping	All	-	-	-	-	272.9
	England	-	-	-	-	see All
	North	-	-	-	-	-
	East	-	-	-	-	270.1
	West	-	-	-	-	-
	Wales	-	-	-	-	-
Horticulture	All	2823.1	2548.8	2773.2	2521.7	2660.3
	England	see All	see All	see All	see All	see All
	North	-	-	-	-	1721.6
	East	2776.4	2612.3	2473.0	2617.4	2630.1
	West	-	-	-	-	3338.5
	Wales	-	-	-	-	-

Results are only presented for farm types where the sample size is greater than or equal to 15.

3.2.10 Vegetables Grown Under Glass

The specialist nature of producing vegetables under glass results in there being a relatively modest 146 observations across the four years of interest. Over these fours years, labour use in this crop grouping averages just under 7000 hrs/ha. Of the total labour usage, approximately 90% of labour use is classified as direct labour, with overhead labour accounting for approximately 10% of total labour. Contract labour plays a very small part in the production of vegetables grown under glass. The specialist production systems leads to labour on this crop grouping accounting for an average of 87% of total farm business labour on farms where vegetables under glass are grown. Labour use by performance quartile demonstrates a pattern noted above for more specialist crop types – that there is large variation across the quartile groupings, resultant of the variation in crops grown and the production systems operated across these individual businesses. The most intensive labour using group (Q1) expend more than 19,000 hrs/ha over an average of 0.5 hectares. By contrast the least labour intensive operate over an average area of 3.0 hectares, and across this area expend just over 1,130 hrs/ha.

Table 3.32: Vegetables Grown Under Glass Labour Use – Average and Performance Quartiles

Category	Measure	2004/05	2005/06	2006/07	2007/08	All
All	Direct	6504.2	6375.0	6440.8	5951.9	6319.4
	Contractor	2.6	2.1	8.2	5.9	4.9
	Overhead	576.1	802.3	671.2	628.0	666.0
	Total Hours	7082.8	7181.0	7120.2	6585.8	**6990.8**
	% of Farm Lab	89.3	86.8	85.3	87.0	87.0
	Crop Area (ha)	1.1	0.8	0.9	0.9	0.9
	No. in sample	*30*	*34*	*39*	*43*	*146*
Q1	Direct	-	-	-	-	17657.0
	Contractor	-	-	-	-	19.0
	Overhead	-	-	-	-	1668.7
	Total Hours	-	-	-	-	19345.6
	% of Farm Lab	-	-	-	-	91.8
	Crop Area (ha)	-	-	-	-	0.5
	No. in sample	-	-	-	-	*37*
Q2	Direct	-	-	-	-	11075.5
	Contractor	-	-	-	-	6.9
	Overhead	-	-	-	-	997.4
	Total Hours	-	-	-	-	12079.8
	% of Farm Lab	-	-	-	-	93.1
	Crop Area (ha)	-	-	-	-	0.5
	No. in sample	-	-	-	-	*36*
Q3	Direct	-	-	-	-	4540.0
	Contractor	-	-	-	-	1.8
	Overhead	-	-	-	-	896.4
	Total Hours	-	-	-	-	5438.2
	% of Farm Lab	-	-	-	-	66.2
	Crop Area (ha)	-	-	-	-	0.9
	No. in sample	-	-	-	-	*36*
Q4	Direct	-	-	-	-	1026.5
	Contractor	-	-	-	-	0.2
	Overhead	-	-	-	-	105.1
	Total Hours	-	-	-	-	1132.7
	% of Farm Lab	-	-	-	-	89.8
	Crop Area (ha)	-	-	-	-	3.0
	No. in sample	-	-	-	-	*37*

Q1 to Q4 refer to labour use performance quartiles

Regional and farm size analysis (Table 3.33) shows that all observations are drawn from England, and that the EU East region records the lowest average labour use of 6,100 hrs/ha, against the average of approximately 7,900 hrs/ha (EU North) and 11,000 hrs/ha (EU West). The dominance of observations from the EU East region can be observed by the presentation of results across the individual years for the EU East region only. Farm size analysis shows that the relatively small number of observations classified as Medium Sized Farms use 9,500 hrs/ha, whilst those falling within the Large Farm Size category use approximately 6,700 hrs/ha.

Table 3.33: Vegetables Grown Under Glass Labour Use by Region and Farm Size

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
All		7082.8	7181.0	7120.2	6585.8	**6990.8**
	Q1	-	-	-	-	19345.6
	Q2	-	-	-	-	12079.8
	Q3	-	-	-	-	5438.2
	Q4	-	-	-	-	1132.7
England		see All-	see All	see All	see All	see All
	North	-	-	-	-	7886.9
	East	6962.2	6355.7	7120.2	6585.8	6123.2
	West	-	-	-	-	10824.6
Wales		-	-	-	-	-
		-	-	-	-	-
FSM		-	-	-	-	9582.6
	FSM England	-	-	-	-	-
	FSM North	-	-	-	-	-
	FSM East	-	-	-	-	-
	FSM West	-	-	-	-	-
	FSM Wales	-	-	-	-	-
FSL		6758.2	6815.7	6836.7	6559.9	6743.4
	FSL England	see FSL	see FSL	see FSL	see FSL	see FSL
	FSL North	-	-	-	-	7936.0
	FSL East	6797.5	6308.3	5672.4	5840.6	6116.1
	FSL West	-	-	-	-	9575.7
	FSL Wales	-	-	-	-	-

FSM and FSL refer to Medium and Large farm size groups respectively; Q1 to Q4 refer to labour use performance quartiles; Farm size results are only presented for size groups where the sample size is greater than or equal to 15.

Labour use analysis by Robust Farm type (Table 3.34) shows that only data for Horticulture farms can be provided and that, due the over-riding dominance of Horticulture farms in the overall sample, typical labour use on Horticulture farms is very close to the results previously presented for the overall sample and across the EU regions on England.

Table 3.34: Vegetables Grown Under Glass Labour Use by Robust Type

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
Horticulture	All	7191.0	7243.1	7138.2	6436.3	6997.3
	England	see All	see All	see All	see All	see All
	North	-	-	-	-	7886.9
	East	7119.3	6425.5	5571.7	5527.7	6114.2
	West	-	-	-	-	10824.6
	Wales	-	-	-	-	-

Results are only presented for farm types where the sample size is greater than or equal to 15.

3.2.11 Flowers and Plants Grown Under Glass

By a considerable margin, the most intensive user of labour (per hectare) in "crop" production is for flowers and plants grown under glass, where average labour use is recorded at 12,800 hrs/ha (Table 3.35). With 80% of this total figure derived from direct labour, and 20 % from overhead labour, contract labour, averaging 7.7 hrs/ha features as a very small part of the production process for this crop grouping. As with other intensive crop systems considered, a wide variation in labour use exists with the most intensive labour-users (Q1) expending 31,750 hrs/ha in comparison to 4,070 hrs/ha for the least intensive

users (Q4). It is instructive to note that labour use on flowers and plants grown under glass accounts for 82% of total farm business labour for Q1, whilst for Q4, the corresponding figure is 53%, indicating that for the former group, on average, this crop type is more central to their overall business than for those businesses in Q4.

Table 3.35: Flowers and Plants Grown Under Glass Labour Use – Average and Performance Quartiles

Category	Measure	2004/05	2005/06	2006/07	2007/08	All
All	Direct	12766.2	10995.8	9108.0	9412.3	10270.1
	Contractor	2.8	25.4	0.4	0.2	7.7
	Overhead	3213.1	2874.2	2357.2	1929.6	2516.6
	Total Hours	15982.2	13895.4	11465.6	11342.1	**12794.4**
	% of Farm Lab	79.9	76.8	73.7	77.8	76.6
	Crop Area (ha)	0.6	0.8	0.8	0.9	0.8
	No. in sample	*49*	*66*	*66*	*66*	*247*
Q1	Direct	-	21732.1	22843.0	20806.9	24099.1
	Contractor	-	128.4	1.7	0.0	43.2
	Overhead	-	8420.8	8508.0	5217.1	7607.5
	Total Hours	-	30281.4	31352.7	26024.0	31746.9
	% of Farm Lab	-	72.0	82.2	90.2	82.2
	Crop Area (ha)	-	0.6	0.4	0.5	0.4
	No. in sample	-	*17*	*17*	*17*	*62*
Q2	Direct	-	12482.5	12081.6	10194.5	12129.4
	Contractor	-	0.4	0.7	0.2	0.4
	Overhead	-	1811.4	1763.2	2059.8	1954.4
	Total Hours	-	14294.3	13845.5	12254.4	14084.3
	% of Farm Lab	-	95.1	95.4	96.5	94.1
	Crop Area (ha)	-	1.2	0.9	1.5	1.1
	No. in sample	-	*16*	*16*	*16*	*62*
Q3	Direct	-	7444.1	7138.2	8080.5	7841.1
	Contractor	-	1.1	0.0	0.1	0.6
	Overhead	-	1840.8	1825.6	1164.4	1908.4
	Total Hours	-	9286.0	8963.07	9245.1	9750.1
	% of Farm Lab	-	74.1	80.1	74.2	81.6
	Crop Area (ha)	-	1.3	1.5	1.0	1.3
	No. in sample	-	*16*	*16*	*16*	*61*
Q4	Direct	-	3106.8	3491.0	2281.3	3342.4
	Contractor	-	0.0	0.0	0.6	1.1
	Overhead	-	670.2	521.7	573.4	727.0
	Total Hours	-	3777.0	4012.7	2855.3	4070.6
	% of Farm Lab	-	55.2	52.2	47.4	53.2
	Crop Area (ha)	-	0.5	0.8	0.6	0.7
	No. in sample	-	*17*	*17*	*17*	*62*

Q1 to Q4 refer to labour use performance quartiles

Table 3.36 provides the regional and farm size breakdown of labour use for flowers and plants grown under glass. Note that there are no observations from Wales, as the data set for England matches that for all businesses. Across England, the systems and crops produced in the North record the lowest labour use of 8,500 hrs/ha, whilst the EU East and West respectively record 13,000 hrs/ha and nearly 15,000 hrs/ha. No clear pattern emerges to link farm size groupings to labour use, indicating that variations in labour use across individual businesses are not strongly linked to farm business size.

Table 3.36: Flowers and Plants Grown Under Glass Labour Use by Region and Farm Size

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
All		15982.2	13895.4	11465.6	11342.1	**12794.4**
	Q1	-	30281.4	31352.7	26024.0	31746.9
	Q2	-	14294.3	13845.5	12254.4	14084.3
	Q3	-	9286.0	8963.07	9245.1	9750.1
	Q4	-	3777.0	4012.7	2855.3	4070.6
England		see All-	see All	see All	see All	see All
	North	-	-	-	-	8494.3
	East	17549.3	14520.3	10777.9	11795.9	13135.7
	West	-			-	14871.7
Wales		-	-	-	-	-
		-	-	-	-	-
FSS		-	-	-	-	14386.6
	FSS England	-	-	-	-	-
	FSS North	-	-	-	-	-
	FSS East	-	-	-	-	-
	FSS West	-	-	-	-	-
	FSS Wales	-	-	-	-	-
FSM		18512.3	13457.1	11468.1	11517.9	127936.8
	FSM England	see FSM	see FSM	see FSM	see FSM	see FSM
	FSM North	-	-	-	-	-
	FSM East	-	-	-	-	13478.3
	FSM West	-	-	-	-	10725.5
	FSM Wales	-	-	-	-	-
FSL		15399.1	14172.4	11338.6	11037.7	12731.3
	FSL England	see FSL	see FSL	see FSL	see FSL	see FSL
	FSL North	-	-	-	-	7700.7
	FSL East	17254.3	14578.6	10086.2	11289.2	12925.5
	FSL West	-	-	-	-	19036.8
	FSL Wales	-	-	-	-	-

FSS, FSM and FSL refer to Small, Medium and Large farm size groups respectively; Q1 to Q4 refer to labour use performance quartiles

Labour use by Robust Farm Type in Table 3.37 shows that results can only be presented for the Horticulture farm type group. Within this group, overall average labour use is very close to the overall average for the complete set of data, and whilst the regional analysis follows the pattern noted above, there is no clear pattern to emerge across years, albeit that variation across years is present.

Table 3.37: Flowers and Plants Grown Under Glass Labour Use by Robust Type

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
Horticulture	All	16071.5	13860.6	11364.4	11345.7	12751.8
	England	see All	see All	see All	see All	see All
	North	-	-	-	-	8494.3
	East	17750.5	14463.7	10622.0	11802.4	13077.0
	West	-	13969.5	16865.6	-	14871.7
	Wales	-	-	-	-	-

Results are only presented for farm types where the sample size is greater than or equal to 15.

3.2.12 Set-Aside

Categorised within the "crop" enterprises, set-aside clearly represents a different land use in that it is, in traditional agricultural terms, non-productive. However, the regulations pertaining to the retention of land set aside in good agricultural condition ensures that the land cannot be "abandoned" but requires active management. Table 3.38 provides the average and performance quartile analysis for labour use in the management of set-aside, and notes that the average labour use is 2.9 hrs/ha. Approximately 69% of total labour use on set-aside is direct labour use, with 3% accounted for by contract labour and 28% from overhead labour input. Over the sample, the area of set-aside averaged 14.6 hectares. The quartile analysis shows that the least labour efficient managers of set-aside (Q1) expend 10.8 hrs/ha, over an average area of 10.1 ha, whilst the most labour efficient (Q4) incur only 0.6 hrs/ha over an average of 19.7 ha. As the average area of set-aside increases across these four quartiles, the amount of labour used per hectare decreases, indicating labour economies of size in the management of set-aside.

Table 3.38: Set-Aside Labour Use – Average and Performance Quartiles

Category	Measure	2004/05	2005/06	2006/07	2007/08	All
All	Direct	1.7	1.9	2.0	2.3	2.0
	Contractor	0.2	0.1	0.1	<0.1	0.1
	Overhead	0.8	0.9	0.8	0.6	0.8
	Total Hours	2.6	3.0	2.9	2.9	**2.9**
	% of Farm Lab	1.2	1.2	1.1	1.0	1.1
	Crop Area (ha)	15.9	15.1	13.3	14.0	14.6
	No. in sample	*509*	*506*	*534*	*458*	*2007*
Q1	Direct	4.5	5.2	5.7	8.1	7.1
	Contractor	0.3	0.2	0.1	0.3	0.2
	Overhead	2.8	3.3	2.8	2.0	3.5
	Total Hours	7.6	8.8	8.7	10.4	10.8
	% of Farm Lab	2.6	2.4	2.2	2.1	1.7
	Crop Area (ha)	11.1	10.0	9.4	10.1	10.1
	No. in sample	*127*	*127*	*134*	*115*	*502*
Q2	Direct	1.6	2.2	2.2	2.2	2.0
	Contractor	0.3	<0.1	0.2	<0.1	0.2
	Overhead	0.7	0.9	0.8	0.7	0.8
	Total Hours	2.5	3.2	3.3	3.0	3.0
	% of Farm Lab	1.5	1.4	1.1	1.2	1.5
	Crop Area (ha)	15.7	14.3	11.7	10.1	12.8
	No. in sample	*127*	*126*	*133*	*114*	*502*
Q3	Direct	1.1	1.2	1.3	1.2	1.2
	Contractor	0.1	<0.1	<0.1	<0.1	<0.1
	Overhead	0.3	0.3	0.3	0.3	0.3
	Total Hours	1.4	1.7	1.6	1.5	1.5
	% of Farm Lab	0.9	1.2	0.9	0.8	0.9
	Crop Area (ha)	16.6	18.1	13.2	16.1	16.2
	No. in sample	*127*	*126*	*133*	*114*	*501*
Q4	Direct	0.5	0.5	0.5	0.4	0.5
	Contractor	<0.1	<0.1	<0.1	<0.1	<0.1
	Overhead	0.2	<0.1	<0.1	<0.1	0.1
	Total Hours	0.7	0.6	0.6	0.5	0.6
	% of Farm Lab	0.5	0.4	0.5	0.4	0.5
	Crop Area (ha)	20.8	18.5	19.9	19.6	19.7
	No. in sample	*128*	*127*	*134*	*115*	*502*

Q1 to Q4 refer to labour use performance quartiles

Presenting labour use for set-aside by region and farm size, Table 3.39 shows that average labour use for set-aside in Wales (15.1 hrs/ha) is dramatically higher than for England (average 2.8 hrs/ha). One possible explanation for this is the difference in labour use, is the average area of set-aside; in England (Wales) the average area of set-aside across all years is 14.8 ha (4.5ha). Within England, there is some small variation in labour use, with the North, East and West recording labour use of 3.0, 2.8 and 2.7 hrs/ha respectively. Small farms expend an average of 4.3 hrs/ha, with Small Farms in the EU East region recording the lowest use within this farm size band; Medium and Large farms record labour use of 2.6 and 2.9 hrs/ha, and following the pattern for the full sample, Wales records the highest labour use per hectare. It is instructive to note the relatively small variation across EU regions within England for the Large Farm Size group.

Table 3.39: Set-Aside Labour Use by Region and Farm Size

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
All		2.6	3.0	2.9	2.9	**2.9**
	Q1	7.6	8.8	8.7	10.4	10.8
	Q2	2.5	3.2	3.3	3.0	3.0
	Q3	1.4	1.7	1.6	1.5	1.5
	Q4	0.7	0.6	0.6	0.5	0.6
England		2.6	2.9	2.8	2.1	2.8
	North	3.8	3.5	2.9	1.9	3.0
	East	2.3	2.9	2.9	3.1	2.8
	West	2.7	2.4	2.6	3.2	2.7
Wales		9.6	-	14.6	19.5	15.1
FSS		2.8	4.2	5.8	4.2	4.3
	FSS England	2.6	3.8	4.8	3.8	3.8
	FSS North	-	-	-	-	4.4
	FSS East	-	-	-	-	3.0
	FSS West	-	-	5.3	4.2	3.9
	FSS Wales	-	-	-	-	14.8
FSM		2.7	2.6	2.7	2.3	2.6
	FSM England	2.6	2.6	2.7	2.2	2.6
	FSM North	4.9	3.6	2.9	1.9	3.0
	FSM East	2.2	2.5	2.6	2.1	2.4
	FSM West	2.1	2.3	2.9	3.5	2.7
	FSM Wales	-	-	-	-	6.8
FSL		2.6	3.0	2.9	3.1	2.9
	FSL England	2.6	3.0	2.8	3.0	2.8
	FSL North	3.5	3.4	2.7	1.7	2.9
	FSL East	2.3	3.0	3.0	3.3	2.9
	FSL West	3.1	2.3	1.8	2.9	2.6
	FSL Wales	-	-	-	-	23.7

FSS, FSM and FSL refer to Small, Medium and Large farm size groups respectively; Q1 to Q4 refer to labour use performance quartiles

Analysis of labour use by Robust Farm Type (Table 3.40) shows that Cereals farms incur the lowest average labour use in managing set-aside (2.3 hrs/ha), followed by Mixed farms (3.0 hrs/ha). The more specialist farm types (Horticulture, Pigs and Poultry) incur greater labour input in managing set-aside which may be due to the typically smaller areas of set-aside found on these farms.

Table 3.40: Set-Aside Labour Use by Robust Type

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
Cereals	All	2.3	2.5	2.3	2.1	2.3
	England	2.2	2.5	2.3	2.1	2.3
	North	3.2	2.7	2.4	1.5	2.4
	East	2.1	2.5	2.9	2.3	2.3
	West	1.9	2.0	2.0	2.8	2.2
	Wales	-	-	-	-	-
General Cropping	All	2.9	3.5	3.6	4.0	3.5
	England	2.9	3.5	see All	3.8	3.4
	North	-	-	2.7	1.7	2.6
	East	2.9	3.6	3.8	4.3	3.6
	West	-	-	-	-	2.8
	Wales	-	-	-	-	-
Horticulture	All	-	-	-	-	6.4
	England	-	-	-	-	see All
	North	-	-	-	-	-
	East	-	-	-	-	6.7
	West	-	-	-	-	-
	Wales	-	-	-	-	-
Specialist Pigs	All	-	-	7.3	-	5.1
	England	-	-	see All	-	see All
	North	-	-	-	-	-
	East	-	-	-	-	5.6
	West	-	-	-	-	-
	Wales	-	-	-	-	-
Specialist Poultry	All	-	-	-	-	10.8
	England	-	-	-	-	see All
	North	-	-	-	-	-
	East	-	-	-	-	-
	West	-	-	-	-	-
	Wales	-	-	-	-	-
Dairy	All	3.8	4.3	3.9	4.0	4.5
	England	6.0	3.4	3.1	3.4	3.9
	North	-	-	-	-	5.0
	East	-	-	3.0	-	2.7
	West	-	4.2	2.0	4.0	5.2
	Wales	-	-	-	-	25.9
Lowland Grazing Livestock	All	3.4	4.2	4.5	3.1	3.9
	England	-	3.1	3.2	2.7	3.0
	North	-	-	-	-	4.4
	East	-	-	-	-	2.6
	West	-	-	3.4	1.6	2.4
	Wales	-	-	-	-	-
Mixed	All	2.7	2.8	3.3	3.6	3.0
	England	2.6	2.7	3.2	3.4	2.9
	North	4.9	4.2	4.5	4.4	4.6
	East	1.6	2.3	2.4	2.5	2.1
	West	1.6	2.4	3.7	4.0	2.8
	Wales	-	-	-	-	11.9

Results are only presented for farm types where the sample size is greater than or equal to 15.

3.3 Results by Animal Enterprise

Building on the summary results in Table 3.1 the forthcoming sections present detailed results by animal enterprise categories, following the pattern presented above for crop types.

3.3.1 Dairy Cows

Labour use in milk production is presented in Table 3.41 where the labour usage per dairy cow is presented for each of the four years of interest and the complete data set spanning the four years. The average labour use is 42.5 hours per cow (hrs/cow) with 84% of this amount coming from direct labour, 4% from contract and 12% (5.3 hrs/cow) accounted for by overheads. On average, dairy labour accounts for 71% of total farm business labour on farms with dairy cow enterprises. It is instructive to note the gradual reduction in labour use across the four years, matched by an increase in herd size from just under 90 cows in 2004/05 to just over 115 cows in 2007/08. Performance quartile analysis shows that those farms using the most labour (Q1) expend 68 hrs/cow, across an average of 57 cows, whilst the most labour efficient use less than 27 hrs/cow, across an average of 145 cows. Considering performance across the four labour quartiles, there is an inverse relationship between herd size and labour use, with labour economies of size being apparent in the data presented. There is no strong trend between performance quartile and the percentage of total farm business labour accounted for by dairy labour, albeit that for the most labour efficient (Q4) dairy labour accounts for just under 70% of total farm business labour whilst for Q1 the resultant figure is just over 74%.

Table 3.41: Dairy Cows Labour Use – Average and Performance Quartiles

Category	Measure	2004/05	2005/06	2006/07	2007/08	All
All	Direct	37.3	36.5	34.7	33.6	35.5
	Contractor	1.4	1.1	1.7	2.0	1.5
	Overhead	5.1	5.5	5.4	5.2	5.3
	Total Hours	43.8	43.4	41.8	40.8	**42.5**
	% of Farm Lab	71.4	71.7	70.6	72.1	71.4
	Herd size	89.4	86.1	96.9	115.2	95.6
	No. in sample	*434*	*402*	*403*	*412*	*1651*
Q1	Direct	59.3	59.5	56.1	53.5	57.6
	Contractor	1.1	1.1	1.4	2.8	1.5
	Overhead	8.8	9.7	9.4	9.4	9.1
	Total Hours	68.5	70.5	67.0	65.6	68.3
	% of Farm Lab	73.7	74.4	73.7	75.1	74.3
	Herd size	57.2	51.4	58.1	70.8	57.4
	No. in sample	*109*	*101*	*101*	*103*	*413*
Q2	Direct	40.9	39.9	38.3	38.5	39.3
	Contractor	1.9	1.2	2.5	2.0	1.8
	Overhead	5.6	5.6	5.5	5.8	5.8
	Total Hours	48.4	47.0	46.3	46.3	47.0
	% of Farm Lab	71.2	71.8	71.8	73.9	71.8
	Herd size	80.7	82.2	91.0	101.2	88.3
	No. in sample	*108*	*100*	*101*	*103*	*413*
Q3	Direct	32.1	31.2	31.9	32.3	31.8
	Contractor	1.4	1.2	1.5	1.9	1.5
	Overhead	4.8	4.7	4.3	4.2	4.4
	Total Hours	38.3	37.9	37.7	37.3	37.8
	% of Farm Lab	69.8	71.9	69.5	72.7	71.1
	Herd size	105.7	101.7	112.0	142.9	114.3
	No. in sample	*108*	*100*	*100*	*103*	*412*
Q4	Direct	23.2	22.0	21.1	21.8	22.0
	Contractor	1.3	0.9	1.5	1.7	1.4
	Overhead	2.8	3.2	3.6	3.4	3.3
	Total Hours	27.2	26.7	26.2	26.9	26.7
	% of Farm Lab	71.2	69.7	68.6	68.7	69.6
	Herd size	139.2	137.9	149.0	156.0	145.5
	No. in sample	*109*	*101*	*101*	*103*	*413*

Q1 to Q4 refer to labour use performance quartiles

Labour use in dairy production across regional and farm size groupings is presented in Table 3.42. The average labour in Wales is 39.1 hrs/cow, whilst in England the average is 43.1 hrs/cow. Within England, labour use is highest in the West (44.8 hrs/cow), with the East recording a similar labour usage (44.2); the North region uses 39.5 hrs/cow on average. The pattern of labour use against herd size identified in Table 3.41 is also demonstrated by the labour use by farm size groupings in Table 3.42. Small Farms use an average 80.6 hrs/cow, considerably more than the 50.8 hrs/cow for Medium Sized Farms and the 37.7 hrs/cow for Large Farms. The lowest user of labour are Large farms in Wales, recording an average of 32.5 hrs/cow; it is likely that this lower labour use follows, in part, from the more grass-based extensive systems in parts of Wales.

Table 3.42: Dairy Cows Labour Use by Region and Farm Size

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
All		43.8	43.4	41.8	40.8	**42.5**
	Q1	68.5	70.5	67.0	65.6	68.3
	Q2	48.4	47.0	46.3	46.3	47.0
	Q3	38.3	37.9	37.7	37.3	37.8
	Q4	27.2	26.7	26.2	26.9	26.7
England		44.4	43.9	42.6	41.3	43.1
	North	41.0	42.4	38.4	36.1	39.5
	East	44.1	43.2	43.9	45.6	44.2
	West	47.2	45.3	44.7	42.2	44.8
Wales		40.2	41.1	37.5	37.4	39.1
FSS		80.9	83.0	81.3	-	80.6
	FSS England	-	77.5	78.7	-	77.4
	FSS North	-	-	-	-	74.3
	FSS East	-	-	-	-	-
	FSS West	-	-	-	-	78.9
	FSS Wales	-	-	-	-	-
FSM		52.1	51.7	48.9	50.2	50.8
	FSM England	52.8	52.7	50.0	51.5	55.1
	FSM North	45.2	46.0	42.6	42.1	56.5
	FSM East	57.2	55.8	54.0	-	56.5
	FSM West	57.5	58.3	55.8	54.8	56.8
	FSM Wales	48.6	47.7	44.1	45.8	46.7
FSL		38.3	36.8	37.6	38.0	37.7
	FSL England	39.3	37.6	38.5	38.7	38.6
	FSL North	36.3	36.4	33.9	34.2	35.1
	FSL East	41.1	40.0	41.9	43.9	41.7
	FSL West	39.6	36.3	32.5	37.9	38.0
	FSL Wales	32.3	32.1	38.7	33.2	32.5

FSS, FSM and FSL refer to Small, Medium and Large farm size groups respectively; Q1 to Q4 refer to labour use performance quartiles

Table 3.43 provides labour use in dairy production by Robust Farm Type. The lowest labour users are Mixed farms, averaging 40.0 hrs/cow against 42.6 hrs/cow for Dairy farms. Regional patterns of labour variation within Robust Types, follows the pattern identified in Table 3.42, however, Mixed farms in the East, and Dairy farms in the North, share the lowest average results across these groupings for the full four year's data, recording 39.3 hrs/cow.

Table 3.43: Dairy Cows Labour Use by Robust Type

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
Dairy	All	43.8	44.0	41.8	40.7	42.6
	England	44.6	44.7	42.8	41.4	43.3
	North	40.8	42.5	38.2	36.1	39.3
	East	44.9	45.1	45.0	46.7	45.4
	West	47.3	46.0	44.9	42.2	45.1
	Wales	39.9	41.0	37.4	37.4	38.9
LFA	All	-	-	-	-	46.8
Grazing	England	-	-	-	-	-
Livestock	North	-	-	-	-	-
	East	-	-	-	-	-
	West	-	-	-	-	-
	Wales	-	-	-	-	46.2
Lowland	All	-	-	-	-	41.7
Grazing	England	-	-	-	-	42.0
Livestock	North	-	-	-	-	-
	East	-	-	-	-	-
	West	-	-	-	-	40.3
	Wales	-	-	-	-	-
Mixed	All	43.3	36.4	40.3	40.1	40.0
	England	see All	see All	see All	see All	see All
	North	-	-	-	-	43.0
	East	42.6	36.8	38.1	39.0	39.3
	West	-	-	-	-	40.8
	Wales	-	-	-	-	-

Results are only presented for farm types where the sample size is greater than or equal to 15.

3.3.2 Beef Cows

Presenting the results of labour use in beef cow herds, Table 3.44 shows that, on average, 25.8 hrs/cow are expended. Average herd size if just under 35 cows, and labour for beef cows accounts for 32.4% of total farm business labour usage; direct, contract and overhead labour account for approximately 83%, 3% and 13% respectively. No clear pattern emerges as to changes in labour use across the four years, nor any change in herd size as found for dairy cows. The labour efficiency performance analysis shows that the least labour efficient (Q1) use 52.8 hrs/cow, and have an average herd size of 20.8 cows. By contrast the most labour efficient (Q4) use 11.5 hrs/cow and have an average herd size of 48.5 cows. The trend across the performance quartiles follows that of dairy cows – as herd size increases, average labour use per cow decreases.

Table 3.44: Beef Cows Labour Use – Average and Performance Quartiles

Category	Measure	2004/05	2005/06	2006/07	2007/08	All
All	Direct	21.8	21.1	21.7	21.2	21.5
	Contractor	0.8	0.6	0.8	1.0	0.8
	Overhead	3.4	3.6	3.4	3.3	3.4
	Total Hours	26.1	25.5	25.9	25.5	**25.8**
	% of Farm Lab	32.4	33.4	32.0	31.7	32.4
	Herd size	35.8	35.2	33.5	34.0	34.6
	No. in sample	*737*	*741*	*805*	*819*	*3102*
Q1	Direct	46.1	43.1	44.1	44.6	44.5
	Contractor	1.2	0.9	1.0	1.2	1.1
	Overhead	7.7	7.0	6.9	6.4	7.0
	Total Hours	55.1	51.3	52.0	52.2	52.7
	% of Farm Lab	39.6	38.2	38.6	38.8	38.7
	Herd size	21.8	20.6	20.2	20.7	20.8
	No. in sample	*184*	*185*	*201*	*205*	*776*
Q2	Direct	24.1	23.8	24.5	25.0	24.4
	Contractor	1.0	0.6	0.8	1.2	0.9
	Overhead	3.6	4.4	3.9	4.1	4.0
	Total Hours	28.7	29.0	29.1	30.3	29.3
	% of Farm Lab	37.9	38.7	37.0	39.2	37.8
	Herd size	33.4	35.0	34.1	31.4	33.3
	No. in sample	*184*	*185*	*201*	*205*	*775*
Q3	Direct	16.7	16.9	16.7	16.9	16.8
	Contractor	0.8	0.4	0.8	1.0	0.8
	Overhead	2.4	2.5	2.5	2.7	2.5
	Total Hours	19.9	20.2	20.1	20.5	20.2
	% of Farm Lab	31.1	32.9	30.9	31.1	31.8
	Herd size	43.2	43.3	40.9	39.1	41.4
	No. in sample	*184*	*185*	*201*	*204*	*775*
Q4	Direct	9.4	9.3	9.3	9.1	9.3
	Contractor	0.5	0.5	0.7	0.7	0.6
	Overhead	1.5	1.7	1.6	1.5	1.6
	Total Hours	11.4	11.7	11.6	11.3	11.5
	% of Farm Lab	24.3	26.3	24.1	22.5	24.3
	Herd size	51.9	48.2	44.2	49.2	48.5
	No. in sample	*185*	*186*	*202*	*205*	*776*

Q1 to Q4 refer to labour use performance quartiles

Labour use for beef cows in Wales (29.7 hrs/cow; Table 3.45) is the highest of the four EU regions, with the EU East recording the lowest average labour use per beef cow. Farm size analysis shows that Small Farms use nearly 30 hrs/cow, whilst Medium Sized Farms use 21.7 hrs/cow and Large Farms 20.0 hrs/cow. Across the full four years of data, Small Farms in Wales record the highest labour use (34.5 hrs/cow), whilst Large Farms in Wales record the lowest labour use (17.1 hrs/cow).

Table 3.45: Beef Cows Labour Use by Region and Farm Size

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
All		26.1	25.5	25.9	25.5	**25.8**
	Q1	55.1	51.3	52.0	52.2	52.7
	Q2	28.7	29.0	29.1	30.3	29.3
	Q3	19.9	20.2	20.1	20.5	20.2
	Q4	11.4	11.7	11.6	11.3	11.5
England		24.3	24.5	24.8	24.3	24.5
	North	22.2	22.7	23.2	23.7	22.9
	East	22.7	22.1	22.7	21.4	22.2
	West	28.4	29.5	29.4	28.5	28.9
Wales		32.7	28.4	28.8	29.4	29.7
FSS		30.4	28.7	29.6	29.3	29.5
	FSS England	27.7	27.1	27.1	27.8	27.7
	FSS North	23.6	23.7	23.7	27.2	24.9
	FSS East	27.0	23.6	23.6	23.0	24.4
	FSS West	32.2	32.9	32.9	32.4	32.8
	FSS Wales	39.9	33.3	33.3	33.3	34.5
FSM		22.1	21.8	22.0	21.0	21.7
	FSM England	20.1	21.1	21.3	19.7	20.7
	FSM North	17.8	19.2	19.7	18.5	18.8
	FSM East	21.8	22.3	24.2	21.0	22.3
	FSM West	23.6	21.7	17.8	18.9	20.9
	FSM Wales	26.0	23.2	23.5	24.4	24.2
FSL		20.9	20.8	19.0	19.0	20.0
	FSL England	21.1	21.6	19.3	19.5	20.5
	FSL North	24.9	24.2	23.3	20.0	23.3
	FSL East	18.4	19.2	16.4	18.5	18.2
	FSL West	19.7	21.5	18.9	20.8	20.2
	FSL Wales	19.7	-	17.4	-	17.1

FSS, FSM and FSL refer to Small, Medium and Large farm size groups respectively; Q1 to Q4 refer to labour use performance quartiles

Table 3.46 gives the labour use results for beef cows by Robust Farm Types. Mixed farms use the lowest amount of labour per cow (21.9) when examining results by robust type, whilst Dairy farms record the largest amount per cow (34.7 hrs/cow). The complete sample of farms with beef cow enterprises exceeds 3100 observations. Consequently within Table 3.46 the analysis across Robust Types and regions and across the four years is possible for many individual data cells. Considerable variation exists across these data cells; the most striking being the difference between labour use in England (18.0 hrs/cow) and Wales (60.4 hrs cow) within Dairy Farm Type in 2005/06.

Table 3.46: Beef Cows Labour Use by Robust Type

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
Cereals	All	26.7	26.8	25.5	25.4	26.1
	England	see All	see All	see All	see All	see All
	North	-	-	-	-	27.0
	East	24.9	28.0	25.6	26.0	26.2
	West	-	-	-	-	25.1
	Wales	-	-	-	-	-
General Cropping	All	29.4	26.9	28.2	23.7	27.0
	England	29.1	see All	see All	see All	26.9
	North	-	-	-	-	36.4
	East	-	-	27.1	23.5	24.3
	West	-	-	-	-	21.8
	Wales	-	-	-	-	-
Dairy	All	32.2	34.3	40.1	30.3	34.7
	England	24.7	18.0	37.6	27.5	28.5
	North	-	-	-	-	23.3
	East	-	-	-	-	-
	West	-	-	-	-	27.8
	Wales	49.9	60.4	46.5	36.8	48.6
LFA Grazing Livestock	All	25.7	25.3	25.7	25.9	25.7
	England	21.4	23.6	22.9	23.0	22.7
	North	21.0	27.4	22.9	23.6	22.7
	East	20.1	19.9	21.5	17.0	19.5
	West	23.4	25.5	24.1	25.0	24.5
	Wales	31.5	26.8	28.2	28.9	28.8
Lowland Grazing Livestock	All	27.9	26.5	26.8	25.9	26.7
	England	26.9	25.6	26.3	25.2	26.0
	North	20.9	18.6	22.4	26.2	22.0
	East	22.2	21.3	21.3	20.5	21.3
	West	34.2	34.0	34.2	30.2	33.1
	Wales	39.6	38.8	30.4	31.3	34.1
Mixed	All	20.9	21.4	22.1	23.3	21.9
	England	20.6	21.1	22.1	23.1	21.7
	North	19.3	20.3	19.5	18.5	19.4
	East	20.8	20.8	20.2	19.9	20.0
	West	21.7	21.7	25.6	30.1	25.0
	Wales	-	-	-	-	29.2

Results are only presented for farm types where the sample size is greater than or equal to 15.

3.3.3 Other Cattle

Other cattle represent a grouping of cattle enterprises that covers a wide range of cattle rearing and finishing activities; for example it encompasses calf rearing for sale at 3 months of age, taking calves from a week old to finished condition for meat, and buying store cattle and finishing them. Table 3.47 shows that across this wide range of activities, the average labour use is 11.7 hours per animal (hrs/animal), with 83% derived from direct labour (9.7 hrs/animal), 3% from contract labour (0.4 hrs/animal) and 13% from overhead labour (1.5 hrs/animal). The average number of animals per farm per year is 80.3, with labour on other cattle enterprises accounting for an average of 29% of total farm business labour. As with the animal enterprises presented above, a clear trend exists across the labour usage quartiles, where labour use per animal decreases as the average animal number per farm increases. The heaviest labour users per animal (Q1) use 23 hrs/animal, whilst the lowest labour users (Q4) expend 4.8 hrs/animal. Given the wide variety of enterprise types that make up this relatively broad category, it is logical that part of this variation in labour use results directly from the difference in type of enterprise. It is also interesting to note that as labour

use per animal decreases, the amount of total farm labour this accounts for also falls; labour use on other cattle for Q1 accounts for 41% of total farm business labour, whilst for Q4 the corresponding result is 19%.

Table 3.47: Other Cattle Labour Use – Average and Performance Quartiles

Category	Measure	2004/05	2005/06	2006/07	2007/08	All
All	Direct	9.3	10.0	9.7	9.8	9.7
	Contractor	0.4	0.3	0.5	0.5	0.4
	Overhead	1.5	1.6	1.6	1.5	1.5
	Total Hours	11.2	12.0	11.8	11.7	**11.7**
	% of Farm Lab	28.8	27.9	30.3	29.8	29.2
	Av. Number	80.4	75.0	81.6	84.2	80.3
	No. in sample	*1269*	*1257*	*1304*	*1340*	*5170*
Q1	Direct	17.6	19.6	19.8	20.3	19.3
	Contractor	0.5	0.4	0.8	0.7	0.6
	Overhead	3.0	3.2	3.2	3.0	3.1
	Total Hours	21.1	23.3	23.7	23.9	23.0
	% of Farm Lab	42.0	39.8	43.5	39.4	41.2
	Av. Number	57.3	51.1	53.7	51.8	53.1
	No. in sample	*317*	*314*	*326*	*335*	*1293*
Q2	Direct	10.0	11.1	10.4	11.2	10.7
	Contractor	0.5	0.4	0.4	0.6	0.5
	Overhead	1.5	1.7	1.9	1.6	1.7
	Total Hours	12.0	13.3	12.7	13.3	12.9
	% of Farm Lab	30.1	31.6	35.5	35.9	32.9
	Av. Number	81.3	76.8	83.9	84.6	81.5
	No. in sample	*317*	*314*	*326*	*335*	*1292*
Q3	Direct	6.8	7.3	7.2	7.4	7.2
	Contractor	0.4	0.3	0.4	0.5	0.4
	Overhead	1.1	1.0	1.1	1.2	1.1
	Total Hours	8.3	8.8	8.8	9.0	8.7
	% of Farm Lab	27.5	23.4	24.8	26.7	26.2
	Av. Number	93.6	83.8	93.1	103.0	94.1
	No. in sample	*317*	*314*	*326*	*335*	*1292*
Q4	Direct	3.6	3.9	4.0	4.0	3.9
	Contractor	0.3	0.2	0.4	0.4	0.3
	Overhead	0.5	0.6	0.6	0.6	0.6
	Total Hours	4.4	4.8	5.0	5.0	4.8
	% of Farm Lab	16.4	18.8	20.4	21.2	19.3
	Av. Number	100.6	100.8	107.7	109.1	104.5
	No. in sample	*318*	*315*	*326*	*335*	*1293*

Q1 to Q4 refer to labour use performance quartiles

Labour use for other cattle across regions and farm size groupings is presented in Table 3.48. The EU North and East record the lowest use by region at 10.8 hrs/animal each, with Wales incurring 12.3 and the West the highest at 12.9 hrs/animal. Farm size groupings once again demonstrate a typical pattern that the Small Farm group records the greatest labour use of 14 hrs/animal, Medium Farms recording 11.3 hrs/animal and Large Farms 10 hrs/animal. Year to year and regional variation around these average results exists, with the broad patterns of labour use noted above capturing the essence of the influence of region and farm size variation.

Table 3.48: Other Cattle Labour Use by Region and Farm Size

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
All		11.2	12.0	11.8	11.7	**11.7**
	Q1	21.1	23.3	23.7	23.9	23.0
	Q2	12.0	13.3	12.7	13.3	12.9
	Q3	8.3	8.8	8.8	9.0	8.7
	Q4	4.4	4.8	5.0	5.0	4.8
England		11.1	11.8	11.8	11.6	11.6
	North	10.8	10.8	11.3	10.4	10.8
	East	10.6	11.3	11.1	10.3	10.8
	West	11.9	13.3	12.8	13.7	12.9
Wales		11.7	12.7	12.1	12.4	12.3
FSS		13.7	13.8	14.2	14.1	14.0
	FSS England	12.9	12.7	13.7	13.6	13.2
	FSS North	13.3	12.9	14.1	13.5	13.5
	FSS East	12.2	11.9	12.6	11.0	11.9
	FSS West	12.9	13.0	14.0	15.4	13.9
	FSS Wales	16.5	16.8	15.6	15.6	16.1
FSM		10.6	12.0	11.3	11.2	11.3
	FSM England	10.9	12.5	11.6	14.8	11.6
	FSM North	10.4	10.6	10.3	10.2	10.4
	FSM East	9.8	12.1	10.8	10.8	10.8
	FSM West	1.2	14.8	13.7	13.1	13.3
	FSM Wales	9.3	10.4	10.3	10.6	10.1
FSL		9.8	10.3	10.1	9.9	10.0
	FSL England	10.0	10.6	10.4	10.1	10.3
	FSL North	8.9	8.8	9.8	8.3	8.9
	FSL East	10.3	10.7	10.6	9.7	10.3
	FSL West	10.6	12.2	10.6	12.4	11.5
	FSL Wales	8.6	8.1	8.1	8.5	8.3

FSS, FSM and FSL refer to Small, Medium and Large farm size groups respectively; Q1 to Q4 refer to labour use performance quartiles

Average labour use by Robust Farm Type is provided in Table 3.49. Several of the Robust Farm Types incur 12 hrs/animal or less – General Cropping, Dairy, LFA Grazing Livestock, Lowland Grazing Livestock and Mixed Farms. Cereals, Specialist Pigs and Specialist Poultry incur more than 13 hrs/animal on average. The consistently lowest labour use group in Table 3.49 is by Lowland Grazing Livestock farms in the East, averaging 9.3 hrs/animal across the four years presented.

Table 3.49: Other Cattle Labour Use by Robust Type

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
Cereals	All	12.4	14.1	13.5	13.4	13.3
	England	see All	see All	see All	see All	see All
	North	14.1	11.9	12.3	12.1	12.5
	East	11.0	14.0	13.2	13.2	12.7
	West	14.1	17.0	15.1	15.2	15.2
	Wales	-	-	-	-	-
General Cropping	All	12.2	12.9	11.5	11.4	12.0
	England	12.0	12.8	see All	11.3	11.9
	North	-	-	-	-	12.3
	East	11.2	9.2	10.6	10.3	10.4
	West	11.4	-	-	-	32.2
	Wales	-	-	-	-	-
Specialist Pigs	All	-	-	-	-	13.5
	England	-	-	-	-	see All
	North	-	-	-	-	-
	East	-	-	-	-	-
	West	-	-	-	-	-
	Wales	-	-	-	-	-
Specialist Poultry	All	-	-	-	-	15.1
	England	-	-	-	-	see All
	North	-	-	-	-	-
	East	-	-	-	-	-
	West	-	-	-	-	-
	Wales	-	-	-	-	-
Dairy	All	11.2	12.2	11.3	11.1	11.4
	England	11.5	12.5	11.7	11.4	11.7
	North	10.0	10.3	10.7	9.7	10.2
	East	10.9	11.7	11.5	10.2	11.1
	West	13.0	14.7	12.6	13.3	13.4
	Wales	9.9	10.9	9.6	10.0	10.1
LFA Grazing Livestock	All	10.2	11.4	11.8	11.8	11.3
	England	8.9	10.4	11.0	11.1	10.3
	North	9.2	9.7	10.7	10.9	10.1
	East	7.2	12.2	12.1	9.8	10.4
	West	8.8	11.7	11.2	12.2	11.0
	Wales	11.4	12.1	12.3	12.5	12.1
Lowland Grazing Livestock	All	11.7	13.3	12.1	12.3	11.9
	England	10.9	10.4	11.5	11.8	11.2
	North	11.5	11.5	13.3	11.6	11.9
	East	9.5	8.9	9.3	9.5	9.3
	West	11.5	11.1	12.6	13.7	12.3
	Wales	17.2	17.9	15.3	15.8	16.5
Mixed	All	11.0	11.8	11.9	11.3	11.5
	England	11.0	11.6	11.8	11.1	11.4
	North	11.7	10.7	11.1	9.5	10.8
	East	11.0	12.0	11.2	9.8	11.0
	West	10.3	12.3	13.0	14.1	12.5
	Wales	-	-	-	-	17.0

Results are only presented for farm types where the sample size is greater than or equal to 15.

3.3.4 Lowland Ewes

Labour use for lowland ewes (and rams) is presented in Table 3.50. Across the four years, for a flock size of 271 ewes, the average labour requirement is 5.2 hours per ewe (hrs/ewe). Of this 4.4 hrs/ewe (85%) are accounted for by direct labour, with contract labour (0.1 hrs/ewe) accounting for 2% and overhead labour (0.7 hrs/ewe) accounting for 13%. Just over half (51%) of the total labour of the farm business is attributable to labour on lowland ewes across this sample. Over the four years there appears to be a reduction in labour use per ewe, but this is not a defined trend with 2007/08 recording a slight increase over 2006/07. When considering labour use across performance quartiles the pattern of labour economies of size is evident, across the four quartiles (Q1 to Q4) hours per ewe [flock size] are 11.3 [128], 6.5 [245], 4.3 [338], 2.2 [469] respectively.

Table 3.50: Lowland Ewes Labour Use – Average and Performance Quartiles

Category	Measure	2004/05	2005/06	2006/07	2007/08	All
All	Direct	5.0	4.5	3.9	4.1	4.4
	Contractor	0.1	0.1	0.1	0.1	0.1
	Overhead	0.7	0.8	0.7	0.7	0.7
	Total Hours	5.8	5.4	4.7	4.9	**5.2**
	% of Farm Lab	51.1	51.9	52.7	49.7	51.3
	Flock Size	261.1	258.7	287.6	276.8	271.2
	No. in sample	*386*	*358*	*347*	*352*	*1443*
Q1	Direct	10.3	8.9	9.0	9.2	9.5
	Contractor	0.1	0.1	0.1	0.1	0.1
	Overhead	1.5	1.8	1.6	1.6	1.6
	Total Hours	11.9	10.9	10.7	10.9	11.3
	% of Farm Lab	56.6	55.2	55.3	55.0	54.6
	Flock Size	131.7	131.3	128.7	134.9	128.4
	No. in sample	*97*	*90*	*87*	*88*	*361*
Q2	Direct	5.9	5.3	5.3	5.3	5.5
	Contractor	0.1	0.1	0.1	0.1	0.1
	Overhead	0.9	0.9	0.8	0.8	0.9
	Total Hours	6.8	6.4	6.2	6.2	6.5
	% of Farm Lab	50.9	57.1	52.2	51.2	54.3
	Flock Size	220.5	270.4	216.9	220.9	245.3
	No. in sample	*96*	*89*	*87*	*88*	*361*
Q3	Direct	4.1	3.6	3.3	3.6	3.6
	Contractor	0.1	0.1	0.1	0.1	0.1
	Overhead	0.5	0.6	0.6	0.6	0.6
	Total Hours	4.8	4.3	4.0	4.3	4.3
	% of Farm Lab	56.3	51.2	56.0	51.9	52.7
	Flock Size	384.8	314.3	399.7	314.5	338.2
	No. in sample	*96*	*89*	*86*	*88*	*360*
Q4	Direct	2.1	1.9	1.7	1.8	1.8
	Contractor	0.1	0.1	0.1	0.1	0.1
	Overhead	0.3	0.3	0.3	0.3	0.3
	Total Hours	2.5	2.3	2.1	2.2	2.2
	% of Farm Lab	42.6	45.5	48.8	45.1	46.5
	Flock Size	422.9	432.2	488.5	527.2	469.0
	No. in sample	*97*	*90*	*87*	*88*	*361*

Q1 to Q4 refer to labour use performance quartiles

Table 3.51 shows the regional variation in labour use for Lowland ewes together with variation across farm size groupings. Wales incurs an average of 4.5 hrs/ewe, against 5.3 hrs/ewe for England, with the latter result further disaggregated to show that the EU North incurs 4.4 hrs/ewe against 6.2 hrs/ewe in the West. Small Farms use an average of 6.5 hrs/ewe, Medium Sized Farms use 4.9 hrs/ewe whilst Large Farms expend an average of 3.8 hrs/ewe. This trend is consistent with all the animal enterprises considered thus far, again demonstrating labour economies of size in production.

Table 3.51: Lowland Ewes Labour Use by Region and Farm Size

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
All		5.8	5.4	4.7	4.9	**5.2**
	Q1	11.9	10.9	10.7	10.9	11.3
	Q2	6.8	6.4	6.2	6.2	6.5
	Q3	4.8	4.3	4.0	4.3	4.3
	Q4	2.5	2.3	2.1	2.2	2.2
England		5.8	5.5	4.8	4.9	5.3
	North	4.6	4.8	4.3	3.9	4.4
	East	6.1	5.6	4.3	4.4	5.0
	West	6.7	5.9	4.4	6.3	6.2
Wales		5.3	4.9	3.9	4.2	4.5
FSS		7.1	6.5	6.0	6.5	6.5
	FSS England	7.2	6.6	6.0	6.6	6.6
	FSS North	6.2	5.8	5.5	5.7	5.8
	FSS East	7.2	7.2	6.2	6.1	6.6
	FSS West	7.7	6.3	6.1	7.3	6.9
	FSS Wales	6.3	6.2	5.3	5.4	5.9
FSM		5.4	5.3	4.5	4.6	4.9
	FSM England	5.5	5.5	4.8	4.7	5.1
	FSM North	4.4	4.9	4.2	3.5	4.2
	FSM East	5.5	4.7	4.1	4.6	4.7
	FSM West	6.6	6.9	6.6	6.2	6.6
	FSM Wales	-	3.7	3.4	3.2	3.5
FSL		4.6	4.1	3.2	3.2	3.8
	FSL England	4.7	4.1	3.2	3.2	3.8
	FSL North	3.9	4.0	3.6	3.1	3.7
	FSL East	5.5	4.2	2.5	2.5	3.6
	FSL West	4.7	4.1	3.9	4.4	4.3
	FSL Wales	-	-	-	-	3.7

FSS, FSM and FSL refer to Small, Medium and Large farm size groups respectively; Q1 to Q4 refer to labour use performance quartiles

Labour use by Robust Farm Type analysis (Table 3.52) shows that Mixed, Dairy and Lowland Grazing Livestock use 5.0, 5.1 and 5.1 hrs/ewe respectively, whilst the more specialised farm types (Specialist Pigs and Specialist Poultry) incur considerably more labour use per ewe, in part reflecting typically lower flock sizes on these farm types, due to their main focus on other enterprises. North and Wales tend to record lower labour use across these Robust Farm Types across years, but this does not hold universally.

Table 3.52: Lowland Ewes Labour Use by Robust Type

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
Cereals	All	5.9	6.0	4.5	4.6	5.3
	England	5.9	6.0	see All	see All	5.3
	North	-	6.8	4.5	4.7	5.3
	East	6.1	4.7	3.7	4.2	4.8
	West	6.0	-	-	-	6.4
	Wales	-	-	-	-	-
General Cropping	All	6.7	5.5	5.1	4.5	5.5
	England	6.8	see All	see All	4.5	5.5
	North	-	-	-	-	6.0
	East	-	-	-	-	5.6
	West	-	-	-	-	5.1
	Wales	-	-	-	-	-
Specialist Pigs	All	-	-	-	-	11.1
	England	-	-	-	-	see All
	North	-	-	-	-	-
	East	-	-	-	-	-
	West	-	-	-	-	-
	Wales	-	-	-	-	-
Specialist Poultry	All	-	-	-	-	9.7
	England	-	-	-	-	see All
	North	-	-	-	-	-
	East	-	-	-	-	-
	West	-	-	-	-	-
	Wales	-	-	-	-	-
Dairy	All	6.0	5.6	5.4	3.5	5.1
	England	6.2	6.0	5.7	3.6	5.3
	North	-	-	-	-	3.6
	East	-	-	-	-	7.8
	West	-	-	-	-	6.4
	Wales	-	-	-	-	4.4
Lowland Grazing Livestock	All	5.9	5.4	4.5	5.0	5.1
	England	6.0	5.5	4.7	5.2	5.3
	North	4.5	4.4	4.0	3.9	4.2
	East	5.5	5.5	4.1	4.4	4.7
	West	7.1	5.9	5.9	7.0	6.5
	Wales	5.1	4.5	3.8	3.8	4.2
Mixed	All	5.2	5.1	4.8	5.1	5.0
	England	5.1	5.0	4.8	5.0	5.0
	North	3.7	3.8	3.8	3.5	4.3
	East	7.0	6.5	4.8	4.2	5.6
	West	5.8	5.0	5.3	6.1	5.6
	Wales	-	-	-	-	6.5

Results are only presented for farm types where the sample size is greater than or equal to 15.

3.3.5 LFA Ewes

Across an overall sample size of 2006 observations Table 3.53 shows that average labour use for LFA ewes (and rams) is 3.7 hrs/ewe, across an average flock size of 492 ewes. LFA ewe labour accounts for approximately 60% of total farm business labour. Direct labour of 3.1 hrs/ewe accounts for 84% of total labour for LFA ewes; contract and overhead labour respectively account for 3% and 11% of total labour. Labour use performance quartiles demonstrate labour economies of size, with the Q1 group using 7.3 hrs/ewe over an average of 245 ewes, against the 1.8 hrs/ewe for Q4 who have an average flock size of 850 ewes. As labour use per ewe decreases across the quartile groups, the total

amount of farm business labour attributable to LFA ewes also falls, ranging from 67% for Q1 to 53% for Q4.

Table 3.53: LFA Ewes Labour Use – Average and Performance Quartiles

Category	Measure	2004/05	2005/06	2006/07	2007/08	All
All	Direct	3.2	3.1	3.1	3.2	3.1
	Contractor	0.1	<0.1	0.1	0.1	0.1
	Overhead	0.4	0.4	0.4	0.4	0.4
	Total Hours	3.8	3.6	3.6	3.7	**3.7**
	% of Farm Lab	60.1	59.0	59.4	59.7	59.6
	Flock Size	490.0	493.4	495.3	488.6	491.8
	No. in sample	*480*	*487*	*512*	*527*	*2006*
Q1	Direct	6.9	6.3	5.9	6.2	6.3
	Contractor	0.1	<0.1	0.1	0.1	0.1
	Overhead	0.9	0.9	0.9	0.9	0.9
	Total Hours	7.9	7.2	6.9	7.2	7.3
	% of Farm Lab	67.9	65.3	65.8	66.4	66.5
	Flock Size	236.6	238.5	251.5	248.8	244.6
	No. in sample	*120*	*122*	*128*	*132*	*502*
Q2	Direct	3.7	3.5	3.6	3.7	3.6
	Contractor	0.1	<0.1	0.1	0.1	0.1
	Overhead	0.5	0.5	0.5	0.5	0.5
	Total Hours	4.3	4.1	4.2	4.3	4.2
	% of Farm Lab	66.5	64.0	63.8	64.0	64.4
	Flock Size	512.8	495.1	452.6	413.5	466.0
	No. in sample	*120*	*122*	*128*	*132*	*501*
Q3	Direct	2.5	2.5	2.5	2.6	2.5
	Contractor	0.1	<0.1	0.1	0.1	0.1
	Overhead	0.4	0.3	0.3	0.4	0.4
	Total Hours	3.0	2.9	2.9	3.0	2.9
	% of Farm Lab	57.0	59.0	59.3	61.3	59.4
	Flock Size	615.3	612.1	656.5	657.3	631.4
	No. in sample	*120*	*121*	*128*	*131*	*501*
Q4	Direct	1.5	1.5	1.6	1.6	1.6
	Contractor	0.1	<0.1	0.1	0.1	0.1
	Overhead	0.2	0.2	0.2	0.2	0.2
	Total Hours	1.8	1.8	1.9	1.9	1.8
	% of Farm Lab	54.2	52.2	52.7	52.0	52.7
	Flock Size	797.4	883.1	869.64	859.4	849.8
	No. in sample	*120*	*122*	*128*	*132*	*502*

Q1 to Q4 refer to labour use performance quartiles

Regional and farm size grouping analysis for LFA ewes (Table 3.54) shows that Wales incurs the lowest labour use of 3.4 hrs/ewe, whilst the East records the highest use of 5.8 hrs/ewe. The farm size grouping analysis demonstrates labour use per ewe decreases as farm size increases. Small farms expend 4.7 hrs/ewe, whilst medium and large farms average 2.7 and 2.2 hrs/ewe respectively. Small farms in the East record the greatest average labour use (6.6 hrs/ewe) whilst large farms in Wales incurred less than one-third of this figure, using 2.1 hrs/ewe.

Table 3.54: LFA Ewes Labour Use by Region and Farm Size

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
All		3.8	3.6	3.6	3.7	**3.7**
	Q1	7.9	7.2	6.9	7.2	7.3
	Q2	4.3	4.1	4.2	4.3	4.2
	Q3	3.0	2.9	2.9	3.0	2.9
	Q4	1.8	1.8	1.9	1.9	1.8
England		4.0	4.2	4.0	4.1	4.1
	North	3.5	3.7	3.6	3.7	3.6
	East	6.2	6.4	5.9	4.6	5.8
	West	5.7	5.5	5.1	5.6	5.5
Wales		3.6	3.3	3.3	3.4	3.4
FSS		4.9	4.7	4.6	4.7	4.7
	FSS England	4.8	5.0	4.9	5.2	5.0
	FSS North	4.1	4.5	4.5	4.9	4.4
	FSS East	-	-	-	4.9	6.6
	FSS West	6.8	6.3	5.7	6.1	6.2
	FSS Wales	4.9	4.4	4.3	4.4	4.5
FSM		2.8	2.6	2.8	2.7	2.7
	FSM England	3.2	3.0	2.9	2.9	3.0
	FSM North	2.9	2.8	2.7	2.6	2.8
	FSM East	-	-	-	-	4.4
	FSM West	4.1	-	-	-	3.8
	FSM Wales	2.6	2.5	2.7	2.6	2.6
FSL		2.3	2.0	2.1	2.3	2.2
	FSL England	-	-	2.3	-	2.5
	FSL North	-	-	-	-	2.3
	FSL East	-	-	-	-	-
	FSL West	-	-	-	-	-
	FSL Wales	2.2	1.9	2.0	2.2	2.1

FSS, FSM and FSL refer to Small, Medium and Large farm size groups respectively; Q1 to Q4 refer to labour use performance quartiles

Analysis of LFA ewe production is confined to two robust farm types (Dairy and LFA Grazing Livestock) in Table 3.55. Typically, labour use on Dairy farms (average of 3.2 hrs/ewe) is lower than for LFA Grazing Livestock (3.7 hrs/ewe). The average results across the four years reflects the pattern across individual years presented.

Table 3.55: LFA Ewes Labour Use by Robust Type

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
Dairy	All	3.6	3.3	3.0	2.8	3.2
	England	3.6	3.3	3.0	2.7	3.1
	North	3.0	2.6	2.5	2.4	2.6
	East	-	-	-	-	6.0
	West	-	-	-	-	-
	Wales	3.7	3.5	2.9	3.1	3.3
LFA Grazing Livestock	All	3.8	3.6	3.7	3.7	3.7
	England	4.1	4.3	4.2	4.3	4.2
	North	3.5	3.9	3.8	3.9	3.7
	East	6.2	6.3	5.9	4.6	5.7
	West	5.6	5.5	5.3	5.7	5.5
	Wales	3.6	3.2	3.4	3.5	3.4

Results are only presented for farm types where the sample size is greater than or equal to 15.

3.3.6 Lowland Other Sheep

Average labour use on other sheep enterprises on lowland farms is presented in Table 3.56. Labour use across all farms for all years averages 2.9 hrs/sheep (place), of which approximately 79% is attributed to direct labour, 3% to contract labour and 17% to overhead labour, across an average number of 156 sheep. Lowland other sheep enterprises account for an average of 26% of the labour on farms where these enterprises are present. Labour use quartile analysis shows that the heaviest labour users (Q1) expend 6.7 hrs/sheep, whilst the most labour efficient per sheep (Q4) use only 0.5 hrs/sheep. It is instructive to note that in this case there is no substantial difference in the average animal number between these two groups, suggesting that labour economies of size are not directly apparent for this group, albeit that for the second and third quartile groups average numbers are substantially above those of Q1 and Q4.

Table 3.56: Lowland Other Sheep Labour Use – Average and Performance Quartiles

Category	Measure	2004/05	2005/06	2006/07	2007/08	All
All	Direct	2.3	2.4	2.4	2.3	2.3
	Contractor	<0.1	0.1	0.1	0.2	0.1
	Overhead	0.5	0.5	0.5	0.5	0.5
	Total Hours	2.8	3.0	2.9	2.9	**2.9**
	% of Farm Lab	30.9	24.9	26.5	22.4	25.9
	Av. Number	132.6	123.4	178.6	187.4	155.6
	No. in sample	*50*	*65*	*70*	*58*	*243*
Q1	Direct	-	5.2	5.5	4.6	5.3
	Contractor	-	0.1	0.1	0.5	0.3
	Overhead	-	1.0	1.2	1.0	1.2
	Total Hours	-	6.3	6.8	6.2	6.7
	% of Farm Lab	-	44.5	46.3	41.7	42.7
	Flock Size	-	123.1	125.6	218.1	121.5
	No. in sample	-	*16*	*18*	*15*	*61*
Q2	Direct	-	2.5	2.6	-	2.7
	Contractor	-	0.1	0.1	-	0.1
	Overhead	-	0.5	0.6	-	0.6
	Total Hours	-	3.1	3.2	-	3.3
	% of Farm Lab	-	33.2	31.0	-	35.9
	Av. Number	-	209.2	245.4	-	198.6
	No. in sample	-	*16*	*17*	-	*61*
Q3	Direct	-	1.2	1.4	-	1.4
	Contractor	-	0.1	<0.1	-	0.1
	Overhead	-	0.2	0.2	-	0.3
	Total Hours	-	1.5	1.6	-	1.7
	% of Farm Lab	-	8.5	24.4	-	19.1
	Av. Number	-	98.6	217.2	-	187.4
	No. in sample	-	*16*	*17*	-	*60*
Q4	Direct	-	0.3	0.4	0.5	0.4
	Contractor	-	<0.1	0.1	<0.1	<0.1
	Overhead	-	0.1	0.1	0.1	0.1
	Total Hours	-	0.4	0.6	0.6	0.5
	% of Farm Lab	-	1.8	3.2	6.2	4.2
	Av. Number	-	76.1	134.9	185.3	118.2
	No. in sample	-	*17*	*18*	*15*	*61*

Q1 to Q4 refer to labour use performance quartiles

Examining labour use for lowland other sheep by region and farm size (Table 3.57), labour use in Wales (1.7 hrs/sheep) is substantially lower than for England (3.1 hrs/sheep), albeit that the observations for Wales are drawn from a modest sample size which only permits results to be presented for one individual year in addition to the overall sample. Within England, farms in North use less labour than farms in the East and West. Examining farm size influences, Small and Medium Farms average 3.0 and 3.3 hrs/sheep respectively, whilst Large Farms expend an average of 2.2 hrs/sheep.

Table 3.57: Lowland Other Sheep Labour Use by Region and Farm Size

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
All		2.8	3.0	2.9	2.9	**2.9**
	Q1	-	6.3	6.8	6.2	6.7
	Q2	-	3.1	3.2	-	3.3
	Q3	-	1.5	1.6	-	1.7
	Q4	-	0.4	0.6	0.6	0.5
England		3.2	3.1	3.1	3.0	3.1
	North	2.5	2.8	3.2	3.0	2.9
	East	-	-	-	-	3.4
	West	-	-	-	-	3.4
Wales		-	2.1	-	-	1.7
FSS		2.6	3.2	3.4	2.8	3.0
	FSS England	-	3.3	3.4	2.8	3.2
	FSS North	-	-	-	-	2.4
	FSS East	-	-	-	-	3.5
	FSS West	-	-	-	-	4.5
	FSS Wales	-	-	-	-	2.2
FSM		3.2	3.3	2.7	-	3.3
	FSM England	-	3.8	3.3	-	3.7
	FSM North	-	-	-	-	3.9
	FSM East	-	-	-	-	-
	FSM West	-	-	-	-	-
	FSM Wales	-	-	-	-	1.4
FSL		1.7	2.1	2.6	1.9	2.2
	FSL England	1.9	2.1	2.6	see FSL	2.2
	FSL North	-	-	-	1.9	2.1
	FSL East	-	-	-	-	-
	FSL West	-	-	-	-	2.2
	FSL Wales	-	-	-	-	-

FSS, FSM and FSL refer to Small, Medium and Large farm size groups respectively; Q1 to Q4 refer to labour use performance quartiles

Robust Farm Type analysis, presented in Table 3.58 shows that Dairy farms expend the lowest amount of labour per sheep (1.9 hrs), arguably this is driven by Dairy farms integrating less labour intensive sheep enterprises onto their farms than may be typically found on Lowland Grazing Livestock farms (3.2 hrs/sheep). Mixed farms use an average of 2.3 hrs/sheep, whilst the relatively small number of observations from Cereal farms indicate a higher labour usage of 4.6 hrs/sheep.

Table 3.58: Lowland Other Sheep Labour Use by Robust Type

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
Cereals	All	-	-	-	-	4.6
	England	-	-	-	-	see All
	North	-	-	-	-	-
	East	-	-	-	-	-
	West	-	-	-	-	-
	Wales	-	-	-	-	-
Dairy	All	1.7	1.9	2.4	1.4	1.9
	England	-	-	2.6	see All	2.0
	North	-	-	-	-	1.4
	East	-	-	-	-	-
	West	-	-	-	-	3.3
	Wales	-	-	-	-	0.9
Lowland Grazing Livestock	All	-	3.3	3.4	3.2	3.2
	England	-	3.4	4.1	3.2	3.5
	North	-	-	-	-	3.1
	East	-	-	-	-	3.2
	West	-	-	-	-	5.2
	Wales	-	-	-	-	2.1
Mixed	All	-	-	-	-	2.3
	England	-	-	-	-	2.4
	North	-	-	-	-	2.6
	East	-	-	-	-	-
	West	-	-	-	-	-
	Wales	-	-	-	-	-

Results are only presented for farm types where the sample size is greater than or equal to 15.

3.3.7 LFA Other Sheep

Labour use for other sheep enterprises on LFA farms is presented in Table 3.59. Across the four years presented, labour use averages 3.1 hrs/sheep, with reliance on direct, contract and overhead labour accounting for approximately 2.5, 0.1 and 0.4 hrs respectively. In total, labour use for other sheep enterprises on LFA farms accounts for approximately 35% of total labour use on these farms. Labour use by quartile analysis shows that whilst Q1 uses 7.4 hrs/sheep, Q4 uses only 0.2 hrs/sheep, a substantial difference that is arguably due to differences in the type of sheep enterprises present on the farms in these different data groups. Following the pattern for other sheep enterprises on lowland farms, no labour economies of size are present.

Table 3.59: LFA Other Sheep Labour Use – Average and Performance Quartiles

Category	Measure	2004/05	2005/06	2006/07	2007/08	All
All	Direct	3.5	2.6	1.4	2.9	2.5
	Contractor	<0.1	<0.1	0.1	0.1	0.1
	Overhead	0.5	0.3	0.3	0.6	0.4
	Total Hours	4.0	3.0	1.8	3.6	**3.1**
	% of Farm Lab	41.9	44.1	22.2	32.3	34.5
	Flock Size	172.8	127.3	191.5	156.4	161.1
	No. in sample	*20*	*15*	*22*	*23*	*80*
Q1	Direct	-	-	-	-	6.4
	Contractor	-	-	-	-	0.1
	Overhead	-	-	-	-	0.9
	Total Hours	-	-	-	-	7.4
	% of Farm Lab	-	-	-	-	78.7
	Flock Size	-	-	-	-	145.3
	No. in sample	-	-	-	-	*20*
Q2	Direct	-	-	-	-	2.4
	Contractor	-	-	-	-	0.1
	Overhead	-	-	-	-	0.5
	Total Hours	-	-	-	-	3.0
	% of Farm Lab	-	-	-	-	37.4
	Flock Size	-	-	-	-	198.5
	No. in sample	-	-	-	-	*20*
Q3	Direct	-	-	-	-	1.0
	Contractor	-	-	-	-	<0.1
	Overhead	-	-	-	-	0.3
	Total Hours	-	-	-	-	1.3
	% of Farm Lab	-	-	-	-	14.3
	Flock Size	-	-	-	-	137.5
	No. in sample	-	-	-	-	*20*
Q4	Direct	-	-	-	-	0.1
	Contractor	-	-	-	-	<0.1
	Overhead	-	-	-	-	<0.1
	Total Hours	-	-	-	-	0.2
	% of Farm Lab	-	-	-	-	1.3
	Flock Size	-	-	-	-	175.4
	No. in sample	-	-	-	-	*20*

Q1 to Q4 refer to labour use performance quartiles

The relatively small sample of 80 farms across the four years leads to analysis by region and farm size groups to be somewhat restricted (Table 3.60). However, the farm size grouping shows that Small Farms use considerably more labour per sheep (3.7 hrs) than either the Medium (1.6 hrs) or Large Farms (1.5 hrs).

Table 3.60: LFA Other Sheep Labour Use by Region and Farm Size

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
All		4.0	3.0	1.8	3.6	**3.1**
	Q1	-	-	-	-	7.4
	Q2	-	-	-	-	3.0
	Q3	-	-	-	-	1.3
	Q4	-	-	-	-	0.2
England		-	-	-	5.2	3.5
	North	-	-	-	-	2.0
	East	-	-	-	-	-
	West	-	-	-	-	-
Wales		-	-	-	-	
FSS		-	-	-	-	3.7
	FSS England	-	-	-	-	4.3
	FSS North	-	-	-	-	-
	FSS East	-	-	-	-	-
	FSS West	-	-	-	-	-
	FSS Wales	-	-	-	-	-
FSM		-	-	-	-	1.6
	FSM England	-	-	-	-	-
	FSM North	-	-	-	-	-
	FSM East	-	-	-	-	-
	FSM West	-	-	-	-	-
	FSM Wales	-	-	-	-	-
FSL		-	-	-	-	1.5
	FSL England	-	-	-	-	-
	FSL North	-	-	-	-	-
	FSL East	-	-	-	-	-
	FSL West	-	-	-	-	-
	FSL Wales	-	-	-	-	-

FSS, FSM and FSL refer to Small, Medium and Large farm size groups respectively; Q1 to Q4 refer to labour use performance quartiles

Analysis by Robust Farm Type (Table 3.61) is restricted to those groups where LFA farms are present, and shows a clear difference between the average labour use on (LFA) Dairy farms (1.6 hrs/sheep) and LFA Grazing Livestock farms (3.7 hrs/sheep).

Table 3.61: LFA Other Sheep Labour Use by Robust Type

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
Dairy	All	-	-	-	-	1.6
	England	-	-	-	-	1.2
	North	-	-	-	-	1.2
	East	-	-	-	-	-
	West	-	-	-	-	-
	Wales	-	-	-	-	1.7
LFA Grazing Livestock	All	-	-	-	-	3.7
	England	-	-	-	-	4.3
	North	-	-	-	-	-
	East	-	-	-	-	-
	West	-	-	-	-	-
	Wales	-	-	-	-	2.0

Results are only presented for farm types where the sample size is greater than or equal to 15.

3.3.8 Sows

Table 3.62 presents the average labour use for breeding sow enterprises, and shows that average labour use is 28.1 hours per sow (hrs/sow). Direct labour contributes a large 85% of this total, with contract labour providing approximately 1%, and overhead labour 14%. By their more specialist nature, labour use for sows typically accounts for 79% of total farm business labour use, with an average herd size of 156 sows. As identified for many enterprises, labour economies of size exist in breeding sow herds, with the greatest labour users (Q1) using 64 hrs/sow across an average herd size of 25 sows, whilst the most labour efficient group (Q4) expend 17 hrs/sow over an average herd size of 314 sows. In contrast with some previous findings for animal enterprises, the percentage of total farm business labour accounted for by breeding sow enterprises increases as the labour use per sow decreases. This result indicates that the most labour efficient per sow are more specialised on breeding sow enterprises.

Table 3.62: Sow Labour Use – Average and Performance Quartiles

Category	Measure	2004/05	2005/06	2006/07	2007/08	All
All	Direct	24.1	24.2	24.9	22.5	23.9
	Contractor	0.3	0.4	0.3	0.1	0.3
	Overhead	3.9	4.0	3.6	4.0	3.9
	Total Hours	28.4	28.6	28.8	26.6	**28.1**
	% of Farm Lab	78.3	80.3	77.9	80.3	79.2
	Herd size	157.8	180.1	147.6	142.1	156.2
	No. in sample	*76*	*69*	*72*	*77*	*294*
Q1	Direct	47.3	45.3	50.3	45.4	45.4
	Contractor	1.5	0.5	0.1	0.5	0.5
	Overhead	9.4	12.8	9.8	18.1	18.1
	Total Hours	58.1	58.7	60.2	64.0	64.0
	% of Farm Lab	69.5	82.6	70.8	50.5	50.5
	Herd size	49.7	59.1	49.4	25.0	25.0
	No. in sample	*19*	*17*	*18*	*19*	*74*
Q2	Direct	31.3	30.1	30.8	33.3	30.5
	Contractor	0.3	1.2	0.8	0.4	0.8
	Overhead	5.0	5.7	5.9	4.6	6.0
	Total Hours	36.6	37.0	37.6	38.3	37.3
	% of Farm Lab	74.8	70.4	69.4	85.2	73.2
	Herd size	138.4	167.4	114.0	98.1	134.7
	No. in sample	*19*	*17*	*18*	*19*	*73*
Q3	Direct	22.9	23.6	24.7	23.7	23.9
	Contractor	0.3	0.3	0.3	<0.1	0.2
	Overhead	3.5	2.9	3.2	4.7	3.2
	Total Hours	26.7	26.8	28.3	28.4	27.3
	% of Farm Lab	80.4	80.5	76.0	82.9	80.1
	Herd size	229.9	236.7	156.2	206.4	198.0
	No. in sample	*19*	*17*	*18*	*19*	*73*
Q4	Direct	13.3	15.4	16.6	15.7	15.3
	Contractor	0.1	<0.1	0.1	0.1	0.1
	Overhead	1.9	1.3	1.5	2.0	1.6
	Total Hours	15.3	16.6	18.2	17.8	17.0
	% of Farm Lab	81.3	84.9	84.6	80.7	83.6
	Herd size	309.7	342.5	324.0	280.77	314.3
	No. in sample	*19*	*18*	*18*	*20*	*74*

Q1 to Q4 refer to labour use performance quartiles

Labour use by region and farm size (Table 3.63) shows a relatively small degree of variation across the three EU regions of England, albeit that the North uses the lowest labour per sow (25.4 hrs). Farm size analysis correlates with the quartile performance group analysis from Table 3.62, whereby Small Farms are the heaviest users of labour, averaging nearly 52 hrs/sow; Medium and Large Farms use an average of 31.7 and 25.7 hrs/sow respectively.

Table 3.63: Sow Labour Use by Region and Farm Size

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
All		28.4	28.6	28.8	26.6	**28.1**
	Q1	58.1	58.7	60.2	64.0	64.0
	Q2	36.6	37.0	37.6	38.3	37.3
	Q3	26.7	26.8	28.3	28.4	27.3
	Q4	15.3	16.6	18.2	17.8	17.0
England		28.4	28.6	28.7	26.6	28.1
	North	26.7	25.9	27.9	-	25.4
	East	29.7	28.1	28.4	28.0	28.6
	West	25.5	35.7	30.4	26.9	28.9
Wales		-	-	-	-	-
FSS		-	-	-	51.9	51.9
	FSS England	-	-	-	52.0	52.1
	FSS North	-	-	-	-	-
	FSS East	-	-	-	-	47.3
	FSS West	-	-	-	-	48.8
	FSS Wales	-	-	-	-	-
FSM		33.6	31.4	30.9	30.9	31.7
	FSM England	see FSM	31.4	30.4	-	31.6
	FSM North	-	-	-	-	28.9
	FSM East	-	-	-	-	34.4
	FSM West	-	-	-	-	30.7
	FSM Wales	-	-	-	-	-
FSL		26.2	26.4	25.9	24.3	25.7
	FSL England	see FSL	see FSL	see FSL	see FSL	see FSL
	FSL North	-	-	-	-	20.4
	FSL East	28.4	27.0	26.9	26.4	27.2
	FSL West	-	-	-	-	24.0
	FSL Wales	-	-	-	-	-

FSS, FSM and FSL refer to Small, Medium and Large farm size groups respectively; Q1 to Q4 refer to labour use performance quartiles

Labour use by Robust Farm Type (Table 3.64) shows that Specialist Pig farms are the lowest labour users averaging 26.0 hrs/sow, whilst Cereal farms use an average of 60.5 hrs/sow, albeit that this latter result is drawn from a relatively small number of observations. General Cropping, LFA Grazing Livestock and Mixed farms use 36.6, 42.9 and 29.2 hrs/sow respectively.

Table 3.64: Sow Labour Use by Robust Type

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
Cereals	All	-	-	-	-	60.5
	England	-	-	-	-	60.4
	North	-	-	-	-	-
	East	-	-	-	-	-
	West	-	-	-	-	-
	Wales	-	-	-	-	-
General Cropping	All	-	-	-	-	36.6
	England	-	-	-	-	-
	North	-	-	-	-	-
	East	-	-	-	-	-
	West	-	-	-	-	-
	Wales	-	-	-	-	-
Specialist Pigs	All	24.9	28.2	26.3	25.0	26.0
	England	see All	see All	see All	see All	see All
	North	-	-	-	-	23.3
	East	25.6	27.5	24.7	24.9	25.6
	West	-	-	-	-	31.9
	Wales	-	-	-	-	-
LFA Grazing Livestock	All	-	-	-	-	42.9
	England	-	-	-	-	-
	North	-	-	-	-	-
	East	-	-	-	-	-
	West	-	-	-	-	-
	Wales	-	-	-	-	-
Mixed	All	-	-	-	-	29.2
	England	-	-	-	-	see All
	North	-	-	-	-	-
	East	-	-	-	-	31.0
	West	-	-	-	-	-
	Wales	-	-	-	-	-

Results are only presented for farm types where the sample size is greater than or equal to 15.

3.3.9 Finishing and Rearing Pigs

Finishing and rearing pig enterprises, almost by definition of the grouping, vary in their individual enterprises and thus the labour requirements needed for different systems within this group. Average labour use is 2.3 hours per pig place (hrs/pig), the majority of this (1.9 hrs, or 83%) derived from direct labour, with overhead labour accounting for 13%. Across the four years, labour use on these enterprises accounts for 63% of total farm business labour use, and the average number of batches of pigs per year is 1.9. Considerable variation exists across the four years presented, with respect to total labour use, average number of pigs present on farm, and batches of pigs per year. These differences arguably are reflecting different pig finishing and rearing systems as well as differences in the efficiency of labour use. Quartile analysis demonstrates labour use varying from an average of 9.5 hrs/pig (Q1) to 0.9 hrs/pig (Q4); the former has an average animal number of 90, whilst the latter has an average animal number of just over 1,200.

Table 3.65: Finishing and Rearing Pigs Labour Use – Average and Performance Quartiles

Category	Measure	2004/05	2005/06	2006/07	2007/08	All
All	Direct	2.4	2.3	1.7	1.5	1.9
	Contractor	<0.1	<0.1	<0.1	<0.1	<0.1
	Overhead	0.3	0.3	0.4	0.3	0.3
	Total Hours	2.7	2.7	2.1	1.8	**2.3**
	% of Farm Lab	61.4	61.6	68.1	63.9	62.9
	Av. Number	774.2	593.5	773.4	1046.8	737.0
	Batches per yr	3.7	2.3	1.3	1.5	1.9
	No. in sample	*45*	*54*	*50*	*46*	*195*
Q1	Direct	-	-	-	-	7.2
	Contractor	-	-	-	-	0.3
	Overhead	-	-	-	-	2.0
	Total Hours	-	-	-	-	9.5
	% of Farm Lab	-	-	-	-	79.3
	Av. Number	-	-	-	-	90.3
	Batches per yr					2.6
	No. in sample	-	-	-	-	*49*
Q2	Direct	-	-	-	-	3.6
	Contractor	-	-	-	-	<0.1
	Overhead	-	-	-	-	0.4
	Total Hours	-	-	-	-	4.0
	% of Farm Lab	-	-	-	-	65.8
	Av. Number	-	-	-	-	575.0
	Batches per yr					2.6
	No. in sample	-	-	-	-	*49*
Q3	Direct	-	-	-	-	1.5
	Contractor	-	-	-	-	<0.1
	Overhead	-	-	-	-	0.3
	Total Hours	-	-	-	-	1.8
	% of Farm Lab	-	-	-	-	70.3
	Av. Number	-	-	-	-	1372.1
	Batches per yr					2.2
	No. in sample	-	-	-	-	*48*
Q4	Direct	-	-	-	-	0.8
	Contractor	-	-	-	-	<0.1
	Overhead	-	-	-	-	0.2
	Total Hours	-	-	-	-	0.9
	% of Farm Lab	-	-	-	-	49.6
	Av. Number	-	-	-	-	1236.1
	Batches per yr					0.9
	No. in sample	-	-	-	-	*49*

Q1 to Q4 refer to labour use performance quartiles

Table 3.66 provides labour use for finishing and rearing pigs by region and farm size and shows that the EU North region incurs the lowest labour use of 1.7 hrs/pig, whilst the West incurs 2.7 hrs/pig. Farm size groupings show that Small Farms expend 2.8 hrs/pig against the average of 2.0 hrs/pig for both Medium and Large Farms.

Table 3.66: Finishing and Rearing Pigs Labour Use by Region and Farm Size

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
All		2.7	2.7	2.1	1.8	**2.3**
	Q1	-	-	-	-	9.5
	Q2	-	-	-	-	4.0
	Q3	-	-	-	-	1.8
	Q4	-	-	-	-	0.9
England		2.6	2.7	2.1	1.8	2.3
	North	2.2	1.6	1.4	-	1.7
	East	2.8	2.9	2.3	1.9	2.4
	West	-	-	-	-	2.7
Wales		-	-	-	-	-
FSS		3.0	3.0	2.8	2.2	2.8
	FSS England	3.0	3.0	2.8	see FSS	2.8
	FSS North	-	-	-	-	2.6
	FSS East	-	-	-	-	2.9
	FSS West	-	-	-	-	-
	FSS Wales	-	-	-	-	-
FSM		2.5	1.8	1.8	-	2.0
	FSM England	2.5	see FSM	1.7	-	2.0
	FSM North	-	-	-	-	1.2
	FSM East	-	-	-	-	2.4
	FSM West	-	-	-	-	-
	FSM Wales	-	-	-	-	-
FSL		-	2.8	-	1.6	2.0
	FSL England	-	see FSL	-	1.6	2.0
	FSL North	-	-	-	-	-
	FSL East	-	-	-	-	2.0
	FSL West	-	-	-	-	-
	FSL Wales	-	-	-	-	-

FSS, FSM and FSL refer to Small, Medium and Large farm size groups respectively; Q1 to Q4 refer to labour use performance quartiles

Robust Farm Type analysis (Table 3.67) for finishing and rearing pigs shows wide variation, with Cereals farms expending the lowest average labour use (1.7 hrs/pig), whilst Lowland Grazing Livestock farms incur 7.1 hrs/pig. Specialist Pig farms use 2.1 hrs/pig.

Table 3.67: Finishing and Rearing Pigs Labour Use by Robust Type

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
Cereals	All	-	-	-	-	1.7
	England	-	-	-	-	see All
	North	-	-	-	-	-
	East	-	-	-	-	-
	West	-	-	-	-	-
	Wales	-	-	-	-	-
General Cropping	All	-	-	-	-	2.0
	England	-	-	-	-	2.0
	North	-	-	-	-	-
	East	-	-	-	-	2.8
	West	-	-	-	-	-
	Wales	-	-	-	-	-
Specialist Pigs	All	-	3.0	-	1.8	2.1
	England	-	-	-	-	see All
	North	-	-	-	-	-
	East	-	-	-	-	2.2
	West	-	-	-	-	-
	Wales	-	-	-	-	-
Lowland Grazing Livestock	All	-	-	-	-	7.1
	England	-	-	-	-	6.5
	North	-	-	-	-	-
	East	-	-	-	-	-
	West	-	-	-	-	-
	Wales	-	-	-	-	-
Mixed	All	-	-	-	-	2.6
	England	-	-	-	-	see All
	North	-	-	-	-	-
	East	-	-	-	-	2.7
	West	-	-	-	-	-
	Wales	-	-	-	-	-

Results are only presented for farm types where the sample size is greater than or equal to 15.

3.3.10 Table Fowl

Labour use in table fowl production is presented in Table 3.68. Average labour use is 0.091 hour per bird place (hrs/bird). Of this, 77% comes from direct labour, 3% from contract labour and 19% from overhead labour. The specialist nature of these enterprises and farms is shown by an average of 89% of total farm business labour accounted for by table fowl production. Average bird number (i.e. bird places per farm) is 33,500, with an average of 6.1 batches per year, indicating an average turn over of 60 days per batch. The most labour efficient quartile (Q4) average a labour use of 0.003 hrs/bird, on enterprises averaging 125,000 bird place and achieving 6.7 batches per year (54 days per batch). By contrast, the heaviest labour users (Q1) expend 2.6 hrs/bird, within systems averaging 550 bird places, and rearing 2.2 batches per year (166 days per batch). These differences in scale of operation and batch throughput indicate a combination of different production systems and different bird products in addition to any labour economies of size present.

Table 3.68: Table Fowl Labour Use – Average and Performance Quartiles

Category	Measure	2004/05	2005/06	2006/07	2007/08	All
All	Direct	0.082	0.053	0.080	0.092	0.070
	Contractor	0.004	0.003	0.003	0.004	0.003
	Overhead	0.008	0.013	0.020	0.031	0.017
	Total Hours	0.095	0.069	0.104	0.127	**0.091**
	% of Farm Lab	86.2	89.2	92.6	86.5	89.1
	Av. Number	27,128	47,199	29,639	24,343	33,543
	Batches per yr	5.8	6.1	6.3	6.1	6.1
	No. in sample	*28*	*45*	*40*	*39*	*152*
Q1	Direct	-	-	-	-	2.071
	Contractor	-	-	-	-	0.077
	Overhead	-	-	-	-	0.420
	Total Hours	-	-	-	-	2.568
	% of Farm Lab	-	-	-	-	44.3
	Av. Number	-	-	-	-	553
	Batches per yr					2.2
	No. in sample	-	-	-	-	*38*
Q2	Direct	-	-	-	-	0.664
	Contractor	-	-	-	-	0.003
	Overhead	-	-	-	-	0.281
	Total Hours	-	-	-	-	0.946
	% of Farm Lab	-	-	-	-	88.0
	Av. Number	-	-	-	-	4,517
	Batches per yr					2.0
	No. in sample	-	-	-	-	*38*
Q3	Direct	-	-	-	-	0.090
	Contractor	-	-	-	-	0.006
	Overhead	-	-	-	-	0.016
	Total Hours	-	-	-	-	0.112
	% of Farm Lab	-	-	-	-	78.8
	Av. Number	-	-	-	-	35,839
	Batches per yr					5.0
	No. in sample	-	-	-	-	*38*
Q4	Direct	-	-	-	-	0.023
	Contractor	-	-	-	-	0.002
	Overhead	-	-	-	-	0.003
	Total Hours	-	-	-	-	0.028
	% of Farm Lab	-	-	-	-	92.5
	Av. Number	-	-	-	-	125,067
	Batches per yr					6.7
	No. in sample	-	-	-	-	*38*

Q1 to Q4 refer to labour use performance quartiles

Regional and Farm Size analysis in table fowl production is presented in Table 3.69. Regional variation does exist with the EU North region expending 0.035 hrs/bird, approximately one-third of EU East region (0.116 hrs/bird). Clear labour economies of size are shown across the farm size groupings, albeit that this may also reflect different production systems across these different farm groups. Small Farms use an average of 0.956 hrs/bird, Medium Farms use 0.141 hrs/bird and Large Farms use 0.081 hrs/bird.

Robust Farm Type analysis (Table 3.70) shows that table fowl enterprises on Cereals farms use an average of 1.9 hrs/bird, whilst Specialist Poultry farms use an average of 0.065 hrs/bird and Mixed farms use 0.179 hrs/bird. The specialist nature of the poultry farms results in substantial labour economies, when examined in terms of hours per bird place.

Table 3.69: Table Fowl Labour Use by Region and Farm Size

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
All		0.095	0.069	0.104	0.127	**0.091**
	Q1	-	-	-	-	2.568
	Q2	-	-	-	-	0.946
	Q3	-	-	-	-	0.112
	Q4	-	-	-	-	0.028
England		see All	0.069	0.103	0.127	0.090
	North	-	-	-	-	0.035
	East	-	0.073	0.139	0.169	0.116
	West	-	-	-	-	0.090
Wales		-	-	-	-	-
FSS		-	-	-	-	0.956
	FSS England	-	-	-	-	0.960
	FSS North	-	-	-	-	-
	FSS East	-	-	-	-	-
	FSS West	-	-	-	-	-
	FSS Wales	-	-	-	-	-
FSM		-	0.120	-	-	0.141
	FSM England	-	see FSM	-	-	0.137
	FSM North	-	-	-	-	0.060
	FSM East	-	-	-	-	-
	FSM West	-	-	-	-	-
	FSM Wales	-	-	-	-	-
FSL		0.095	0.0614	0.091	0.109	0.081
	FSL England	see FSL	see FSL	see FSL	0.109	0.081
	FSL North	-	-	-	-	-
	FSL East	-	-	-	-	0.099
	FSL West	-	-	-	-	0.088
	FSL Wales	-	-	-	-	-

FSS, FSM and FSL refer to Small, Medium and Large farm size groups respectively; Q1 to Q4 refer to labour use performance quartiles

Table 3.70: Table Fowl Labour Use by Robust Type

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
Cereals	All	-	-	-	-	1.883
	England	-	-	-	-	see All
	North	-	-	-	-	-
	East	-	-	-	-	1.708
	West	-	-	-	-	-
	Wales	-	-	-	-	-
Specialist Poultry	All	-	0.054	0.076	-	0.065
	England	-	see All	see All	-	see All
	North	-	-	-	-	0.030
	East	-	-	-	-	0.079
	West	-	-	-	-	0.067
	Wales	-	-	-	-	-
Mixed	All	-	-	-	-	0.179
	England	-	-	-	-	see All
	North	-	-	-	-	-
	East	-	-	-	-	-
	West	-	-	-	-	-
	Wales	-	-	-	-	-

Results are only presented for farm types where the sample size is greater than or equal to 15.

3.3.11 Hens

Average and performance quartile labour analysis for laying hens is presented in Table 3.71. Overall average labour for laying hens is 0.364 hours per hen (hrs/hen). Of this 0.36 hrs/hen, 82% is derived from direct labour, with contract and overhead labour constituting 1% and 16% respectively. The specialist nature of laying hen enterprises is shown by 88.6% of total farm business labour accounted for by labour on laying hen enterprises, and across these farm business, average flock size is 13,800. Labour performance quartile analysis indicates that average labour for the heaviest labour users (Q1) is 1.16 hrs/hen over an average flock size of 2,500 hens. By contrast the most labour efficient users per hen (Q4) expend 0.229 hrs/hen over an average flock size of just over 29,000 hens. The difference in average scale of operation across the performance quartiles reflects in large part different production systems, for example more small scale, free-range or organic production, against more large scale laying hen enterprises. Across all performance quartiles, the percentage of total farm business labour attributable to laying hen enterprises exceeds 80%. Despite reflecting possible different systems of production, clear labour economies of size exist as shown across the four performance quartiles.

Table 3.71: Hens Labour Use – Average and Performance Quartiles

Category	Measure	2004/05	2005/06	2006/07	2007/08	All
All	Direct	0.298	0.313	0.310	0.277	0.300
	Contractor	0.003	0.006	0.006	0.003	0.005
	Overhead	0.040	0.046	0.085	0.076	0.060
	Total Hours	0.340	0.365	0.402	0.355	**0.364**
	% of Farm Lab	89.7	88.9	89.9	86.1	88.6
	Flock Size	15,099	15,027	11,376	13,757	13,780
	No. in sample	*50*	*51*	*60*	*69*	*230*
Q1	Direct	-	-	0.867	0.567	0.757
	Contractor	-	-	0.002	0.002	0.004
	Overhead	-	-	0.679	0.439	0.406
	Total Hours	-	-	1.548	1.006	1.164
	% of Farm Lab	-	-	91.4	91.5	86.2
	Flock Size	-	-	2,474	2,941	2,489
	No. in sample	-	-	*15*	*17*	*58*
Q2	Direct	-	-	0.568	0.526	0.509
	Contractor	-	-	0.007	0.003	0.005
	Overhead	-	-	0.105	0.094	0.085
	Total Hours	-	-	0.680	0.620	0.599
	% of Farm Lab	-	-	91.5	88.3	82.7
	Av. Number	-	-	5,756	5,509	6,059
	No. in sample	-	-	*15*	*17*	*57*
Q3	Direct	-	-	0.302	0.291	0.306
	Contractor	-	-	0.006	0.003	0.003
	Overhead	-	-	0.073	0.059	0.051
	Total Hours	-	-	0.382	0.353	0.361
	% of Farm Lab	-	-	82.7	91.8	93.2
	Flock Size	-	-	8,946	32,217	20,957
	No. in sample	-	-	*15*	*17*	*57*
Q4	Direct	-	-	0.210	0.166	0.200
	Contractor	-	-	0.006	0.003	0.006
	Overhead	-	-	0.022	0.017	0.023
	Total Hours	-	-	0.238	0.186	0.229
	% of Farm Lab	-	-	92.2	79.3	87.1
	Flock Size	-	-	32,937	23,807	29,172
	No. in sample	-	-	*15*	*18*	*58*

Q1 to Q4 refer to labour use performance quartiles

Regional and farm size analysis (Table 3.72) shows that producers in the EU East region incur the greatest labour use per hen (0.505 hrs/hen), with those in the West achieving the lowest average regional labour use (0.308 hrs/hen). Farm size analysis reinforces the labour economies of size note above; Small, Medium and Large Farms incur 0.582, 0.489 and 0.320 hrs/hen respectively. Note that a small number of observations in each year for Wales, and in total across the four years, does not allow presentation of results for this region.

Table 3.72: Hens Labour Use by Region and Farm Size

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
All		0.340	0.365	0.402	0.355	**0.364**
	Q1	-	-	1.548	1.006	1.164
	Q2	-	-	0.680	0.620	0.599
	Q3	-	-	0.382	0.353	0.361
	Q4	-	-	0.238	0.186	0.229
England		0.339	0.362	0.399	0.353	0.362
	North	-	-	0.302	0.324	0.335
	East	0.338	0.436	0.693	0.524	0.505
	West	0.307	0.356	0.314	0.249	0.308
Wales		-	-	-	-	-
FSS		0.530	0.682	0.587	0.637	0.582
	FSS England	0.517	0.666	0.563	0.447	0.555
	FSS North	-	-	-	-	0.436
	FSS East	-	-	-	-	0.702
	FSS West	-	-	-	-	0.451
	FSS Wales	-	-	-	-	-
FSM		0.477	0.522	0.493	0.444	0.489
	FSM England	see FSM	see FSM	see FSM	see FSM	see FSM
	FSM North	-	-	-	-	0.498
	FSM East	-	-	-	-	0.446
	FSM West	-	-	-	-	0.500
	FSM Wales	-	-	-	-	-
FSL		0.296	0.302	0.355	0.334	0.320
	FSL England	0.296	-	-	0.335	0.320
	FSL North	-	-	-	-	0.283
	FSL East	-	-	-	-	0.483
	FSL West	-	-	-	-	0.265
	FSL Wales	-	-	-	-	-

FSS, FSM and FSL refer to Small, Medium and Large farm size groups respectively; Q1 to Q4 refer to labour use performance quartiles

Robust Farm Type analysis (Table 3.73) is dominated by results for Specialist Poultry farms, all of which are drawn from England. On Specialist Poultry farms average labour use is 0.354 hrs/hen, contrasting with 0.174 hrs/hen (Dairy farms), 0.60 hrs/hen (Lowland Grazing Livestock) and 0.517 hrs/hen (Mixed farms).

Table 3.73: Hens Labour Use by Robust Type

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
Specialist	All	0.341	0.349	0.384	0.347	0.354
Poultry	England	see All	see All	see All	see All	see All
	North	-	-	-	-	0.335
	East	-	-	-	0.513	0.498
	West	-	-	-	-	0.297
	Wales	-	-	-	-	-
Dairy	All	-	-	-	-	0.174
	England	-	-	-	-	0.166
	North	-	-	-	-	-
	East	-	-	-	-	-
	West	-	-	-	-	-
	Wales	-	-	-	-	-
Lowland	All	-	-	-	-	0.600
Grazing	England	-	-	-	-	0.338
Livestock	North	-	-	-	-	-
	East	-	-	-	-	-
	West	-	-	-	-	-
	Wales	-	-	-	-	-
Mixed	All	-	-	-	-	0.517
	England	-	-	-	-	-
	North	-	-	-	-	-
	East	-	-	-	-	-
	West	-	-	-	-	-
	Wales	-	-	-	-	-

Results are only presented for farm types where the sample size is greater than or equal to 15.

3.3.12 Other Poultry

Labour use data for Other Poultry enterprises is restricted to 28 observations across the four years presented. Consequently, analysis is restricted to this overall average group with performance group analysis not possible. Average performance across these 28 observations (Table 3.74) shows that average labour use is 2.3 hrs per bird place over an average flock size of 291 producing 3.1 batches per year. Of the 2.3 hrs/bird, 72% is derived from direct labour, with 13% and 15% flowing from contract and overhead labour respectively. Across this sample, labour used on Other Poultry enterprises accounts for 23% of total farm business labour.

Table 3.74: Other Poultry Labour Use

Category	Measure	2004/05	2005/06	2006/07	2007/08	All
All	Direct	-	-	-	-	1.681
	Contractor	-	-	-	-	0.308
	Overhead	-	-	-	-	0.345
	Total Hours	-	-	-	-	**2.333**
	% of Farm Lab	-	-	-	-	23.2
	Flock Size	-	-	-	-	291
	Batches per yr	-	-	-	-	3.1
	No. in sample	-	-	-	-	*28*

Regional analysis of labour use for other poultry enterprises (Table 3.75) is restricted to presenting results for England only; the dominance of the overall sample from English farm businesses means that the average labour use for England is 2.331 hrs/bird. The small sample size does not permit analysis by Robust Farm Types.

Table 3.75: Other Poultry Labour Use by Region

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
All		-	-	-	-	**2.333**
	Q1	-	-	-	-	-
	Q2	-	-	-	-	-
	Q3	-	-	-	-	-
	Q4	-	-	-	-	-
		-	-	-	-	-
England		-	-	-	-	2.331
	North	-	-	-	-	-
	East	-	-	-	-	-
	West	-	-	-	-	-
Wales		-	-	-	-	-

Q1 to Q4 refer to labour use performance quartiles; Farm size results are only presented for size groups where the sample size is greater than or equal to 15.

3.3.13 Horses

Labour use for horse enterprises is shown in Table 3.76 to average 38.9 hours per horse (hrs/horse). Direct labour (30.8 hrs/horse) accounts for 79% of total labour use, with contract and overhead labour accounting for 9% and 12% respectively. Horse labour, on average, accounts for 11% of total farm business labour on farms with horse enterprises, and the average stud size is 6.8 horses. Performance quartile analysis shows very wide ranging labour use across the sample, with the most labour intensive (Q1) using 154.7 hrs/horse, compared with the most labour efficient (Q4) using 0.6 hrs/horse, thus representing a 257 fold difference in average labour use between Q1 and Q4.

Table 3.76: Horses Labour Use – Average and Performance Quartiles

Category	Measure	2004/05	2005/06	2006/07	2007/08	All
All	Direct	36.6	17.1	24.6	49.9	30.8
	Contractor	0.4	7.3	2.5	2.2	3.4
	Overhead	5.0	4.6	3.3	6.0	4.6
	Total Hours	41.9	29.0	30.4	58.1	**38.9**
	% of Farm Lab	16.1	7.6	5.2	19.8	11.4
	Stud Size	6.6	6.1	7.6	6.8	6.8
	No. in sample	*31*	*70*	*63*	*59*	*223*
Q1	Direct	-	89.4	119.6	127.6	124.6
	Contractor	-	38.7	9.2	3.4	12.1
	Overhead	-	22.1	16.3	15.3	18.1
	Total Hours	-	150.3	145.0	146.3	154.7
	% of Farm Lab	-	39.4	22.4	49.9	44.2
	Stud Size	-	6.0	5.3	8.3	6.3
	No. in sample	-	*18*	*16*	*15*	*56*
Q2	Direct	-	7.5	5.7	9.8	9.0
	Contractor	-	0.3	1.0	0.9	0.9
	Overhead	-	3.6	0.7	1.0	2.0
	Total Hours	-	11.5	7.4	11.7	11.9
	% of Farm Lab	-	2.3	2.2	4.2	3.8
	Stud Size	-	4.2	5.6	5.4	6.2
	No. in sample	-	*17*	*16*	*15*	*56*
Q3	Direct	-	0.6	0	-	1.2
	Contractor	-	1.0	1.3	-	1.1
	Overhead	-	0.1	0	-	0.3
	Total Hours	-	1.7	1.3	-	2.5
	% of Farm Lab	-	0.7	0.8	-	1.0
	Stud Size	-	8.1	9.9	-	6.8
	No. in sample	-	*17*	*15*	-	*55*
Q4	Direct	-	<0.1	0	<0.1	<0.1
	Contractor	-	0.5	0.5	0.5	0.6
	Overhead	-	0	0	<0.1	<0.1
	Total Hours	-	0.5	0.5	0.5	0.6
	% of Farm Lab	-	0.2	0.4	0.1	0.4
	Stud Size	-	5.6	9.8	4.0	7.7
	No. in sample	-	*18*	*16*	*15*	*56*

Q1 to Q4 refer to labour use performance quartiles

Regional and Farm Size analysis (Table 3.77) shows that the EU North region uses the lowest labour per horse (11.6 hrs) followed closely by Wales (14.1). The EU East region is the heaviest labour user (91.0 hrs/horse). The presentation of results by farm size groupings shows that horse enterprises are most often found on Small Farms, where average labour use is 55.4 hrs/horse, compared with 26.3 hrs/horse for Medium Farms and 7.1 hrs/horse for Large Farms. These differences arguably reflecting different types of horse enterprises, rather than simply a reflection of the influence of farm size alone.

Table 3.77: Horses Labour Use by Region and Farm Size

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
All		41.9	29.0	30.4	58.1	**38.9**
	Q1	-	150.3	145.0	146.3	154.7
	Q2	-	11.5	7.4	11.7	11.9
	Q3	-	1.7	1.3	-	2.5
	Q4	-	0.5	0.5	0.5	0.6
England		49.7	30.4	32.7	61.8	92.7
	North	-	15.1	-	-	11.6
	East	-	-	-	409.1	91.0
	West	-	14.6	24.7	33.7	23.3
Wales		-	13.2	-	21.6	14.1
FSS		56.5	45.0	46.2	70.9	55.4
	FSS England	-	47.0	48.8	73.8	57.7
	FSS North	-	-	-	-	10.4
	FSS East	-	-	-	-	124.5
	FSS West	-	-	-	-	12.7
	FSS Wales	-	-	-	-	20.6
FSM		-	19.8	19.8	43.6	26.3
	FSM England	-	19.1	20.0	-	26.9
	FSM North	-	-	-	-	-
	FSM East	-	-	-	-	-
	FSM West	-	-	-	-	43.6
	FSM Wales	-	-	-	-	21.3
FSL		-	-	-	-	7.1
	FSL England	-	-	-	-	8.3
	FSL North	-	-	-	-	-
	FSL East	-	-	-	-	-
	FSL West	-	-	-	-	-
	FSL Wales	-	-	-	-	-

FSS, FSM and FSL refer to Small, Medium and Large farm size groups respectively; Q1 to Q4 refer to labour use performance quartiles

Analysis by Robust Farm Type (Table 3.78) differs from previous analysis in that specialist horse farms have been included for reference. Within the FBS specialist horse farms are not attributed with an FBS Weight and hence are excluded from the analysis thus far. However, in Table 3.78 they are included, albeit that the results are not weighted using FBS weights. The results for specialist horse farms shows an average labour use of 32.3 hrs/horse, thus lower than the overall average of 38.9 hrs/horse. Other farm types show considerable variation in labour use, ranging from 6.9 hrs/horse on Dairy farms to 70.2 hrs/horse on Mixed farms. Within Table 3.78 variation across farm types in individual years also exists.

Table 3.78: Horses Labour Use by Robust Type

Category	Sub-Category	2004/05	2005/06	2006/07	2007/08	All
Cereals	All	-	-	-	-	29.2
	England	-	-	-	-	see All
	North	-	-	-	-	-
	East	-	-	-	-	-
	West	-	-	-	-	-
	Wales	-	-	-	-	-
Dairy	All	-	-	-	-	6.9
	England	-	-	-	-	7.0
	North	-	-	-	-	-
	East	-	-	-	-	-
	West	-	-	-	-	-
	Wales	-	-	-	-	-
LFA	All	-	6.7	3.3	28.1	25.7
Grazing	England	-	-	-	-	33.5
Livestock	North	-	-	-	-	-
	East	-	-	-	-	-
	West	-	-	-	-	5.8
	Wales	-	-	-	22.0	15.1
Lowland	All	-	46.7	66.8	66.8	52.0
Grazing	England	-	46.9	67.6	65.6	52.3
Livestock	North	-	-	-	-	-
	East	-	-	-	-	116.9
	West	-	-	-	-	16.5
	Wales	-	-	-	-	-
Mixed	All	-	-	-	-	70.2
	England	-	-	-	-	-
	North	-	-	-	-	-
	East	-	-	-	-	-
	West	-	-	-	-	-
	Wales	-	-	-	-	-
Horses	All	-	31.5	29.8	37.1	32.3
	England	-	33.1	31.7	39.6	34.2
	North	-	18.7	-	-	11.4
	East	-	46.2	55.9	51.4	50.9
	West	-	39.1	43.7	32.1	26.2
	Wales	-	12.2	-	19.6	14.3

Results are only presented for farm types where the sample size is greater than or equal to 15.

3.3.14 Goats

Table 3.79 provides the results for labour use in goat enterprises, across a total of 23 observations for the overall sample. Average labour use is 12.1 hours per goat (hrs/goat), 74% derived from direct labour (8.9 hrs), with contract and overhead labour accounting for 14% and 12% respectively. Average herd size is 116 goats, with goat labour accounting for 55% of total farm business labour on farms where goat enterprises are found. The small sample size does not permit analysis by performance quartiles, regions, farm size groups, or robust farm type.

Table 3.79: Goats Labour Use

Category	Measure	2004/05	2005/06	2006/07	2007/08	All
All	Direct	-	-	-	-	8.9
	Contractor	-	-	-	-	1.7
	Overhead	-	-	-	-	1.5
	Total Hours	-	-	-	-	**12.1**
	% of Farm Lab	-	-	-	-	55.3
	Herd Size	-	-	-	-	115.8
	No. in sample	-	-	-	-	*23*

3.4 Standard Labour Requirement Coefficients

Table 3.80 draws together the results of the analysis of direct and total labour use by crop type and animal enterprise (average labour hours). These are presented alongside the coefficients currently in use within the FBS (original coefficients) and proposed coefficients based on the total labour use results presented in this chapter. This section reviews the results from Table 3.80, whilst more discursive analysis of these coefficients is presented in Chapter 4. For the combinable crops of cereals and oilseeds, the proposed coefficients are in the same order of magnitude as the original coefficient; cereals original coefficient equals 20 hrs/ha, proposed coefficient is 18 hrs/ha; oilseeds original is 15 hrs/ha, whilst the proposed is 16 hrs/ha. However for field peas and beans the original coefficient (10 hrs/ha) is considerably lower than the proposed coefficient (16 hrs/ha), albeit that the proposed coefficient is in line with that for oilseeds, and thus in line with the major alternative break crop in combinable cropping rotations. Within the FBS insufficient data exists on hops, other peas and beans and mushrooms to undertake analysis, and thus the proposed coefficients remain unchanged. The proposed coefficient for sugar beet of 33 hrs/ha remains unchanged from the original coefficient, whilst the proposed coefficients for maincrop potatoes (110 hrs/ha) and early potatoes (200 hrs/ha) are greater than the original coefficients, with the coefficient for early potatoes representing a substantial increase over the original. A large order of magnitude increase is proposed for outdoor vegetables and salad crops with the proposed coefficient of 280 hrs/ha, in comparison to the original coefficient of 100 hrs/ha. The proposed coefficient for vining peas of 12 hrs/ha represents a decrease of just over 50% in the standard labour requirements for this crop. The original coefficient for top and soft fruit of 450 hrs/ha is proposed to change to 425 hrs/ha, whilst for hardy nursery stock and vegetables grown under glass, the respective proposed coefficients of 1900 hrs/ha and 7000 hrs/ha represent increases over the original coefficients. By contrast, the proposed coefficient for flowers and plants grown under glass of 13,000 hrs/ha represents almost a 50% decrease on the previous coefficient. Labour requirement analysis for set-aside at 2.9 hrs/ha represents a substantial increase on the previous coefficient of only 1 hr/ha.

Examining the proposed coefficients for animal enterprises, standard labour use per dairy cow is recommended to be 42 hrs/cow, representing a slight increase on the original coefficient of 39 hrs/cow. The proposed coefficient for beef cows (26 hrs/cow) is considerably greater than the original coefficient of 12 hrs/cow, whilst the proposed coefficient for other cattle of 12 hrs/animal is also greater than the original coefficient (9 hrs). Proposed coefficients for sheep enterprises encompass ewes and rams (Lowland) of 5.2 hrs/ewe (*cf.* 5.2 hrs original), ewes and rams (LFA) of 3.7 hrs/ewe (4.2 hrs original), other sheep (Lowland) 2.9 hrs/sheep (3.3 hrs original) and other sheep (LFA) 3.1 hrs/sheep (2.6 hrs original). With the exception of other sheep (LFA), the recommended coefficients are equal to or less than the original coefficient for sheep enterprises. The proposed coefficient for sows at 28 hrs/sow represents a doubling of the original coefficient. The proposed labour coefficient for finishing and rearing pigs at 2.3 hrs/pig is greater than the original coefficient (1.9 hrs), whilst substantial increases are also proposed for poultry enterprises; the proposed coefficients for poultry are table fowl (0.09 hrs/bird place), laying hens (0.34 per hen), growing pullets (0.24 hrs/bird place) and other poultry (0.10 hrs/bird place). For growing poultry and other poultry the small number of observations limited any analysis of results and thus these coefficients have been calibrated from the original coefficients on the basis of the change for the table fowl category. A substantial

reduction in the coefficient for horses is proposed, with the recommended 40 hrs/ horse representing nearly one-quarter of the original coefficient. The proposed coefficient of 12 hrs/goat represents a substantial decrease from the original coefficient. A lack of data on labour use precludes analysis for fodder crops, grassland and rough grazing and comparison with published data and the previous coefficients leads to proposed coefficients of 6 hrs/ha, 3.1 hrs/ha an 1.5 hrs/ha respectively.

Table 3.80: Standard Labour Use Coefficients

	Original coefficient	**Direct Labour Hours (results)**	**Total Labour Hours (results)**	**Proposed (2004-8) coefficient**
Cereals	20	12.6	18.0	**18**
Oilseeds	15	11.2	15.8	**16**
Hops	60a	-	-	**60[g]**
Sugar Beet	33	21.5	33.0	**33**
Field peas & beans	10	10.9	15.7	**16**
Maincrop Potatoes*	90	81.1	109.1	**110**
Early Potatoes	120	174.6	202.1	**200**
Outdoor Vegetables and salad	100	249.6	282.4	**280**
Other peas and beans	500	-	-	**500[g]**
Vining Peas	25[d]	7.2	12.0	**12**
Top and soft fruit	450	359.1	424.5	**425**
HNS	1500	1583.0	1883.6	**1900**
Vegetables under glass	5000	6319.4	6990.8	**7000**
Flowers & plants under glass	25000	10270.1	12794.4	**13000**
Mushrooms	7220 (or 0.044 hrs/Ib)	-	-	**7220 (or 0.044 hrs/lb)[g]**
Set aside	1	2.0	2.9	**2.9**
Dairy cows	39	35.5	42.5	**42**
Beef cows	12	21.5	25.8	**26**
Other cattle	9	9.7	11.7	**12**
Ewes and rams (Lowland) 1	5.2	4.4	5.2	**5.2**
Ewes and rams (lfa) 1	4.2[f]	3.1	3.7	**3.7**
Other sheep (Lowland) 1	3.3[b]	2.3	2.9	**2.9**
Other sheep (lfa) 1	2.6[f]	2.5	3.1	**3.1**
Sows	14	23.9	28.1	**28**
Finishing & rearing pigs	1.9	1.9	2.3	**2.3**
Piglets (<20kg)	0.2	-	-	**0.2[h]**
Table fowl	0.04	0.07	0.091	**0.09**
Laying hens	0.17	0.30	0.364	**0.36**
Growing pullets	0.12[d]	-	-	**0.24[i]**
Other Poultry	0.045	1.681	2.333	**0.10[i]**
Fodder crops	6c	-	-	**6[a,g]**
Horse	150	30.8	38.9	**40**
Goats	20	8.9	12.1	**12**
Deer	15	-	-	**15[g]**
Grassland	4[a]	-	-	**3.1[a]**
Rough grazing	1.5[a]	-	-	**1.5[g]**

See Appendix 1 for notes / footnote details

4. Discussion

4.1 Introduction

Chapter 3 presents the results of labour use for crop types and animal enterprises together with a table of proposed standard labour coefficients set against original coefficients. As noted above, there is considerable variation across labour performance quartiles, and additionally for many enterprises, substantial variation exists across farm types, sizes and regions. This chapter places the results from Chapter 3 in context, considering the variation in labour use across crop types and animal enterprises in order to draw out the key emerging themes from the results.

4.2 Crop Types

Chapter 3 presents empirical findings for 13 crop types (including set-aside). These crop types encompass combinable crops, root cropping, fruit crops, horticulture and set-aside. Some clear findings emerge from this analysis. With respect to combinable cropping and root crops, there is evidence of labour economies of size across both enterprise / crop type area grown and also across farm size groupings. Those farm businesses with larger crop areas and larger farms typically incur lower labour use per hectare than smaller farms and those with smaller crop areas. Regional analysis for these crop types suggest that labour use is lower in the East of England, and in terms of Robust Farm Types, typically it is the Cereals and General Cropping farm types that expend the lowest labour per hectare on these crop types. The correlation between the East of England, enterprise size and farm types is not surprising and would confirm *a priori* expectations of the efficiency of labour use for these crop types. Direct labour accounts for 65% - 74% within combinable cropping and root cropping (with the exception of early potatoes where direct labour accounts for 86%), and overhead labour approximates to just over 20% of total labour used. Contract labour plays its greatest part in sugar beet production, and is marginally lower in potato production than in combinable cropping production. The amount of farm labour accounted for by combinable cropping and root cropping enterprises varies across crop types, but generally follows the popularity of these crop types in arable farm systems. Cereals accounts for 40% of total farm labour, with oilseeds and sugar beet at 19% each. Field peas and beans account for only 10% of total farm labour. Where potatoes are present on farm businesses they account for an average of 40% of total labour usage. Vining Peas represent a particular case, with a relatively low reliance on direct labour (60%), contract labour of 15% represents one of the larger users of contract labour across the crop types. Set-Aside represents a rather special case, with total labour on set-aside accounting for an average of 1% of total farm business labour use; the pattern of labour economies of size follow those noted for cereals.

Horticultural crops are typified by their high reliance upon direct labour (84% - 90%), with overhead labour accounting for the majority of the remaining labour use per crop type. Contract labour in horticultural crops is small, in the order of 0% to 2%. Labour economies of size are less clearly defined in horticultural crop groups; in part this may be due to the large variability in production systems and crops produced. However, the balance of evidence suggests that some labour economies of size do exist, particularly for hardy nursery stock and vegetables grown under glass. Perhaps not surprising, specialist Horticulture farms tend to incur the lowest labour use per Robust Farm Type, albeit that for some crop

groups, analysis at Robust Farm Type level is only possible for the Horticulture group. Regional trends for efficient labour use are not clearly defined. The specialist nature of these crop types is represented by the high percentage of total farm business labour that is accounted for by horticulture crops (69% - 87%).

4.3 Animal Enterprises

The range of animal enterprises considered is wide ranging; from the intensive production of table fowl, to the more extensive systems for other sheep in the LFA. Whilst the enterprises differ substantially, the characteristics underlying labour use on these enterprises are often common. With the exception of other sheep enterprises (Lowland and LFA), or categories where sample size is modest (other poultry, goats) or where large variation in the sample exists (horses), there is a very clear trend of labour economies of size being present. With increased animal numbers, and increased farm size, labour use per animal falls. The pattern of labour economies of size noted for the majority of the animal enterprises is arguably more clear-cut than for crop types. Within crop types, the clear labour economies of size noted for combinable crops and roots crops was less evident when examining horticultural production. The analysis of the animal enterprises shows that for grazing livestock (e.g. dairy, beef, sheep) and, the traditionally more intensive animal enterprises (e.g. table fowl, laying hens, breeding sows), labour use per animal falls as the scale of operation increases.

The disaggregation of enterprise labour into direct, contract and overhead labour shows that direct labour typically accounts for 75% - 85% of total labour for animal enterprises, whilst overhead labour ranges from 12% - 20%. Contract labour use differs according to animal enterprise type, with grazing livestock type systems (including dairy) using contract labour in the order of 5% of total labour, whilst the more intensive animal enterprises draw to a lesser extent on the input from contractors. Labour use patterns across the EU regions are less well-defined than for crop types, albeit that for dairy and sheep enterprises the North of England and Wales often incur the lowest labour use across the regions. Considering labour use across Robust Farm Types shows that for the more specialist farm types (Pigs and Poultry) these generally incur lower labour use for their respective specialist enterprises than for other farm types. However, this pattern is less clear for more grass-based enterprises, where Mixed Farms often expend the lowest or low labour use per animal (e.g. for dairy, beef cows, ewes and rams in the lowlands), whilst for sheep enterprises the Dairy farm type incurs some of the lowest labour use; this latter observation in part is due to the type of sheep enterprises operated on some Dairy farms, in addition to the potential for spreading labour across dairy and sheep enterprises within a business. It is important that these observations are taken in context – whilst labour use per animal may be lower on some farm types than others, labour use in itself is only one measure of *input* productivity and does not, on its own, inform us directly as to the output efficiency of labour use.

The proportion of total farm business labour attributable to individual animal enterprises is wide ranging. Horse enterprises use an average of 11% of total farm business labour, whilst table fowl use accounts for 89% of total farm business labour use. Typically the more intensive animal enterprises (sows, table fowl and laying hens) account for 80% - 90% of total farm business labour. In general "dominant" animal enterprises on farms (dairy, ewes and rams, finishing and rearing pigs) account for approximately 50% to 70% of total farm business labour, whilst more "secondary" animal enterprises (beef cows, other cattle, other

sheep, other poultry) account for approximately one-quarter to one-third of total farm business labour use.

4.4 Comparison with Previous Research

Considering the findings of this report with previous examples of labour use on farms provides some key themes. As noted in Chapter 1, many Special Study (SS) reports have focused upon measuring direct labour use alone for a particular enterprise, and for certain animal enterprises (e.g. grazing livestock) the direct labour has been restricted to that used for animal husbandry alone. Hence, direct comparison on an enterprise by enterprise basis from the SS series of reports is only possible with respect to direct hours per enterprise. Turner and Fogerty's (1994) analysis, whilst now dated, provides the most comparable findings from a methodological view point. Examining direct labour results from this study to the findings from Turner and Fogerty (T&F) provides evidence of reductions in the direct hours of labour required per hectare or per animal. For cereals, this study reports a direct labour requirement of 12.6 hours per hectare, whilst T&F report 13.1 hours. Oilseeds labour requirement is broadly similar between this study and T&F with respective results of 11.2 and 10.8 hours per hectare. Direct labour use in sugar beet is estimated to be 21.5 hours per hectare from the above analysis, whilst T&F note direct labour of 33.3. However, within sugar beet production considerable use of contract labour is now made as noted in Chapter 3. T&F note direct labour use of 19.3 hours per hectare for peas and beans, whilst the current study reports labour use of 10.9 direct hours. Labour use in potato production by T&F is noted to be 224 hours per hectare, whilst the current study reports direct labour of 81 hours (maincrop) and 175 hours (earlies) per hectare. Some key comparators for livestock include T&F's direct labour use of 38.5 hours per dairy cow against 35.5 hours from this study. A similar reduction in direct labour use is noted for beef cows with T&F recording use of 22.6 hours per cow, with the current analysis showing this to have reduced to 21.5 hours per cow. Broadly similar results between the two studies are shown for other cattle (9.7 hours per animal, current study; 9.5 hours per animal, T&F). Direct labour use in breeding sheep is considerably different between the two analyses, with T&F showing this to be 9.5 hours per ewe, whilst the current analysis provides averages of 4.4 hours per ewe (Lowland) and 3.1 hours per ewe (LFA). Reporting direct labour of 26.9 hours per sow, T&F's result is slightly greater than the result of 23.9 hours per sow from the present study.

Considering analyses of the SS findings noted in Chapter 1 and comparing these with the current study findings, a general trend emerges. Typically, this current study reports greater labour use (direct and total) than the labour use recorded as part of the SS series. This is particularly the case for arable crops and also for grazing livestock enterprises. The latter is due to SS recording labour use for husbandry alone. Some of the SS livestock results are more directly comparable in terms of direct labour use. For example, within the current study, direct labour for laying hens averages 0.30 hours per hen, in comparison to 0.168 hours per hen (Russell *et al.* 2005), albeit that Russell *et al.* note that organic systems use considerably more labour. With respect to overhead labour, T&F note that overhead labour constitutes 22% of total farm labour, whilst Tiffin (2003) suggest an overhead coefficient of 15.1% (equating to a 17.8% of direct and overhead labour combined). This current report finds that approximately 20% (or more) of labour is accounted for by overheads for crop types, which is in line with T&F's findings, whilst for animal enterprises, this report finds that overhead labour is generally in the low-teens of percentage of overall labour. The analysis presented in this report is thus broadly in line with previous studies, and corresponds well

with the findings from Tiffin (2003) when examining farm types alongside animal enterprise types.

4.5 Original and Proposed Standard Labour Coefficients

Table 3.80 in Chapter 3 provides details of the updated proposed coefficients. Within this table, there are a large number of crop type and animal enterprises for which the proposed standard labour coefficient has increased from the previous estimate. For an industry that has seen substantial improvements in mechanisation, to find a number of increases in the proposed coefficients requires further consideration and explanation. First, as noted with respect to many SS, previous research (and industry standards) have often sought to measure labour use for a particular enterprise, rather than capturing total labour use for a business and allocating this to the individual enterprises. By contrast the philosophy of the FBS is to capture the entirety of farm business activities and allocate these out to enterprises. Secondly, within the above analysis and commentary, overhead labour has been seen to represent a reasonable percentage of enterprise labour (typically low teens of percentage for animal enterprises and around 20% for crop types). Hence, where previous studies and industry standard data have been collated on the basis of direct labour use only, then this excludes an important element of labour use. Similarly, where previous analyses have excluded contract labour (which accounts for 0 to 10% of typical labour use), this input to production processes has been overlooked. These two factors alone frequently account for a substantial proportion of the increase in standard labour coefficients as can be seen by comparing direct and total labour in Table 3.80. Third, other factors, often sector specific, will have led to changes in labour use and thus to the differences between the proposed coefficients and those previously in use. For example, pig production has undergone considerable production changes as a result of legislation on pig welfare, but also in terms of market changes with an increase in outdoor pig production over recent years. In egg production, the growth in free range and organic production will have led to changes in the manner in which labour is used in these enterprises. Hence, whilst the general trend has been a reduction in agricultural labour use, it must be borne in mind that sector specific changes will play a large part in the utilisation of this very key input to production.

4.6 Conclusion

The collection and analysis of labour usage data in agriculture in the UK has previously largely been undertaken within the remit of Special Studies that have focused upon a particular enterprise or crop type. From the FBS accounting year 2004/05 onwards, the FBS has collected data on labour usage at farm business level and the allocation of this to individual enterprises and crop type groups. This report has undertaken an in-depth analysis of this labour usage data over four years, examining data that is direct to an enterprise, supplied by contractors or is allocated to undertaking overhead activities on the farm. The analysis by crop type and animal enterprise has been undertaken for England and Wales together, these two regions separately, and for the three EU regions of England. Analysis by labour use performance groups has also been undertaken, showing that in general, considerable labour economies of size exist, and this is reinforced by previous findings. Analysis has also been undertaken across farm size groups, and across Robust Farm Types, and within these groupings across the EU Regions of England and Wales. Substantial variation in labour use often exists across farm type groups, and whilst this indicates considerable differences in the

efficiency of labour use across farm businesses in England and Wales, it also partly reflects differences in the production systems and types of output being generated from different farm businesses serving different, and differentiated, agricultural and food markets.

The findings of this report have been used to provide proposed coefficients to the Standard Labour Requirements (SLR) used for farm classification purposes. Overall, the proposed SLR coefficients are generally greater than the original coefficients, however, comparison with previous research indicates that the analysis undertaken within this report, by capturing contractor and overhead labour, provides a more comprehensive assessment of labour use on farms than previous studies that have considered direct labour use alone.

In summary, the depth and breadth of analysis undertaken within this report provides one of the most comprehensive analyses ever undertaken on labour use by crop type and animal enterprise across farm businesses in England and Wales. In addition to the use of these results for updating SLR coefficients, the data will be of very considerable interest and value to farmers and advisors, as well as agricultural researchers and policy makers.

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Appendix 1: SLRs

FINAL STANDARD LABOUR REQUIREMENTS

	Original coefficient	Average Labour Hours (results)	Proposed (2004-8) coefficient	June census items, England	England FBS items	Herd/crop size implied by SLR*	Standard hrs - Nix (32nd)	1976 SLRs
Cereals	**20**	18.0	**18**	A1:A7, A23, A31	C(1:52)[21:22]	95	10-16	20
Oilseeds	**15**	15.8	**16**	A24: A27, G8:G10	C(91:100+103:106)[21:22]	125	10	20
Hops	**60a**	-	**60**[g]	A28	C(101)[21:22]	30	60	240
Sugar Beet	**33**	33.0	**33**	A12	C(81)[21:22]	60	24	88
Field peas & beans	**10**	15.7	**16**	A21, A22	C(61:64)[21:22]	190	12	20
Maincrop Potatoes*	**90**	109.1	**110**	A11	C(72:74)[21:22]	20	80-160	240
Early Potatoes	**120**	202.1	**200**	A10	C(71)[21:22]	15	80-160	200
Outdoor Vegetables and salad	**100**	282.4	**280**	B21	C(127+131:159+170:181+233 :235+250:264)[21:22]{1:4+6:8 }	19	-	-
Other peas and beans	**500**	-	**500**[g]	B1:B4	C(160+162+163)[21:22]	3.8		
Vining Peas	**25**[d]	12.0	**12**	B5	C(161)[21:22]	75	-	-
Top and soft fruit	**450**	424.5	**425**	C99	C(190:205+222+230+238:243 +246:247+ 214:220 +223+232+ 244:245)[21:22]	4.2	-	480-1680
HNS	**1500**	1883.6	**1900**	D99	C(111:116+120:125+129+224 :225+265)[21:22]{1:4+6:8}	1.25	-	2400
Vegetables under glass	**5000**	6990.8	**7000**	F1/10000	C(127+131:160+162:181+233 :235+250:264)[21:22]{5}	-	-	-
Flowers & plants under glass	**25000**	12794.4	**13000**	F2/10000	C(111:116+120:125+129+190 :205+214:220+222+223:225+ 230+232+238:247+265)[21:2 2]{5}	-	-	21600
Mushrooms	**7220**	-	**7220 (or**	R1	C(126)[21:22]	0.25	-	-

	Original coefficient	Average Labour Hours (results)	Proposed (2004-8) coefficient	June census items, England	England FBS items	Herd/crop size implied by SLR*	Standard hrs - Nix (32nd)	1976 SLRs
	(or 0.044 hrs/lb)		0.044 hrs/lb)[g]					
Set aside	**1**	2.9	**2.9**	G11, A32	C(422)[21]	1900	2	-
Dairy cows	**39**	42.5	**42**	K1	E(4)[18]	50	34	56
Beef cows	**12**	25.8	**26**	K6	E(12+74)[18]	160	11	20
Other cattle	**9**	11.7	**12**	K8:K19, K4, K5	E(10+3+13+14+16:21)[18]	210	11	12
Ewes and rams (Lowland) 1	**5.2**	5.2	**5.2**	M1, M4, M7,M9	E(29+28+75)[18]	365	4	4
Ewes and rams (lfa)1	**4.2**[f]	3.7	**3.7**	M1, M4, M7,M9	E(29+28+75)[18]	450	3.2	4
Other sheep (Lowland)1	**3.3**[b]	2.9	**2.9**	M13, M14	E(32:36)[18]	575	2.4	-
Other sheep (lfa)1	**2.6**[f]	3.1	**3.1**	M13, M14	E(32:36)[18]	730	2.4	-
Sows	**14**	28.1	**28**	L1:L5	E(43+44)[18]	136	24	28
Finishing & rearing pigs	**1.9**	2.3	**2.3**	L7, L10:L13	E(42+45+46+50+51)[18]	1000	2.4	4
Piglets (<20kg)	**0.2**	-	**0.2**[h]	L14	E(47)[18}	9500		
Table fowl	**0.04**	0.091	**0.09**	N10	E(57:59)[18]	47500	0.016	0.24
Laying hens	**0.17**	0.364	**0.36**	N3	E(54)[18]	11175	0.14-0.48	0.32
Growing pullets	**0.12**[d]	-	**0.24**[i]	N5, N6, N7, N2	E(55)[18]	15800	0.04	3.2
Other Poultry	**0.045**	2.333	**0.10**[i]	N13:N16	E(60)[18]	42000		
Fodder crops	**6c**	-	**6**[a,g]	A15:A18	C(400+415:417)[21:22]	315	7	-
Horse	**150**	38.9	**40**	P1+P2	E(65)[18]	13		
Goats	**20**	12.1	**12**	P5:P7	E(69+71)[18]	95		
Deer	**15**	-	**15**[g]	P10	E(67)[18]	125		
Grassland	**4**[a]	-	**3.1**[a]	G1, G2	C(402:403+409)[21:22]	475	4	-
Rough grazing	**1.5**[a]	-	**1.5**[g]	G5	C(404:407)[21:22]	1265	1.6	-

COEFFICIENTS ARE PER HEAD or PER HECTARE PER YEAR

*Working year = 1900 hrs.

(1) Based on farm type classification – e.g. for LFA Cattle & Sheep farms the LFA coefficients are applied to all relevant livestock on the farm.

(a) Figure from NIX

(b) Special study SLRs have been adjusted using the ratio between the relevant Nix figures.

(c) Best estimate

(d) Nix and NFU data

(f) LFA sheep coefficients generated by regression analysis of FBS LFA Cattle & Sheep farm labour after application of cattle coefficients

(g) Based upon previous coefficient

(h) Calibrated from previous estimate on the basis of change in Finishing and Rearing Pigs

(i) Calibrated from previous estimate on the basis of change in Table Fowl