

## AGRICULTURE, ENVIRONMENT AND MARINE

# Scottish Survey of Farm Structure and Methods, 2016

15<sup>th</sup> November 2016

## 1. Main Findings

### Farm structure

- The **legal and financial** responsibility for holdings lay in an institution (e.g. limited company, church, estate) for five per cent of holdings. (Table 1)
- Eighty nine per cent of holdings were **managed** by the occupier or member of their family, with the remaining run by a manager. (Table 2)
- Seventy per cent of those running farms (working occupiers and spouses, or managers) were **male**. Twenty-nine per cent were **aged** over 65, with a further 28 per cent 55 to 65. Four per cent were aged under 35. (Table 3)
- Twenty-two per cent of occupiers reported they worked **full-time** on the holding, with over sixty per cent reporting they worked less than 50 per cent of the time. (Table 4)
- Just under a fifth (18.5 per cent) of those managing the farm had completed a full **agricultural training course** of two years or more, with 1.2 per cent having carried out some vocational training in the last 12 months. (Table 5)
- Over a third (37.5 per cent) of family members working on the farm reported that at least some of their time was **unpaid labour**. (section 3.1)

### Diversification and renewables

- The most common forms of **other gainful activities** on holdings were tourism (ten per cent of holdings) and agricultural contract work and 'other' activities (both six per cent of holdings). Four per cent of holdings reported the production of renewable energy for the market (not own use), up slightly from three per cent in 2013. (Table 6)

- One in six holdings (16 per cent) reported that more than ten per cent of their **turnover** came from other gainful activities at the location. The figure was 12 per cent in 2013. (Table 7)

### Livestock breeding

- Of the holdings reporting the breeding of sheep or cattle, eight per cent reported using **genetic information** such as EBVs for sheep, 23 per cent for beef cattle, and 66 per cent for dairy cattle. (Table 9)
- Fifty per cent of ewes were mated using a home-bred ram, with one per cent **artificially inseminated**. Just under half (44 per cent) of the cows were mated using a brought-in bull, but with 23 per cent mated using artificial insemination. (Table 10)

### Land Use

- Conventional inversion **tillage** was used on 90 per cent of cultivated land, with reduced, conservation tillage on six per cent, and zero tillage on four per cent. (Table 11)
- The most common methods of **soil cover** were plant residues or stubble, and winter crops, both of which were on 42 per cent of land, with 13 per cent of cultivated land reported as being left bare. (Table 12)
- Over a half (54 per cent) of holdings kept all their land in general **crop rotation** (Table 13). Over 60 per cent of holdings had carried out a pH test on their land (table 14).

### Manure and Slurry

- Twenty-nine per cent of holdings with cultivable land **applied manure or slurry** on their holdings. There were 12 million tonnes of manure broadcast, of which three per cent was ploughed in within the recommended four hours. There were also 5 million tonnes of slurry applied with a bandsread, and 600,000 tonnes injected. (Table 15)
- Seven per cent of holdings that had applied manure or slurry had tested the **nutrient value** of the manure or slurry. (section 4.6)
- One fifth of holdings had **storage facilities for solid manure**, with nine per cent of holdings having storage facilities for slurry. Eighty-eight per cent of manure storage facilities and 38 per cent of slurry storage were not covered. (Table 17)

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## 2. Introduction

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The 2016 EU Farm Structure and Methods Survey recorded details of farming practices and labour across Scotland. Many of these questions were asked as part of the Farm Structure Surveys in 2013. Comparisons of results for 2013 are made where available, though in some cases questions have changed slightly and so will not be directly comparable.

The data will be used to inform the development of EU and national policies on agriculture and the environment.

The 2016 survey was undertaken on a sample of around 15,100 holdings, drawn from the 32,300 holdings within the remit of the Farm Structure Survey. Returns were received from 9,900 holdings.

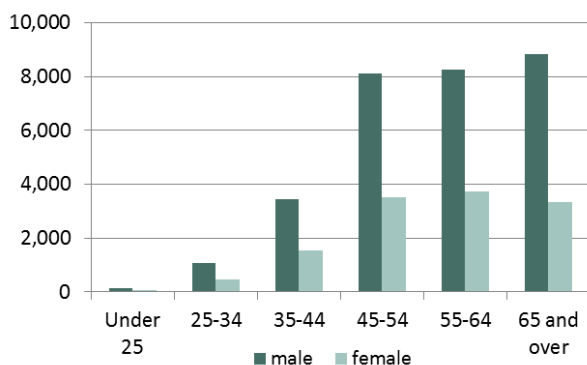
Since the Farm Structure Survey covered mainly larger holdings, the results published here refer to these larger holdings only, and not of the entire population of agricultural holdings included in the June Agricultural Census. These holdings however accounted for 96 per cent of agricultural land in 2016, so are largely representative of agricultural land use and livestock management in Scotland. More information on how the figures were produced can be found in the methodology section 5.3, and a table showing the thresholds for inclusion in the survey is given as an Annex in section 7.

We welcome comments on the content or format of this publication to:  
email: [Jaye.Ware@gov.scot](mailto:Jaye.Ware@gov.scot)  
Tel: 0300 244 9707

## 3. Farm Structure

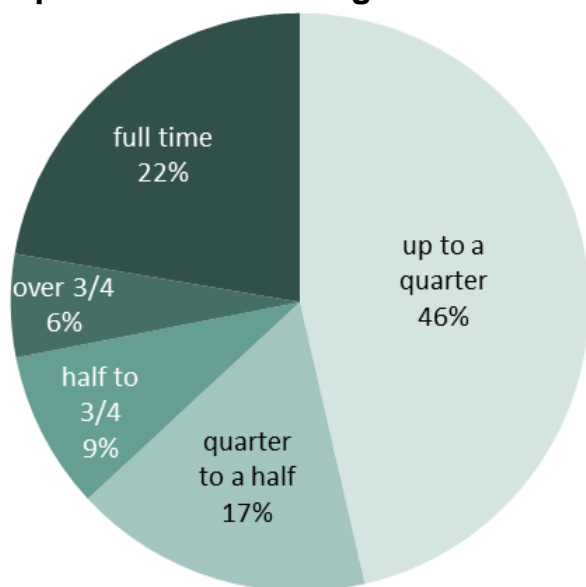
### 3.1 Labour

**Chart 1: Age profile of occupiers and managers**



Source: Table 3

**Chart 2: Work-profile of person responsible for running the farm**



Source: Table 4

The day-to-day running of the holding was the responsibility of the occupier or member of their family for 89 per cent of holdings, with the remaining run by a manager. Note that, in this publication, 'occupier' relates to any individual (i.e. not an estate, church or limited liability company with legal and financial responsibility).

Those holdings where the legal and financial responsibility lay with an institution (e.g. limited company, church, estate) accounted for 4.7 per cent of holdings.

Sixty-seven per cent of occupiers were male (if managers are included the proportion is 70 per cent).

The age profile of occupiers shows increasingly large proportions as the age-group increases, as one might expect in family-run businesses, but with 31 per cent of occupiers aged 65 or older (29 per cent if managers are included). Only three per cent of occupiers were under 35.

Twenty-two per cent of those running the farm reported they worked **full-time** on the holding, with over sixty per cent reporting they worked less than half time.

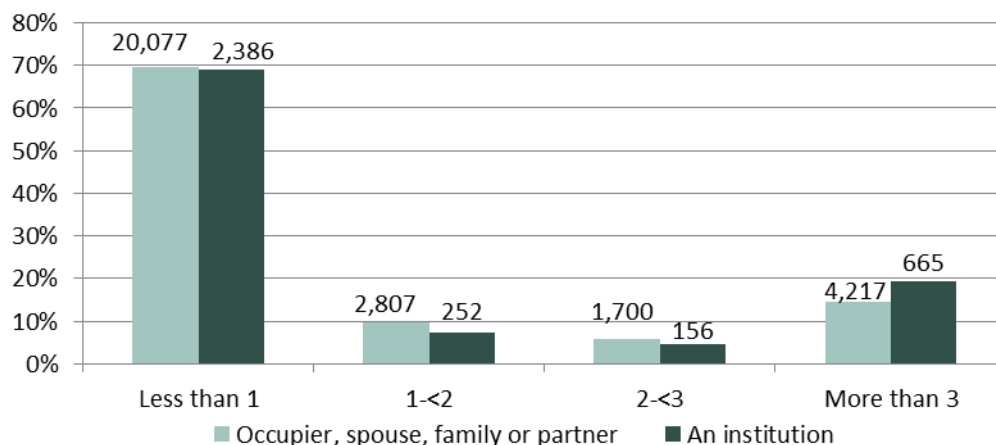
Chart 3 shows a comparison by size (in terms Standard Labour Requirements (SLRs<sup>1</sup>)) for two categories of owner. Holdings where managerial responsibility is

<sup>1</sup> SLRs represent the notional amount of labour required by the holding to carry out all of its agricultural activity and can also be used as a measure of farm size. SLRs are derived at an aggregate level for each agricultural activity. The total SLR for each farm is calculated by multiplying its crop areas and livestock numbers by the appropriate SLR coefficients and then

undertaken by the representative of an institution, such as a limited liability company, church or estate, had a slight tendency to be larger, with almost one quarter (23.7 per cent) of those holdings having an SLR value of two or more compared with just over a fifth (20.5 per cent) of holdings managed by the occupier, a family member or a business partner.

### Chart 3: Person running farm by farm size

Percentage distribution



Source: Table 2b

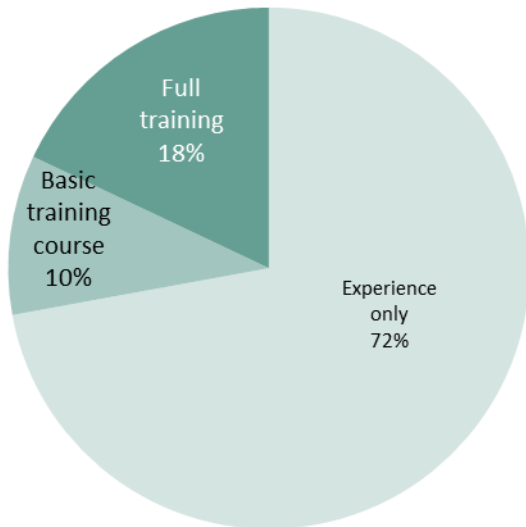
Over a third (37.5 per cent) of family members working on the farm reported that at least some of their time was unpaid labour.

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summing the results for all agricultural activity on that farm. One SLR equates to 1,900 working hours per year.

### 3.2 Training

**Chart 4: Qualification of those running farms**



Source: Table 5

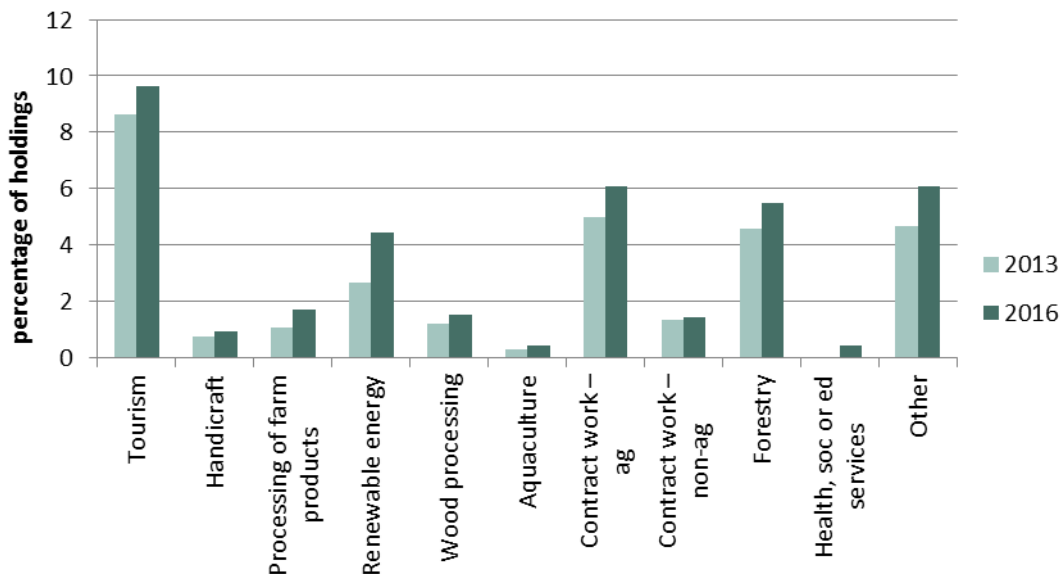
The survey also asked about the level of qualifications of the manager (or occupier with managerial responsibility). Eighteen per cent had completed a full agricultural training course of two years or more, ten per cent had completed a basic course of less than two years, with the remaining 72 per cent having practical agricultural experience only. In 2013, 17 per cent had completed full training, with 73 per cent having practical experience only.

Just over one per cent of those managing farms said that they had undergone some vocational training in the last 12 months.

### 3.3 Diversification and Income (Tables 6-8)

Of the various “other gainful activities” taking place on the holding that were asked about, the most common was tourism, which was reported on ten per cent of holdings. Contract work (agricultural work) and ‘other’ activities were reported on six per cent of holdings, while renewable energy for sale to the market was reported on four per cent of holdings. Overall, 25 per cent of holdings reported other gainful activities on the holding, compared to 21 per cent in 2013.

**Chart 5: Proportion of holdings reporting other gainful activities**

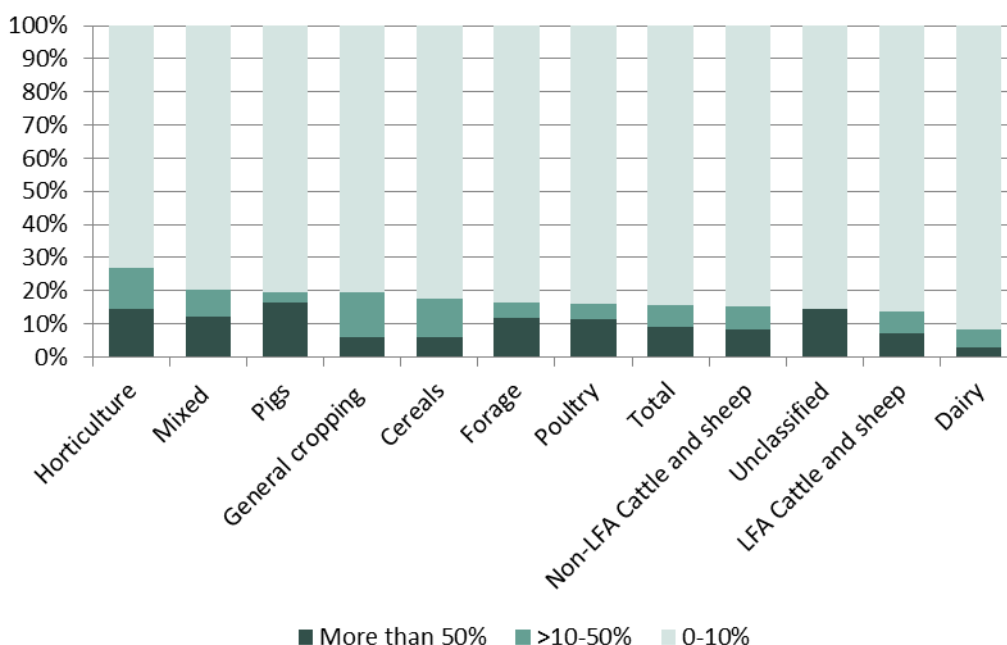


Source: Table 6

In terms of income from these activities, 16 per cent reported that it accounted for more than ten per cent of their turnover, with just over half of these (nine per cent) reporting more than half of their turnover coming from other gainful activities.

Looking at the proportion of income from other gainful activities by farm type<sup>2</sup>, horticulture holdings and mixed holdings were most likely to acquire more than ten per cent of their income from other gainful activities (27 per cent of horticulture holdings and 20 per cent of mixed holdings). In contrast, only eight per cent of dairy holdings obtained more than 10 per cent of their income from other gainful activities.

**Chart 6: Proportion of income from other gainful activities, by farm type**



Source: Table 7

Five per cent of holdings reported they sold more than half of their produce direct to individuals (rather than wholesalers, shops or restaurants).

<sup>2</sup> Farm types represent a classification of the main agricultural activity taking place on holdings, based on their Standard Output (SO). SOs represent the notional farm-gate worth generated by a holding by applying multipliers (in £s) to its crops and livestock. These are applied uniformly across Scotland. More information on how farm types were calculated in 2016 can be found in section 4.13 of the publication 'Results from the June 2016 Scottish Agricultural Census' [www.gov.scot/stats/bulletins/01250](http://www.gov.scot/stats/bulletins/01250)

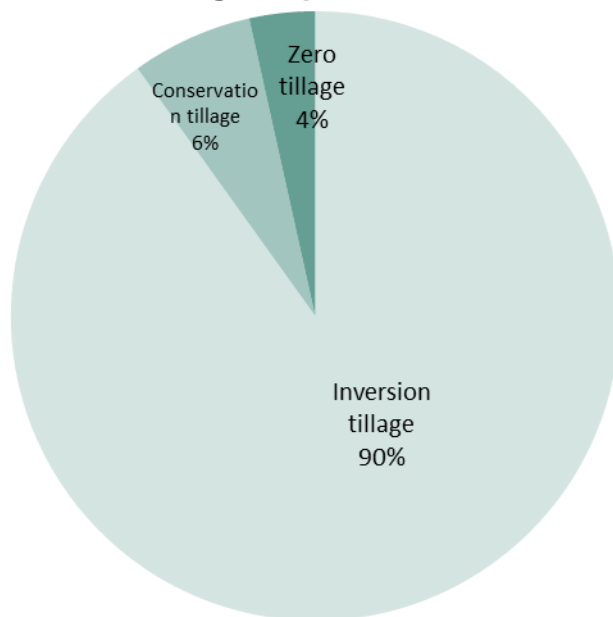


## 4. Production methods

### 4.1 Tillage Methods (Table 11)

More intensive tillage systems, such as conventional ploughing, leave low levels of crop residue cover, whereas reduced tillage methods leave about 30 per cent or more residue cover. These residues reduce the amount of soil erosion, soil compaction and fuel consumption. Reduced tillage or no-till systems will also increase levels of soil organic carbon, and may result in lower direct carbon emissions from the soil.

**Chart 7: Area of arable land by tillage method during the past 12 months**



Source: Table 11

Note: Arable land excludes glasshouse crops, permanent crops and permanent grass. More than one form of tillage may be undertaken on a given holding.

In 2015/16 about 790,000 hectares of land was cultivated, excluding permanent crops, grassland and crops under cover. The survey asked whether respondents had used inversion tillage, reduced tillage or whether the land was not cultivated (zero tillage) on the area of land sown/cultivated in the twelve months up to March 2016. Responses were received for the equivalent of 740,000 hectares of land (once the sample is scaled up).

Survey results show that conventional inversion tillage was used on 90 per cent of land (81 per cent in 2013), with reduced, conservation tillage on six per cent land (11 per cent in 2013), while four per cent land (eight per cent in 2013) was not ploughed.

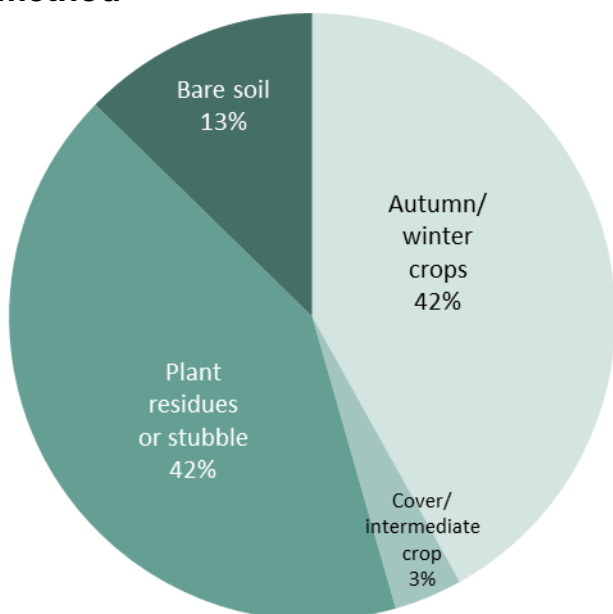
In 2016, as in 2013, inversion tillage appeared to be used more on larger holdings (or on larger areas within holdings), being employed at an average of 55 hectares per holding compared to 44 hectares for reduced tillage and 34 hectares for zero tillage, however the difference here is much less marked than in 2013.

## 4.2 Winter soil cover (Table 12)

Maintaining soil cover over the winter is a practice aimed at reducing soil erosion and the loss of particulate pollutants (e.g. plant protection products and faecal microbes), in addition to contributing to the amount of organic matter in the soil.

The survey asked about coverage of land sown/cultivated over the preceding winter (i.e. winter 2015/16), including if the soil had been left bare.

**Chart 8: Area of land sown or cultivated over winter 2015/16 by soil cover method**



Source: Table 12

Note: Excludes glasshouse crops and permanent crops and permanent grass, though due to a printing error on the form many may have also excluded temporary grass. More than one form of cover may be undertaken on a given holding.

Responses in 2016 accounted almost three quarters of the potential area of land. Chart 8 provides a breakdown of the reported soil-cover methods used.

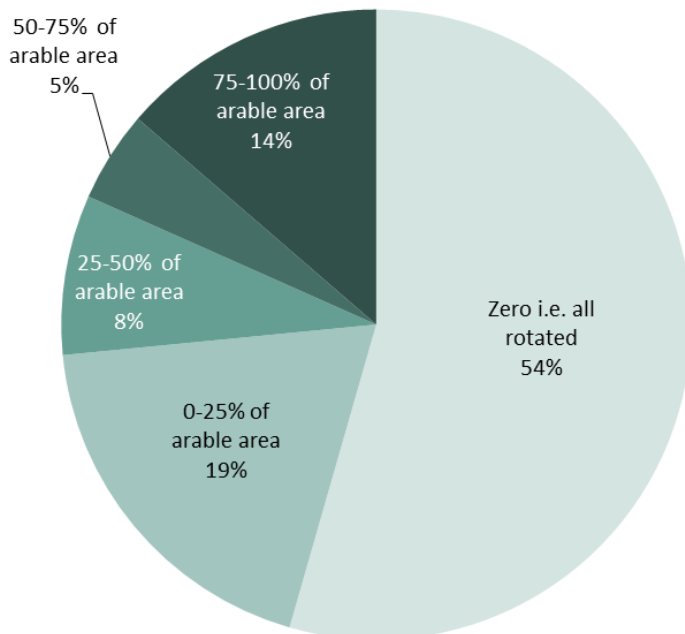
The most widespread cover on cultivable land was plant residues or stubble, and autumn/winter crops, which were both undertaken on around 42 per cent of land. Cover crops, intermediate crop or unharvested crops to be ploughed in before spring accounted for four per cent of land reported, with 13 per cent of land being left bare.

The proportion of bare soil has fallen from 17 per cent in 2013, though this may be related to better weather allowing winter crops to be sown.

Autumn/winter crop cover was also used most on larger holdings or areas within holdings, averaging at 41.5 hectares per holding, compared with around 26 hectares per holding of bare soil and of plant residues or stubble.

### 4.3 Crop rotation (Table 13)

**Chart 9: Distribution of holdings by percentage of arable land not in general crop rotation**



Source: Table 13

Chart 9 details the proportions of holdings which did not include a share of their agricultural land in crop rotation. Over a half (54 per cent) of holdings with arable land included all their land in general crop rotation, and a further 19 per cent left out only 0-25 per cent of their arable land.

Crop rotation is the practice of alternating crops grown on a specific field each year in a planned pattern or sequence. The proportion of arable land not included in a holding's crop rotation is intended to give an indication of the degree to which monoculture is undertaken. The use of monoculture is also linked to environmental disadvantages and can have adverse effects on the productive capacity of the land.

### 4.4 Irrigation (Tables 18-20)

Finding suitable sources of water for irrigation is a major problem in many countries in the EU, and is becoming more of an issue in Scotland in some eastern areas. Additionally, inefficient and unplanned use of irrigation can lead to over-wet soils which can affect yields and lead to leaching of nutrients.

It was reported that a total of 94,000 hectares of land (two per cent of the crops and grass in the survey) could be irrigated using the equipment and the quantity of water normally available at the location<sup>3</sup>.

Just under 2,000 holdings with crops (just under a fifth of all holdings with crops) had undertaken irrigation in the twelve months up to March 2016, over an area of 26,000 hectares (0.5 per cent of crop area).

<sup>3</sup> this question is not comparable with the 2013 data as the scope of land included has changed.

## 4.5 Nutrient Management (Table 14)

In the last year, 17 per cent of holdings with grassland had carried out a nutrient management plan on their grassland (18 per cent in 2013), and 42 per cent of holdings had carried out a nutrient management plan on their other land (compared to 36 per cent in 2013).

Thirty per cent of holdings with grassland had carried out pH testing on their grassland, while 64 per cent of holdings had carried out pH testing on their other land. Data on pH testing of grassland and other land was not collected in 2013.

Of those with temporary grassland, 16 per cent of holdings reported that some of it was sown with a low n variety mix, such as red clover. The area sown accounted for 21 per cent of grassland on surveyed holdings. The large drop in the reported proportion of both temporary grass area and holdings with temporary grass in comparison with that reported in 2013 may be partly attributable to the fact that the definition of temporary grass changed in the June 2015 Agricultural Census which led to a halving of the area of temporary grass. More information on this can be found in section 4.7 of the publication, 'Results of the June 2015 Scottish Agricultural Census'.<sup>4</sup>

## 4.6 Manure and Slurry (Tables 15-17)

Immediate incorporation of manure and slurry, following application onto fields, can reduce environmentally harmful ammonia emissions, and preserves nitrogen in the soil. A threshold of four hours from the time of application to manure and slurry being ploughed in, along with immediate injection of slurry, is used to define immediate incorporation.

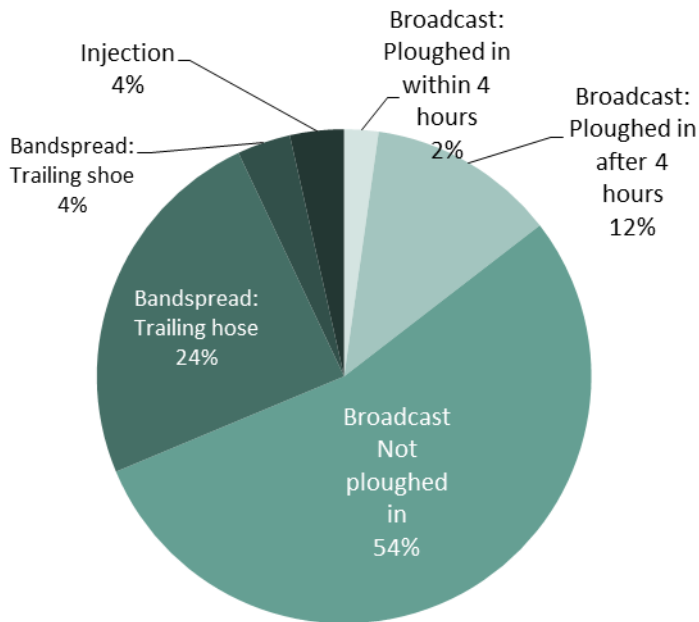
In 2016 the question was adapted from that asked in 2013, to now include the distinction between broadcast and bandspread application, and to collect tonnage rather than area.

In 2016, 29 per cent of holdings reported applying manure or slurry on their land. There were 12 million tonnes broadcast, of which three per cent was ploughed in within four hours. There was a further 5 million tonnes applied with a bandspread, and a further 600,000 tonnes injected.

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<sup>4</sup> [www.gov.scot/Publications/2015/10/6201/320269](http://www.gov.scot/Publications/2015/10/6201/320269)

**Chart 10: Tonnage of manure and slurry, by method of application**

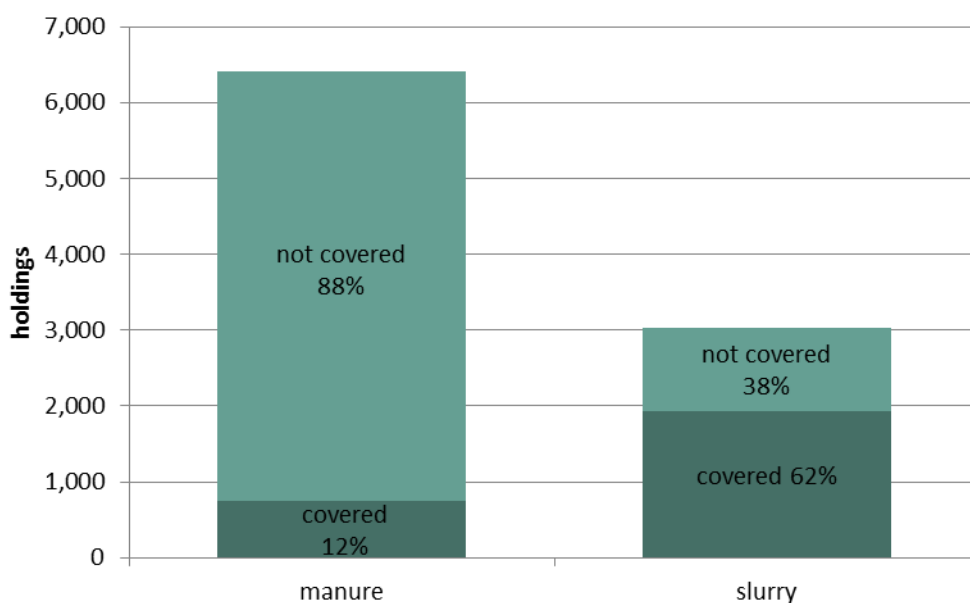


Source: Table 15

Seven per cent of holdings that had applied manure or slurry had tested the nutrient value of the manure or slurry, and 74 per cent always separated applications of slurry and/or mineral fertilizer by at least five days.

Covered storage facilities also reduce ammonia emissions, as well as protecting manure from rainfall. Twenty per cent of all holdings had storage facilities for solid manure, and about 12 per cent of these had covered storage (a slight fall from 13 per cent in 2013). Nine per cent of all holdings had storage facilities for slurry, with 62 per cent of these having covered storage (up from 61 per cent in 2013).

**Chart 11: Prevalence of storage methods**

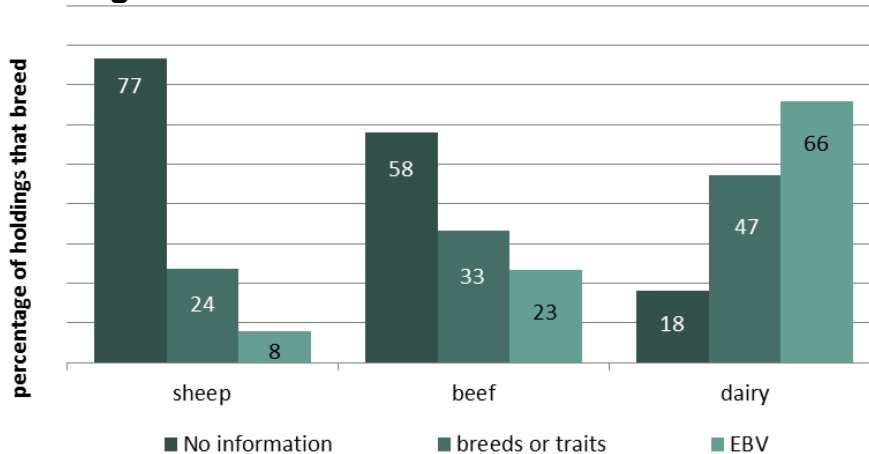


Source: Table 17

## 4.7 Livestock Breeding (Tables 9-10)

Respondents were asked about on the type of information used when breeding cattle and sheep, and the methods of insemination used. In each of the following, the percentage will not add to 100 as some farmers used more than one method.

**Chart 12: Breeding – what information is used when selecting ram/bull/semen**



Source: Table 9

The lowest rate of usage of genetic information was found on holdings reporting the breeding of sheep, where 77 per cent reported not using information on genetics, 24 per cent reported using specific breeds or traits, and eight per cent reported using genetic information such as EBVs.

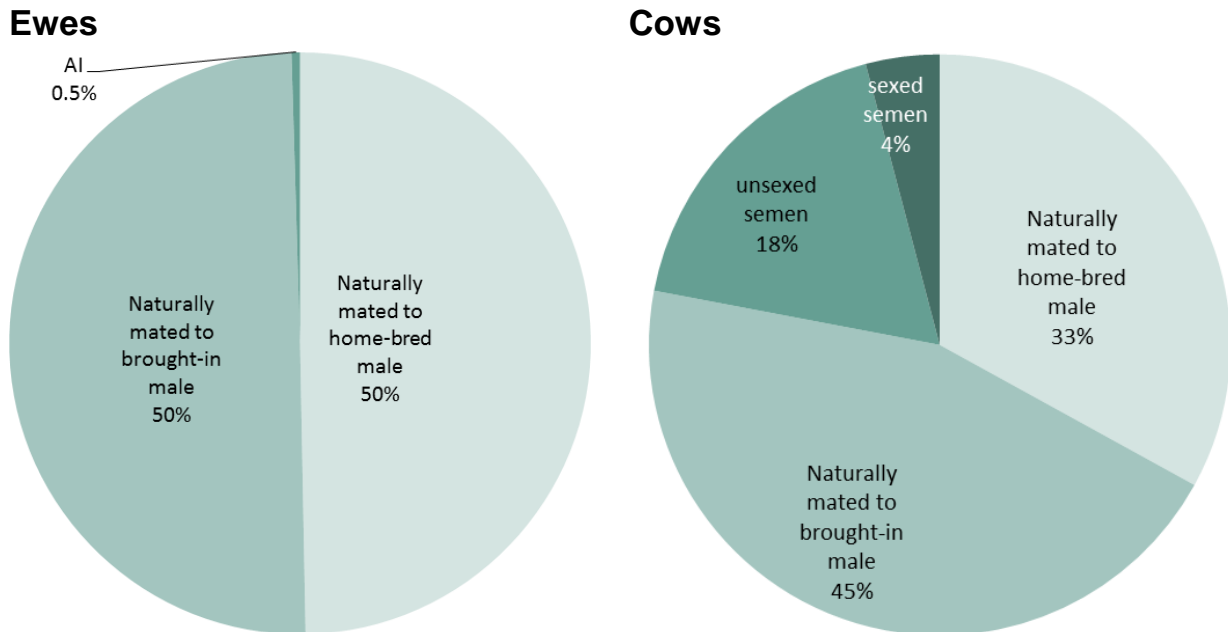
Of the holdings reporting the breeding of beef cattle, 58 per cent reported not using information on genetics, 33 per cent reported using specific breeds or traits, and 23 per cent reported using genetic information such as EBVs.

The highest rate of usage of genetic information was found on holdings reporting the breeding of dairy cattle, where 18 per cent reported not using information on genetics, 47 per cent reported using specific breeds or traits, and 66 per cent reported using genetic information such as PLIs.

Respondents were also asked how many ewes or cows had been mated in the previous year using various methods. Most ewes were mated naturally using home-bred (50 per cent) or brought-in (50 per cent) rams. Less than one per cent were mated using artificial insemination. Cows were more likely to be mated with a brought-in bull (44 per cent), with 33 per cent using a home-bred bull. Artificial insemination was more common with cattle, with 18 per cent mated using unsexed semen, and four per cent using sexed semen.

Twenty-three per cent of cattle breeders used some form of artificial insemination for some of their cattle. Two per cent of sheep breeders used artificial insemination for some of their sheep.

**Chart 13: Proportion of animals mated using various methods**



Source: Table 10

## **5. Notes**

### **5.1 Background**

The survey formed part of the 2016 EU Farm Structure Survey, which gathered information on the structure and activities of farm holdings alongside information on labour and diversification activities. The bulk of this was collected through the June Census alongside other administrative sources. The specific content of the Farm Structure Survey was determined by a European Commission requirement and was carried out across the whole of the EU.

Information not included in the Census or available from administrative sources was collected via a postal survey form, requesting information as at 15 March 2016. Some additional questions, not required this time by the EU, were added, most of which had previously been part EU Farm Structure Surveys and which may be asked again in future surveys. Repeating the collection in 2016 gives a fuller time series, enabling stakeholders to monitor any changes in practice more closely.

### **5.2 Uses of the information**

Primarily, the March survey was conducted in order to satisfy information requirements of the EU, providing a source of information on farm management structure, labour, diversification and production methods. Each member state collects the data, anonymises the records and sends them to Eurostat where they are entered into the Eurofarm database. The survey results will then be used to assess the current status of farming in Scotland and the UK, and to monitor and develop agricultural strategy. It is likely that information from other EU countries will not be available until 2018 at the earliest.

The survey also gives the Scottish Government important baseline and time-series information in considering the environmental impact of agricultural production. In particular, many farm activities have both a positive and negative impact on greenhouse gas (GHG) emissions. In order to properly quantify these, and to promote effective ways of mitigating emissions and enhancing sequestrations, it is important to have robust data that can accurately assess farm practices. Repeating questions in this survey allows the Scottish Government to monitor changes over time and progress towards the GHG mitigation targets in the Climate Change (Scotland) Act.

### **5.3 Methodology – data collection**

The date for the survey was 15<sup>th</sup> March 2016. A date in March was chosen in order to ensure that correspondence and queries could be cleared in time for the June Census.



A holding's eligibility for inclusion in the survey was based on it meeting the threshold of any of the 14 characteristics outlined in the Annex section 7.1. In 2016 there were 33,200 holdings eligible on this basis, accounting for 96 per cent of agricultural land.

A sample of around 15,100 holdings, stratified by size and type, was taken from this population and sent a form. Around 9,900 holdings returned a form, giving a response rate of 65 per cent. Non-response was imputed to provide a dataset of 15,100 holdings. These were then weighted and scaled up by stratum to provide final figures based on the 32,260 holdings eligible for the survey. This method weighted responses based on the ratio of holdings in each stratum in the full dataset to the number of holdings per stratum in the sample. Where numbers of holdings are provided in this publication, these are calculated using weighting factors and then rounded. Please note that, the sum of holdings may therefore not always equal 33,260.

## 5.4 Data Quality

### Relevance

The survey provides important information about farm structure and agricultural production methods which have consequences for both efficiency and the environmental impact of farming. Both the EU and the Scottish Government are committed to reducing the environmental impact of the agricultural industry, and monitoring of practices is a vital part of this process.

### Accuracy

Data undergo several validation processes, as follows; (i) checking for any obvious errors on the paper forms upon receipt, (ii) auto-checking and identifying any internal inconsistencies once loaded onto the initial database, (iii) auto-checking for any inconsistencies in relation to land items in the June Census. A series of validation checks are also set out by the EU. If necessary, farmers are contacted to ensure data are correct. Additional quality assurance is provided at the later stages by using expert knowledge within the Scottish Government. See also section 5.3 above for details of the sampling and weighting strategies.

### Timeliness and Punctuality

Results have been published at the earliest possible occasion, given available resources. Although the EU Farm Structure and Methods Survey took place before the June Agricultural Survey, the former survey relies on June land and livestock information for validation. Consequently, this publication follows that of the June census.

### Accessibility and Clarity

These statistics are made available online at the Scottish Government's statistics website in accessible formats (html and pdf versions are available). All data tables are made available in excel format to allow users to carry out further analysis. No data will be published in a form that would allow individual responses to be identified.

Comparability: Most of the questions in the 2016 survey were asked in 2013 and are directly comparable except where stated. New data on unpaid family labour, vocational training undertaken in the last 12 months, and tonnage of manure imported and exported from farms were requested in 2016. Results from Farm Structure Surveys prior to 2013 are not included in this publication.

Farm Structure Survey datasets are not due to be submitted to the EU until late in 2017, with publication not until 2018. No comparable data for other countries are therefore yet available for FSS 2016. Data for previous surveys are available here: <http://ec.europa.eu/eurostat/data/database>

## 5.5 Other Publications

Results from all Scottish Government agricultural surveys can be accessed here: [www.gov.scot/Topics/Statistics/Browse/Agriculture-Fisheries/Publications](http://www.gov.scot/Topics/Statistics/Browse/Agriculture-Fisheries/Publications)

Farm Structure Survey Results for 2013 can be found in the publication, Results from the Scottish Survey of Farm Structure and Methods 2013: [www.gov.scot/stats/bulletins/01079](http://www.gov.scot/stats/bulletins/01079)

Farm Structure Survey Results for 2010 can be found in the publication, Results from the 2010 Survey of Agricultural Production Methods: <http://www.gov.scot/Publications/2012/10/7669>

Results from previous June Censuses can be accessed here: [www.gov.scot/Topics/Statistics/Browse/Agriculture-Fisheries/PubFinalResultsJuneCensus](http://www.gov.scot/Topics/Statistics/Browse/Agriculture-Fisheries/PubFinalResultsJuneCensus)

Results from previous December Censuses can be accessed here: [www.gov.scot/Topics/Statistics/Browse/Agriculture-Fisheries/PubFinalResulsDecCensus](http://www.gov.scot/Topics/Statistics/Browse/Agriculture-Fisheries/PubFinalResulsDecCensus)

Publications relating to cereal and oilseed rape production can be accessed here: [www.gov.scot/Topics/Statistics/Browse/Agriculture-Fisheries/PubCerealHarvest](http://www.gov.scot/Topics/Statistics/Browse/Agriculture-Fisheries/PubCerealHarvest)

Agricultural Facts and Figures pocketbook. This provides a useful summary of the key statistics in the Scottish agriculture and food sector in a convenient pocketbook format.

[www.gov.scot/Topics/Statistics/Browse/Agriculture-Fisheries/PubFactsFigures](http://www.gov.scot/Topics/Statistics/Browse/Agriculture-Fisheries/PubFactsFigures)

The Economic Report on Scottish Agriculture. This provides an overarching look at Scottish agriculture using data from various sources.

[www.gov.scot/Topics/Statistics/Browse/Agriculture-Fisheries/PubEconomicReport](http://www.gov.scot/Topics/Statistics/Browse/Agriculture-Fisheries/PubEconomicReport)

## 6. Tables

**Table 1: Farm management structure – legal and financial responsibility**

	2013		2016	
	number of holdings	percentage of holdings	number of holdings	percentage of holdings
The occupier	25,890	78.2	24,979	77.4
The occupier's spouse or member of the family	812	2.5	830	2.6
The occupier and other partners	4,928	14.9	4,928	15.3
An institution	1,490	4.5	1,523	4.7

**Table 2a: Farm management structure – day-to-day running**

	2013		2016	
	number of holdings	percentage of holdings	number of holdings	percentage of holdings
The occupier	26,796	80.9	25,769	79.9
The occupier's spouse	899	2.7	994	3.1
A member of the occupier's family	2,173	6.6	2,038	6.3
Another person (a "manager")	3,252	9.8	3,459	10.7

Base: 33,120 holdings for 2013, 32,260 holdings for 2016

**Table 2b: Farm management structure by farm size (Standard Labour Requirement)**

Standard Outputs	2013				2016			
	Occupier, spouse, family or partner		An institution		Occupier, spouse, family or partner		An institution	
	number of holdings	percentage of holdings	number of holdings	percentage of holdings	number of holdings	percentage of holdings	number of holdings	percentage of holdings
Less than 1	22,114	66.8	1,015	3.1	20,077	62.2	2,386	7.4
1-<2	3,400	10.3	113	0.3	2,807	8.7	252	0.8
2-<3	1,979	6.0	63	0.2	1,700	5.3	156	0.5
More than 3	4,138	12.5	298	0.9	4,217	13.1	665	2.1
Total	31,631	95.5	1,489	4.5	28,801	89.3	3,459	10.7

**Table 3: Age profile of individual running the holding**

	Occupiers		Occupiers or managers	
	male	female	male	female
Under 25	59	31	140	46
25-34	678	408	1,058	469
35-44	2,586	1,426	3,450	1,547
45-54	6,497	3,425	8,099	3,519
55-64	7,171	3,542	8,265	3,728
65 and over	8,120	3,247	8,847	3,330
% male	67.2		70.3	

Note: in this table Occupiers included their spouses, unless the spouse is the manager

**Table 4: Proportion of time spent by person responsible for running the farm**

	number of occupiers	percentage
>0-<25%	14,966	46.4
>25-<50%	5,388	16.7
>50-<75%	2,848	8.8
>75-<100%	1,860	5.8
Full time	7,198	22.3
Total	32,260	100.0

**Table 5: Qualifications of person responsible for running the farm**

	2013		2016	
	number	percentage	number	percentage
Practical experience only	24,188	73.0	23,267	72.1
Basic agricultural training course – less than two years	3,321	10.0	3,197	9.9
Full agricultural training course – two years or more	5,611	16.9	5,796	18.0
Vocational training in last 12 months	:	:	388	1.2

: Information not available

**Table 6: Other gainful activities**

	2013		2016	
	number	percentage	number	percentage
Tourism	2,863	8.6	3,106	9.6
Handicraft	250	0.8	300	0.9
Processing of farm products	360	1.1	552	1.7
Renewable energy	885	2.7	1,431	4.4
Wood processing	396	1.2	494	1.5
Aquaculture	100	0.3	137	0.4
Contract work – ag	1,659	5.0	1,957	6.1
Contract work – non-ag	449	1.4	461	1.4
Forestry	1,519	4.6	1,766	5.5
Health, soc or ed services	:	:	145	0.4
Other	1,540	4.6	1,958	6.1
Any OGA	7,075	21.4	8,249	25.6
Total	33,120		32,260	

: Information not available

**Table 7: Proportion of turnover derived from other gainful activities, by farm type**

Main Farm Type	2013			2016		
	0-10%	>10-50%	More than 50%	0-10%	>10-50%	More than 50%
	holdings	holdings	holdings	holdings	holdings	holdings
Cereals	2,090	227	116	1,854	280	140
General cropping	838	53	14	1,207	209	93
Horticulture	220	14	45	213	34	59
Pigs	70	27	12	84	4	9
Poultry	304	26	7	236	12	36
Dairy	856	28	5	702	40	18
LFA Cattle and sheep	11,688	750	738	11,327	915	962
Non-LFA Cattle and sheep	1,791	92	130	1,572	146	152
Mixed	2,266	180	285	1,982	219	295
Forage	8,859	426	841	7,804	430	1,088
Unclassified	84	9	29	129	-	-
Total	29,066	1,832	2,222	27,109	2,290	2,853

**Table 8: Use of farm produce**

	2013		2016	
	number	percentage	number	percentage
Household consumes more than half of holdings production	1,521	4.6	1,742	5.6
Direct sales to consumers >50 per cent of production	2,325	7	1,430	4.6

Base: 33,120 holdings for 2013, 32,260 holdings for 2016

**Table 9: Number of holdings using various methods for selecting rams/bulls/semen**

	2013						2016					
	sheep		beef cattle		dairy cattle		sheep		beef cattle		dairy cattle	
	number	%	number	%	number	%	number	%	number	%	number	%
No information	9,546	80.5	6,923	71.0	3,712	86.8	9,496	76.6	5,220	58.1	184	18.0
Breeds or traits	2,236	18.9	2,336	24.0	326	7.6	2,944	23.7	2,979	33.1	484	47.3
EBV	676	5.7	1,431	14.7	466	10.9	989	8.0	2,097	23.3	674	65.8
Total breeding	11,859		9,746		4,277		12,403		8,991		1,024	

**Table 10: Method used for mating livestock**

	2013				2016			
	ewes		cows		ewes		cows	
	number	holdings	number	holdings	number	holdings	number	holdings
Naturally mated to home-bred male	1,751,715	8,359	244,115	6,395	1,516,893	7,342	230,813	4,656
Naturally mated to brought-in male	1,499,256	7,758	362,737	7,213	1,521,028	6,127	306,550	5,276
Artificial insemination with unsexed semen	25,744	862	114,642	4,976	13,687	228	126,765	2,173
Artificial insemination with sexed semen	131	5	18,668	3,273	680	11	38,079	739



**Table 11: Area of arable land cultivated in the past twelve months using various tillage methods**

	2013				2016			
	hectares	percentage of tillage	number of holdings	hectares per holding	hectares	percentage of tillage	number of holdings	hectares per holding
Inversion tillage	504,837	81.1	10,295	49.0	668,817	90.1	12,079	55.4
Conservation tillage	68,434	11.0	6,263	10.9	47,783	6.4	1,082	44.2
Zero tillage	48,853	7.9	6,071	8.0	25,858	3.5	827	31.3
Total	622,124		10,491		742,458		19,356	

Note: Sum of sub-categories do not equal total holdings figure as holdings may employ more than one method of tillage.

Excludes glasshouse crops and permanent crops and permanent grass.

**Table 12: Area of sown or cultivable land by soil cover method over winter 2015/16**

	2013				2016			
	hectares	percentage of cultivable land	number of holdings	hectares per holding	hectares	percentage of cultivable land	number of holdings	hectares per holding
Autumn/ winter crops	215,034	32.5	8,211	26.2	246,814	41.9	5,859	42.1
Cover/ intermediate crop	23,757	3.6	6,086	3.9	21,448	3.6	2,205	9.7
Plant residues or stubble	309,875	46.8	9,317	33.3	245,860	41.7	9,524	25.8
Bare soil	113,098	17.1	7,152	15.8	74,792	12.7	2,797	26.7
Total	661,764		10,491	63.1	588,914		13,362	44.1

Note 1: Sum of sub-categories do not equal total holdings figure as holdings may employ more than one method of soil cover.

Sum of percentages may not equal 100 due to rounding. Excludes glasshouse crops and permanent crops and permanent grass.

Note 2: no equivalent data available for 2013

**Table 13: Distribution of holdings by percentage of arable land not in crop rotation**

	2013		2016	
	number of holdings	percentage of holdings	number of holdings	percentage of holdings
Zero i.e. all rotated	5,678	34.2	7,735	54.4
0-25% of arable area	6,706	40.4	2,701	19.0
25-50% of arable area	2,020	12.2	1,166	8.2
50-75% of arable area	1,163	7.0	664	4.7
75-100% of arable area	971	5.9	1,942	13.7
Total	16,583		14,208	

Note: Excludes glasshouse crops and permanent crops and permanent grass.

**Table 14: Nutrient management**

	2013		2016	
	number	percentage	number	percentage
Carried out soil pH testing on grassland <sup>1</sup>	:	:	9,359	29.7
Carried out soil pH testing on other land <sup>2</sup>	:	:	6,673	64.3
Carried out nutrient management plan on grassland <sup>1</sup>	5,857	18.4	5,334	16.9
Carried out nutrient management plan on other land <sup>2</sup>	4,119	36.1	4,322	41.6
Holdings with temporary grass that use low n variety	11,423	85.3	1,629	16.4
Area sown with low n variety	253,200	59.7	44,260	21.3

: Information not available

<sup>1</sup> grassland holdings in 2013 - 31,918; grassland holdings in 2016 - 31,500

<sup>2</sup> holdings with other land in 2013 - 11,479; holdings with other land in 2016 - 10,830

<sup>3</sup> temporary grass area in 2013 - 13,399; temporary grass area in 2016 - 9,877

<sup>4</sup> temporary grass area in 2013 - 424,433; temporary grass area in 2016 - 207,385

**Table 15: Method of manure and slurry application, by tonnage**

	2016	
	holdings	tonnes
<b>Broadcast</b>		
Ploughed in or injected within four hours	920	385,842
Ploughed in after four hours	5,146	2,117,346
Not ploughed in or injected	4,957	9,322,483
<b>Bandspread</b>		
Trailing hose	550	4178295
Trailing shoe	294	602,161
<b>Injection</b>		
Shallow/open slot	63	576,821
Deep/closed slot	11	31,043
<b>Total applied</b>	<b>9,246</b>	<b>17,213,991</b>

Note: no equivalent data available for 2013. Base: 32,260 holdings

**Table 16: Manure tonnage imported and exported**

	2016	
	holdings	tonnes
Total manure exported	743	1,024,726
Total manure imported	1,413	457,199

Note: no equivalent data available for 2013

**Table 17: Manure and slurry storage (including covered storage)**

	2013				2016			
	all holdings with storage		...of which are covered		all holdings with storage		...of which are covered	
	number of holdings	percentage of all holdings	number of holdings	as a percentage of holdings with storage	number of holdings	percentage of all holdings	number of holdings	as a percentage of holdings with storage
Storage for solid dung	8,963	27.1	1,253	12.7	6,178	19.2	720	11.7
Storage facilities for slurry...	3,838	11.6	2,354	61.3	3,007	9.3	1,872	62.3
in a tank	3,487	10.5			2,739	8.5		
in a lagoon	641	1.9			571	1.8		
Total	9,882	29.8	8,482	85.8	7,161	22.2	6,204	86.6

Note: Sum of sub-categories do not equal base figure as holdings may employ more than one form of storage

Table amended: 14:50 15 November 2016

**Table 18: Irrigation**

	holdings number	area hectares
Crops irrigated in last twelve months	1,992	25,898
Irrigable land with available equipment and water	2,747	93,818

Note: Irrigable land includes grassland, crops irrigated does not

**Table 19: Irrigation methods used**

	2016	
	holdings	
	number	%
Surface irrigation	295	30.5
Sprinkler irrigation	553	57.2
Drop Irrigation	172	17.8
Total	967	

Note: no equivalent data available for 2013

**Table 20: Sources of irrigation**

	2016	
	holdings	
	number	%
On-farm ground water	1,520	48.3
On-farm surface water	612	19.4
Off-farm surface water	726	23.0
Common water supply	825	26.2
Other sources	331	10.5
Total	3,150	

Note: no equivalent data available for 2013

## 7. Annex

### 7.1 EU Thresholds for inclusion in the Farm Structure Survey

The table below details the thresholds required for holdings to be included in the Farm Structure Survey. A sample of these holdings were sent a survey form.

Characteristics		Threshold
Utilised agricultural area	Arable land, kitchen gardens, permanent grassland, permanent crops	5 ha
Permanent outdoor crops	Fruit, berry, citrus and olive plantations, vineyards and nurseries	1 ha
Other intensive production	Vegetables, melons and strawberries, which are outdoors or under low (not accessible) protective cover	0.5 ha
	Tobacco	0.5 ha
	Hops	0.5 ha
	Cotton	0.5 ha
Crops under glass or other (accessible) protective cover	Vegetables, melons and strawberries	0.1 ha
	Flowers and ornamental plants (excluding nurseries)	0.1 ha
Bovine animals	All	10 head
Pigs	All	50 head
	Breeding sows	10 head
Sheep	All	20 head
Goats	All	20 head
Poultry	All	1,000 head

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### **Correspondence and enquiries**

For enquiries about this publication please contact:

Neil White,

RESAS, Q Spur, Saughton House, Broomhouse Drive, Edinburgh, EH11 3XD,

Telephone: 0300 244 9715,

e-mail: [agric.stats@gov.scot](mailto:agric.stats@gov.scot)

For general enquiries about Scottish Government statistics please contact:

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