



## Greenhouse gas mitigation practices - England Farm Practices Survey 2014

This release contains the results from the February 2014 Farm Practices Survey which focused on practices relating to greenhouse gas mitigation. A second FPS will run in the autumn of 2014 and will collect data covering more general farming topics. The key results from these surveys are given below.

### **Nutrient management ([section 1](#))**

Nutrient Management Plans help farmers and growers to plan the use of fertilisers and manures, meet regulatory demands and protect the environment. The proportion of holdings with a nutrient management plan has increased steadily from 46% in 2006 to 60% in 2014. Although this is slightly higher than in 2013 (57%), the difference is not statistically significant. Those holdings with nutrient management plans in 2014 accounted for 74% of the farmed area.

In 2014, almost two thirds of these plans were created by the farmer themselves either with or without professional advice; 76% of plans are updated annually. Over the past four years more holdings reported a financial benefit (49% in 2014) from having such a plan than an environmental one (34% in 2014). Of those without a plan, 22% would not be motivated to create one.

### **Anaerobic digestion ([section 2](#))**

Anaerobic digestion is a treatment that composts waste in the absence of oxygen, producing a biogas that can be used to generate electricity and heat. Less than 2% of holdings currently process slurries, crops or other feedstocks by anaerobic digestion either on their farm or elsewhere.

### **Emissions ([section 3](#))**

In 2014, just under half of farmers (45%) attached some importance to considering greenhouse gases (GHGs) when taking decisions about their land, crops and livestock. Almost 40% of farmers agreed or strongly agreed that reducing GHG emissions from their farm would contribute to improving their overall profitability.

### **Soil drainage ([section 4](#))**

Almost 2.8 million hectares of crops and grassland has artificial under drainage in 2014. Approximately 22% of the current drained area requires some repair or replacement of the field drains.

### **Fertiliser, manure and slurry spreaders ([section 5](#))**

In 2014, 71% of farmers spread manure or slurry on their grassland or arable crops either themselves or hiring a contractor to do so and 84% spread fertiliser. Of those farmers spreading some or all of the manure or slurry themselves, 64% never calibrate their spreader.

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**Note: The results in sections 6 to 9 relate only to holdings with livestock.**

### **Manure and slurry storage ([section 6](#))**

In 2014 just over two thirds of holdings (67%) with livestock had storage facilities for solid manure in temporary heaps in fields and over half (55%) could store it on a solid base. These figures have remained similar since 2011. The proportions of holdings with the facilities to store slurry in a tank or a lagoon are 20% and 18% respectively. The majority of manure and slurry stores are uncovered.

### **Farm health planning and biosecurity ([section 7](#))**

Almost three quarters (74%) of livestock holdings had a farm health plan in 2014. Of those holdings with a plan, 70% completed it with the assistance of a vet or adviser and 82% use their plan either routinely or when possible during the year to inform decisions on disease management. Of those holdings without a plan 13% said that they planned to create one within the next 12 months.

### **Temporary grassland ([section 8](#))**

In some situations sowing grassland with a clover mix or high sugar grasses can be a cost-effective method of increasing production and improving environmental protection. In 2014, 78% of livestock holdings had sown some or all of their temporary grassland with a clover mix and 58% have sown their temporary grassland with high sugar grasses. The most common frequency with which farmers reseed their clover or high sugar grasses is every three to five years, with 42% and 41% doing so respectively.

### **Cattle and sheep feeding regimes and breeding practices ([section 9](#))**

In 2014, 53% of livestock farmers indicated they use a ration formulation programme or expert nutritional advice when planning the feeding regime of their livestock at least some of the time. This is unchanged compared from 2013.

Estimated Breeding Values (EBV) provide an estimate of the genetic worth of animals using desirable traits such as meat production. The proportion of holdings using bulls or rams with a high EBV when breeding beef cattle or lambs in 2014 is 63% and 56% respectively. These holdings accounted for 69% of beef cattle and 64% of lambs at June 2013.

# Farm Practices Survey – Greenhouse Gas Mitigation Practices

## 1 Nutrient management

Effective nutrient management provides sufficient nutrients to meet the growth requirements of crops and grassland whilst managing environmental impacts; it can help minimise GHG emissions, reduce the incidence of diffuse water pollution and increase productivity by reducing input costs. Here we consider how farmers manage the application of fertilisers and manures, the use of nutrient management plans, how nutrient requirements are calculated and whether farmers have seen any financial or environmental benefits.

### Key findings

- In 2014, 60% of holdings had a nutrient management plan, these holdings accounted for 74% of the farmed area covered by this survey. Although higher than in 2013, the increase is not statistically significant.
- In 2014, 22% of nutrient management plans were created by the farmer without professional advice, 43% were created by the farmer with the help of a professional while the remaining 35% were created by an adviser or contractor.
- About 49% of farms with nutrient management plans reported a financial benefit in 2014, an increase from 43% in 2013. Fewer farms (34%) reported an environmental benefit and this has been similar since 2011.
- In 2014, 70% of farmers have a programme of soil testing for nutrient indices and 74% for pH. Of these holdings almost all were testing at least some of their fields every five years.
- Some 64% of holdings have a manure management plan for their farm. This is a reduction from 71% of holdings in 2013.

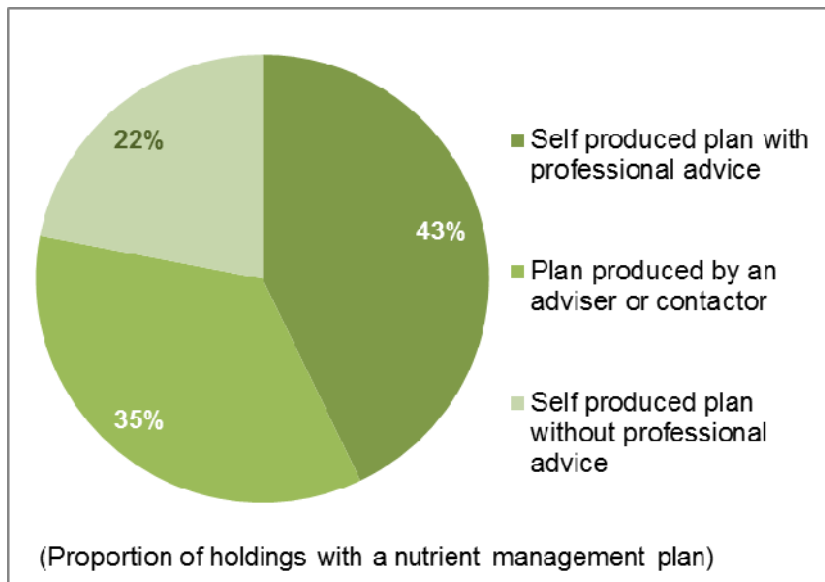
Figure 1.1: Proportion of holdings with a nutrient management plan: 2006 - 2014



Results are not available for 2008 and 2010.

The proportion of applicable farms with a nutrient management plan (NMP) has increased from 46% in 2006 to 60% in 2014 (Figure 1.1). This could be due to a mixture of regulation and increasing environmental awareness. In 2014, those holdings with nutrient management plans accounted for 74% of the farmed area. Around 8% of holdings (accounting for 4% of the farmed area in 2014) indicated that a NMP is not applicable. In 2014, 24% of pig/poultry farms, 12% of LFA grazing livestock farms and 12% of lowland grazing livestock farms indicated that a NMP was not applicable compared to less than 5% of cereal, general cropping and dairy farms.

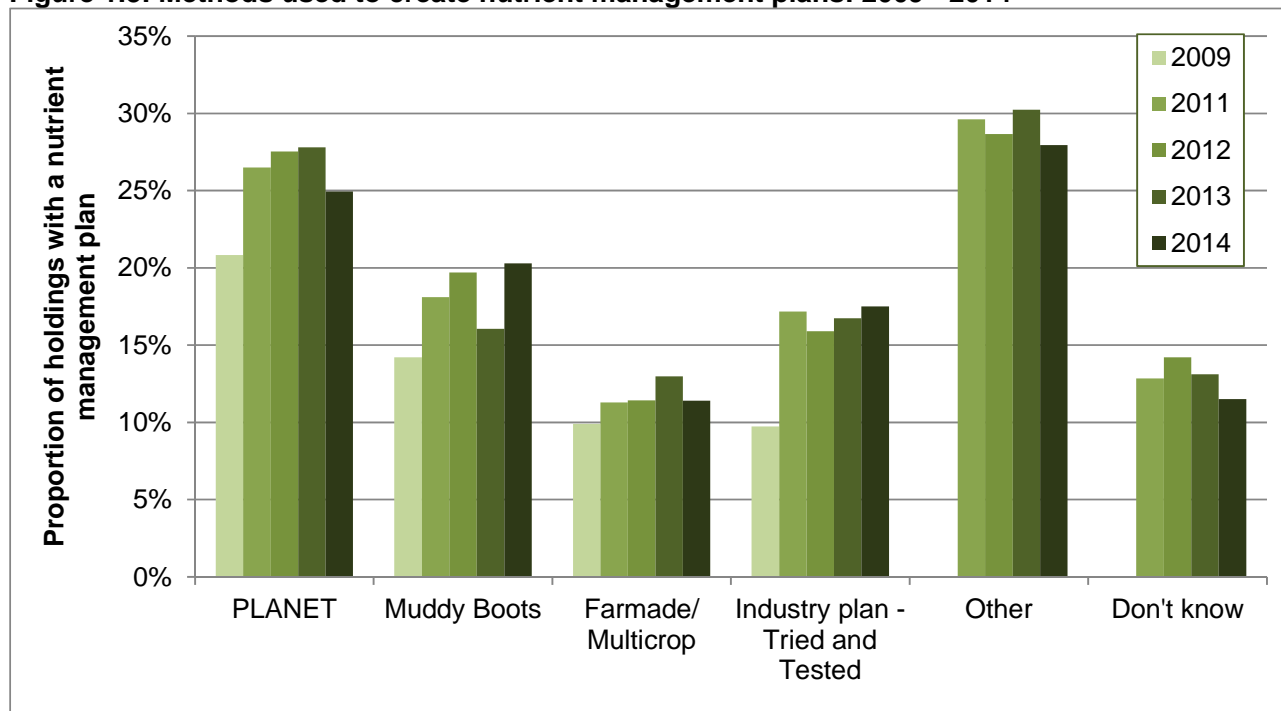
**Figure 1.2: Preparation of nutrient management plans: 2014**



In 2014 22% of those with a nutrient management plan completed the plan on their own without advice, whilst a further 43% created it themselves with the help of an adviser (Figure 1.2). The remaining 35% had the plan produced by a contractor or adviser, an increase from 27% in 2013 (Table 1.2).

Of those that sought professional advice, the majority (84%) did so from fertiliser advisers or agronomists (Table 1.3). Most of those with a nutrient management plan update it every year (76%) and almost all (94%) refer to it at least once each year (Tables 1.4 and 1.5).

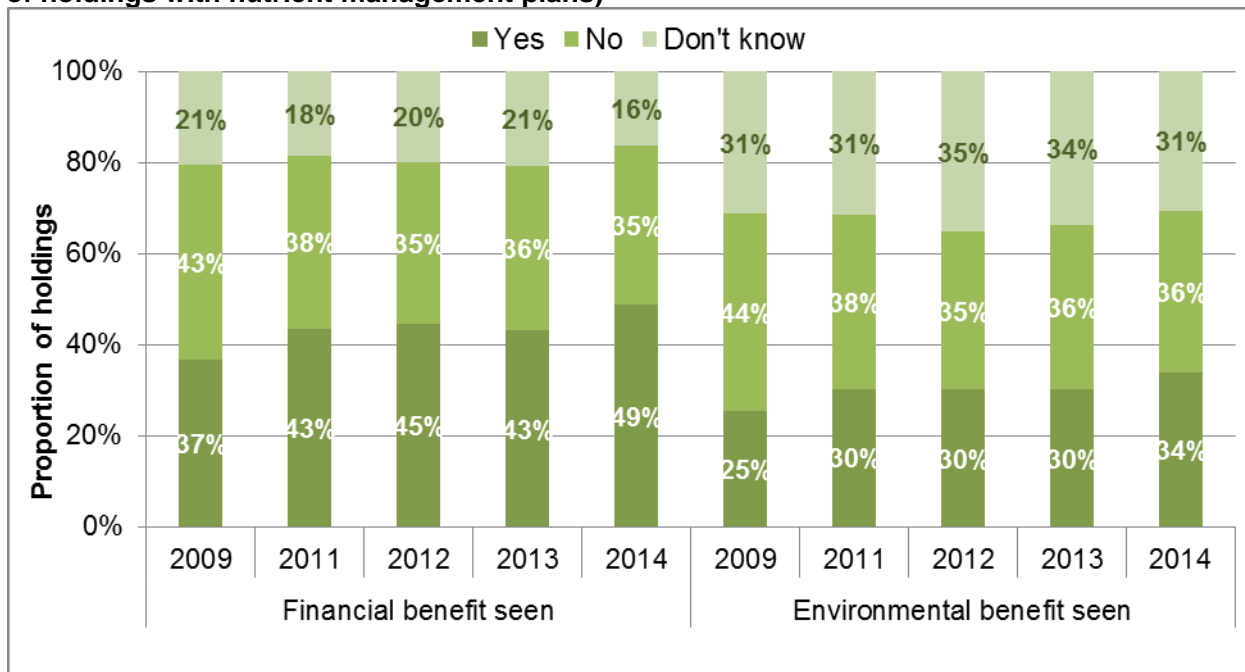
**Figure 1.3: Methods used to create nutrient management plans: 2009 - 2014<sup>(a)</sup>**



(a) "Don't know" was not included as an option on the 2009 form and the "other" option is not directly comparable to the more recent results.

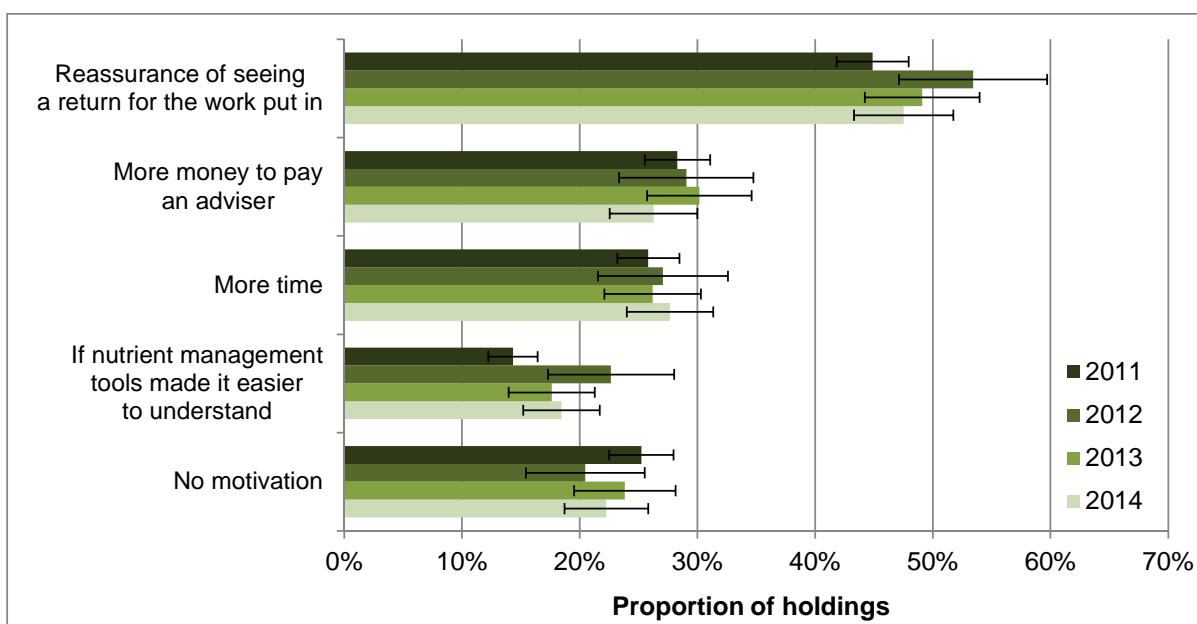
PLANET, Muddy Boots, Farmade/Multicrop and Tried & Tested are methods for creating nutrient management plans. PLANET has been the most popular of these four methods (Figure 1.3), although in each of the last four years the largest proportion of farmers (28% in 2014) have used other methods not listed on the survey form to create their plans (Table 1.6). 'Defra recommendations (RB209)' was the most commonly reported source of nutrient recommendations for plans (Table 1.7).

**Figure 1.4: Reported benefits from having a nutrient management plan: 2009 – 2014 (proportion of holdings with nutrient management plans)**



In each year since 2009, a higher proportion of farmers have seen a financial benefit from having a nutrient management plan than an environmental benefit (Figure 1.4). Although there appears to have been an increase in the proportion of farmers seeing financial and environmental benefits between 2013 and 2014, the change is not statistically significant (Table 1.8).

**Figure 1.5: Reasons that would motivate farmers to create a nutrient management plan: 2011 – 2014<sup>(a)</sup>**



(a) For applicable holdings without a nutrient management plan.

Of those farmers that considered it applicable, around a third (35%) did not have a nutrient management plan in 2014. For around half of these farmers, the most common motivator to create one would be reassurance of a return for the work they'd put in. Having more money to pay an adviser and more time were also common motivators. However, for 22% of farmers without a nutrient management plan there remains no motivation to create one (Figure 1.5).

The percentage of farmers undertaking some form of nutrient testing on soil has remained similar between 2009 and 2014. Results for the past three years can be found in table 1.10. Approximately 64% of farms have a manure management plan in 2014, a reduction from 71% in 2013. The majority of farmers (90%) use nutrient recommendations for manure management plans from Defra recommendations (RB209, CoGAP).

**Table 1.1: Uptake of nutrient management plans: 2009 – 2014 (proportion of holdings and farmed area)**

	2009		2011		2012		2013		2014	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
<b>% of holdings</b>										
Yes	50	±3	56	±1	62	±3	57	±2	60	±2
No	41	±3	34	±2	29	±3	33	±2	32	±2
Not applicable	10	±2	10	±1	9	±2	10	±2	8	±1
<b>% of farmed area</b>										
Yes			71	±2	78	±3	73	±2	74	±2
No			24	±2	18	±2	21	±2	22	±2
Not applicable			5	±1	5	±2	6	±1	4	±1
Number of responses	1 504		3 436		1 146		2 058		2 481	

**Table 1.2: Use of advisers/professional advice to create nutrient management plans: 2011 – 2014 (proportion of farmers with nutrient management plans)**

	2011		2012		2013		2014	
	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI
Self produced plan without professional advice	23	±2	19	±3	25	±3	22	±2
Self produced plan with professional advice	49	±2	50	±4	48	±3	43	±3
Plan produced by an adviser or contractor	27	±2	31	±4	27	±3	35	±3

Based on 2 096 responses in 2011, 792 in 2012, 1 348 in 2013 and 1 651 in 2014 from holdings with a nutrient management plan.

**Table 1.3: Use of advisers and contractors for completion of nutrient management plans: 2014**

Type of adviser	Those who sought an adviser's help to create the plan themselves <sup>(a)</sup>		Those whose plan was created by an adviser or contractor <sup>(b)</sup>	
	% of holdings	95% CI	% of holdings	95% CI
Fertiliser adviser / agronomist	84	±3	84	±3
Animal nutritionist	7	±2	2	±1
FWAG <sup>(c)</sup>	4	±2	2	±1
Other	11	±2	12	±3

(a) Based on 751 responses from those who created the nutrient management plan themselves with advice.

(b) Based on 566 responses from those whose nutrient management plan was created by an adviser or contractor.

(c) FWAG: Farming and Wildlife Advisory Group.

**Table 1.4: Frequency with which the nutrient management plan is updated: 2011 – 2014**

Frequency of update	2011		2012		2013		2014	
	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI
Every year	77	±2	76	±3	79	±3	76	±2
Every 2 years	11	±1	11	±2	10	±2	10	±2
Every 3 years or longer	12	±1	13	±3	11	±2	13	±2

Based on 2 094 responses in 2011, 792 in 2012, 1 346 in 2013 and 1 647 in 2014 from holdings with a nutrient management plan.

**Table 1.5: Frequency with which the nutrient management plan is referred to in a year: 2011 – 2014**

Frequency of use	2011		2012		2013		2014	
	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI
More than 10 times	9	±1	9	±2	8	±1	9	±1
5 to 10 times	34	±2	21	±3	18	±2	18	±2
Less than 5 times	51	±2	64	±4	67	±3	68	±2
Never	5	±1	5	±2	6	±1	6	±1

Based on 2 096 responses in 2011, 792 in 2012, 1 345 in 2013 and 1 649 in 2014 from holdings with a nutrient management plan.

**Table 1.6: Methods used to create nutrient management plans: 2011 – 2014**

Method	2011		2012		2013		2014	
	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI
PLANET	26	±2	28	±3	28	±3	25	±2
Muddy Boots	18	±2	20	±3	16	±2	20	±2
Farmade / Multicrop	11	±1	11	±2	13	±2	11	±2
Industry plan – ‘Tried and Tested’	17	±2	16	±3	17	±2	18	±2
Other	30	±2	29	±3	30	±3	28	±2
Don't know	13	±1	14	±3	13	±2	12	±2

Based on 2 096 responses in 2011, 791 in 2012, 1 348 in 2013 and 1 643 in 2014 from holdings with a nutrient management plan.

**Table 1.7: Sources of nutrient recommendations for nutrient management plans: 2011 – 2014**

	2011		2012		2013		2014	
	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI
Defra recommendations / manual (RB209)	65	±2	68	±4	70	±3	68	±3
An adviser's or industry note	39	±2	39	±4	38	±3	36	±3
Personal experience	42	±2	41	±4	43	±3	41	±3
Other	5	±1	4	±2	4	±1	3	±1
Don't know	4	±1	4	±2	4	±1	2	±1

Based on 2 096 responses in 2011, 792 in 2012, 1 348 in 2013 and 1 651 in 2014 from holdings with a nutrient management plan.

**Table 1.8: Proportion of holdings that have seen financial and/or environmental benefits from having a nutrient management plan: 2012 – 2014**

Benefit		2012		2013		2014	
		% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI
Holdings seeing a financial benefit	Yes	45	±4	43	±3	49	±3
	No	35	±4	36	±3	35	±3
	Don't know	20	±3	21	±2	16	±2
Holdings seeing an environmental benefit	Yes	30	±4	30	±3	34	±3
	No	35	±4	36	±3	36	±3
	Don't know	35	±4	34	±3	31	±2

Based on 790 responses in 2012, 1 347 in 2013 and 1 650 in 2014 from holdings with a nutrient management plan.



**Table 1.9: Motivations to create a nutrient management plan for those without one: 2011 – 2014**

	2011		2012		2013		2014	
	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI
More time	26	±3	27	±6	26	±4	28	±4
More money to pay an adviser	28	±3	29	±6	30	±4	26	±4
If nutrient management tools made it easier to understand	14	±2	23	±5	18	±4	18	±3
Reassurance of seeing a return for the work put in	45	±3	53	±6	49	±5	48	±4
No motivation	25	±3	20	±5	24	±4	22	±4

Based on 1 044 responses in 2011, 277 in 2012, 549 in 2013 and 657 in 2014 from holdings without a nutrient management plan.

**Table 1.10: Nutrient testing of soil: 2012 – 2014**

		2012		2013		2014	
		Proportion	95% CI	Proportion	95% CI	Proportion	95% CI
<b>Testing the nutrient content (indices) of soil<sup>(a)</sup></b>	% of holdings	74	±3	73	±2	70	±2
	% of farmed area	86	±2	85	±2	83	±2
<b>Testing the pH of soil<sup>(a)</sup></b>	% of holdings	81	±3	80	±2	74	±2
	% of farmed area	90	±2	89	±2	84	±2

Based on responses from holdings considering the questions applicable. Minimum numbers of responses used: 1 107 in 2012, 1 985 in 2013 and 2 375 in 2014.

(a) The questions used to collect this data were worded differently in 2014, so the differences seen between 2014 and previous years may be due to these changes. Prior to 2014 the question was worded to ask whether farmers regularly tested the nutrient content and pH of soil 'at least every 5 years'. In 2014 the question was split to initially ask if farmers carried out soil testing and then whether they tested all fields, some fields or no fields at least every 5 years. The additional detail relating to the number of fields tested regularly can be found in table 1.11.

**Table 1.11: Nutrient testing of soil by proportion of fields: 2014**

		All fields		Some fields		None of the fields	
		Proportion	95% CI	Proportion	95% CI	Proportion	95% CI
<b>Testing the nutrient content (indices) of soil at least every 5 years</b>	% of holdings	58	±2	42	±2	0.4	±0.3
	% of farmed area	63	±3	36	±3	0.5	±0.6
<b>Testing the pH of soil at least every 5 years</b>	% of holdings	57	±2	42	±2	0.6	±0.4
	% of farmed area	62	±3	37	±3	0.3	±0.2

Based on responses from holdings with a programme of soil testing for either nutrient indices or pH. Minimum numbers of responses used: 1 821 in 2014.

**Table 1.12: Nutrient testing of manure: 2014**

<b>Methods of testing/assessing/calculating nutrient content of manure</b>	% of holdings	95% CI
Sampling and lab analysis	12	±1
Sampling and on-farm testing	2	±1
Based on published tables	36	±2
No testing done	47	±2

Based on 2 017 responses in 2014 from holdings without a manure management plan.

**Table 1.13: Uptake of manure management plans: 2011 – 2014**

	2011		2012		2013		2014	
	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI
% of holdings	67	±2	76	±3	71	±3	64	±2
% of farmed area	79	±2	86	±3	82	±2	77	±2

Based on 2 566 responses in 2011, 847 in 2012, 1 570 in 2013 and 2 134 in 2014 from holdings for which the question was applicable.

**Table 1.14: Source of nutrient recommendations for manure management plans: 2011 – 2014**

	2011		2012		2013		2014	
	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI
Defra recommendations / manual (RB209), CoGAP	87	±2	90	±3	87	±2	90	±2
Other	15	±2	13	±3	16	±2	12	±2

Based on 1 742 responses in 2011, 660 in 2012, 1 206 in 2013 and 1 537 in 2014 from holdings with a manure management plan.

**Table 1.15: Motivations to create a manure management plan for those without one: 2014**

	2014	
	% of holdings	95% CI
More time	19	±4
Reassurance of seeing a return for the work put in	26	±4
Knowing where to look for advice and guidance	12	±3
If professional advice was available to produce the plan	10	±3
If published guidance was available to assist in producing a plan	17	±4
No motivation	47	±5

Based on 536 responses in 2014 from holdings without a manure management plan.

## 2 Anaerobic digestion

Anaerobic digestion is a natural process in which plant and animal materials are broken down by micro-organisms in the absence of oxygen, producing a biogas that can be used to generate electricity and heat. The process allows more efficient capture and treatment of the nutrients and greenhouse gas emissions from animal slurries and manures than can be achieved by spreading directly onto land. The remaining digestate is rich in nutrients and can be used as fertiliser. This section looks at the proportion of farmers who are currently processing, or intending to process, any waste or crop feedstocks in this way.

### Key findings

- Only 1.5% of farmers already process waste by anaerobic digestion, little changed since 2011.
- A slightly higher proportion (2.1%) of farmers are planning to process waste by anaerobic digestion in the future. However this is still a low figure with crops being the most common waste type considered by 1.3% of farmers.

The majority of farms do not currently process slurries, crops or other feedstocks by anaerobic digestion, with just 1.5% of holdings doing so in 2014. Approximately 1.3% of holdings are planning to process crops by anaerobic digestion in the future and 1.2% plan to process slurries. More detailed figures for 2014 can be found in table 2.1 along with results from 2011, 2012 and 2013.

**Table 2.1: Proportion of holdings processing waste by anaerobic digestion: 2011 – 2014**

Waste type		% of holdings				95% CI
		2011	2012	2013	2014	2014
<b>Slurries</b>	Already processing	0.6	0.4	0.6	0.9	±0.5
	Plan to process in future	3.1	1.9	1.4	1.2	±0.4
<b>Crops</b>	Already processing	:	0.4	0.6	0.8	±0.4
	Plan to process in future	:	2.1	2.4	1.3	±0.4
<b>Other feedstocks from the holding</b>	Already processing	0.8	0.5	0.5	0.2	±0.3
	Plan to process in future	3.1	1.6	1.4	0.5	±0.3
<b>Other feedstocks from outside the holding</b>	Already processing	0.3	0.6	0.1	0.3	±0.3
	Plan to process in future	2.2	1.1	1.2	0.4	±0.2
<b>Any of the above</b>	Already processing	1.4	1.4	1.3	1.5	±0.5
	Plan to process in future	4.8	3.4	3.3	2.1	±0.6

Based on no fewer than 2 547 responses in 2011, 1 114 in 2012 from holdings who had heard of anaerobic digestion and 2 049 responses in 2013 and 2 470 responses in 2014 from all holdings.  
: data not collected.

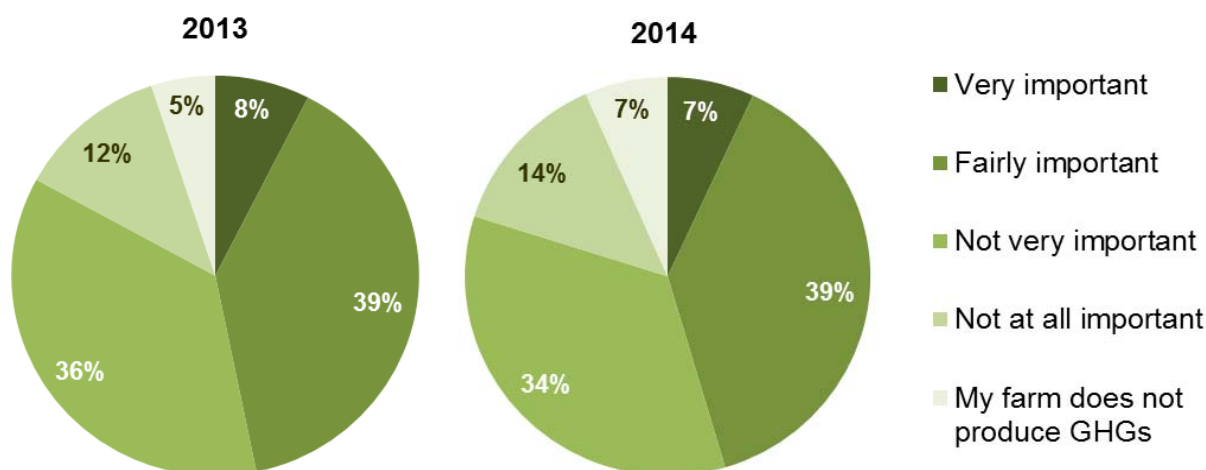
### 3 Emissions

This section looks at the importance farmers place on greenhouse gas (GHG) emissions and their understanding of where these gases are produced on the farm. It also focuses on the actions that farmers are currently taking to reduce emissions and their motivations for doing so. In contrast we also look at the reasons that prevent farmers from taking action.

#### Key findings

- Just under half of farms in 2014 considered it fairly or very important to consider greenhouse gases (GHG) when taking decisions about their land, crops and livestock. This was almost unchanged from 2013.
- In 2014 59% of farmers reported that they were currently taking action to reduce greenhouse gas emissions from their farm. The most common actions taken by this group were recycling of waste materials from the farm (85%) and improving nitrogen fertiliser application accuracy (70%).
- The most common motivation for taking any action was that it was considered to be good business practice to do so.
- For those not taking action to reduce GHG emissions the most common reason preventing them was that it was not necessary because their farm did not produce many emissions.

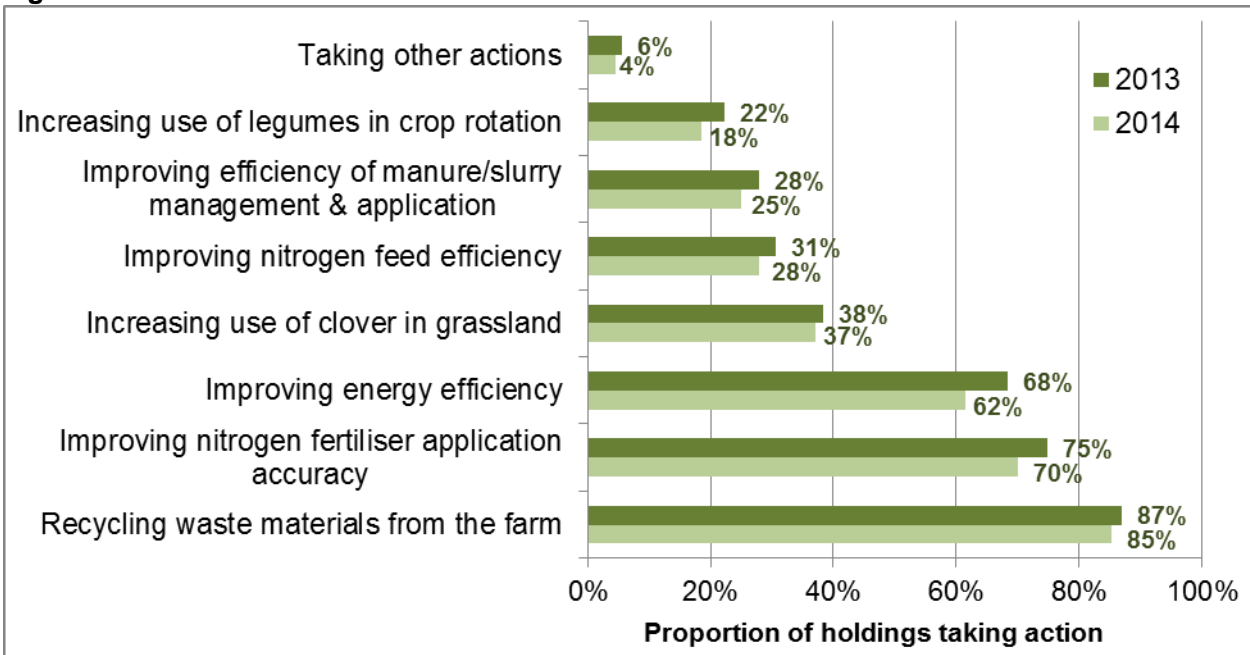
**Figure 3.1: Importance placed on GHGs by farmers when taking decisions about their land, crops and livestock: 2013 – 2014**



Just under half of farms considered it fairly or very important to consider greenhouse gases (GHG) when taking decisions about their land, crops and livestock in 2014. This was almost unchanged since 2013 (Figure 3.1). There were 7% of farms that believed that their farm did not produce any GHGs.

59% of farmers said that they were currently taking action to reduce GHG emissions from their farm. Of those taking action (Figure 3.2 and Table 3.3) the three most common actions are recycling waste materials from the farm (85%), improving nitrogen fertiliser application accuracy (70%) and improving energy efficiency (62%).

**Figure 3.2: Actions taken to reduce GHG emissions from the farm: 2013 - 2014<sup>(a)</sup>**



(a) Figures relate only to those holdings currently taking action to reduce GHG emissions from their farm.

For those farmers currently taking action to reduce their farm's GHG emissions the most common motivation for doing so was that it was considered to be good business practice (selected by 79% of holdings) followed by concern for the environment (selected by 59%) (see table 3.4).

**Figure 3.3: Reasons preventing farmers taking action to reduce GHG emissions: 2014**



(a) Unsure what to do - too many conflicting views on the issue

(b) Not necessary - don't believe farm produces many emissions

As might be expected, the reasons given that prevent people from taking action to reduce GHG emissions varied depending on whether farmers were currently taking action or not (figure 3.3). For those not currently taking action, the most commonly quoted reason was that farmers did not think it was necessary to do so as the farm did not produce many emissions. For those who were already taking action the most commonly quoted reason was that farmers had already done all they can (35%), closely followed by expense (31%).

**Table 3.1: Importance placed on GHGs by farmers when taking decisions about their land crops and livestock**

	% of holdings		95% CI
	2013	2014	2014
Very important	8	7	±1
Fairly important	39	39	±2
Not very important	36	34	±2
Not at all important	12	14	±2
Do not believe farm produces GHGs	5	7	±1

Based on responses from 2 048 holdings in 2013 and 2 474 in 2014.

**Table 3.2: Belief that reducing GHG emissions from the farm will contribute to improving the overall profitability**

	% of holdings		95% CI
	2013	2014	2014
Strongly agree	2	2	±1
Agree	36	37	±2
Disagree	53	52	±2
Strongly disagree	9	8	±1

Based on responses from 2 038 holdings in 2013 and 2 458 in 2014.

**Table 3.3: Actions being taken to reduce GHG emissions from farms**

Actions	% of holdings		95% CI
	2013	2014	2014
Taking action <sup>(a)</sup>	62	59	±2
<i>Of those taking action, the actions were<sup>(b)</sup></i>			
Recycling of waste materials from the farm (e.g. tyres, plastics)	87	85	±2
Improving nitrogen fertiliser application accuracy	75	70	±2
Improving energy efficiency (e.g. reducing fuel use, producing own energy)	68	62	±3
Increasing use of clover in grassland	38	37	±3
Improving nitrogen feed efficiency, livestock diets	31	28	±2
Improving efficiency in manure and slurry management and application	28	25	±2
Increasing use of legumes in arable rotation	22	18	±2
Other actions	6	4	±1

(a) Based on responses from 2 035 holdings in 2013 and 2 461 in 2014.

(b) Based on responses from 1 361 holdings in 2013 and 1 566 in 2014 who are taking action to reduce GHG emissions.

**Table 3.4: Main motivations for those taking action to reduce GHG emissions**

Motivations	% of holdings		95% CI
	2013	2014	2014
Consider it good business practice	78	79	±2
Concern for the environment	67	59	±3
To improve profitability	58	53	±3
Regulation	50	47	±3
To meet market demands	20	19	±2
Other motivation	1	2	±1

Based on 1 353 responses in 2013 and 1 564 in 2014 from holdings who are taking action to reduce GHG emissions.

**Table 3.5: Reasons preventing farmers from taking action to reduce GHG emissions from their farm: 2014**

	For those not taking action <sup>(a)</sup>			For those already taking action <sup>(b)</sup>			For all holdings <sup>(c)</sup>		
	% of holdings			% of holdings			% of holdings		
	2013	2014	95% CI	2013	2014	95% CI	2013	2014	95% CI
Lack of information	34	26	±3	32	22	±3	33	25	±2
Too expensive	16	11	±2	42	31	±3	30	20	±2
Lack of incentive	24	18	±3	28	19	±3	26	19	±2
Already done all they can	10	10	±2	28	35	±4	20	22	±2
Don't believe farmers can do much	17	23	±3	7	9	±2	12	16	±2
Not necessary – don't believe farm produces many emissions	42	41	±4	13	17	±3	25	29	±2
Unsure what to do - too many conflicting views on the issue	34	31	±3	31	25	±3	33	29	±2
Other reasons	5	3	±1	4	5	±1	5	4	±1

(a) Based on responses from 651 holdings in 2013 and 880 holdings in 2014 who are not taking action to reduce GHG emissions.

(b) Based on responses from 1 001 holdings in 2013 and 867 holdings in 2014 who are currently taking action to reduce GHG emissions.

(c) Based on responses from 1 658 holdings in 2013 and 1 754 holdings in 2014 regardless of whether or not they are taking action to reduce GHG emissions.



## 4 Soil drainage

This section looks at the artificial under-drainage of crops and grassland and the amount of drained land that is in need of repair or replacement of the field drains. Crops and grassland refers to land under arable and horticultural crops grown outdoors, permanent pastures and meadows or temporary grassland sown in the last 5 years. Protected crops such as those grown under glass, rough grazing and woodland are excluded. The total area of crops and grassland used in this section is taken from the June Survey of Agriculture & Horticulture and only represents the 60 thousand holdings in the Farm Practices Survey population. More details on the survey population can be found in the methodology section.

### Key findings

- Almost 2.8 million hectares of crops and grassland has artificial under-drainage in 2014, which amounts to 39% of the total crops and grassland area.
- Approximately 22% of the current drained area requires repair or replacement of field drains.
- Almost two thirds of farmers carry out farm ditch maintenance to ensure field under drainage outfalls have free discharge at least every 5 years.

**Table 4.1: Area of crops and grassland with artificial under-drainage in 2014**

	Thousand hectares	
	Area	95% CI
Crops and grassland with under-drainage <sup>(a)</sup>	2 779	±153
Drained area in need of repair or field drain replacement <sup>(b)</sup>	608	±60
Total crops and grassland <sup>(a)</sup>	7 143	±230

(a) Based on 2 291 responses from holdings whose area of under-drained land did not exceed the total area of crops and grassland reported in the June 2013 Survey of Agriculture.

(b) Based on 1 785 responses from holdings with under-drained land.

**Table 4.2: Frequency with which farm ditches are maintained to ensure field under drainage outfalls have free discharge: 2014**

Frequency of maintenance	% of holdings	95% CI
At least every 2 years	26	±2
Every 3 to 5 years	38	±2
Every 6 to 10 years	22	±2
Less frequently than 10 years	11	±2
Don't know	3	±1

Based on 2 050 responses in 2014.

## 5 Fertiliser, manure and slurry spreaders

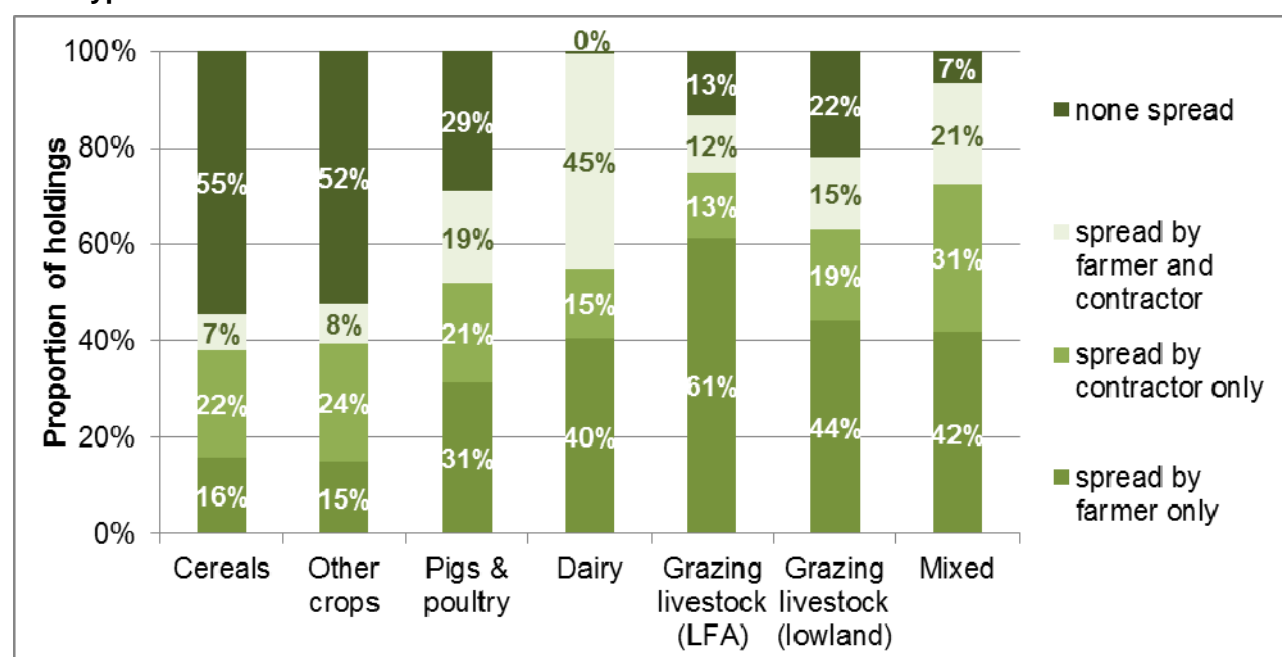
Calibrating fertiliser, manure and slurry spreaders can help to improve input efficiency and reduce GHG emissions. This section focuses specifically on farmers who spread manure, slurry and fertiliser.

More details on nitrogen fertiliser spreading practices are available in the British Survey of Fertiliser Practice at: <https://www.gov.uk/government/collections/fertiliser-usage>.

### Key findings

- Almost three quarters of holdings (71%) spread manure or slurry on their grass or arable land in 2014 and 84% spread fertilisers.
- Just under two thirds of holdings (64%) where the farmer spreads at least some manure or slurry themselves the manure or slurry spreader is never calibrated.

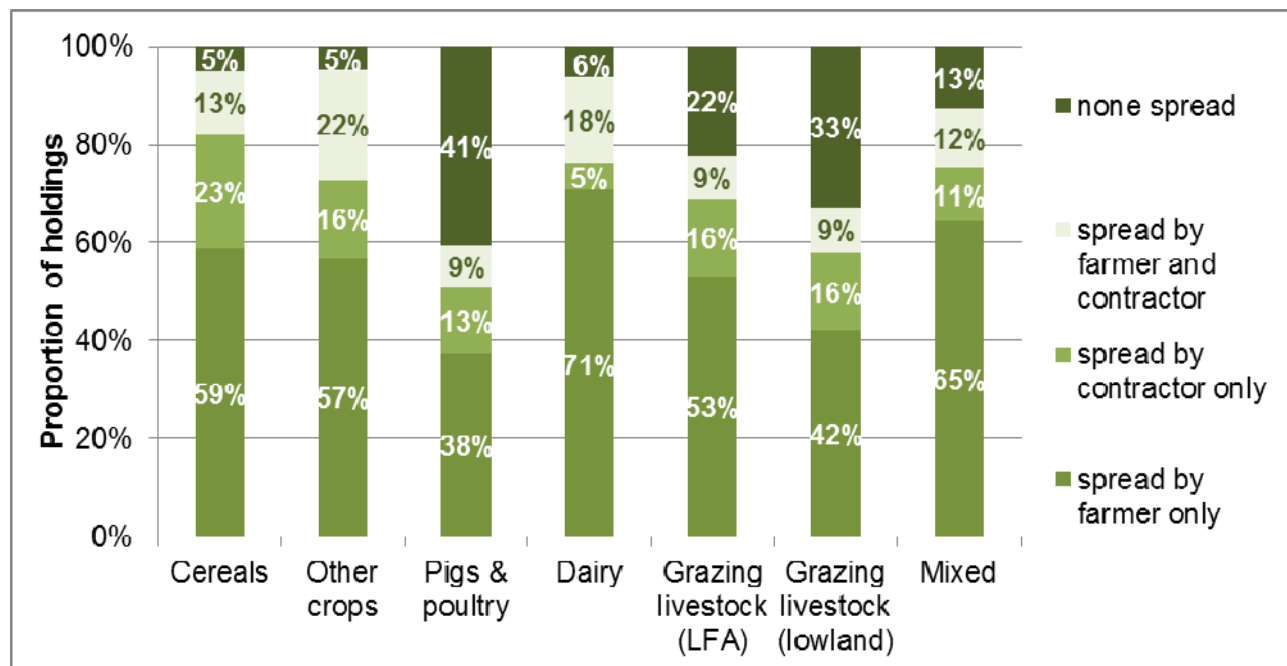
**Figure 5.1: Proportion of holdings spreading manure and slurry on grassland and arable land by farm type: 2014**



In 2014 71% of holdings spread manure or slurry on their grass and arable land. As might be expected there was considerable variation between farm types. Almost all dairy farms spread manures or slurries and these farms are more likely to use contractors to spread at least some of the manure and slurry than other farm types. The majority (61%) of LFA grazing livestock farmers spread manure/slurry themselves only (Figure 5.1).

Fertiliser was spread either by the farmer or a contractor on 95% of cereal and other cropping farms and 94% of dairy farms. On all three of these farm types the largest proportion of holdings said the fertiliser was spread solely by the farmer, however cereal and other cropping farms were more likely to use a contractor than dairy farms (Figure 5.2).

**Figure 5.2: Proportion of holdings spreading fertiliser on grassland and arable land by farm type: 2014**



**Table 5.1: Spreading of manure and slurry on grassland or arable land: 2013 - 2014**

	2013		2014	
	% of holdings	95% CI	% of holdings	95% CI
Spread by farmer only	39	±2	35	±2
Spread by farmer and also contractor	17	±2	16	±1
Spread by contractor only	20	±2	20	±2
None spread	24	±2	29	±2

Based on 2 056 responses in 2013 and 2 467 in 2014.

**Table 5.2: Spreading of fertiliser on grassland or arable land: 2014**

	% of holdings	95% CI
Spread by farmer only	55	±2
Spread by farmer and also contractor	13	±1
Spread by contractor only	16	±2
None spread	16	±2

Based on 2 461 responses in 2014.

**Table 5.3: Frequency with which farmers calibrate their manure or slurry spreader(s): 2013 - 2014**

Frequency of check	2013		2014	
	% of holdings	95% CI	% of holdings	95% CI
Never	58	±3	64	±3
Whenever there is significant change in manure or slurry characteristics	29	±3	24	±2
Whenever manure or slurry is tested	4	±1	4	±1
Other frequency	9	±2	8	±2

Based on 1 167 responses in 2013 and 1 343 in 2014 on holdings where the farmer spreads some or all of the manure/slurry.

**Table 5.4: Spreading of manure or slurry on tillage land: 2014**

	% of holdings	95% CI
Manure or slurry spread on tillage land	43	±2

Based on 2 462 responses in 2014.

**Table 5.5: Methods used to incorporate manure and slurry on tillage land within 1 week of spreading: 2014**

Methods	Manure		Slurry	
	% of holdings	95% CI	% of holdings	95% CI
Plough	58	±5	48	±9
Disc / Tine	13	±2	20	±7
Other	4	±3	10	±3
Don't incorporate within 1 week	7	±3	11	±5

Based on 1 275 responses on holdings where the farmer spreads manure on tillage and 468 holdings where slurry is spread.

**Note: The results in sections 6 to 9 relate only to holdings with livestock.**

## 6 Manure and slurry storage

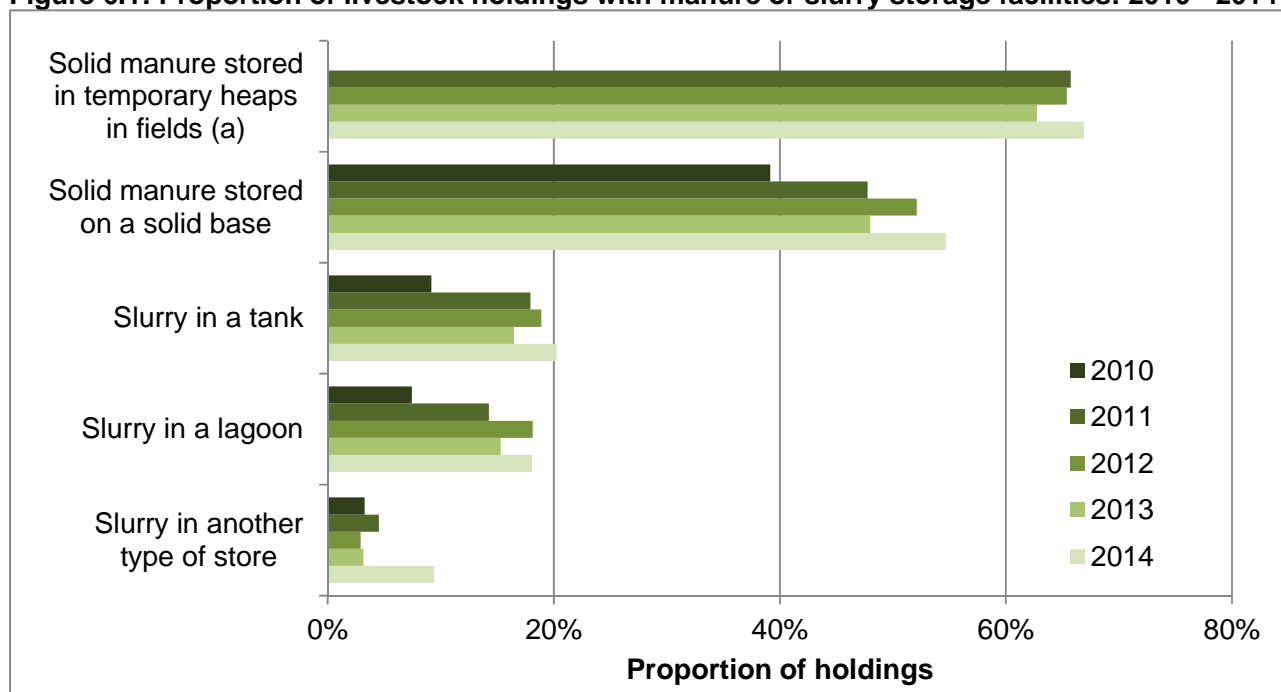
The system of manure and slurry management is relevant to the control of environmental risks to water and air. It prevents the loss of ammonia to the air, at the same time retaining the nitrogen for use as an organic fertiliser, reducing the need for manufactured nitrogen fertiliser inputs.

This section looks at the types of stores that livestock farmers have, whether or not they are covered, and whether the farmer has any plans to upgrade their current facilities. It also looks at whether the farmer has a slurry separator. Separating the suspended solids from slurry allows the two manure streams to be handled separately. The solid fraction can be stored on a concrete pad or in a field heap, while the liquid fraction can be stored and transported/pumped to fields for land application. Separation can reduce storage space and improve the efficiency with which nitrogen is applied to land which has the potential to reduce emissions.

### Key findings

- Approximately two thirds of livestock farmers can store solid manure in temporary heaps in fields, while just over half have storage facilities for solid manure on a solid base.
- The most popular storage facilities for slurry are tanks and lagoons, with 20% and 18% of livestock holdings having these stores respectively.
- Approximately 17% of livestock farmers plan to enlarge, upgrade or reconstruct their storage facilities and of these 91% plan to make these changes within the next 5 years.
- In 2014, just 4% of livestock farmers have a slurry separator, almost unchanged since 2011.

**Figure 6.1: Proportion of livestock holdings with manure or slurry storage facilities: 2010 - 2014**

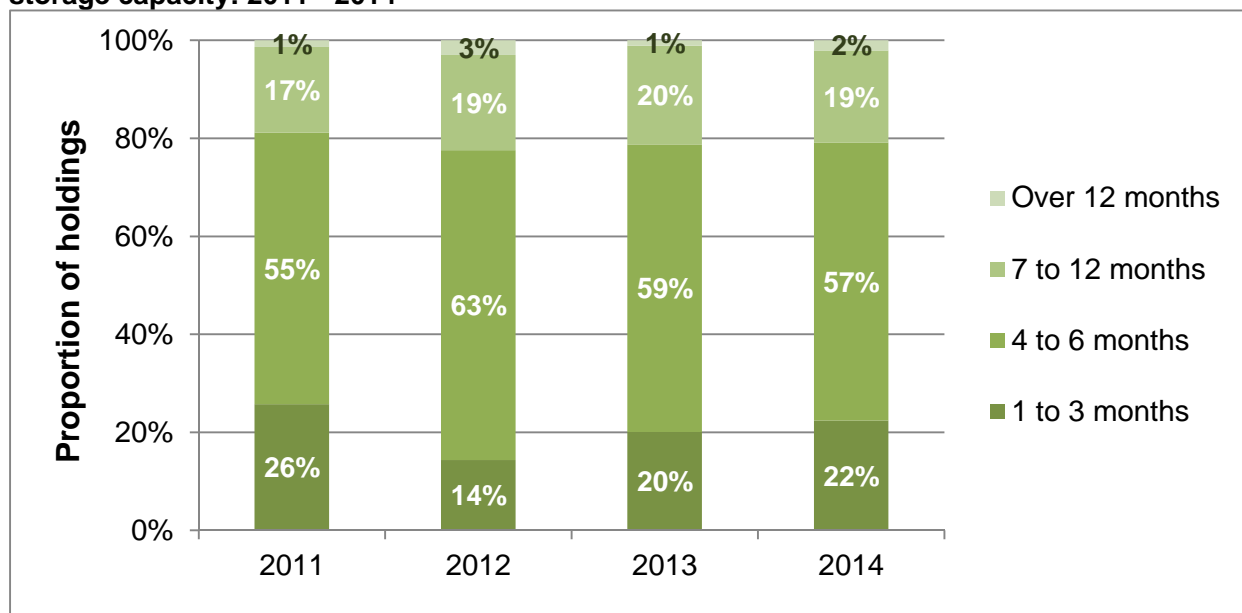


(a) Data not collected in 2010

The most common storage facility for solid manure continues to be temporary heaps in fields. The most common facilities for slurry storage are tanks (20% of farms) closely followed by lagoons (18%). Very few stores are covered (Table 6.2).

In 2014, 17% of livestock farmers planned to make changes to their manure or slurry storage facilities, similar findings to the previous three years. Of these, 28% planned to make the changes within the next year and a further 46% in the next 1 to 3 years (Table 6.3).

**Figure 6.2: Proportion of holdings with storage facilities for slurry by number of months of storage capacity: 2011 - 2014**



Approximately 79% of holdings with slurry have 6 months storage capacity or less. Almost all of the remaining holdings had between 7 and 12 months capacity with only very few people having more than 12 months storage (Figure 6.2 and Table 6.6).

In 2014 just 4% of livestock holdings had a slurry separator, little changed since 2011. Of those who don't have a slurry separator, 7% plan to get one in the future. This is an increase from 1% in 2013 (Table 6.7).

**Table 6.1: Proportion of holdings with storage facilities for manure and/or slurry: 2011 - 2014**

Storage facility	2011		2012		2013		2014	
	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI
Solid manure stored in heaps on a solid base	48	±2	52	±4	48	±3	55	±3
Solid manure stored in temporary heaps in fields	66	±2	65	±4	63	±3	67	±3
Slurry in a tank	18	±1	19	±3	16	±2	20	±2
Slurry in a lagoon	14	±1	18	±3	15	±2	18	±2
Slurry in another type of store	5	±1	3	±1	3	±1	9	±2

Based on no fewer than 2 592 responses in 2011, 789 in 2012, 1 546 in 2013 and 1 533 in 2014 from livestock holdings.

**Table 6.2: Proportion of holdings having storage facilities for manure and/or slurry where the store is covered: 2011 - 2014**

Storage facility	2011		2012		2013		2014	
	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI
Solid manure stored in heaps on a solid base	6	±1	7	±3	7	±2	13	±3
Solid manure stored in temporary heaps in fields	1	±0	0	±0	0	±0	1	±1
Slurry in a tank	15	±3	12	±6	14	±4	26	±5
Slurry in a lagoon	1	±1	0	±0	1	±1	3	±2
Slurry in another type of store	12	±6	19	±20	9	±6	5	±10

Based on no fewer than 137 responses in 2011, 24 in 2012, 54 in 2013 and 165 in 2014 from livestock holdings that have the storage facilities in question.

**Table 6.3: Proportion of holdings planning to enlarge, upgrade or reconstruct their manure and slurry storage facilities: 2011 - 2014**

	2011		2012		2013		2014	
	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI
Holdings planning to make changes to their current facilities <sup>(a)</sup>	14	±1	13	±3	14	±2	17	±2
<i>Of those planning to make changes, the changes will be made: <sup>(b)</sup></i>								
In 0 to 6 months	20	±4	15	±7	16	±5	11	±4
In 7 to 11 months	22	±4	12	±7	19	±7	17	±5
In 1 to less than 3 years	42	±5	52	±11	44	±7	46	±6
In 3 to less than 5 years	10	±3	13	±7	10	±4	17	±5
In 5 years or more	6	±2	9	±7	11	±4	9	±4

(a) Based on 2 347 responses in 2011, 718 in 2012, 1 424 in 2013 and 1 518 in 2014 from livestock holdings that have manure or slurry storage facilities.

(b) Based on 373 responses in 2011, 98 in 2012, 219 in 2013 and 284 in 2014 from livestock holdings that are planning to make changes.

**Table 6.4: Manure practices: 2014**

	% of holdings	95% CI
Manure compaction	4	±1
Manure composting	23	±3
Incineration of poultry manure	0	±0
None of these	74	±3

Based on 1 399 responses in 2014 from livestock holdings with manure storage facilities.

**Table 6.5: Slurry practices: 2014**

	% of holdings	95% CI
Slurry acidification	1	±1
Slurry aeration	7	±3
None of these	93	±3

Based on 698 responses in 2014 from livestock holdings with slurry storage facilities.

**Table 6.6: Proportion of holdings with slurry stores by storage capacity: 2011 - 2014**

Storage capacity	2011		2012		2013		2014	
	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI
1 to 3 months	26	±3	14	±4	20	±4	22	±4
4 to 6 months	55	±3	63	±6	59	±5	57	±4
7 to 12 months	17	±3	19	±5	20	±4	19	±3
Over 12 months	1	±1	3	±2	1	±1	2	±2

Based on 894 responses in 2011, 279 in 2012, 518 in 2013 and 592 in 2014 from livestock holdings that have slurry storage facilities.

**Table 6.7: Proportion of holdings that have a slurry separator or plan to get one in the future: 2011 - 2014**

	2011		2012		2013		2014	
	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI
Holdings who have a slurry separator <sup>(a)</sup>	3	±1	4	±2	3	±1	4	±1
Holdings who do not have a slurry separator but plan to get one in the future <sup>(b)</sup>	2	±1	3	±2	1	±1	7	±2

(a) Based on 2 152 responses in 2011, 631 in 2012, 1 219 in 2013 and 701 in 2014 from livestock holdings.

(b) Based on 1 913 responses in 2011, 563 in 2012, 1 057 in 2013 and 626 from livestock holdings without a slurry separator.



## 7 Farm health planning and biosecurity

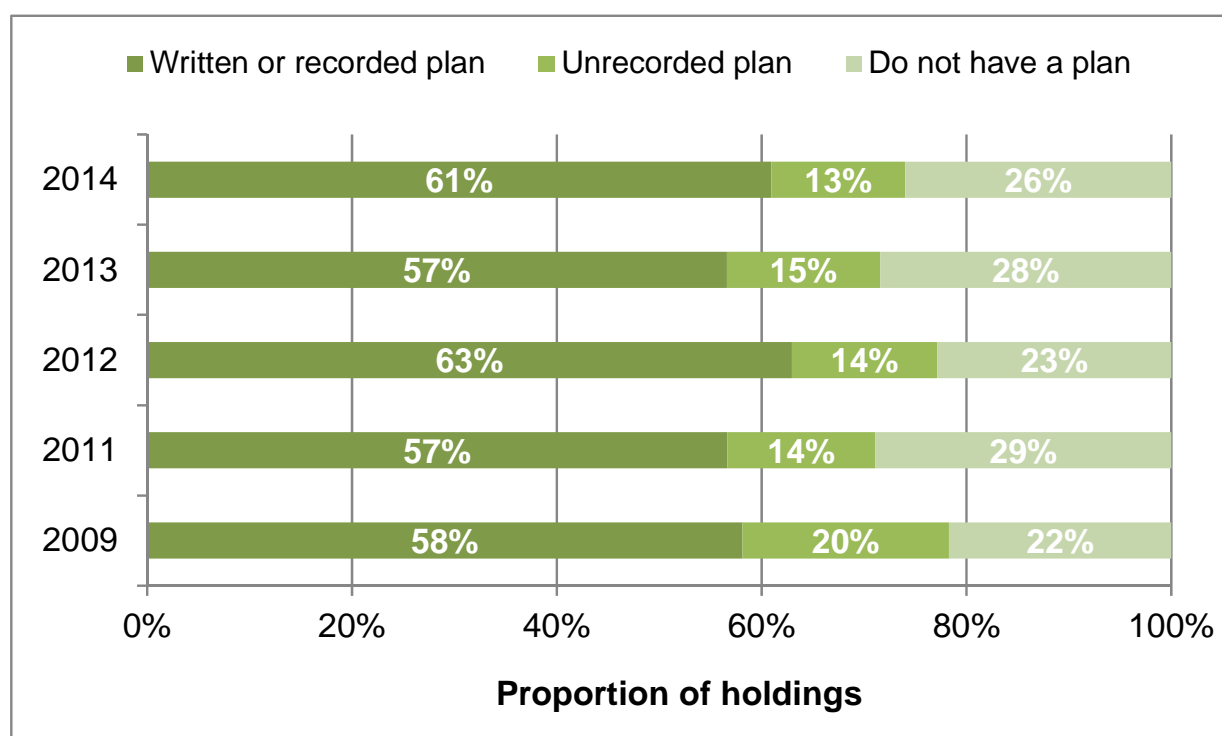
Farm health planning is a Defra initiative which benefits farmers by helping to prevent disease and improve the performance of their livestock. This can help to reduce GHG emissions over the course of an animal's lifetime by, for example, reaching finishing weights earlier and achieving higher feed conversion rates. Farm health planning is about farmers working closely with their vets or other advisers to set targets for their animals' health and welfare and take steps to measure, manage and monitor productivity.

### Key findings

- In 2014, 74% of livestock farmers had a Farm Health Plan (FHP). Although higher than in 2013, the increase is not statistically significant.
- Around 70% of FHPs in 2014 were completed with the help of a vet or adviser. This is an increase from 63% in 2013.
- Of those who have a FHP in 2014, 44% use it on a routine basis to inform disease management decisions. This is an increase from 36% in 2013.

In 2014, 74% of livestock farms had a Farm Health Plan. The majority of livestock farmers have a written or recorded plan (61%) and 13% had a plan that was not recorded (Figure 7.1). Of those holdings with a FHP in 2014, 70% had created the plan with assistance from a vet or advisor. Of those currently without a FHP, 13% planned to complete one in the next 12 months with some assistance (Table 7.4).

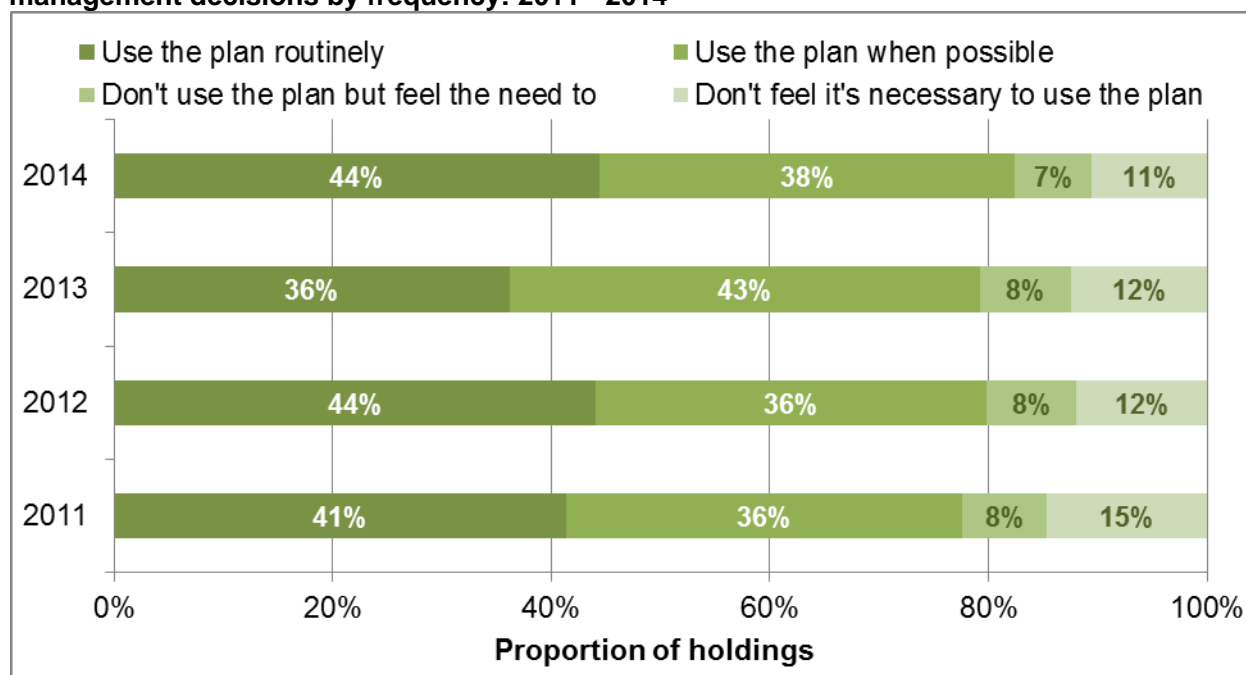
**Figure 7.1: Proportion of livestock holdings with a farm health plan: 2009 – 2014<sup>(a)</sup>**



(a) Results are not available for 2010.

Of those with a FHP, 82% were using it routinely or when they could. However, a further 7% felt that they should be doing so (Figure 7.2).

**Figure 7.2: Proportion of livestock holdings using their farm health plan to inform disease management decisions by frequency: 2011 - 2014**



Just over half of livestock farmers undertake training for animal health and welfare and disease management (Table 7.5).

**Table 7.1: Proportion of livestock holdings with a farm health plan: 2009 - 2014**

	% of holdings					95% CI
	2009	2011	2012	2013	2014	2014
Written or recorded plan	58	57	63	57	61	±2
Unrecorded plan	20	14	14	15	13	±2
No plan	22	29	23	28	26	±2

Based on 1 032 responses in 2009, 2 607 in 2011, 812 in 2012, 1 588 in 2013 and 1 942 in 2014 from livestock holdings.

**Table 7.2: Proportion of holdings who completed their farm health plan with the assistance of a vet or adviser: 2009 - 2014**

	% of holdings					95% CI
	2009	2011	2012	2013	2014	2014
Assistance from vet / adviser	60	65	65	63	70	± 3

Based on 813 responses in 2009, 1 948 in 2011, 634 in 2012, 1 230 in 2013 and 1 548 in 2014 from holdings with livestock.

**Table 7.3: Proportion of holdings using their farm health plan to inform disease management decisions by frequency of use: 2011 - 2014**

Frequency of use	2011		2012		2013		2014	
	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI
Use plan routinely	41	±2	44	±4	36	±3	44	±3
Use plan when possible	36	±2	36	±4	43	±3	38	±3
Don't use plan but feel the need to	8	±1	8	±2	8	±2	7	±1
Don't feel it's necessary to use plan	15	±2	12	±3	12	±2	11	±2

Based on 1 948 responses in 2011, 634 in 2012, 1 228 in 2013 and 1 553 in 2014 from livestock holdings with a farm health plan.

**Table 7.4: Proportion of livestock holdings who intend to complete a FHP with assistance within the next 12 months: 2011 - 2014**

Frequency of use	2011		2012		2013		2014	
	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI
Holdings who currently have a FHP	44	±2	62	±4	60	±3	62	±3
Holdings who do not currently have a FHP	14	±3	14	±6	11	±4	13	±3
All holdings regardless of whether they have a farm health plan	36	±2	51	±4	47	±3	49	±2

Based on no fewer than 658 responses in 2011, 176 in 2012, 353 in 2013 and 382 in 2014 from livestock holdings.

**Table 7.5: Proportion of holdings undertaking animal health and welfare and disease management training by frequency of training: 2011 - 2014**

Frequency of use	2011		2012		2013		2014	
	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI
Undertake training routinely	16	±1	17	±3	14	±2	14	±2
Undertake training when possible	34	±2	36	±4	36	±3	37	±2
Don't undertake training but feel the need to	14	±1	14	±3	15	±2	14	±2
Don't feel training is necessary	36	±2	33	±3	35	±3	35	±2

Based on 2 607 responses in 2011, 810 in 2012, 1 585 in 2013 and 1 934 in 2014 from livestock holdings.

## 8 Temporary grassland

In some situations sowing temporary grassland with a clover mix or high sugar grasses can be a cost effective method of increasing production and improving environmental protection. For example, clover's nitrogen fixing properties (although not suitable for all soil types) can reduce the amount of nitrogen applied and improve grassland yields. High sugar grasses can help to improve the efficiency of animal production (for example, improved milk yields and faster live weight gain) which can in turn reduce GHG emissions.

### Key findings

- In 2014, 78% of livestock holdings indicated that a proportion of their temporary grassland had been sown with a clover mix: 35% had sown all of their temporary grassland with a clover mix, little changed from 2013.
- High sugar grasses were sown on 58% of livestock holdings with temporary grassland, little changed from the previous three years.
- The most common frequency for reseeding clover or high sugar grass swards was 3 to 5 years.

**Table 8.1: Proportion of livestock holdings that have sown their temporary grassland with a clover mix by proportion of grassland: 2011 - 2014**

Proportion of temporary grassland (%)	2011		2012		2013		2014	
	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI
100	33	±3	33	±5	32	±4	35	±3
81-99	6	±1	7	±3	7	±2	7	±2
61-80	8	±2	8	±3	7	±2	7	±2
41-60	9	±2	9	±3	11	±2	10	±2
21-40	8	±2	8	±3	10	±3	8	±2
1-20	12	±2	14	±4	12	±3	12	±2
0	24	±3	21	±4	21	±3	22	±3

Based on 1 149 responses in 2011, 407 in 2012, 775 in 2013 and 967 in 2014 from livestock holdings with temporary grass.

**Table 8.2: Proportion of livestock holdings that have sown their temporary grassland with high sugar grasses by proportion of grassland: 2011 - 2014**

Proportion of temporary grassland (%)	2011		2012		2013		2014	
	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI
100	18	±2	20	±4	17	±3	20	±3
81-99	7	±1	7	±3	6	±2	6	±1
61-80	9	±2	7	±3	11	±2	9	±2
41-60	11	±2	10	±3	9	±2	9	±2
21-40	6	±1	8	±3	10	±2	6	±2
1-20	9	±2	9	±3	10	±3	8	±2
0	40	±3	38	±5	37	±4	42	±3

Based on 1 149 responses in 2011, 407 in 2012, 775 in 2013 and 967 in 2014 from livestock holdings with temporary grass.

**Table 8.3: Proportion of holdings by the frequency with which holders reseed their clover sward: 2011 - 2014**

Frequency of reseeded	2011		2012		2013		2014	
	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI
1 to 12 months	3	±1	1	±1	1	±1	2	±1
1 to 2 years	5	±2	4	±3	5	±2	6	±2
2 to 3 years	9	±2	6	±3	10	±3	12	±3
3 to 5 years	42	±3	47	±6	50	±5	42	±4
5 to 10 years	35	±3	32	±6	32	±4	32	±4
10 years and over	3	±1	2	±2	1	±1	3	±1
Never	4	±1	7	±3	1	±1	2	±1

Based on 862 responses in 2011, 315 in 2012, 586 in 2013 and 733 in 2014 from livestock holdings with temporary grass.

**Table 8.4: Proportion of holdings by the frequency with which holders reseed their high sugar grass sward: 2011 - 2014**

Frequency of reseeded	2011		2012		2013		2014	
	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI
1 to 12 months	3	±1	1	±1	1	±1	2	±1
1 to 2 years	7	±2	7	±4	7	±2	8	±3
2 to 3 years	16	±3	16	±5	15	±3	18	±3
3 to 5 years	40	±4	42	±7	43	±5	41	±4
5 to 10 years	30	±3	29	±6	32	±4	26	±4
10 years and over	2	±1	1	±1	1	±1	3	±2
Never	2	±1	4	±3	1	±1	2	±1

Based on 709 responses in 2011, 254 in 2012, 504 in 2013 and 575 in 2014 from livestock holdings with temporary grass.

## 9 Cattle and sheep feeding regimes and breeding practices

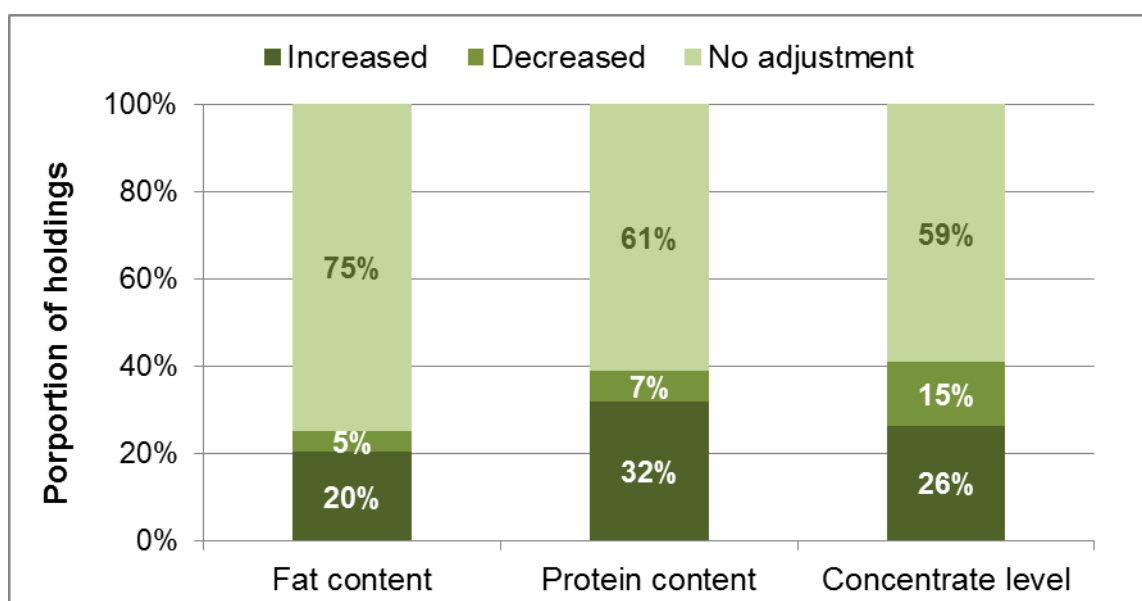
Breeding practices are another area which can contribute to herd and flock productivity and efficiency which in turn can reduce GHG emissions. A Profitable Lifetime Index (PLI) is a scoring system to identify cattle with the best 'genetic merit' used when choosing bulls to breed with dairy cattle. The PLI uses a combination of attributes including life expectancy, health, fertility and milk production. Estimated Breeding Values (EBV) estimate the genetic worth of animals using desirable traits such as meat production. Livestock feeding regimes can also play an important role in productivity and efficiency, factors which can impact on GHG emissions.

### Key findings

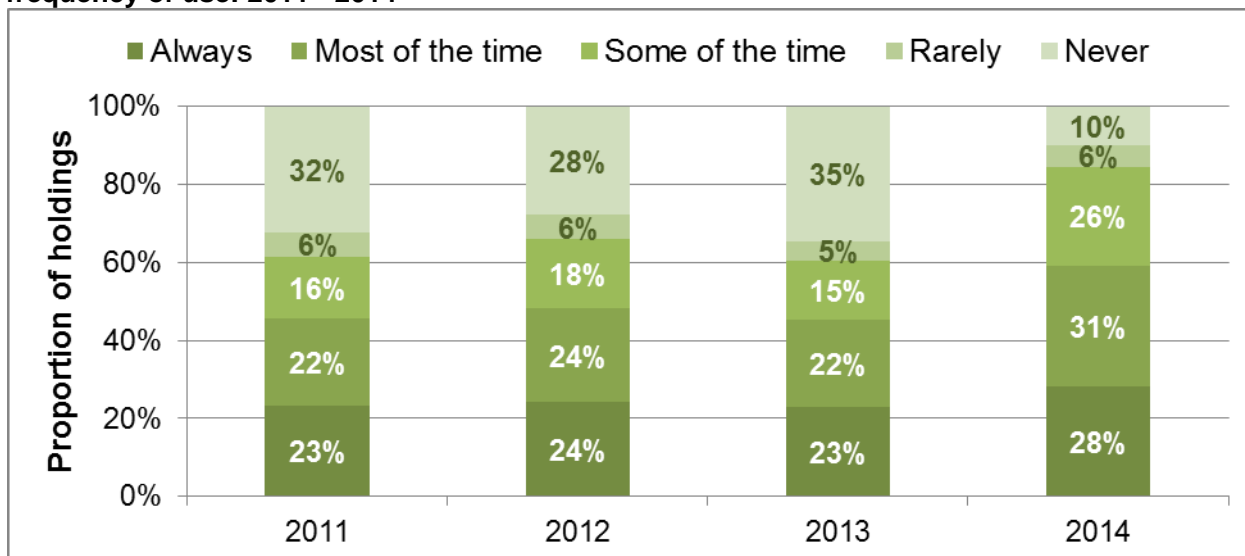
- Around three quarters (73%) of holdings used a ration formulation programme or nutritional advice in 2014, unchanged from 2013.
- In 2014, 28% of holdings breeding dairy cows always used bulls with a high Profitable Lifetime Index (PLI).
- Bulls and rams with high Estimated Breeding Values (EBV) were always used by 18% of holdings breeding beef cattle and 10% of those breeding lambs in 2014. These holdings accounted for 23% of beef cattle and 12% of lambs at June 2013.

In 2014, just over half (53%) of livestock holdings used a ration formulation programme or expert nutritional advice when planning the feeding regime of their livestock. In the majority of cases no adjustments were made to the fat or protein content or the concentrate levels in the diet of lactating dairy cows. In each case the largest adjustments were increases rather than decreases (Figure 9.1).

**Figure 9.1: Proportion of holdings implementing a change to the make-up of the diet of their lactating dairy cows for the current winter/housed period: 2014**



**Figure 9.2: Proportion of holdings using bulls with a high PLI when breeding dairy cows by frequency of use: 2011 - 2014** <sup>(a)</sup>

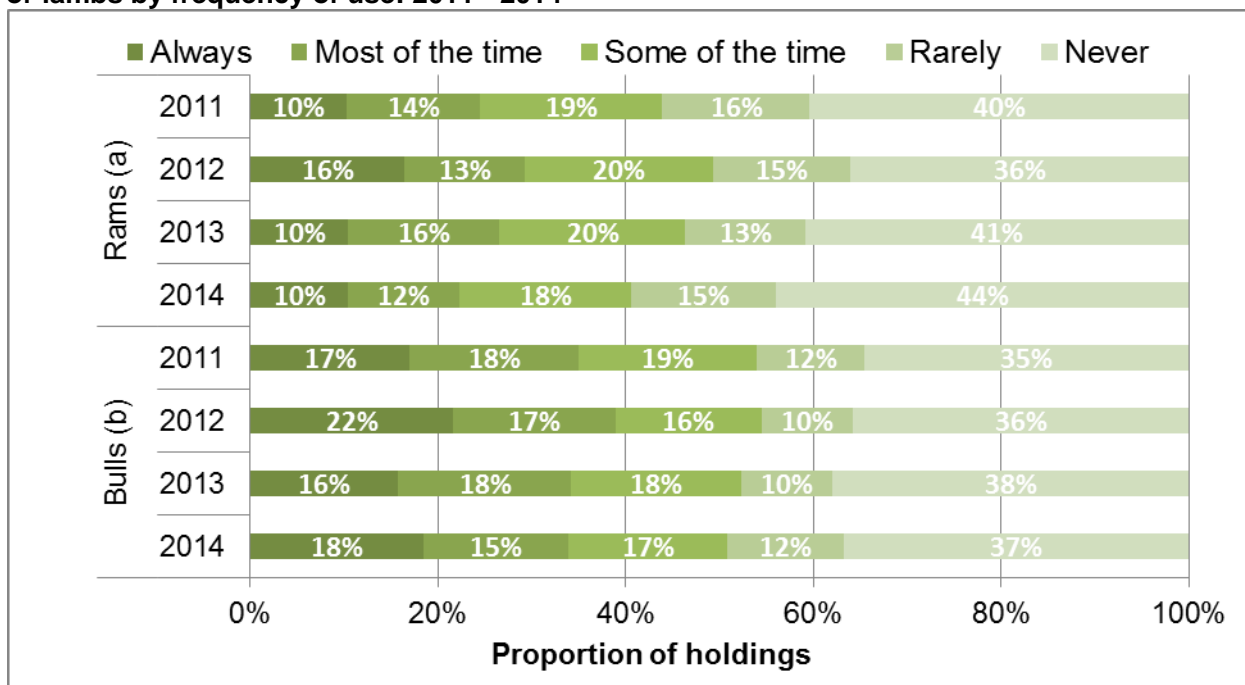


(a) For holdings with dairy cattle

Estimated Breeding Values (EBV) estimate the genetic worth of animals using desirable traits such as meat production. Tables 9.4-9.5 and Figure 9.3 show the proportion of holdings using bulls or rams with high EBVs when breeding beef cattle or lambs and the frequency with which these are used.

Just over half of holdings used bulls with a high EBV at least some of the time in 2014 (Figure 9.3). This is little changed since 2011. The equivalent proportion of holdings using rams with a high EBV was 41%. These holdings accounted for 58% of beef cattle and 46% of lambs at June 2013.

**Figure 9.3: Proportion of holdings using bulls or rams with high EBVs when breeding beef cattle or lambs by frequency of use: 2011 - 2014**



(a) For holdings with lambs

(b) For holdings with beef cattle

In addition to the proportion of holdings using bulls and rams with high EBVs (Table 9.4 and 9.5) the proportion of beef cattle and lambs that this figure relates to has also been calculated (Table 9.6). By using responses from the 2013 June survey we are able to give an indication of the proportion of animals that are covered by this practice.

**Table 9.1: Proportion of holdings using a ration formulation programme when planning livestock feeding regimes by frequency of use: 2011 - 2014**

Frequency of use	2011		2012		2013		2014	
	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI
Always	24	±2	26	±3	22	±2	20	±2
Most of the time	15	±2	18	±3	14	±2	13	±2
Some of the time	19	±2	19	±3	17	±2	20	±2
Rarely	16	±2	13	±3	21	±3	19	±2
Never	25	±2	25	±3	27	±3	27	±2

Based on 2 164 responses in 2011, 704 in 2012 1 333 in 2013 and 1 679 in 2014 from holdings with cattle or sheep.

**Table 9.2: Proportion of holdings implementing a change to the make-up of the diet of their lactating dairy cows for the current winter/housed period: 2014**

Adjustment to	Increased		Decreased		No adjustment	
	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI
Fat content	20	±4	5	±2	75	±4
Protein content	32	±4	7	±2	61	±5
Concentrate level	26	±4	15	±3	59	±5

Based on no less than 440 responses in 2014

**Table 9.3: Proportion of holdings using bulls with a high Profitable Lifetime Index (PLI) when breeding dairy cows by frequency of use: 2011 - 2014**

Frequency of use	2011		2012		2013		2014	
	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI
Always	23	±3	24	±5	23	±4	28	±4
Most of the time	22	±3	24	±5	22	±4	31	±4
Some of the time	16	±2	18	±5	15	±3	26	±4
Rarely	6	±2	6	±3	5	±2	6	±2
Never	32	±3	28	±6	35	±5	10	±3

Based on 809 responses in 2011, 263 in 2012, 505 in 2013 and 445 in 2014 from holdings with cattle or sheep.

**Table 9.4: Proportion of holdings using bulls with a high Estimated Breeding Value (EBV) when breeding beef cattle by frequency of use: 2011 - 2014**

Frequency of use	2011		2012		2013		2014	
	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI
Always	17	±2	22	±4	16	±3	18	±3
Most of the time	18	±2	17	±4	18	±3	15	±2
Some of the time	19	±2	16	±4	18	±3	17	±2
Rarely	12	±2	10	±3	10	±2	12	±2
Never	35	±3	36	±5	38	±4	37	±3

Based on 1 332 responses in 2011, 416 in 2012, 822 in 2013 and 1 063 in 2014 from holdings with beef cattle.



**Table 9.5: Proportion of holdings using rams with a high Estimated Breeding Value (EBV) when breeding lambs by frequency of use: 2011 - 2014**

Frequency of use	2011		2012		2013		2014	
	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI	% of holdings	95% CI
Always	10	±2	16	±4	10	±3	10	±2
Most of the time	14	±2	13	±4	16	±3	12	±2
Some of the time	19	±2	20	±5	20	±4	18	±3
Rarely	16	±2	15	±4	13	±3	15	±3
Never	40	±3	36	±6	41	±5	44	±4

Based on 954 responses in 2011, 313 in 2012, 612 in 2013 and 811 in 2014 from holdings with lambs.

**Table 9.6: Proportion of beef cattle and lambs on holdings using bulls and rams with a high Estimated Breeding Value (EBV) by frequency of use: 2013 - 2014**

Frequency of use	Beef Cattle				Lambs			
	2013		2014		2013		2014	
	% of animals	95% CI	% of animals	95% CI	% of animals	95% CI	% of animals	95% CI
Always	24	±6	23	±4	11	±3	12	±3
Most of the time	19	±4	18	±3	19	±4	12	±3
Some of the time	17	±4	17	±3	25	±5	22	±4
Rarely	9	±2	11	±2	14	±3	18	±3
Never	31	±5	31	±4	31	±5	36	±4

Based on 822 responses in 2013 and 1 063 in 2014 from holdings with beef cattle and 612 responses in 2013 and 811 in 2014 from holdings with lambs.

## Survey details

### Survey content

The Farm Practices Survey (FPS) is usually run annually and collects information on a diverse range of topics usually related to the impact of farming practices on the environment. Each year, stakeholders are invited to request new questions to help inform policy decisions and provide evidence on progress towards agricultural and environmental sustainability. In 2014 two surveys will be run to meet our data users' requirements.

This release includes the results from the first FPS run in February 2014. The survey largely focused on practices relating to greenhouse gas mitigation, similar in content to FPS surveys run in February over the previous three years. Topics covered include nutrient and manure management plans, uptake of anaerobic digestion, manure and slurry storage, fertiliser, manure & slurry spreaders, farm health plans and cattle and sheep breeding and feeding practices. Where comparisons with earlier years are possible, the results are displayed alongside those from previous years.

The results provided in this release are based on questions sent to approximately 6,000 holdings in England. These holdings were targeted by farm type and size to ensure a representative sample. The survey was voluntary and the response rate was 41%. Thank you to all of the farmers who completed a survey form.

Thresholds were applied to ensure that very small holdings with little agricultural activity were not included in the survey. To be included in the main sample, holdings had to have at least 50 cattle, 100 sheep, 100 pigs, 1,000 poultry or 20 hectares of arable crops or orchards. Therefore, all results given in this statistical release reflect only the 60 thousand holdings that exceed these thresholds out of the total English population of 103 thousand commercial holdings.

A breakdown of the number of holdings within the population and the sample are shown below.

Farm type	Number of eligible holdings in England	Number of holdings sampled	Response rate %
Cereals	15 129	1 154	49
Other crops	6 650	883	40
Pigs & poultry	3 264	476	33
Dairy	6 931	1 040	41
Grazing livestock (less favoured areas)	7 986	690	42
Grazing livestock (lowland)	13 961	1 134	38
Mixed	5 658	623	41
<b>All farms</b>	<b>59 579</b>	<b>6 000</b>	<b>41</b>

### Data analysis

Results have been analysed using a standard methodology for stratified random surveys to produce national estimates. With this method, all of the data are weighted according to the inverse sampling fraction.

### Accuracy and reliability of the results

We show 95% confidence intervals against the results. These show the range of values that may apply to the figures. They mean that we are 95% confident that this range contains the true value. They are calculated as the standard errors (se) multiplied by 1.96 to give the 95% confidence interval (95% CI). The standard errors only give an indication of the sampling error. They do not reflect any other sources of survey errors, such as non-response bias.

We have also shown error bars on some of the figures in this notice. These error bars represent the 95% confidence intervals (as defined above).

## Definitions

Where reference is made to the *type of farm* in this document, this refers to the 'robust type', which is a standardised farm classification system. *Farm sizes* are based on the estimated labour requirements for the holding, rather than its land area. The farm size bands used within the detailed results tables which accompany this publication are shown in the table below. Standard Labour Requirement (SLR) is defined as the theoretical number of workers required each year to run a holding, based on its cropping and livestock activities.

Farm size	Definition
Small	Less than 2 SLR
Medium	2 to less than 3 SLR
Large	3 or more SLR

## Availability of results

This release contains headline results for each section. The full breakdown of results, by region, farm type and farm size, will be available on 07 August 2014 at:

<https://www.gov.uk/government/collections/farm-practices-survey> .

Other Defra statistical notices can be viewed on the Defra website at:

<https://www.gov.uk/government/organisations/department-for-environment-food-rural-affairs/about/statistics>.

## Data uses

The Farm Practices survey is used to investigate the impact of farming on the environment and to provide up-to-date agri-environment information on current issues to help inform policy decisions. The survey has a wide customer base both internal and external to Defra including Natural England, English Heritage, ADAS, the Environment Agency and the NFU.

Data from the Farm Practices Survey are used in Defra's greenhouse gas (GHG) indicator framework. The framework, initially developed as part of the 2012 review of progress in reducing GHG emissions from English agriculture<sup>1</sup>, consists of ten key indicators covering farmer attitudes and knowledge, the uptake of mitigation methods and the GHG emission intensity of production<sup>2</sup> in key agricultural sectors.

Defra and the Devolved Administration Governments are currently investing £12.6 million in the development of an improved GHG Inventory for agriculture which will be delivered in 2015. Information from the Farm Practices Survey fed into this research which should enable greater precision in reporting of greenhouse gas emissions from the agricultural sector.

Information from the survey also feeds into the Defra publication, Agricultural Statistics and Climate Change, which provides background context to the current understanding of agriculture and GHG emissions in the period before we have more accurate knowledge from the improved GHG Inventory.

## Closing points and additional information

For more information on how the data was collected you can view the questions asked on our survey form in Annex I over the page.

Finally we are keen to hear your thoughts on this statistical release. If you found the data useful or if you have any other comments please let us know. You can contact us via the phone number on the front page or alternatively email us at [farming-statistics@defra.gsi.gov.uk](mailto:farming-statistics@defra.gsi.gov.uk).

<sup>1</sup> <https://www.gov.uk/government/publications/2012-review-of-progress-in-reducing-greenhouse-gas-emissions-from-english-agriculture>

<sup>2</sup> GHG produced per tonne of crop or litre of milk or kilogramme of meat produced.



**ONLY** if there are any amendments or corrections to details opposite, please write them in this box

Name:  
Address:  
  
Postcode:

## Farm Practices Survey - February 2014

Dear Sir/Madam

You are invited to participate in the February 2014 Farm Practices Survey. This survey aims to assess how farming practices are affected by current agricultural and environmental issues. We have tried to make the form as straightforward as possible and most of the questions can be answered using tick boxes.

Please note that this is a voluntary survey. Any information you supply on this form will not be used to assess cross-compliance on your holding and will not affect your Single Payment Scheme payment. The aim of these questions is to ensure that those making decisions affecting farmers know what really happens on farms.

The results from the survey are important and will be used widely within Defra, its agencies and other external bodies. We can use some information from the June Survey of Agriculture and Horticulture or from other national surveys, but there are important gaps which this survey will help to fill. Results from this survey will be available from the end of May 2014 on the following website:

**<https://www.gov.uk/government/collections/farm-practices-survey>**.

I would be very grateful if you would take the time to complete this form and return it in the enclosed pre-paid envelope. If you could complete and return it within 2 weeks of receipt, this will avoid the need for reminder letters. This survey form has been sent to a randomly selected sample of 6,300 holdings and a good response will improve the reliability of the results. For guidance on completing the form, please telephone or email using the details below.

### Data Protection

Any information you provide to us is treated in confidence. Defra is the Data Controller in respect of the Data Protection Act 1998. The purposes for which it is used are set out in full in a data protection statement which can be found at **[http://bit.ly/Data\\_Protection\\_Statement](http://bit.ly/Data_Protection_Statement)**. Alternatively we can send you a copy if you call 01904 455284 or email [surveys@defra.gsi.gov.uk](mailto:surveys@defra.gsi.gov.uk).

We greatly appreciate the time and effort you spend completing our survey forms. Thank you for your assistance.

Jennie Blackburn  
Farming Statistics Team

### Official Use Only

Name/Address	
Comments in box	
Comments elsewhere	

**If you require a large  
print form please  
contact us on  
01904 455284**

**For help with completion of the form  
contact us at:**

**Helpline: 01904 455284** Mon-Fri 9.00am to 4.30pm

**Email: [surveys@defra.gsi.gov.uk](mailto:surveys@defra.gsi.gov.uk)**

# Section 1. Soil Nutrient Management

## (i) Nutrient management plans

1. Have you completed a nutrient management plan for your farm?

Yes  1    No  2    Not applicable  3    C68

If No, please go to question 8. If Not applicable, please go to question 9

2. If yes, did you create the plan yourself or was it created by an adviser or contractor?

I created the plan myself without professional advice  C4 → If ticked, please go to question 3

OR

I created the plan myself with professional advice from:

	Fertiliser adviser / agronomist	Animal nutritionist	FWAG	Other	
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 4	C125

OR

The plan was created by the following type of adviser or contractor:

<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	C6
----------------------------	----------------------------	----------------------------	----------------------------	----

3. How often do you update your nutrient management plan? Please tick one box

Every year  1    Every 2 years  2    Every 3 years or more  3    C82

4. How often do you refer to your nutrient management plan in a year? Please tick one box

More than 10 times  1    6 to 10 times  2    1 to 5 times  3    Never  4    C7

5. How did you or your adviser/contractor create the nutrient management plan? Tick all that apply

PLANET	Muddy Boots	Farmade / Multicrop	Industry plan - Tried and Tested	Other	I don't know
<input type="checkbox"/> C69	<input type="checkbox"/> C70	<input type="checkbox"/> C71	<input type="checkbox"/> C72	<input type="checkbox"/> C74	<input type="checkbox"/> C8

6. What are the nutrient recommendations for your nutrient management plan based on? Tick all that apply

Defra Recommendations / Manual (RB209)	An adviser's or industry note	Personal experience	Other	I don't know
<input type="checkbox"/> C75	<input type="checkbox"/> C9	<input type="checkbox"/> C10	<input type="checkbox"/> C76	<input type="checkbox"/> C86

7. With regard to having a nutrient management plan: Tick one box in each row

	Yes	No	Don't know	
Have you seen any financial benefit?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	C83
Have you seen any environmental benefit?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	C84

8. If you do not have a nutrient management plan, what would motivate you to create one?

Tick all that apply

If I had more time	<input type="checkbox"/> C87
If I had more money to pay an adviser	<input type="checkbox"/> C88
If nutrient management tools made it easier to understand	<input type="checkbox"/> C89
If I knew I would see a return for the work I'd put in	<input type="checkbox"/> C90
Nothing	<input type="checkbox"/> C91

**(ii) Nutrient testing**

Tick **one** box in each row

9. Do you have a programme of soil testing for nutrient indices?

Yes  
 1

No  
 2

Not applicable  
 3

C63

If No or Not applicable, please go to question 11

10. If yes, do you test each field at least every 5 years?

All of them  
 1

Some of them  
 2

None of them  
 3

C140

11. Do you have a programme of soil testing for pH?

Yes  
 1

No  
 2

Not applicable  
 3

C92

If No or Not applicable, please go to question 13

12. If yes, do you test each field at least every 5 years?

All of them  
 1

Some of them  
 2

None of them  
 3

C141

13. Do you test/assess/calculate the nutrient content of manure?

Yes, by sampling and lab analysis  
 1

Yes, by sampling and on-farm testing  
 2

Yes, based on published tables  
 3

No  
 4

Not applicable  
 5

C142

**(iii) Manure management plans**

14. Have you completed a manure management plan for your farm?

Yes  
 1

No  
 2

Not applicable  
 3

C65

If No please go to question 16. If Not applicable, please go to Section 2

15. If yes, are the nutrient recommendations for this plan based on:

Defra Recommendations/Manual (RB209), CoGAP

C66

Other (please specify)

C67

16. If you do not have a manure management plan, what would motivate you to create one?

Tick **all** that apply

If I had more time

C143

If I knew I'd see a return for the work put in

C144

If I knew where to look for advice and guidance

C145

If professional advice was available to produce the plan

C146

If published guidance was available to assist me produce the plan

C147

Nothing

C148

## Section 2. Emissions

**17. How important do you feel it is to consider greenhouse gases (GHGs) when taking decisions about your land, crops and livestock?** Please tick **one** box only

- Very important  1      Fairly important  2      Not very important  3      Not at all important  4      My farm does not produce GHGs  5      D51

**18. To what extent do you agree that reducing your farm's greenhouse gas emissions will contribute to improving your overall profitability?** Please tick **one** box only

- Strongly agree  1      Agree  2      Disagree  3      Strongly disagree  4      D52

**19. Are you currently taking any action to reduce greenhouse gas emissions from your farm?**

- Yes  1      No  2      D64      **→ If No, please go to question 22**

**20. What actions are you taking to reduce greenhouse gas emissions from your farm?**

Tick **all** that apply

- Improving energy efficiency (e.g. reducing fuel use, producing own energy)  D65
- Recycling of waste materials from the farm (e.g. tyres, plastics)  D66
- Improving nitrogen feed efficiency, livestock diets (e.g. using a ration formulation programme)  D67
- Improving efficiency in manure and slurry management and application (e.g. covering stores)  D68
- Improving nitrogen fertiliser application accuracy (e.g. using a fertiliser recommendation system, regularly checking and calibrating fertiliser spreaders)  D69
- Increasing use of legumes in arable rotation  D70
- Increasing use of clover in grassland  D71
- Other, please specify  D72

**21. What are your main motivations for taking these actions?**

Tick **all** that apply

- I consider it good business practice  D73
- Regulation  D74
- To improve profitability  D75
- Concern for the environment  D76
- To meet market demands  D77
- Other, please specify  D78

**22. What are the reasons stopping you taking action to reduce greenhouse gas emissions from your farm?**

Tick **all** that apply

- Lack of information  D79
- Too expensive  D80
- Lack of incentive  D81
- I've already done all I can  D82
- I don't believe there is much farmers can do  D83
- It's not necessary as I don't think my farm produces many emissions  D84
- I'm unsure what to do as there are too many conflicting views on the issue  D85
- Other, please specify  D86

## Section 3. Soil Drainage

23. How many hectares of your crops and grassland (excluding rough grazing) have artificial under drainage?  hectares I224

24. How many hectares of your current drained area require repair or replacement of the field drains?  hectares I225

25. How often do you maintain farm ditches to ensure that field under drainage outfalls have free discharge? Please tick **one** box only

At least every 2 years	Every 3 to 5 years	Every 6 to 10 years	Less frequently than every 10 years	I don't know	Not applicable	
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	I226

## Section 4. Fertiliser, manure and slurry spreaders

26. Are any of the manure, slurry or fertiliser spreaders on your farm computer controlled with variable rate application? Please tick **one** box only

Yes, all of them  1 Yes, some of them  2 No, none of them  3 C104

27. Do you or contractors spread fertilisers, solid manure or slurry on your grass or arable land?

Tick **one** box in each column

	Fertiliser	Manure or slurry
Yes, I spread it myself	<input type="checkbox"/> C132	<input type="checkbox"/> C149
Yes, I spread some myself and also use a contractor	<input type="checkbox"/> C133	<input type="checkbox"/> C150
Yes, a contractor spreads it	<input type="checkbox"/> C134	<input type="checkbox"/> C151
No, not applied to grass or arable land	<input type="checkbox"/> C135	<input type="checkbox"/> C152

28. On average, how often is your manure (solid manure or slurry) spreader calibrated? Exclude fertiliser spreaders

Tick **one** box only

Never  C136

Whenever there is significant change in manure or slurry characteristics  C137

Whenever manure or slurry is tested  C138

Other, please specify  C139

29. Do you spread manure or slurry on your tillage land (do not include grass)?

Yes  1 No  2 C153 → If No, please go to section 5

30. If you incorporate manure or slurry on your tillage land within 1 week following spreading, which method(s) do you use? Please tick **all** that apply

	Plough	Disc / Tine	Other	Don't incorporate within 1 week	
Manure	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	C154
Slurry	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	C155



## Section 5. Anaerobic Digestion

31. Do you already process, or intend to process in the next 2 years, any of the following by anaerobic digestion either on your farm or elsewhere? Tick **one** box in each row

	Already process	Intend to process in next 2 years	No	
Slurries / manures	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	A19
Crops (including silage)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	A52
Other feedstocks from your farm	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	A20
Other feedstocks from outside your farm	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	A21

## Section 6. Temporary grassland

32. This section relates to temporary grassland. If you do not have any temporary grassland, please tick this box and go to question 35.  K95

33. What percentage of your temporary grassland has been sown with a clover mix or high sugar grasses?

	100%	81-99%	61-80%	41-60%	21-40%	1-20%	0%	
Clover	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	K96
High sugar grasses	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	K97

34. Please state the frequency (in months) with which you reseed your sward.

Clover  months K98      High sugar grasses  months K99

### Note

35. The following sections relate to holdings with cattle, sheep, pigs or poultry. If you do not have these livestock, please tick this box and go to section 10 at the end of the form  T94

## Section 7. Farm Health Planning and Biosecurity

36. Do you have a Farm Health Plan (FHP)? Please tick **one** box only

Yes, and written / recorded

 T92

Yes, but not written / recorded

 T91

No

 T90

→ If No, please go to question 39

37. If yes, did you complete the FHP with the assistance of a vet or other adviser?

 1

 2 T93

38. Do you review and use your FHP to inform disease management decisions? Please tick **one** box only

Yes, routinely

 1

Yes, when I can

 2

No, but I feel I should

 3

No, I don't feel the need

 4 T130

39. Do you intend to complete or update a Farm Health Plan with the assistance of a vet or other adviser within the next 12 months?

 1

 2 T131

40. Do you or your staff undertake training on animal health & welfare and disease management?

Please tick **one** box only

Yes, routinely

 1

Yes, when I / my staff can

 2

No, but feel I should

 3

No, I don't feel the need

 4 T135

## Section 8. Manure and slurry storage

41. Do you have storage facilities for solid manure on your farm? Please tick **one** box only

Yes	No - I spread directly from shed (no further storage)	No - my farm does not produce manure	
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	P207

If No, please go to question 44

42. Please indicate your manure storage facilities by type of store and type of cover. Tick **all** that apply.

	No cover	Plastic sheet cover	Solid store cover
Solid manure in heaps on a solid base	<input type="checkbox"/> P208	<input type="checkbox"/> P209	<input type="checkbox"/> P210
Solid manure in temporary heaps in fields	<input type="checkbox"/> P211	<input type="checkbox"/> P212	

43. Do you practise any of the following? Tick **all** that apply

Manure compaction	Manure composting	Incineration of poultry manure	None of these
<input type="checkbox"/> P213	<input type="checkbox"/> P214	<input type="checkbox"/> P215	<input type="checkbox"/> P216

44. Do you have storage facilities for slurry on your farm? Please tick **one** box only

Yes	No - I have little or no storage & spread directly	No - my farm does not produce slurry	
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	P217

If no slurry produced, please go to question 50

45. How many months storage capacity do you have for slurry?  months P69

46. Please indicate your slurry storage facilities by type of store and type of cover. Tick **all** that apply.

	No cover	Natural crust	Floating plastic cover	Floating straw / woodchip	Rigid cover
In house storage in channel below slats	<input type="checkbox"/> P218				
Below ground tank	<input type="checkbox"/> P219	<input type="checkbox"/> P223	<input type="checkbox"/> P227	<input type="checkbox"/> P231	<input type="checkbox"/> P235
Above ground tank	<input type="checkbox"/> P220	<input type="checkbox"/> P224	<input type="checkbox"/> P228	<input type="checkbox"/> P232	<input type="checkbox"/> P236
Lagoon	<input type="checkbox"/> P221	<input type="checkbox"/> P225	<input type="checkbox"/> P229	<input type="checkbox"/> P233	<input type="checkbox"/> P237
Other type	<input type="checkbox"/> P222	<input type="checkbox"/> P226	<input type="checkbox"/> P230	<input type="checkbox"/> P234	<input type="checkbox"/> P238

47. Do you practise any of the following? Tick **all** that apply

Slurry acidification	Slurry aeration	None of these
<input type="checkbox"/> P239	<input type="checkbox"/> P240	<input type="checkbox"/> P241

48. Do you have a slurry separator?

Yes	No	
<input type="checkbox"/> 1	<input type="checkbox"/> 2	P70

If Yes, please go to Question 50

49. If you do not have a slurry separator, do you plan to get one in the future?

Yes	No	
<input type="checkbox"/> 1	<input type="checkbox"/> 2	P71

50. Are you planning to enlarge, upgrade or reconstruct any of your manure or slurry storage facilities?

Yes	No	
<input type="checkbox"/> 1	<input type="checkbox"/> 2	P67

If No, please go to section 9

51. If yes, when are you planning to make the majority of these changes? Please tick **one** box

	In 0 to 6 months	In 7 to 11 months	In 1 to less than 3 years	In 3 to less than 5 years	In 5 to less than 10 years	In 10 years or more	
Changes planned:	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	P68

## Section 9. Ruminant livestock

**52. How often do you or your adviser use a ration formulation programme or nutritional advice from an expert when planning the feeding regime for your livestock?** Please tick **one** box only

Always  C105      Most of the time  C106      Some of the time  C107      Rarely  C108      Never  C109

**53. Do you have a dairy herd?** Yes  1      No  2 <sup>C156</sup> → **If No, please go to question 56**

**54. Have you implemented a change to the make-up of the diet of your lactating dairy cows for the current winter/housed period?** Please tick **one** box in each row

	Increased	Decreased	No adjustment	
Fat content	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	C157
Protein content	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	C158
Concentrate level	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	C159

**55. How often do you or your adviser use bulls with a high Profitable Lifetime Index (PLI) when breeding dairy cows?** Please tick **one** box only

Always  C110      Most of the time  C111      Some of the time  C112      Rarely  C113      Never  C114

**56. How often do you or your adviser use bulls or rams with a high Estimated Breeding Value (EBV) when breeding beef cattle or lambs?** Tick **one** box in each row, if relevant.

	Always	Most of the time	Some of the time	Rarely	Never
<b>Bulls</b>	<input type="checkbox"/> C115	<input type="checkbox"/> C116	<input type="checkbox"/> C117	<input type="checkbox"/> C118	<input type="checkbox"/> C119
<b>Rams</b>	<input type="checkbox"/> C120	<input type="checkbox"/> C121	<input type="checkbox"/> C122	<input type="checkbox"/> C123	<input type="checkbox"/> C124

## Section 10. Declaration

Signature  V3

Date

Name (please print)

Telephone number  V8

Time taken to complete this form  minutes V1

E-mail address  V5

Please enter any comments you may have on the figures provided. This may remove the need for us to contact you.

**Thank you for taking the time to complete the form.**

Please now return this form in the pre-paid envelope to ONS, Government Buildings, Cardiff Road, Newport, NP10 8XG.