

Survey of Agricultural Production Methods

Introduction

The Survey of Agricultural Production Methods (SAPM) was carried out on a sample of 40,000 farm holdings in September 2010 as part of the EU Farm Structure Survey. The survey covered farm practices relating to crop rotation and soil conservation, manure and slurry storage and usage, grazing levels, and livestock housing. The results of this survey will be used in the development of EU and national policies on agriculture and the environment.

As this was the first time this survey was carried out, there is no previous data available for comparisons. Of the 40,000 holdings sampled, 25,885 responses were received, giving a response rate of 65%. The sample was stratified based on the size of the holding and whether or not the farm was involved in specialist pig or poultry production. The results presented below have been grossed to the population of farm holdings resulting from the COA 2010. A copy of the SAPM questionnaire is provided in Appendix 5.

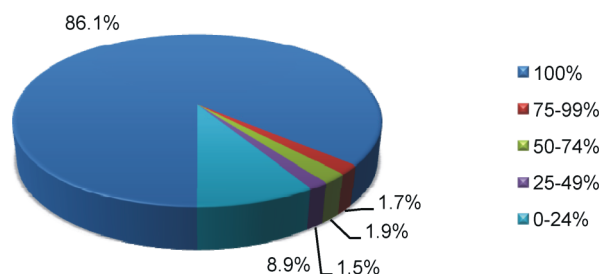
Principal Results

1. Crop Rotation

In 2010 approximately one million hectares of land were considered to be arable land (i.e. excludes permanent grassland, rough grazing and crops under cover). The survey asked respondents about various farm practices relating to crop rotation and soil conservation.

Crop rotation is the practice of alternating annual crops grown on a specific field in a planned pattern or sequence in successive crop years so that crops of the same species are not grown without interruption on the same field (mono-cropping). Figure 1 shows the distribution of farm holdings that had arable land, according to the share of arable land with crop rotation. The majority of farms (86.1%) employed crop rotation on all of their arable land.

Figure 1. Distribution of holdings by percentage of arable land with crop rotation

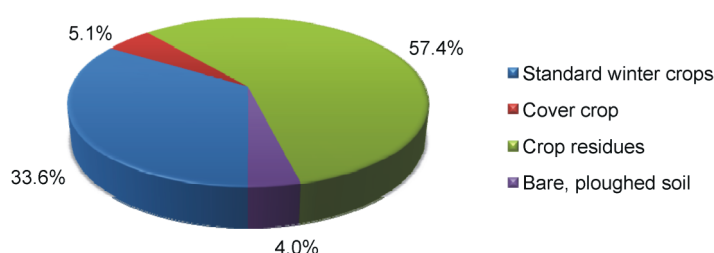


2. Soil Conservation

The survey also asked about the type of soil cover used on arable land during Winter 2009/2010. Various farm practices can be used in order to reduce soil degradation over the winter months. Maintaining soil cover is one practice which reduces soil erosion and the loss of particular pollutants (i.e. those attached to soil). This practice also increases soil organic matter.

Over half of the arable land (57%) was reported to be covered with crop residues (stubble or other plant parts remaining after previous harvest). Standard winter crops (winter barley, wheat and oats) accounted for 34% of the soil cover, cover crops (or intermediate crop sown and ploughed before new Spring planting) accounted for 5% and the remaining 4% was bare, ploughed soil.

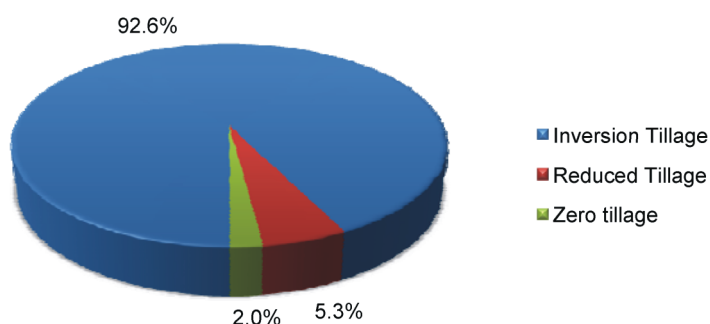
Figure 2. Area of arable land by soil cover method



Soil conditions can be affected by different tillage techniques; conventional ploughing (or inversion tillage) leaves low levels of crop residues resulting in increased soil erosion. Reduced tillage (where at least 30% of stubble and crop residue remain on the surface after cultivation) has advantages in terms of managing soil erosion and potentially improving soil structure through the build up of soil organic matter.

Figure 3 shows the percentage of arable land by tillage method employed in the 12 months prior to September 2010. The majority (93%) of arable land was being tilled by conventional ploughing. Reduced tillage was employed on 5% and zero tillage on 2% of arable land.

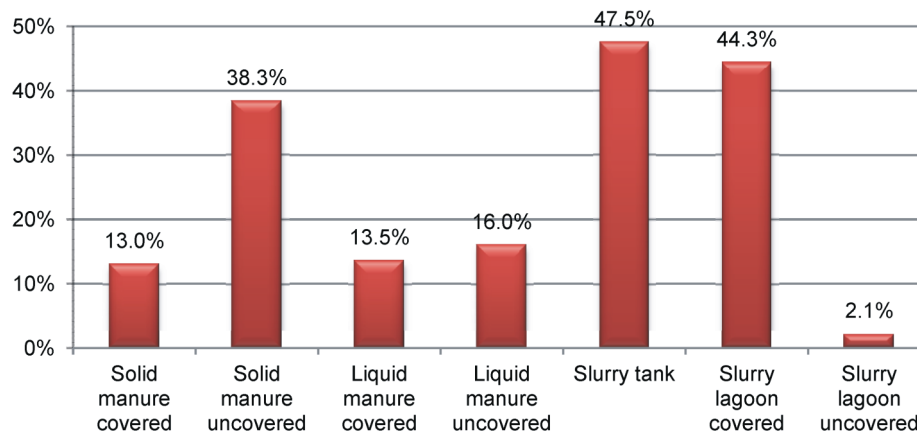
Figure 3. Area of arable land by tillage method



Manure and Slurry - Storage and Movement

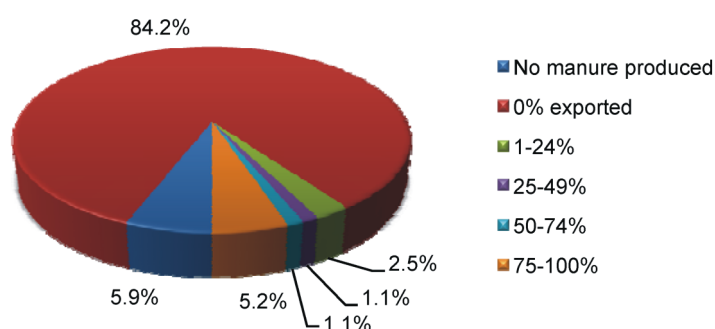
Respondents were asked to indicate if constructed storage facilities were used for slurry or solid manure during the previous 12 months, and whether these facilities were covered or uncovered. Almost half of all farms (47.5%) had a slurry tank. 44.3% of farms had a covered slurry lagoon and only 2.1% had an uncovered slurry lagoon. It should be noted that farms can have more than one type of storage facility.

Figure 4. Prevalence of storage facilities



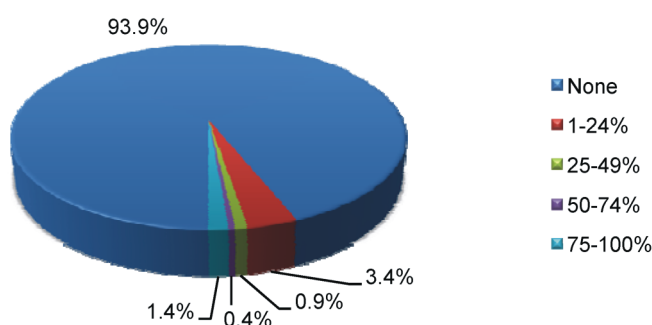
Almost 85% of farms did not export any manure or slurry from their holding and 5.2% of farms reported that they exported between 75-100% of the manure and slurry produced on the holding.

Figure 5. Percentage of manure and slurry exported



Almost 94% of holdings reported that they did not import any manure or slurry during the previous 12 months. 3.4% of holdings imported between 1-24% of the manure and slurry spread on the farm.

Figure 6. Percentage of manure and slurry imported



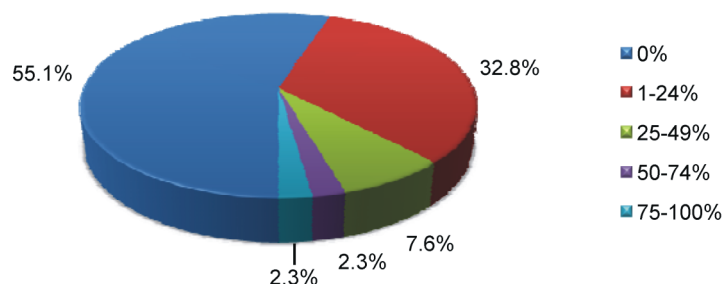
Slurry and Manure Application

Immediate incorporation of slurry and manure following application onto the ground is an efficient way of reducing ammonia emissions and preserving nitrogen in the soil. The SAPM questionnaire asked respondents what area of their land was applied with manure and with slurry, and on what area immediate incorporation was used. Just over 70% of all farms reported that they spread slurry and/or manure on part or all of their land.

1. Solid Manure

Almost 45% of farms applied solid manure to at least part of their land (see Figure 7).

Figure 7. Percentage of farms by area applied with solid manure



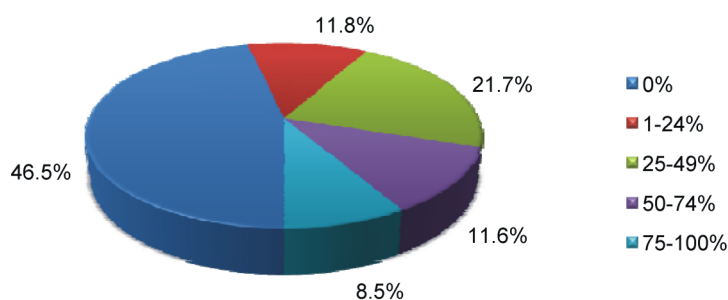
Of the farms that spread manure, 7.6% used immediate incorporation methods (i.e. ploughed into the land within 4 hours of application) on at least some of their land.

Area with manure applied using immediate incorporation	Number of holdings ('000)	% of holdings
0%	58.0	92.4%
1-24%	4.3	6.8%
25-49%	0.3	0.5%
50-74%	0.1	0.2%
75%-100%	0.1	0.2%

2. Slurry

Almost 54% of farms applied slurry to at least part of their land (see Figure 8).

Figure 8. Percentage of farms by area applied with slurry

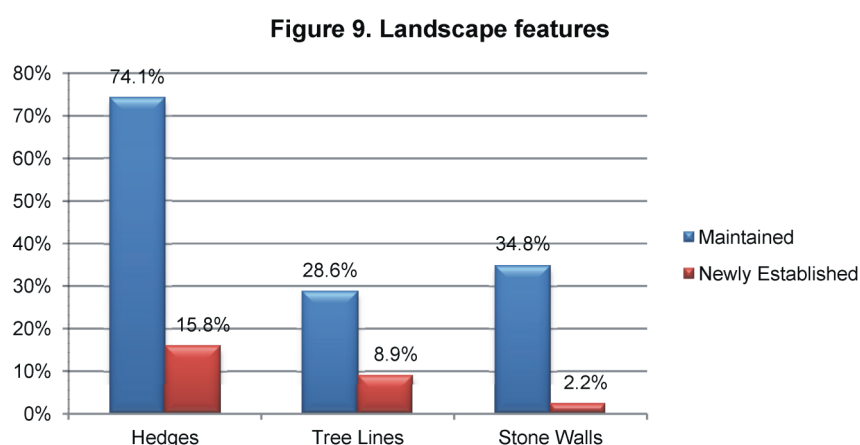


Of the farms that spread slurry, only 1.1% used immediate incorporation methods (i.e. injected or ploughed into the soil within 4 hours of application) on at least some of their land.

Area with slurry applied using immediate incorporation	Number of holdings ('000)	% of holdings
0%	74.0	98.9%
1-24%	0.5	0.7%
25-49%	0.2	0.2%
50-74%	0.1	0.1%
75-100%	0.1	0.1%

Landscape Features

The SAPM questionnaire also included questions on landscape features consisting of continuous man-made rows of trees, shrubs or bushes, and stonewalls, in general representing a field boundary. Hedges in particular play an important role in preventing soil erosion and water run-off, providing shelter, controlling livestock and protecting crops from the wind. The questionnaire asked farmers if any hedges, tree lines, or stone walls had been maintained or newly established on the holding in the the previous 3 years. Figure 9 summarises the findings.



Hedges were the most common form of landscape feature undergoing maintenance. Almost three quarters of all farms reported that they had maintained hedges during the previous 3 years. Almost 16% of farms indicated that they had established new hedges.

Grazing Land

Respondents were asked to state the area of grassland used for grazing in the previous 12 months, and the number of months cattle and sheep grazed on the holding. Almost 3.44 million hectares were reported as used for grazing cattle and sheep in the 12 months prior to September 2010. On average, livestock spent almost 9 months grazing on grassland belonging to the holding.

Over half a million cattle and just over one million sheep were reported as grazing on commonage in the previous 12 months. This accounted for 8% of the cattle population and 22% of the sheep population.

Livestock Housing

Cattle

Almost 70% of farms reported that they had some form of housing for cattle. The table below gives the total number of places available for housing cattle over winter 2009/2010 along with the number of holdings that reported each system of housing.

Type of cattle housing	Number of places ('000)	Number of holdings ('000)
Cubicle housing - solid floor	1,086.3	26.8
Cubicle housing - slatted floor	1,274.7	29.7
Loose housing - solid floor	1,087.6	45.3
Loose housing - slatted floor	2,096.5	43.7
Other indoor housing	256.0	13.9
Total number of places	5,801.1	

Sheep

Almost 18% of farms reported that they had some form of housing for sheep. The table below gives the total number of places available for housing sheep over winter 2009/2010 along with the number of holdings that reported each system of housing.

Type of sheep housing	Number of places ('000)	Number of holdings ('000)
Straw beds	1,216.1	19.4
Slatted housing	215.8	2.8
Other indoor housing	149.8	5.6
Total number of places	1,581.7	

Pigs

Just over 1% of farms reported that they had some form of housing for pigs. The table below gives the total number of places available for housing pigs over winter 2009/2010 along with the number of holdings that reported each system of housing.

Type of pig housing	Number of places ('000)	Number of holdings ('000)
Partially slatted housing	264.5	0.3
Completely slatted housing	937.7	0.4
Straw beds	6.6	0.5
Other	3.9	0.7
Total number of places	1,212.7	

Poultry

Just over 4% of farms reported that they had some form of housing for laying hens. The table below gives the total number of places available for housing laying hens over winter 2009/2010 along with the number of holdings that reported each system of housing.

Type of poultry housing	Number of places ('000)	Number of holdings ('000)
Cages	634.2	0.7
<i>Deep pit</i>	<i>(210.2)</i>	<i>(0.2)</i>
<i>Stilt house</i>	<i>(2.5)</i>	<i>(0.3)</i>
<i>Manure belt</i>	<i>(421.5)</i>	<i>(0.2)</i>
Straw beds	1,734.5	0.8
Other	1,437.5	4.6
Total number of places	4,440.3	

