THE BRITISH SURVEY OF

Fertiliser Practice

FERTILISER USE ON FARM CROPS
FOR CROP YEAR 2024

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Since the last review of these statistics by OSR, we have continued to comply with the Code of Practice for Statistics, and have made the following improvements:

- Improvements to the sample selection to optimise coverage for key survey data items
- Improvements to the wording of questions in light of feedback from interviewers
- Flexible use of the survey platform to collect additional data to meet needs of data users (the modular questions)
- Changes to improve the accessibility of the report and accompanying dataset

Limited extracts from this publication may be reproduced provided that the source is acknowledged. Further statistical analyses of the survey results are also available. For details and other enquiries please contact:

Andrew Fletcher
Defra, King's Pool,1-2 Peasholme Green, York YO1 7PX
Email: Agri.EnvironmentStatistics@defra.gov.uk; Telephone: (+44) 02080 266449

Results from the British Survey of Fertiliser Practice are published here:
https://www.gov.uk/government/collections/fertiliser-usage

FOREWORD

The British Survey of Fertiliser Practice (BSFP) provides information on fertiliser and manure use on the major crops and grass grown in mainland Britain.

The 2024 Survey was funded by the Department for Environment, Food and Rural Affairs (Defra) and the Scottish Government. The Survey has the full support of the Farmers' Unions in England, Scotland, and Wales.

The Survey is carried out annually and is based upon returns from a sample of farms. In 2024, the Survey was co-ordinated by Kynetec, who were responsible for the survey design, data collection, statistical analysis, and quality control monitoring.

Data uses

The information in this publication is widely used by the UK government, international organisations, industry, and researchers. It contains data on trends in usage and application rates of nitrogen, phosphate, potash, sulphur, organic manures, and lime on agricultural crops and grassland in Great Britain.

The Survey data provide important evidence to assess greenhouse gas emissions from agriculture. These aid in informing the ammonia and greenhouse gas inventories and the development of possible mitigation measures. They are also used for developing and assessing the impact of policy on water quality and the environment. The data have additionally been used for indicators on nutrient balances, other indicators relating to environmental impacts and other cross cutting work, looking at links between fertiliser use, productivity (benchmarking) and economic performance. Industry and government use the data to monitor best practice.

Information on all of these topics is available from the GOV.UK website, with publications on greenhouse gas emissions, agriculture and climate change, NVZs and soil nutrient balances of particular relevance.

Other information

Defra also run other surveys which may be of relevance to fertiliser use and related practices through its Farm Practices Survey for England, which is available on the Defra website.

The following shorthand has been used in many of the data tables in this report, in accordance with best practice from the Office of National Statistics:

- The shorthand [c] is used where a data point, if displayed, might disclose confidential information. Data based on responses from fewer than five fields have been suppressed.
- The shorthand [x] is used where data are **not available**. In most cases this is where some data displayed in a table were not collected in every year of the survey.
- The shorthand [z] is used where data are **not applicable**.
- The shorthand [p] is used where data are **provisional**.

Data revisions

See Appendix 3 AA3.2.6 for details of revisions made in this edition.

July 2025

ACKNOWLEDGEMENTS

The sponsors gratefully acknowledge the co-operation of all farmers taking part in the 2024 British Survey of Fertiliser Practice.

We wish to thank all those involved for their assistance and support in the design, conduct and analysis of the Survey.

The agronomic interpretation of the Survey results benefited from advice from Chris Dawson (Chris Dawson and Associates), agronomic consultant to the Agricultural Industries Confederation (AIC).

Vikki Campbell[1]

[1] Kynetec (UK) Ltd., Weston Court, Weston, Newbury, Berkshire RG20 8JE

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EXECUTIVE SUMMARY

The British Survey of Fertiliser Practice (BSFP) is an annual, nationally representative interview survey based on the selection of a random stratified sample of farms from mainland Britain. The main purpose of the Survey is to estimate average application rates of nitrogen, phosphate and potash used for agricultural crops and grassland. The data provide important evidence to assess greenhouse gas emissions from agriculture and for developing possible mitigation measures. Information is also collected on applications of sulphur fertilisers, organic manures, and lime. The main findings from the 2024 Survey on the use of the nutrients nitrogen, phosphate, potash, and sulphur in Great Britain are summarised below (Table ES1).

Table ES1 Nutrient dressing cover, current and five-year mean overall application rates for all crops and grass, Great Britain 2023 vs 2024

	All crops			All grass			All crops and grass		
	2023	2024	+/- 23/24	2023	2024	+/- 23/24	2023	2024	+/- 23/24
Total Nitrogen - N									
Overall application rate (kg/ha)	125	121	-4	38	34	-4	77	73	-4
Mean overall application rate, 2020-2024 (kg/ha)	126	123	-3	46	42	-4	82	78	-4
Crop area receiving dressing	88%	87%	-1pp	44%	42%	-2pp	63%	62%	-1pp
Average field rate (kg/ha)	142	139	-3	88	82	-6	121	118	-3
Total Phosphate - P_2O_5									
Overall application rate (kg/ha)	17	17	0	4	4	0	10	10	0
Mean overall application rate, 2020-2024 (kg/ha)	21	19	-2	6	5	-1	13	12	-1
Crop area receiving dressing	35%	35%	0pp	22%	21%	-1pp	28%	27%	-1pp
Average field rate (kg/ha)	48	49	1	20	19	-1	36	36	0
Total Potash - K_2O									
Overall application rate (kg/ha)	23	22	-1	6	6	0	14	13	-1
Mean overall application rate, 2020-2024 (kg/ha)	28	25	-3	9	8	-1	17	16	-1
Crop area receiving dressing	39%	38%	-1pp	24%	22%	-2pp	31%	29%	-2pp
Average field rate (kg/ha)	58	60	2	26	28	2	45	46	1
Total Sulphur - SO_3									
Overall application rate (kg/ha)	28	29	1	5	4	-1	15	15	0
Mean overall application rate, 2020-2024 (kg/ha)	30	29	-1	5	4	-1	16	15	-1
Crop area receiving dressing	55%	57%	2pp	12%	13%	1pp	32%	32%	0pp
Average field rate (kg/ha)	51	51	0	37	34	-3	48	47	-1

Note: pp denotes 'percentage point'.

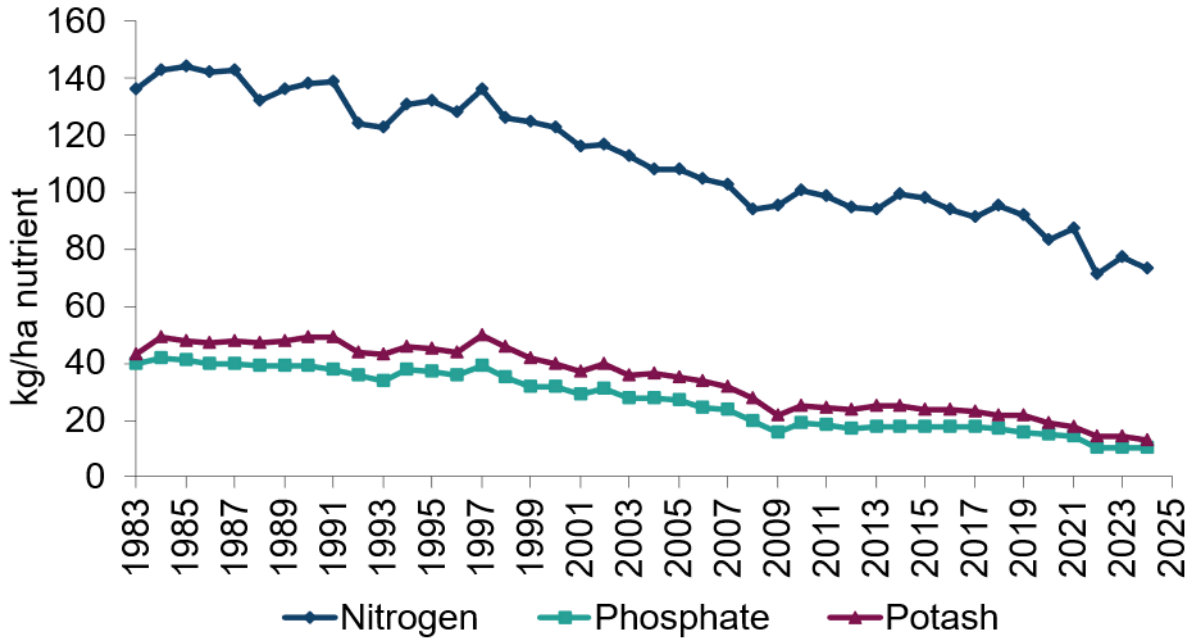
The survey year (which is the same as the crop year) ran from autumn 2023 to autumn 2024, corresponding to the 2024 crop year and the 2024 harvest.

Cropping patterns can influence fertiliser rates and dressing covers observed. In 2024 there was a 5% reduction in the area of crops planted. In addition, 28% of cropping farms and 38% of cropping area was reported to be growing cover crops. The area sown to cereals was largely consistent, albeit with an 11% reduction in the wheat area and a 19% increase in the spring barley area. Oilseed rape sown area continued to decline. When comparing to 2019 there was a 9% reduction in the area sown to crops and a 4% reduction in the area of grass. The weather, which can impact cropping patterns, is described in Appendix 3.

Key findings: Executive Summary

Average field rates for nitrogen decreased on both the cropping and grass categories in 2024, having recovered somewhat in 2023 from the low levels observed in 2022. The 2022 levels were thought to be attributable largely to price and the invasion of Ukraine by Russia. Average field rates and dressing cover percentages for phosphate, potash and sulphur were subject to small changes on both crops and grass. Winter-sown crops and grass both noted a reduced number of total applications of fertilisers and also of specific applications of nitrogen in 2024.

Figure ES1 Overall application rate (kg/ha) of major nutrients on all crops and grass, Great Britain 1983 – 2024



Nitrogen: Executive Summary

- Nitrogen usually has a large immediate effect on crop growth, yield and quality. Most agricultural soils in Great Britain contain too little naturally occurring plant-available nitrogen to meet the needs of a crop, so supplementary nitrogen applications must be made each year.

- The 4 kg/ha decrease in total nitrogen use on all crops and grassland in 2024 resulted from a 4 kg/ha decrease in the overall application rate on crops to 121 kg/ha and a 4 kg/ha decrease on grass to 34 kg/ha.

- Mineral fertiliser nitrogen levels applied to grassland have been consistently lower than on crops. Overall application rates of nitrogen on crops remained relatively constant for several decades before lower levels observed in the last few years. Overall application rates on grass declined significantly from 2000-09 then remained steady until much lower levels were observed in the last couple of years. The decline in cattle numbers, due to a lessening of stocking density, is thought to have contributed to this reduction in the nitrogen rate on grassland, possibly in conjunction with some improvement in manure use efficiency. In addition, the impacts of higher fertiliser price following the 2022 invasion of Ukraine are still being witnessed in reduced application rates. The 2024 overall nitrogen rate on grassland is the same as 2022 at 34 kg/ha, the lowest ever recorded by this survey. Please refer to table AA1.1

- In 2024 the overall application rates of total nitrogen decreased on all the major crops except spring barley and sugar beet. Average field rates changed in the 1-3 kg/ha range for the major arable crops except for spring barley which was unchanged from 2023. Please refer to tables A1.3a and A1.3b.

Phosphate and potash: Executive Summary

- Phosphate and potash are applied in fertilisers and manures, particularly to replace the quantities removed in harvested crops. Most British soils can hold large quantities of these nutrients for crop uptake over several years. Consequently, the timing of maintenance application tends to be less time critical compared to nitrogen or sulphur.

- Overall application rates of phosphate and potash applied to crops are normally about three times those used on grassland. However, there is greater use of applied manures on grassland (48% dressing cover for grass <5 years old, 33% for grass of 5 years or more) than on crops (27% cover) and grazed grassland also receives manure as it is grazed. Please refer to Appendix 2, table GB1.1.

- Overall phosphate application rates on crops declined gradually between 1984 and 1996. Thereafter the decline in rates became more marked until 2009, after which there was some recovery and relative stability until 2018, when a 3 kg/ha decrease to 27 kg/ha was recorded. Overall phosphate rates on crops have declined every year since to a figure of 17 kg/ha in 2024. The overall application rate of phosphate on grassland was highest in 1983, at 28 kg/ha, and remained relatively stable between 1984 and 1998. Overall application rates declined more rapidly between 1999 and 2009, but then remained relatively stable, with a further, sizeable drop in 2022 to 4 kg/ha. This rate was unchanged in 2024. Please refer to table AA1.3.

- Overall potash application rates on crops declined slightly between 1983 and 1997, with the rates in the 60-68 kg/ha range. Like phosphate, overall application rates reduced at a greater rate after this time, dropping to 33 kg/ha in 2009 when fertiliser prices were high. Between 2014 and 2018 overall potash application rates were reasonably stable in the range 35-40 kg/ha, but have since declined again, with a further fall in 2024 of 1 kg/ha to 22 kg/ha. Please refer to table AA1.4.

- Whilst the pattern of use of potash on grassland has been more variable, this also showed a net decline between 1983 and 2008, following relative stability in the mid-late 1980s. Since 2009, overall potash rates fluctuated between 11 and 14 kg/ha, before

dropping to 6 kg/ha in 2022. In 2023 and 2024 the overall potash rate on grass was unchanged at 6 kg/ha. Please refer to table AA1.4.

- It is of note that in Scotland, the phosphate and potash application rates on cropped land have largely been maintained, relative to the decline seen in England & Wales. Although there has been a reduction in dressing covers and overall application rates since 2004, they were relatively stable again on cropping by 2010. In 2024, the overall phosphate rate on crops increased in Scotland to 43 kg/ha and potash increased 5 kg/ha to 56 kg/ha. Please refer to tables AA1.3 and AA1.4.

Sulphur: Executive Summary

- Sulphur is an essential plant nutrient and is a component of most proteins as well as activating certain enzyme systems. In the past, sulphur demand was satisfied through atmospheric deposition, but this contribution is now hardly significant. Therefore, there is a need for sulphur application to crops and grass; with crops such as oilseed rape being particularly sensitive to sulphur deficiency. Elemental sulphur can also be used as a soil acidifier for potatoes which can offer some protection against common scab (*Streptomyces scabiei)* although sulphur as a nutrient is usually applied in the sulphate form.

- The Survey has collected detailed information on sulphur (SO_3) fertiliser use since 1993, when only 3-6% of the cereal crop areas and 8% of the oilseed rape area received a sulphur application. By 1997, these proportions had increased markedly to 13-14% for cereals and 30% for oilseed rape. Dressing covers for sulphur generally remained static until 2002, and then increased steadily to 2007. Dressing covers reduced in 2008 and 2009 for all cereals except winter barley, before continuing to increase. Since 2016, sulphur dressing covers have been relatively stable, around the 50-70% range for cereals, and 70-80% for oilseed rape. In 2024, sulphur dressing covers in cereals were in the 56-67% range, similar to 2023. Please refer to table A1.8.

- The 79% dressing cover for winter oilseed rape was 7 percentage points higher than observed in 2023 and is back in line with the five-year average of 79%. Please refer to table A1.8.

- In 2024, 32% of all crops and grass received a dressing of sulphur; this figure was 57% for crops. On crops the overall application rate for sulphur was 29 kg/ha, the same as the five-year average between 2020-2024. Applications on grass decreased in 2024 by 1 kg/ha and dressing cover increased by 1 percentage point to 13% of grass receiving a sulphur dressing in 2024. Please refer to tables AA1.5 and AA1.6.

Organic manures: Executive Summary

- Historically, the Survey has focused on the application of manufactured fertilisers although in recent years (since 2007) it has also collected information on the use of organic manures. The nutrient levels in organic manures vary according to the type of manure but provide a valuable recycled source of nitrogen, phosphate, potash and sulphur. Where organic manures are used, applications of manufactured fertiliser can usually be reduced.

- In 2024, around 63% of farms used organic manures on at least one field on the farm. Cattle manure from beef and dairy farms is by far the largest volume of manure type generated in Great Britain. In 2024, 58% of cattle manure and 90% of cattle slurry applications were made to grassland, reflecting the practice of utilising the manure on the farm on which it was produced. Please refer to table B1.1a and B2.3a.

- Fields of winter-sown crops mainly receive a manure dressing in August and September, prior to drilling, whereas spring-sown and grass fields are dressed predominantly in spring and summer.

SECTION A

COMMENTARY ON FERTILISER USE IN GREAT BRITAIN

This commentary refers to rates of application in mainland Britain of fertilisers containing nitrogen (N), phosphate (P_2O_5), potash (K_2O) and sulphur (SO_3) on crops and grassland (excluding rough grazing). Section A1 of the report covers the five-year period 2020-24. Comments on longer term trends are made in Section A2.

The estimates of overall application rates from the Survey relate to usage on farms during the 2024 growing season; they form a basis for estimating quantities of fertiliser used in Great Britain. The overall application rate considers both the average field rate and the proportion of the crop area treated, giving an overview of the crop as a whole. The estimates of average field rates provide a better indication than overall application rates of actual usage levels and also of any annual variation in fertiliser practice on farms. The definitions of the terms used are set out below.

Definitions:

Average field rate = fertiliser nutrient application rate over the sown area that received some dressing of that nutrient (kg/ha)

Dressing cover = proportion of the sown area that has received any application of the nutrient or a manure (%)

Overall application rate = fertiliser nutrient application rate over the sown area of all fields, irrespective of whether they received dressing of that nutrient or not (kg/ha).

Crop year = the crop year covers the period from the autumn of the preceding year to the autumn of the crop year i.e. the 2024 crop year ran from autumn 2023 to autumn 2024.

For full details on definitions used throughout this report, along with details on the History of the report, Survey methodology and Background information, please refer to Appendix 3.

The statistics on the pattern of fertiliser practice reported for Great Britain largely reflect practices in England & Wales due to its greater area of total crops and grassland: about 8.7 million hectares in England & Wales and about 1.9 million hectares in Scotland. In what is otherwise a commentary on Britain as a whole, remarks on the separate regions are only made to highlight particular trends of interest. Readers interested in more detailed recent trends for individual crops in England & Wales or in Scotland can refer to tables presented in Appendix 2.

A summary of data from earlier years is available in Chalmers (2001)[2] and historic data for the key data series are also available at https://www.gov.uk/government/collections/fertiliser-usage.

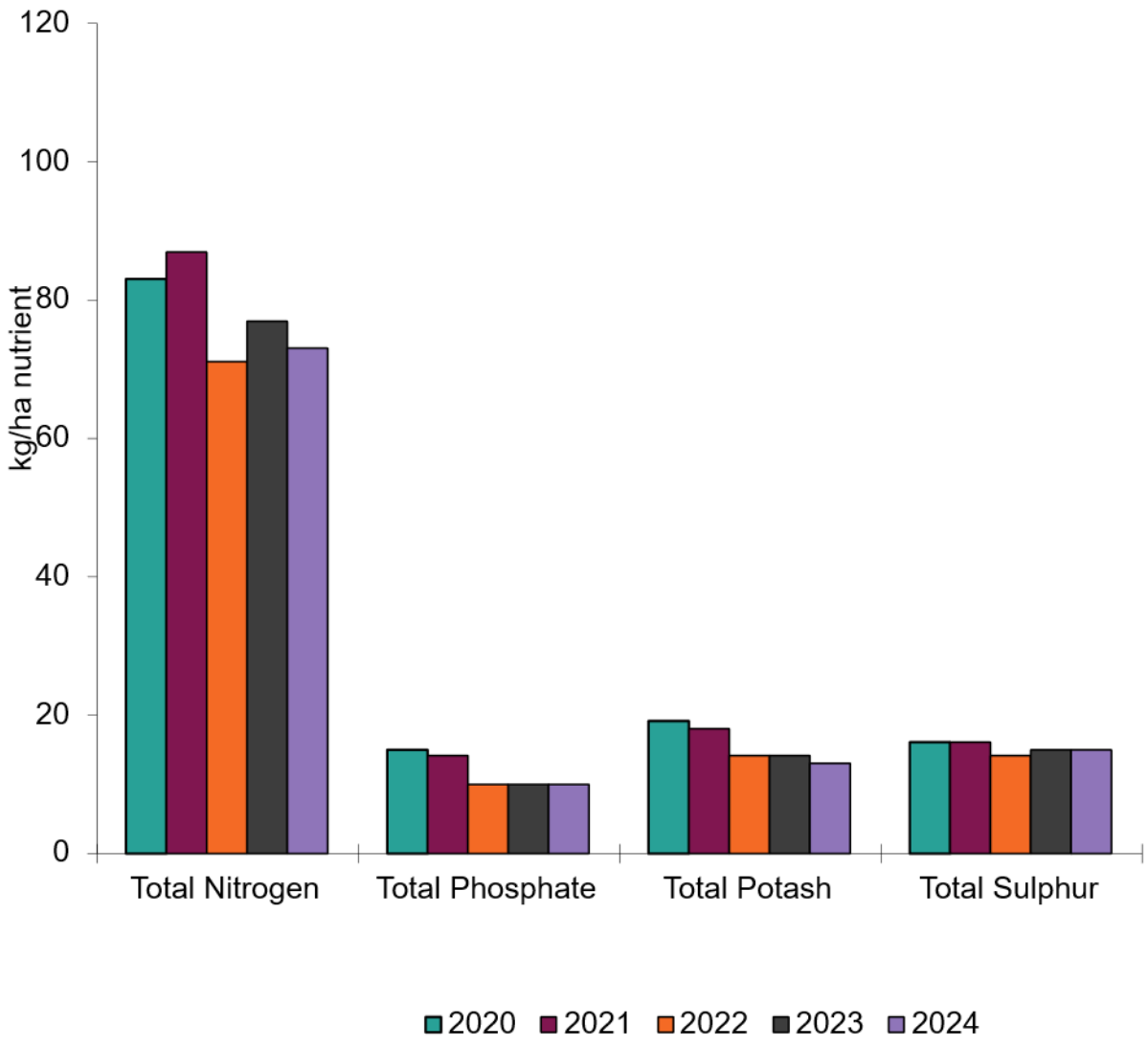
[2] Chalmers A. G. (2001) A Review of fertiliser, lime and organic manure use on farm crops in Great Britain from 1983 to 1997. *Soil Use and Management* **17**, 254-262.

A1 2024 RESULTS FOR GREAT BRITAIN AND CHANGES IN RECENT YEARS

A1.1 Overview of fertiliser use on all crops and grass

Overall application rates of total nitrogen, phosphate, potash and sulphur in Great Britain over the last five years are illustrated in Figure A1.1. The 2024, overall application rate of nitrogen for all crops and grass is 73 kg/ha, a decrease of 4 kg/ha from 2023. Overall application rates for phosphate, potash and sulphur in 2024 were 10 kg/ha, 13 kg/ha and 15 kg/ha, respectively. Application rates for straight and compound nitrogen applied on crops and grassland are also presented in Table A1.1.

Figure A1.1 Overall application rate (kg/ha) on all crops and grass, Great Britain 2020 – 2024



A1.1.1 Nitrogen

Overview of nitrogen use on all crops and grassland

Table A1.1 Overall application rate of nitrogen (kg/ha), Great Britain 2020 – 2024

Total nitrogen

	Crops	Grass	All crops and grass
2020	121	53	83
2021	130	51	87
2022	118	34	71
2023	125	38	77
2024	121	34	73

Straight nitrogen

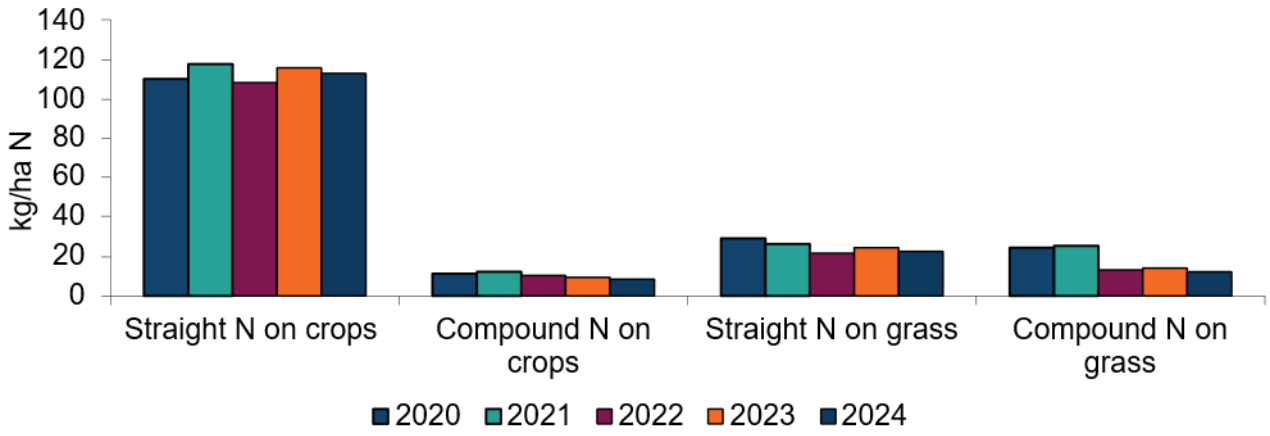
	Crops	Grass	All crops and grass
2020	110	29	65
2021	118	26	68
2022	108	21	59
2023	116	24	65
2024	113	22	63

Compound nitrogen

	Crops	Grass	All crops and grass
2020	11	24	18
2021	12	25	19
2022	10	13	12
2023	9	14	12
2024	8	12	11

Overall, the 4 kg/ha decrease in the application rate of nitrogen for all crops and grass in 2024 (Figure A1.1) was caused by a 4 kg/ha decrease on crops and a 4 kg/ha decrease on grass. When compared with 2023, the rate of straight N decreased by 3 kg/ha for crops and by 2 kg/ha for grass (Figure A1.2). The rate of compound N decreased by 1 kg/ha on crops and decreased by 2 kg/ha on grass. The mean application rates of use of total N, straight N and compound N on all crops and grass over the five-year period (2020-2024) were 78 kg/ha, 64 kg/ha and 14 kg/ha, respectively.

Figure A1.2 Overall straight and compound nitrogen use (kg/ha), Great Britain 2020 – 2024



Overview of Nitrogen use on crops: Section A1.1.1

Straight N continues to be the main source of nitrogen on crops, with 82% of cropping area receiving a straight nitrogen dressing in 2024. This was the same percentage as in 2023. The average field rate of straight N on crops decreased by 5 kg/ha to 137 kg/ha. This resulted in a 3 kg/ha decrease in the overall application rate of straight N on crops which was 113 kg/ha in 2024.

There are a several reasons for the dominance of straight nitrogen over the use of nitrogen in compound fertilisers, with the principal one being the large area of winter-sown crops. As is shown in Appendix Table AA3.3.1, about 52% of the cropping area was sown to winter cereals and winter oilseed rape in 2024. These crops can receive most of any necessary dressings of phosphate and potash in the seedbed or during the autumn and winter, leaving just the nitrogen (and sulphur) to be applied, usually as more than one dressing, during the busy spring period of active crop growth. The need for precise timing of nitrogen applications has also contributed to a separation of nitrogen applications from those of phosphate and potash for spring-sown crops, especially spring cereals and sugar beet. Thus, a continuing increase in the use of straight nitrogen now applies to most spring-sown crops for agronomic and environmental reasons, as well as for the optimisation of logistics and the efficient use of time in the spring. The exception is maincrop potatoes where compound nitrogen accounted for 74% of dressing cover in 2024.

In the context of this report and elsewhere, straight nitrogen includes nitrogen plus sulphur fertiliser products. The term “straight nitrogen” denotes a nitrogen-containing product without any associated phosphate or potash.

Overview of Nitrogen use on Grassland: Section A1.1.1

In 2024, the overall application rate for nitrogen on grass decreased by 4 kg to 34 kg/ha (Table A1.1). The proportion of grass receiving a dressing of straight N decreased by 1 percentage point to 23% in 2024 and the average field rate decreased by 8 kg/ha to 93 kg/ha in 2024. The grass area dressed with compound N decreased by 1 percentage point to 22% and the average field rate decreased by 5 kg/ha to 57 kg/ha. Overall, this resulted in a 2 kg/ha decrease to 12 kg/ha in the overall application rate of compound N on grass in 2024.

A1.1.2 Phosphate, Potash and Sulphur use

Overview of Phosphate use: Section A1.1.2

Table A1.2a shows overall phosphate applications for the past five years. Compared with 2023, the overall application rate on crops was unchanged at 17 kg/ha. This resulted from an unchanged dressing cover at 35% and an increased average field rate of 49 kg/ha of phosphate on crops in 2024. For grassland too, the overall application rate was unchanged at 4 kg/ha and the dressing cover was 21%. The average field rate decreased 1 kg/ha to 19 kg/ha. The five year means for overall phosphate application rates for crops and grass were 19 kg/ha and 5 kg/ha, respectively.

Table A1.2a Overall application rate of phosphate and potash (kg/ha), Great Britain 2020 – 2024

Total phosphate

	Crops	Grass	All crops and grass
2020	24	8	15
2021	22	7	14
2022	17	4	10
2023	17	4	10
2024	17	4	10

Total potash

	Crops	Grass	All crops and grass
2020	29	11	19
2021	28	11	18
2022	24	6	14
2023	23	6	14
2024	22	6	13

Overview of Potash use: Section A1.1.2

On crops, the decrease in the overall potash application rate was caused by a 1 percentage point decrease in dressing cover to 38% with a 2 kg/ha increase in the average field rate to 60 kg/ha in 2024. On grassland, dressing cover decreased by 2 percentage points to 22% and overall application rate was unchanged at 6 kg/ha in 2024. The average field rate increased by 2 kg/ha to 28 kg/ha. The five year means for overall potash application rates for crops and grass were 25 kg/ha and 8 kg/ha, respectively.

Overview of Sulphur use: Section A1.1.2

Table A1.2b shows overall sulphur (SO_3) application rates for the past five years. In 2024, the overall application rate of sulphur on crops increased by 1 kg/ha to 29 kg/ha. The proportion of the cropping area receiving a sulphur dressing increased by 2 percentage points to 57% and the average field rate was unchanged at 51 kg/ha. The overall application rate of sulphur on grass decreased by 1 kg/ha to 4 kg/ha in 2024. The low overall application rate of sulphur on grass is caused by a combination of lower dressing cover percentages and lower average field rates on grass than on crops.

Table A1.2b Overall application rate of sulphur (kg/ha SO_3), Great Britain 2020 – 2024

	Crops	Grass	All crops and grass
2020	31	5	16
2021	30	5	16
2022	27	3	14
2023	28	5	15
2024	29	4	15

A1.2 FERTILISER USE ON MAJOR CROPS IN 2024

Overall application rates and average field rates of fertiliser application for major crops in Great Britain over the past five years are summarised in Tables A1.3a and A1.3b. Dressing cover percentages for the same period are shown in Table A1.3c. More detailed statistics for 2024 are presented in Appendix 2. Longer term trends in overall application rates of nitrogen, phosphate, potash and sulphur are summarised in Section A2.

Small apparent changes in fertiliser use on individual crops should be treated with caution as these estimates are based on a smaller number of farms and fields than the aggregate estimates for all crops.

Table A1.3a Overall application rate (kg/ha) on major crops, Great Britain 2020–2024

Total nitrogen	Winter wheat	Spring barley	Winter barley	Maincrop potatoes[1]	Oilseed rape[3]	Sugar beet
2020	177	99	139	118	168	69
2021	186	98	140	125	167	67
2022	167	92	129	162	152	59
2023	174	95	137	143	164	67
2024	172	97	135	128	163	67

Straight nitrogen	Winter wheat	Spring barley	Winter barley	Maincrop potatoes[1]	Oilseed rape[3]	Sugar beet
2020	172	80	131	27	158	58
2021	179	74	131	35	157	58
2022	163	70	122	80	147	53
2023	170	74	131	69	159	61
2024	169	78	129	58	158	60

Compound nitrogen	Winter wheat	Spring barley	Winter barley	Maincrop potatoes[1]	Oilseed rape[3]	Sugar beet
2020	5	19	8	91	9	11
2021	7	24	9	89	9	8
2022	5	22	7	82	5	6
2023	4	21	6	73	4	6
2024	3	20	6	70	4	7

Total phosphate	Winter wheat	Spring barley	Winter barley	Maincrop potatoes[1]	Oilseed rape[3]	Sugar beet
2020	24	25	26	91	27	22
2021	20	28	24	80	23	19
2022	15	23	16	92	17	14
2023	15	24	17	92	17	21
2024	15	22	19	100	16	17

Total potash	Winter wheat	Spring barley	Winter barley	Maincrop potatoes[1]	Oilseed rape[3]	Sugar beet
2020	29	29	38	159	26	44
2021	25	34	31	153	26	44
2022	19	33	24	189	15	35
2023	20	32	27	158	20	39
2024	19	30	23	188	16	35

Total sulphur	Winter wheat	Spring barley	Winter barley	Maincrop potatoes[1,2]	Oilseed rape[3]	Sugar beet
2020	42	24	36	[z]	64	33
2021	38	22	36	[z]	59	23
2022	36	16	33	[z]	53	17
2023	36	20	33	[z]	51	22
2024	37	21	34	[z]	56	19

[1] Figures for maincrop potatoes include second earlies.
[2] Sulphur rates on potatoes are not shown as some growers apply additional sulphur to acidify the soil for this crop. These applications cannot be separated from those intended as a fertiliser nutrient.
[3] Single crop grouping for the combined winter and spring oilseed rape areas.

Table A1.3b Average field rates (kg/ha) on major crops, Great Britain 2020 – 2024

Total nitrogen	Winter wheat	Spring barley	Winter barley	Maincrop potatoes[1]	Oilseed rape[3]	Sugar beet
2020	179	102	141	130	169	71
2021	188	102	143	132	168	74
2022	170	97	135	171	155	66
2023	176	100	140	149	164	77
2024	175	100	143	145	165	78

Straight nitrogen	Winter wheat	Spring barley	Winter barley	Maincrop potatoes[1]	Oilseed rape[3]	Sugar beet
2020	176	94	137	94	161	66
2021	184	91	140	89	160	71
2022	169	84	132	152	154	65
2023	175	92	136	135	162	75
2024	172	90	139	116	161	80

Compound nitrogen	Winter wheat	Spring barley	Winter barley	Maincrop potatoes[1]	Oilseed rape[3]	Sugar beet
2020	45	53	43	105	34	30
2021	55	51	56	115	42	28
2022	60	52	60	132	40	36
2023	50	50	51	90	45	63
2024	42	52	54	95	35	35

Total phosphate	Winter wheat	Spring barley	Winter barley	Maincrop potatoes[1]	Oilseed rape[3]	Sugar beet
2020	55	47	50	107	54	42
2021	54	49	52	104	55	41
2022	50	44	46	112	49	36
2023	46	45	46	102	55	46
2024	49	47	53	119	52	34

Total potash	Winter wheat	Spring barley	Winter barley	Maincrop potatoes[1]	Oilseed rape[3]	Sugar beet
2020	63	59	67	175	60	75
2021	62	61	62	170	64	64
2022	57	58	59	214	51	64
2023	53	56	61	185	59	63
2024	55	57	60	207	53	62

Total sulphur	Winter wheat	Spring barley	Winter barley	Maincrop potatoes[1,2]	Oilseed rape[3]	Sugar beet
2020	57	43	47	[z]	77	47
2021	52	40	51	[z]	75	32
2022	53	36	49	[z]	67	30
2023	54	40	49	[z]	71	37
2024	55	37	52	[z]	72	36

[1] Figures for maincrop potatoes include second earlies.
[2] Sulphur rates on potatoes are not shown as some growers apply additional sulphur to acidify the soil for this crop. These applications cannot be separated from those intended as a fertiliser nutrient.
[3] Single crop grouping for the combined winter and spring oilseed rape areas.

Table A1.3c Dressing cover (% area) on major crops, Great Britain 2020 – 2024

Total nitrogen	Winter wheat %	Spring barley %	Winter barley %	Maincrop potatoes[1] %	Oilseed rape[2] %	Sugar beet %
2020	99	98	98	91	99	98
2021	99	96	98	94	99	91
2022	98	95	96	95	98	90
2023	99	96	98	96	100	87
2024	98	97	94	89	99	87

Straight nitrogen	Winter wheat %	Spring barley %	Winter barley %	Maincrop potatoes[1] %	Oilseed rape[2] %	Sugar beet %
2020	98	85	95	29	99	88
2021	98	81	94	39	98	82
2022	96	83	92	53	96	82
2023	97	80	97	52	98	81
2024	98	87	92	50	98	75

Compound nitrogen	Winter wheat %	Spring barley %	Winter barley %	Maincrop potatoes[1] %	Oilseed rape[2] %	Sugar beet %
2020	11	36	19	86	27	37
2021	12	47	16	78	22	30
2022	8	42	12	62	13	17
2023	7	42	11	82	10	9
2024	8	38	11	74	13	21

Total phosphate	Winter wheat %	Spring barley %	Winter barley %	Maincrop potatoes[1] %	Oilseed rape[2] %	Sugar beet %
2020	44	52	52	85	50	52
2021	37	58	46	77	42	46
2022	30	52	36	82	34	39
2023	31	52	36	90	31	45
2024	30	48	35	84	31	49

Total potash	Winter wheat %	Spring barley %	Winter barley %	Maincrop potatoes[1] %	Oilseed rape[2] %	Sugar beet %
2020	46	50	57	91	43	59
2021	40	56	51	90	41	68
2022	33	56	41	88	30	55
2023	37	58	44	85	34	61
2024	35	53	38	91	31	56

Total sulphur	Winter wheat %	Spring barley %	Winter barley %	Maincrop potatoes[1] %	Oilseed rape[2] %	Sugar beet %
2020	73	54	76	14	83	69
2021	73	55	71	36	79	70
2022	67	46	67	23	80	55
2023	67	50	68	42	72	59
2024	67	56	65	42	79	53

[1] Figures for maincrop potatoes include second earlies.
[2] Single crop grouping for the combined winter and spring oilseed rape areas.

Overview of number of fertiliser applications

In 2024, the majority of the main crop groups recorded a decrease in the total number of fertiliser applications, following a slight upturn in the previous season. The one exception to this trend was sugar beet, which noted an increase of 0.24 in the total number of applications. Winter cereals and winter oilseed rape remained those crop groups with the highest total number of applications, while established grassland recorded the fewest.

The number of straight nitrogen applications decreased for winter cereals in 2024, after remaining largely constant for the preceding three seasons. While all other main groups recorded a reduction in the number of applications of straight nitrogen, to the lowest number for at least the past four years, both sugar beet and spring cereals saw increases in 2024.

Table A1.4 Average number of applications of mineral fertiliser, where applied, and those which are of straight nitrogen, to different crops or crop groups, Great Britian 2021 – 2024

	Average number of fertiliser applications							
	Total number of applications				of which straight N or NS			
	2021	2022	2023	2024	2021	2022	2023	2024
Winter cereals	3.16	3.03	3.00	2.91	2.42	2.42	2.42	2.28
Winter oilseed rape	3.17	2.89	3.00	2.77	2.42	2.24	2.42	2.21
Spring cereals	2.04	1.86	1.93	1.93	1.26	1.21	1.26	1.30
Potatoes	1.92	2.06	2.09	1.77	0.60	0.67	0.60	0.51
Sugar beet	2.00	1.86	1.94	2.18	1.20	1.15	1.20	1.25
Grass under 5 years old	1.99	1.83	1.88	1.57	1.10	1.04	1.10	0.72
Grass 5 years and over	1.59	1.51	1.56	1.26	0.82	0.79	0.82	0.38

A1.2.1 Nitrogen use on Major Crops

In 2024, overall application rates of total nitrogen (Table A1.3a) decreased on all the major crops except spring barley and sugar beet which was unchanged from 2023. The overall application rate decreased to the greatest extent on potatoes to 128 kg/ha but these data are always more variable. Average field rates (Table A1.3b) changed in the 1-3 kg/ha range for all major crops except spring barley and potatoes. For all the major arable crops except spring barley and sugar beet dressing covers decreased slightly in 2024. For maincrop potatoes and sugar beet dressing covers were lower, but these tend to be more variable (Table A1.3c) due to the fewer fields of these crops in the survey.

Nitrogen use on Winter wheat: Section A1.2.1

The field cropping information collected in the Survey enables separate estimates to be made of nitrogen fertiliser use on milling and non-milling (seed/feed) categories of winter wheat (Table A1.5). The difference between the rates applied to milling and non-milling wheats reflect differences in crop husbandry and nitrogen management practices.

Table A1.5 Average field rates (kg/ha) of nitrogen on cereals by market use, Great Britain 2020 – 2024

Total nitrogen

	Winter wheat		Spring barley		Winter barley	
	Milling	Non-milling	Malting	Non-malting	Malting	Non-malting
2020	194	169	102	101	126	146
2021	202	180	101	104	128	146
2022	184	163	98	95	116	138
2023	187	170	100	99	125	144
2024	191	168	102	98	138	144

Nitrogen fertiliser requirements for winter wheat depend on the intended market end use (grain N levels), as well as upon soil type and the residual soil nitrogen fertility from previous cropping and manure practice. Milling varieties are often grown as a second wheat and often receive extra nitrogen, either as a solid dressing or as late foliar urea spray, which is applied to improve the chances of achieving an adequate grain protein content for a milling premium. High yielding feed crops, rather than potentially lower yielding varieties of milling wheat, are often grown as a first winter wheat after a break crop, such as oilseed rape. This is to exploit the potential yield and residual soil nitrogen benefits from the crop rotation, and to avoid any risk of lower grain protein due to a high yield diluting the grain nitrogen concentration for a first wheat in the rotation. The average field application rate on milling wheat increased by 4 kg/ha to 191 kg/ha, and the rate on non-milling wheat decreased by 2 kg/ha to 168 kg/ha compared with 2023. The non-milling crop continues to dominate the wheat crop area (Table A1.6) with 69% of the crop in 2024 (5-year mean: 64%).

Table A1.6 Percentage distribution (% crop area) of cereal crop areas by market use, Great Britain 2020 – 2024, as estimated from the Survey

	Winter wheat		Spring barley		Winter barley	
	Milling	Non-milling	Malting	Non-malting	Malting	Non-malting
	%	%	%	%	%	%
2020	41	59	51	49	23	77
2021	36	64	58	42	18	82
2022	34	66	57	43	14	86
2023	36	64	58	42	19	81
2024	31	69	58	42	17	83

Nitrogen use on Spring barley: Section A1.2.1

Overall application rates of total nitrogen on spring barley increased by 2 kg/ha to 97 kg/ha, which was just under the five-year mean (2020-2024) of 96 kg/ha. The rate of straight N increased by 4 kg/ha to 78 kg/ha whilst the overall application rate of compound N decreased by 1 kg/ha compared with 2023 to 20 kg/ha. The average field rate for straight N decreased by 2 kg/ha and the rate for compound N increased by 2 kg/ha compared with 2023. The percentage of the spring barley area receiving a dressing of straight N decreased by 7 percentage points to 87%, and dressing cover with compound N decreased 4% to 38% (Table A1.3c).

Further analysis of the data by crop type (Table A1.5) shows the average field rate of nitrogen applied to spring malting barley increased by 2 kg/ha to 102 kg/ha, while that for spring non-malting barley decreased by 1 kg/ha to 98 kg/ha. In the case of the spring malting crop the five-year mean is 101 kg/ha, whilst for non-malting crops the mean is 99 kg/ha.

Estimated nitrogen rates on spring barley crops have been consistently a little higher on malting than non-malting crops. This slightly higher use of nitrogen on malting than non-malting crops may seem anomalous, since lower rates of nitrogen are recommended for malting barley, under the same conditions of soil type and nitrogen fertility level, than for the feed varieties of barley. This recommendation is made to avoid the risk of high grain nitrogen content, which could adversely affect subsequent malt quality. However, malting crops are normally grown on soils with low nitrogen fertility and the average field rates of nitrogen reported for malting varieties in Table A1.5 are in the range recommended for mineral soil types with low nitrogen residues (70 - 120 kg/ha)[3]. Feed crops on the other hand are often grown within mixed rotations, which tend to have a higher soil nitrogen fertility, with consequently less need for nitrogen fertiliser.

The proportion of spring barley grown for malting has fluctuated during the last five years (Table A1.6). The mean for the period 2020-24 is 56%, with the lowest proportion recorded in 2020 at 51%.

Nitrogen use on Winter barley: Section A1.2.1

In the period 2002-08 the total nitrogen overall application rate on winter barley decreased from year to year, down to 132 kg/ha in 2008. This rate then increased albeit with some fluctuations to 2017, but in 2018 the rate decreased by 6 kg/ha to 143 kg/ha. In 2024, overall total N application rate decreased by 2 kg/ha to 135 kg/ha. The application rate of straight N, which was used on 92% of the winter barley crop area, decreased to 129 kg/ha in 2024, in line with the five year (2020-24) mean of 129 kg/ha. The compound N overall application rate was unchanged at 6 kg/ha, below the five-year mean of 7 kg/ha.

As with the spring sown crop, nitrogen requirements for winter barley depend on a range of agronomic factors, such as the intended market for the grain. Average field rates of nitrogen on winter malting crops increased by 13 kg/ha compared to 2023 to 138 kg/ha, above the five-year mean of 127 kg/ha. For winter non-malting crops, the average field rate was the same as in 2023 at 144 kg/ha (Table A1.5), the same as the five-year average of 144 kg/ha.

The higher application rates of nitrogen (five-year mean of +17 kg/ha) on non-malting, compared to malting winter barley crops, reflect typical agronomic practice, but the gap between malting and non-malting crops was smaller than in previous years. The majority of winter barley crops (both feed and malting) are grown in England in arable rotations, usually after a previous cereal crop, when the soil nitrogen fertility status is low. Higher nitrogen rates are recommended for feed crops. The proportion of winter barley area grown for malting was 17% in 2024, 2 percentage points lower than 2023, with the five-year mean calculated as 18%. (Table A1.6).

Nitrogen use on Maincrop potatoes: Section A1.2.1

Total nitrogen use on maincrop potatoes has fluctuated over the last five years. Part of the reason for recent apparent fluctuations in the estimates of nutrient application rates may be because proportionally fewer fields of potatoes are covered by the Survey in comparison to

[3] Anon. (2018). Nutrient Management Guide (RB209). Agriculture and Horticulture Development Board (AHDB). https://ahdb.org.uk/nutrient-management-guide-rb209

other crops. This is because fields of potatoes on respondents' farms may be let out and grown by a third party, so it is not possible to record information in the Survey. Furthermore, fields of potatoes grown by a respondent, but not on the farm being surveyed, are not captured in the Survey.

In 2024, the overall application rate of nitrogen decreased by 15 kg to 128 kg/ha, which is below the five-year mean of 135 kg/ha (Table A1.3a).

Nitrogen use on Oilseed rape: Section A1.2.1

In 2024, the nitrogen average field on winter oilseed rape increased to 166 kg/ha, with a five-year mean of 165 kg/ha (Table A1.7). The crop area dressed with straight N was unchanged at 98%, and increased by 3 percentage points for compound N (to 13%) (Table A1.3c).

Table A1.7 Average field rates of nitrogen (kg/ha) on winter oilseed rape, Great Britain 2020 – 2024

	Winter oilseed rape
2020	172
2021	168
2022	156
2023	165
2024	166

Nitrogen use on Sugar beet: Section A1.2.1

The overall application rate of nitrogen on sugar beet was the same as in 2023 at 67 kg/ha, just above the five-year mean (66 kg/ha). Application rate of straight N, by far the most widely used form of nitrogen in this crop (five-year mean: 82% of the dressed area), decreased to 60 kg/ha (Table A1.3a, A1.3c). The average field rate of straight N increased to 80 kg/ha, 9 kg/ha above the five-year mean of 71 kg/ha.

A1.2.2 Phosphate and Potash use on Major Crops

Phosphate: Section A1.2.2

In 2024, the overall application rate of phosphate on the major crops changed by 1-2 kg/ha except on potatoes and sugar beet. (Table A1.3a). Average field rate changes were small and variable on cereal crops, whereas potatoes and sugar beet recorded a 17 kg/ha increase and a 12 kg/ha decrease respectively. (Table A1.3b). In 2024, the overall phosphate application rate on crops was unchanged at 17 kg/ha (Table A1.2a), below the 2020-24 five-year average (19 kg/ha).

Potash: Section A1.2.2

Overall, potash application rate on crops decreased in 2024 by 1 kg/ha to 22 kg/ha, below the 2020-2024 five-year average of 25 kg/ha (Table A1.2a). This decline was due to a reduction in dressing cover of 1 percentage point to 38%. Dressing covers decreased for all the major crops except potatoes, which increased to 91%. (Table A1.3c). Average field rate changes of potash were mainly small and variable, except for potatoes and oilseed rape for which the decrease was 6 kg/ha from 2023. (Table A1.3b).

A1.2.3 Sulphur use on Major Crops

The Survey has collected detailed information on sulphur fertiliser use since 1993, when only 3-6% of the cereal crop area and 8% of the oilseed rape area received an application of sulphur. By 1997, the proportions of these crop areas which were treated with sulphur had increased markedly to 13-14% for cereals and 30% for oilseed rape. Dressing covers for sulphur then generally remained fairly static until 2002 when the areas increased steadily until 2007. 2008 saw reductions in dressing covers for cereals to 35%-43%, a pattern that continued in 2009, except in winter barley where sulphur dressing cover increased to 45%. Between 2010 to 2020, sulphur dressing covers on winter cereals and sugar beet grew significantly, peaking in 2020. Since then, they have been slightly drawing back. In 2024, sulphur dressing cover increased slightly overall, but with a decrease of 3 percentage points observed on winter barley. (Table A1.8). The average field rates for crops were generally higher than in 2023, with spring barley being the exception.

Table A1.8 Dressing cover (% area) and average field rate (kg/ha SO_3) of sulphur on cereals and oilseed rape, Great Britain 2020 – 2024

Dressing cover (%)

	Winter wheat	Winter barley	Spring barley	Oilseed rape	All crops
	%	%	%	%	%
2020	73	76	54	83	59
2021	73	71	55	79	60
2022	67	67	46	80	54
2023	67	68	50	72	55
2024	67	65	56	79	57

Average field rate (kg/ha SO_3)

	Winter wheat	Winter barley	Spring barley	Oilseed rape	All crops
2020	57	47	43	77	53
2021	52	51	40	75	51
2022	53	49	36	67	50
2023	54	49	40	71	51
2024	55	52	37	72	51

Table A1.9 shows the proportion of major crops receiving a sulphur dressing in England & Wales compared with Scotland. Historically, a higher proportion of cereal and oilseed rape crops were treated with sulphur in Scotland than in England & Wales. This may have been due to the greater awareness of the risk of sulphur deficiency in Scotland due to historically extremely low levels of atmospheric sulphur deposition, compared to most other areas of Britain. Dressing covers are now much more closely aligned and, in some cases, those in England & Wales exceed those recorded in Scotland. Spring barley is an example of this trend, with this possibly being due to the manure which is more commonly applied to this crop in Scotland being assumed to satisfy the sulphur demand. In 2024, 43% of Scottish spring barley received manure compared with 21% in England and Wales.

Table A1.9 Dressing cover (% area) of sulphur on cereals, oilseed rape, all cropping and all crops and grass by region, 2020 – 2024

		Winter wheat	Winter barley	Spring barley	Oilseed rape	All crops	All crops and grass
		%	%	%	%	%	%
England & Wales	2020	73	75	53	83	58	34
	2021	73	71	56	79	60	36
	2022	67	68	47	79	55	30
	2023	66	69	50	72	56	32
	2024	67	65	57	79	57	33
Scotland[1]	2020	79	83	60	78	60	34
	2021	74	69	53	79	55	33
	2022	66	61	44	85	49	27
	2023	74	59	50	78	53	29
	2024	72	68	53	75	56	29

[1] Greater variability in the Scottish data may be due to smaller sample sizes.

A1.3 FERTILISER USE ON GRASSLAND 2020 - 2024

Overall application rates on grassland in Great Britain in the last five years, as previously shown (Tables A1.1 and A1.2), are summarised again in Table A1.10. The corresponding estimates of dressing cover and average field rates for each nutrient are shown in Table A1.11.

Table A1.10 Overall application rate (kg/ha) on grassland, Great Britain 2020 – 2024

	Straight nitrogen	Compound nitrogen	Total nitrogen	Total phosphate	Total potash	Total sulphur
2020	29	24	53	8	11	5
2021	26	25	51	7	11	5
2022	21	13	34	4	6	3
2023	24	14	38	4	6	5
2024	22	12	34	4	6	4

In 2024, dressing cover for total nitrogen on grass decreased by 2 percentage points to 42% (Table A1.11). The long-term trend had been for declining dressing cover for total nitrogen but 2023 saw a small recovery from the low level reported in 2022 and 2024. In 2024, like 2023 grass dressing covers of straight and compound N were at a similar, albeit low level. The average field rate for compound N was 57 kg/ha while for straight N it was 93 kg/ha. In 2024, the overall application rates for phosphate and potash were 4 kg/ha and 6 kg/ha, respectively (Table A1.10).

Table A1.11 Dressing cover (%) and average field rate (kg/ha) of fertiliser on grassland, Great Britain 2020 – 2024

Dressing cover (%)

	Straight nitrogen	Compound nitrogen	Total nitrogen	Total phosphate	Total potash	Total sulphur
	%	%	%	%	%	%
2020	27	36	56	35	37	15
2021	28	37	59	37	39	16
2022	23	22	42	22	22	11
2023	24	23	44	22	24	12
2024	23	22	42	21	22	13

Average field rate (kg/ha)

	Straight nitrogen	Compound nitrogen	Total nitrogen	Total phosphate	Total potash	Total sulphur
2020	108	67	96	22	31	33
2021	95	66	87	20	28	32
2022	91	58	80	18	25	32
2023	101	62	88	20	26	37
2024	93	57	82	19	28	34

The proportion of the grass area receiving a straight nitrogen dressing decreased slightly in 2024 to 23% and the compound N dressing cover was at 22% in 2024 (Table A1.11). The dressing covers of phosphate and potash on grass were 21% and 22% respectively. The five-year means for 2020-2024 were 27% and 29%, respectively. The sulphur dressing cover increased by 1 percentage point from 2023 to 13% in 2024.

In 2024, the average field rates for phosphate on grass decreased by 1 kg/ha to 19 kg/ha and for potash increased by 2 kg/ha to 28 kg/ha. The sulphur average field rate decreased by 3 kg/ha to 34 kg/ha, the same as the five-year average of 34 kg/ha.

A1.3.1 Nitrogen use on Grassland

Cutting and grazing management: Section A1.3.1

Fertiliser requirements for grassland vary according to the type of livestock enterprise, intensity of production and the associated cutting and grazing regimes used for sward management. Fertiliser use on dairy, other livestock, and mixed farms in Great Britain in 2024 are presented in Appendix 2. The Survey estimates of annual distributions of the total grassland area between grazing and cutting management regimes since 2020 are summarised in Table A1.12. These should not be taken as authoritative national estimates of grassland utilisation, as the Survey is designed to estimate fertiliser application rates, not to derive accurate crop areas, although these may still be the best available estimates of grassland utilisation by area.

Table A1.12 Grassland utilisation (% of grass area), Great Britain 2020 – 2024

	Grazed[1]	Silage[2]	Hay[2]
	%	%	%
2020	94	30	9
2021	95	30	10
2022	94	28	12
2023	94	28	11
2024	93	27	12

[1] May also be cut, [2] May also be grazed

Nearly all grassland is grazed at some stage during the season (Table A1.12) and the proportion in 2024, 93%, is just below the five-year mean of 94%. Nitrogen usage for the different cutting and grazing categories is presented in Table A1.13. The differences in average field rates for nitrogen illustrate the influence of grassland management practice on fertiliser inputs with rates being lowest generally in grass cut for hay, higher in grass which is grazed and higher still in grass cut for silage.

Table A1.13 Nitrogen application rates (kg/ha) by grassland utilisation, Great Britain 2020 – 2024

Total nitrogen

	Overall application rate			Average field rate		
	Grazed[1]	Silage[2]	Hay[2]	Grazed[1]	Silage[2]	Hay[2]
2020	50	102	39	91	124	75
2021	48	96	43	83	114	73
2022	31	73	29	76	99	67
2023	34	81	35	82	108	76
2024	30	76	32	76	101	72

Straight nitrogen

	Overall application rate			Average field rate		
	Grazed[1]	Silage[2]	Hay[2]	Grazed[1]	Silage[2]	Hay[2]
2020	26	60	20	102	128	94
2021	24	52	18	91	109	81
2022	19	46	16	86	108	74
2023	21	53	23	93	112	84
2024	18	50	21	85	104	90

Compound nitrogen

	Overall application rate			Average field rate		
	Grazed[1]	Silage[2]	Hay[2]	Grazed[1]	Silage[2]	Hay[2]
2020	24	42	19	65	82	58
2021	24	43	24	64	86	60
2022	12	27	13	57	70	52
2023	14	28	12	61	76	55
2024	12	26	12	56	71	48

[1] May also be cut, [2] May also be grazed

In 2024, the overall total nitrogen rates decreased by 4 kg/ha to 30 kg/ha for grazed grass and by 5 kg/ha for silage grass. The overall nitrogen rate on grass for hay decreased by 3 kg/ha to 32 kg/ha. Rates reported on grass cut for hay need to be treated with caution due to the relatively small numbers of grass fields being managed this way (Table A1.13).

The average field rates of straight nitrogen decreased for both grazed and silage grass. The five-year means for overall straight nitrogen rate are 22, 52 and 20 kg/ha for grazed grass, silage and hay, respectively. Compound nitrogen average field rates all decreased in 2024. The five-year means for the overall compound nitrogen rates are 17, 33 and 16 kg/ha for grazed grass, silage and hay, respectively.

The fall in nitrogen use over the long term on grassland until 2008 is likely to be related in part to decreases in ruminant livestock numbers which may have reduced herbage production requirements. Since then, the rate of nitrogen application to grassland had remained relatively constant, but the 2024 overall nitrogen rate of 30 kg/ha was considerably lower than the 55 kg/ha reported in 2008.

A1.3.2 Phosphate and Potash use on Grassland

As for nitrogen, phosphate and potash requirements for grassland depend on the system of sward management with overall application and field rates for both phosphate and potash being higher in grass cut for silage.

Table A1.14 Phosphate and potash use (kg/ha) by grassland utilisation, Great Britain 2020 – 2024

Total phosphate

	Overall application rate		
	Grazed[1]	Silage[2]	Hay[2]
2020	8	13	8
2021	7	12	8
2022	4	8	5
2023	4	8	5
2024	4	8	5

	Average field rate		
	Grazed[1]	Silage[2]	Hay[2]
2020	21	28	22
2021	20	26	19
2022	18	21	21
2023	18	22	21
2024	19	24	19

Total potash

	Overall application rate		
	Grazed[1]	Silage[2]	Hay[2]
2020	11	23	9
2021	10	22	12
2022	5	12	8
2023	6	13	8
2024	6	14	8

	Average field rate		
	Grazed[1]	Silage[2]	Hay[2]
2020	29	43	26
2021	26	40	27
2022	24	30	29
2023	26	33	32
2024	26	36	30

[1] May also be cut, [2] May also be grazed

In 2024, the overall phosphate rates were unchanged for grazed, silage and hay grass. The corresponding five-year means for grazed grass, silage and hay were 5, 10 and 6 kg/ha, respectively. The average field rate increased by 1-2 kg/ha for grazed and silage grass, and decreased 2 kg/ha on grass cut for hay in 2024.

Overall potash rates increased very slightly in 2024. The average field rate of potash increased by 3 kg/ha on silage grass and decreased by 2 kg/ha on grass cut for hay.

A1.3.3 Sulphur use on Grassland

In 2024, 13% of the total grassland area received a sulphur dressing (five-year mean 13% for 2020-24 period). Of this, a higher proportion of grassland cut for silage is treated with sulphur compared to grazed grass or grass cut for hay (Table A1.15). Estimated dressing covers have fluctuated in the past five years, with 2-3 percentage point changes observed in 2024.

The significant proportion of heavier textured soil types which occur in the main grassland farming areas, together with assumed inputs of sulphur from manure applications to grass fields, are among possible influences on the consistently low level of sulphur fertiliser use on grassland.

Table A1.15 Sulphur use on grassland, Great Britain 2020 – 2024

Dressing cover (%)

	Grazed[1]	Silage[2]	Hay[2]	All grass	All crops	All crops and grass
	%	%	%	%	%	%
2020	15	27	14	15	59	34
2021	15	25	17	16	60	35
2022	11	21	11	11	54	30
2023	12	23	16	12	55	32
2024	12	25	13	13	57	32

Average field rate per year (kg/ha SO_3)

	Grazed[1]	Silage[2]	Hay[2]	All grass	All crops	All crops and grass
2020	32	38	28	33	53	48
2021	32	38	37	32	51	46
2022	30	36	39	32	50	46
2023	34	42	34	37	51	48
2024	33	38	36	34	51	47

[1] May also be cut,
[2] May also be grazed

Estimated average field rates of sulphur application peaked for grazed and silage grass in 2007 at 45 kg/ha and 47 kg/ha, respectively and for hay in 2008 at 47 kg/ha. The average field rate for grazed grass fell back during the 2010s, averaging between 29-35 kg/ha, although 2018 was a notable exception at 37 kg/ha. Silage grass average field rates observed a similar trend, averaging between 23-42 kg/ha over the period. In 2024, compared to 2023 values, average field rates decreased for grazed and silage grass and a 2 kg/ha increase was observed for hay. The five-year means are 32, 38 and 35 kg/ha SO_3 for grazed, silage and hay grassland, respectively (Table A1.15). Note that the average field rates in Table A1.15 are annual totals, not rates per cut.

A2 LONGER TERM TRENDS IN FERTILISER USE FOR GREAT BRITAIN

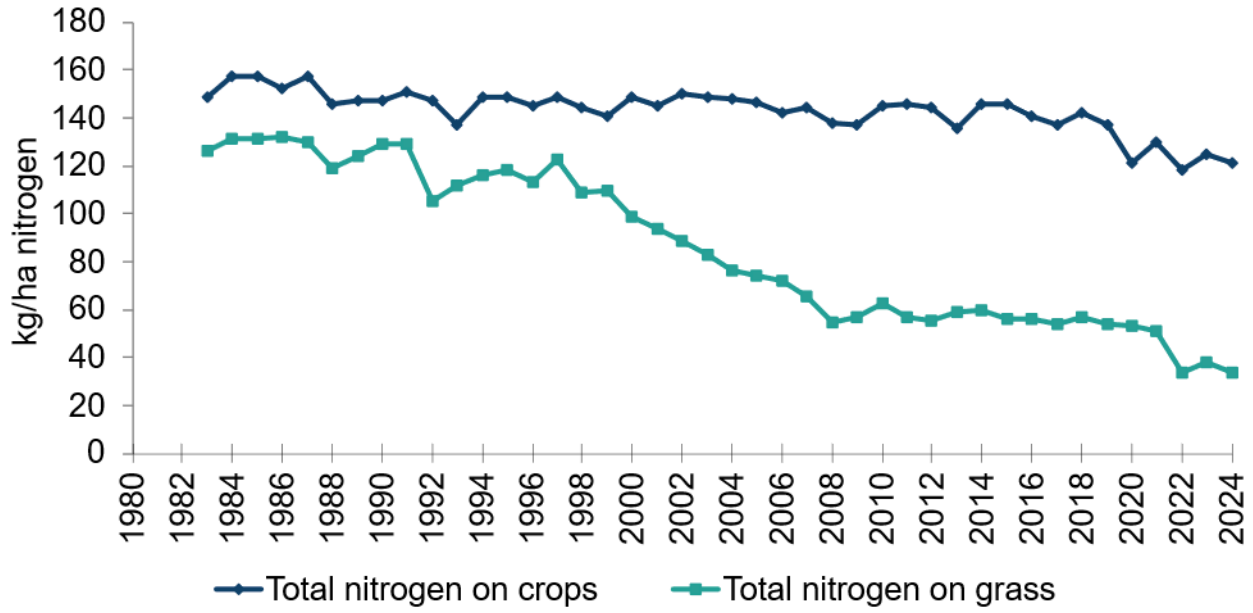
A2.1 Longer term trends in Nitrogen use, from 1983

The BSFP commenced as an integrated British Survey in 1992. Before then, the annual Survey of Fertiliser Practice had been completed separately for England & Wales and for Scotland. Some survey statistics from those earlier surveys have since been collated to report an aggregated series for nutrient use in Great Britain since 1983, when the Survey in Scotland started. All the longer-term data represented in the figures within this section can be found in Appendix 1.

The aggregated data for Great Britain follow a similar pattern to that observed for England & Wales because a large proportion of both the cropping and grassland areas in Britain are in England & Wales. Overall total nitrogen rates for cropping and grassland in England & Wales since 1972 and in Scotland and Great Britain since 1983 are summarised in Table AA1.1. The data for Great Britain are presented graphically in Figure A2.1. Overall, nitrogen use has been consistently higher on crops than on grassland ever since the British Survey started.

Apart from a dip in 1992-93 due to major changes in the Common Agricultural Policy, the overall application rate of total nitrogen on cropping land stayed within the range 140-150 kg/ha, with some wider fluctuations caused by factors such as changes in the crop mix and area or changes in nitrogen applications to specific crops (see Figure A2.3). The estimates for the last five years have fallen outside this range, with the overall application rate of nitrogen on crops for Great Britain being 121 kg/ha in 2024. This rate has recovered from the notable low observed in 2022, which was significantly driven by strong fertiliser prices.

Figure A2.1 Overall application rates (kg/ha) of total nitrogen on crops and grassland, Great Britain 1983 – 2024.

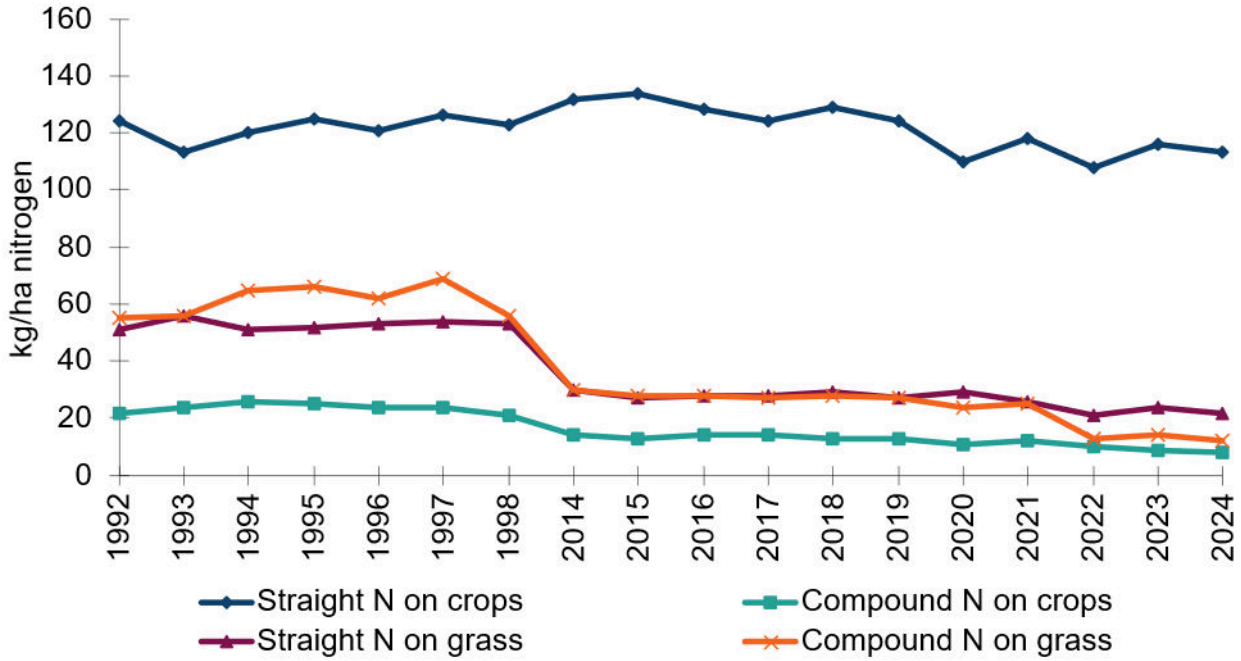


Nitrogen levels applied to grassland have always been lower than those on crops. From 1983 until 1999, the difference was fairly constant, averaging 27 kg/ha. Since 2000, the overall applications made to grass fell consistently relative to those made to crops. If the result from the 2020 survey is excluded, where the replacement of winter cereals and rape by spring

barley (see Appendix 3, Table AA3.3.1) resulted in an overall nitrogen rate difference of 68 kg/ha, during the last five years, the average difference in overall nitrogen rate has remained relatively constant at 84 kg/ha.

Data on straight and compound nitrogen for Great Britain are not available for the period 1983-91 when the Survey in Scotland was separate from the one in England & Wales. Figure A2.2 shows the overall application rates of straight and compound nitrogen on crops and grassland. Most of the total nitrogen fertiliser used on crops each year has been applied in straight form. On grassland, since 2009, the overall application rates of straight and compound nitrogen were similar, but with a greater decrease in compound N rate observed in 2022.

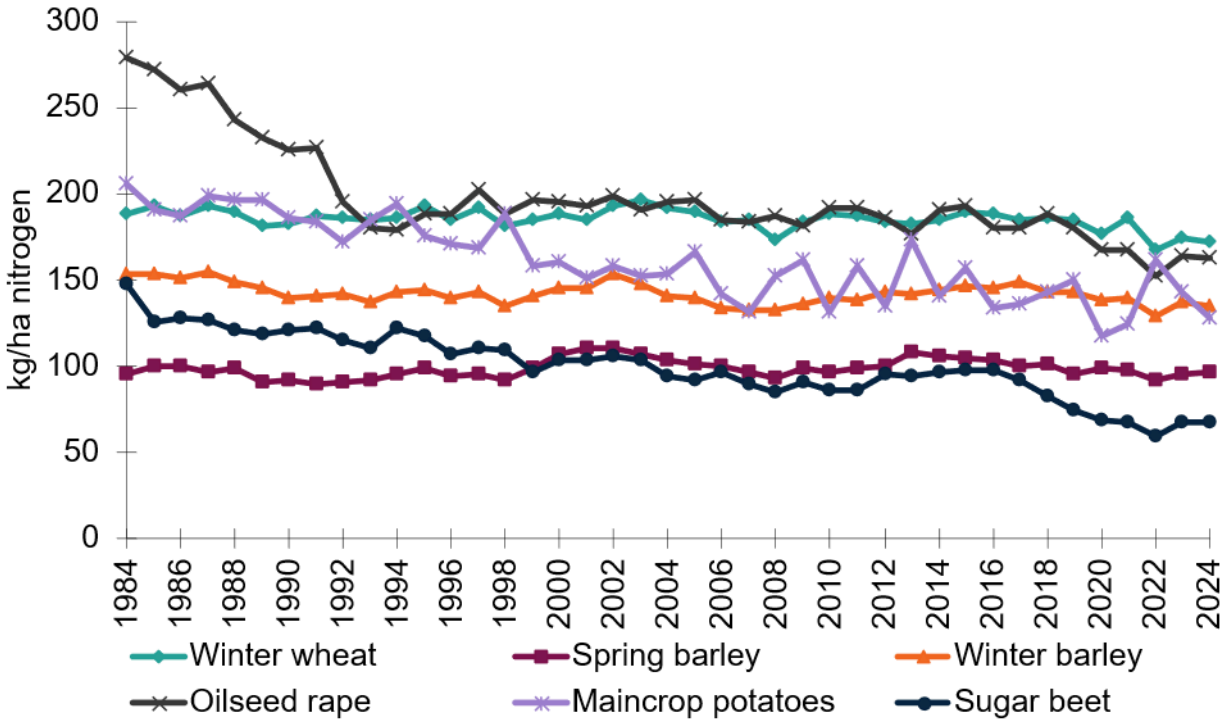
Figure A2.2 Overall application rates (kg/ha) of straight and compound nitrogen on crops and grassland, Great Britain 1992 – 2024



A2.1.1 Longer term trends in nitrogen use on major crops

Overall application rates of total nitrogen on the main arable crops in Great Britain since 1984 are shown in Figure A2.3.

Figure A2.3 Overall application rates (kg/ha) of total nitrogen on major arable crops, Great Britain 1984 – 2024



A2.1.2 Longer term trends in autumn and winter applications of nitrogen fertiliser

The BSFP can monitor the extent to which recommended agronomic advice is adopted. By analysing the timing of fertiliser applications, it is possible to assess the extent to which autumn and winter nitrogen is applied. The standard advice is that autumn nitrogen is not required for winter cereals, as economic yield benefits are rare and such applications are vulnerable to leaching loss. The Great Britain values have remained below 10% of the crop area treated for both winter cereal crops since 2003, with the dressing cover being 5% or below for both since 2021. The area receiving autumn nitrogen is too low for data relating to average field application to be used. Autumn nitrogen at 30 kg/ha is recommended for winter oilseed rape, unless the soil has a high nitrogen fertility, as the crop normally requires more nitrogen than winter cereals during the autumn growth period. Data relating to this commentary can be found in Appendix table AA1.2.

A2.2 LONGER TERM TRENDS IN PHOSPHATE, POTASH AND SULPHUR USE, FROM 1983

Historic annual overall application rates of phosphate, potash and sulphur on crops and on grassland in Great Britain are illustrated in Figure A2.4a and A2.4b, using the data presented in Appendix Tables AA1.3, AA1.4 and AA1.5.

Figure A2.4a Overall application rates (kg/ha) phosphate and potash on crops and grassland, Great Britain 1984 – 2024

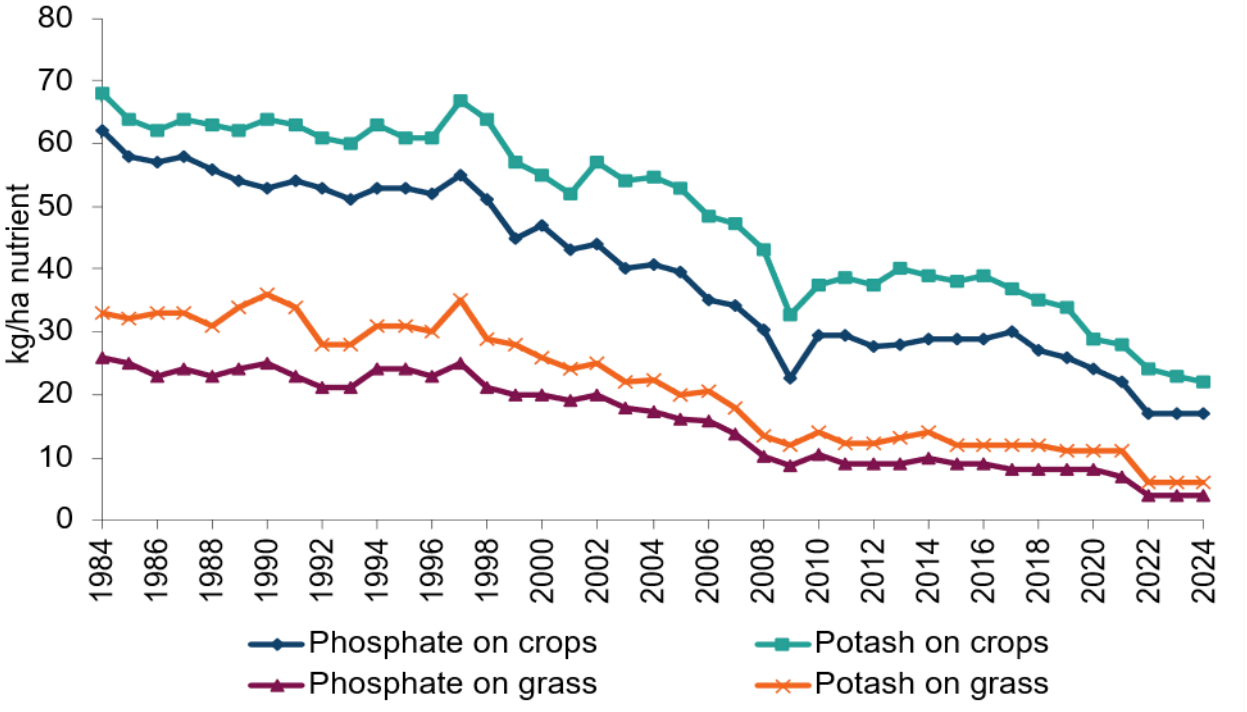
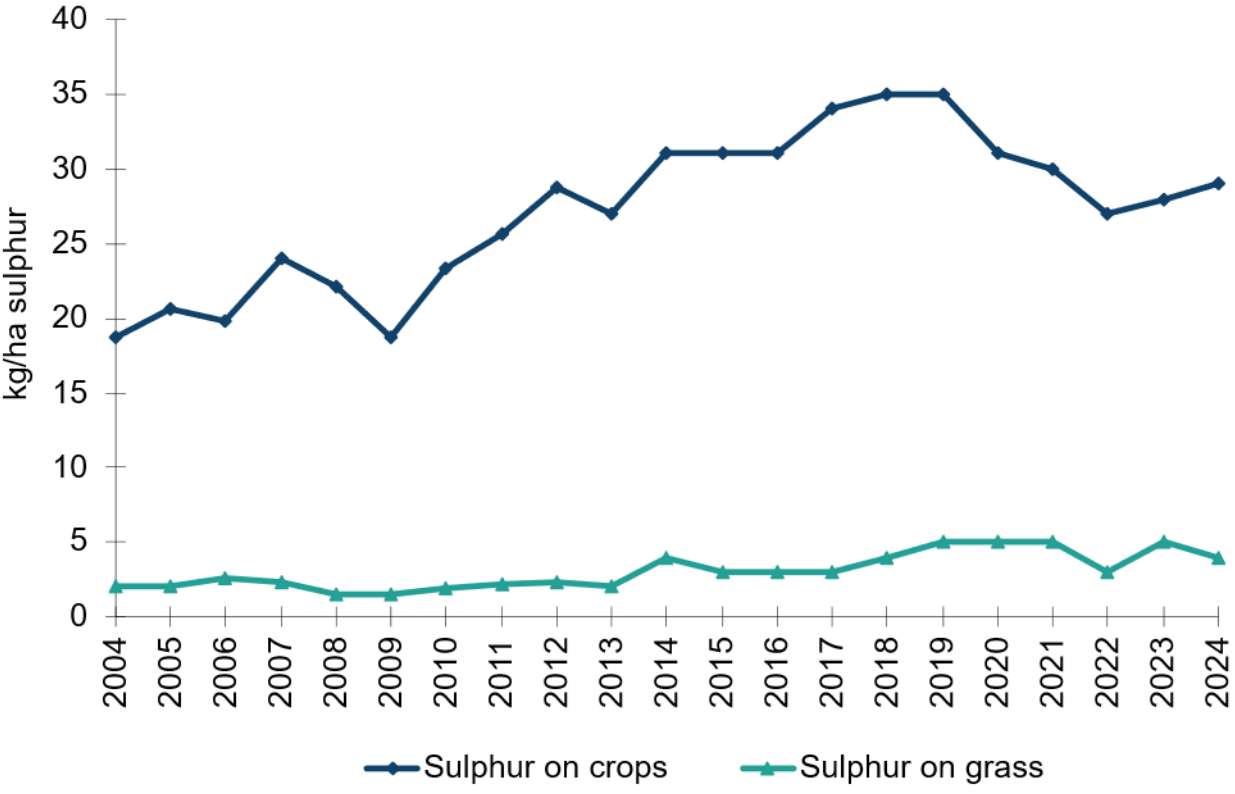


Figure A2.4b Overall application rates (kg/ha) of sulphur (SO_3) on crops and grassland, Great Britain 2004 – 2024



Overall phosphate application rates on crops declined gradually between 1984 and 1996, from 62 kg/ha to 52 kg/ha. Thereafter the decline in rates became more marked to 2010, with

the dip in use in 2009 being caused by a major price increase for the nutrient at that time. The data show that, since 2010, overall application rates of phosphate and potash have remained relatively constant, and rates of 17 kg/ha 22 kg/ha respectively, were recorded in 2024. Overall phosphate rates on crops have been consistently higher than those recorded on grass.

The overall application rate of phosphate on grassland was highest in 1983, at 28 kg/ha, and then application remained relatively stable at 21-26 kg/ha between 1984 and 1998. Overall application rates declined more rapidly in the period between 1999 and 2009, where the rates were 20 kg/ha and 9 kg/ha, respectively. Since then, until 2021, the overall application rates have remained stable at 7-10 kg/ha, but in 2024, like 2022 and 2023, are below that level.

Overall potash usage on crops declined slightly between 1983 and 1997, with the overall application rates in the 60-68 kg/ha range. Like phosphate, overall application rates reduced at a greater rate after this time to 33 kg/ha in 2009. The potash rate in 2009 was the lowest since 1983 and again was thought to be a reaction to the price of the nutrient. Since then, the overall application rates of potash on crops have gradually declined to 22 kg/ha in 2024.

Compared to crops, the pattern of overall potash application on grassland has been more variable. A net decline was shown between 1983 and 2009; since then the rate has remained within the range of 6-14 kg/ha.

Overall sulphur application rate on crops has increased steadily since 2004 and increased by 1 kg/ha to 29 kg/ha in 2024. On grassland the use of sulphur is much lower, but it too has increased, albeit it at a much lower rate. In 2004 the overall application rate was 2 kg/ha and in 2024 this was 4 kg/ha.

Overall application rates of phosphate and potash applied to crops are approximately three times those used on grassland. However, there is greater use of applied manures on grassland (35% cover) than on crops (27% cover) and grazed grassland also receives manure as it is grazed. Annual overall application rates of sulphur on crops and on grassland in Great Britain since 2004 are illustrated in Figure A2.4b.

On crops, the phosphate dressing cover has declined in all GB countries since 2004. However, the decline in England and Wales has been much higher (-32 percentage points) in comparison to Scotland, where the reduction was 17 percentage points for the period. Despite this, long-term trend dressing covers have been relatively stable in the last 5 years. On grass, phosphate dressing covers have also declined since 2004, but these too have stabilised in more recent years.

Potash dressing covers follow a similar pattern to phosphate, with a marked decline on crops in England and Wales since 2004, followed by stabilisation during the last 10 years.

Sulphur dressing covers have increased since 2004 on crops in all GB countries. At the start of the period, they were generally higher in Scotland than in England and Wales. In the last five years sulphur dressing covers have plateaued, although in the last four years they were slightly higher in England and Wales than Scotland. Dressing covers on grass are lower than those observed on crops. They have increased since 2004, and in the last five years have tended to be higher in Scotland (mean 18%) than in England and Wales (mean 12%).

The data pertaining to dressing coverage of phosphate, potash and sulphur, on both crops and grassland, can be found in Appendix tables AA1.6b, AA1.6c and AA1.6d.

A2.2.1 Longer term trends in phosphate, potash and sulphur use on major crops

Overall application rates of phosphate and potash on the main arable crops in Great Britain since 1983 are shown in Figures A2.5a and A2.5b.

Phosphate use on the main combinable crops has shown a gradual net decline since 1983 (Figure A2.5a). The year 2009 saw more marked decreases in overall application rates due to a spike in fertiliser prices (-10 kg/ha for winter wheat and -13 kg/ha for winter barley). In 2010 overall phosphate rates recovered and there was a period of relative stability between 2010 and 2017, but since then there appears to have been a resumption in the decline. Overall phosphate use has also declined steadily on sugar beet but has recently shown signs of recovery on potatoes (Figure A2.5d).

Potash use on the main combinable crops was relatively stable from 1983 to about the turn of the century. It then went through a period of decline to 2009, followed by relative stability between 2010 and 2017, before a return to apparent decline thereafter (Figure A2.5b). Overall potash application rates were declining steadily on potatoes and sugar beet. However, potash application rates on potatoes noted an increase in 2022 and 2024 (Figure A2.5d).

Overall application rates of sulphur (SO_3) on the main combinable crops have increased steadily since reporting of sulphur data began in 1983 (Figure A2.5c). However, these increases plateaued during the 2010s, with 2022 recording a second subsequent year of declining application rates. This downward movement reflects a decrease in the dressing cover of sulphur on these and other crops rather than decreases in the average rates which have been relatively constant and close to the recommended rate for many years (Tables A1.3b and A1.3c).

Figure A2.5a Overall application rates (kg/ha) of phosphate on major arable crops, Great Britain 1984 – 2024

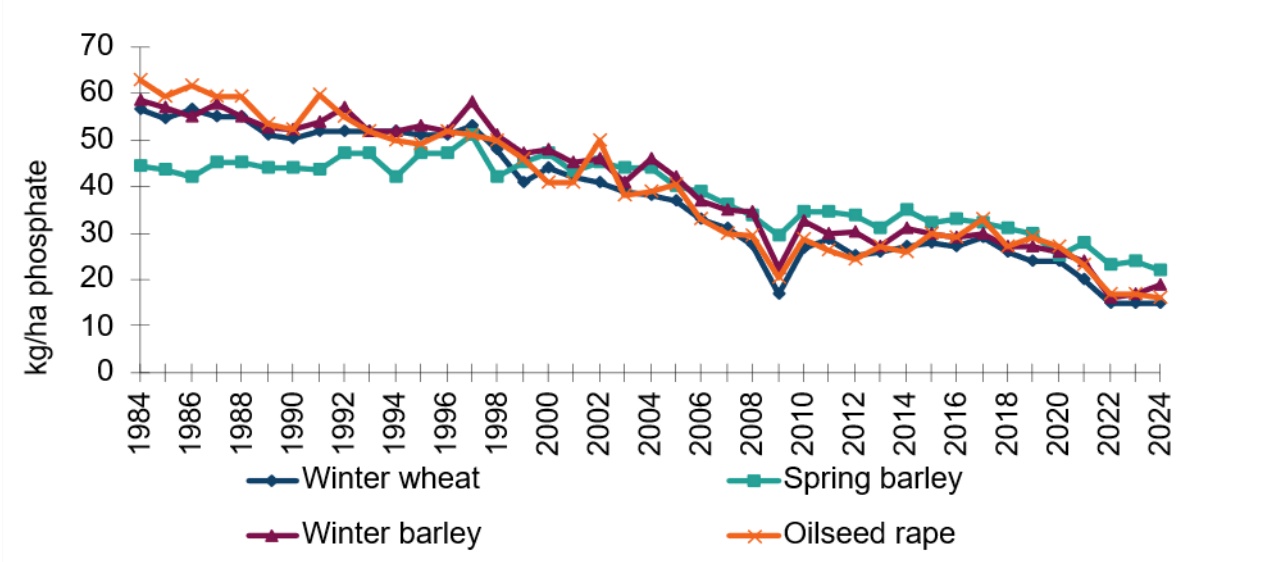


Figure A2.5b Overall application rates (kg/ha) of potash, on major arable crops, Great Britain 1984 – 2024

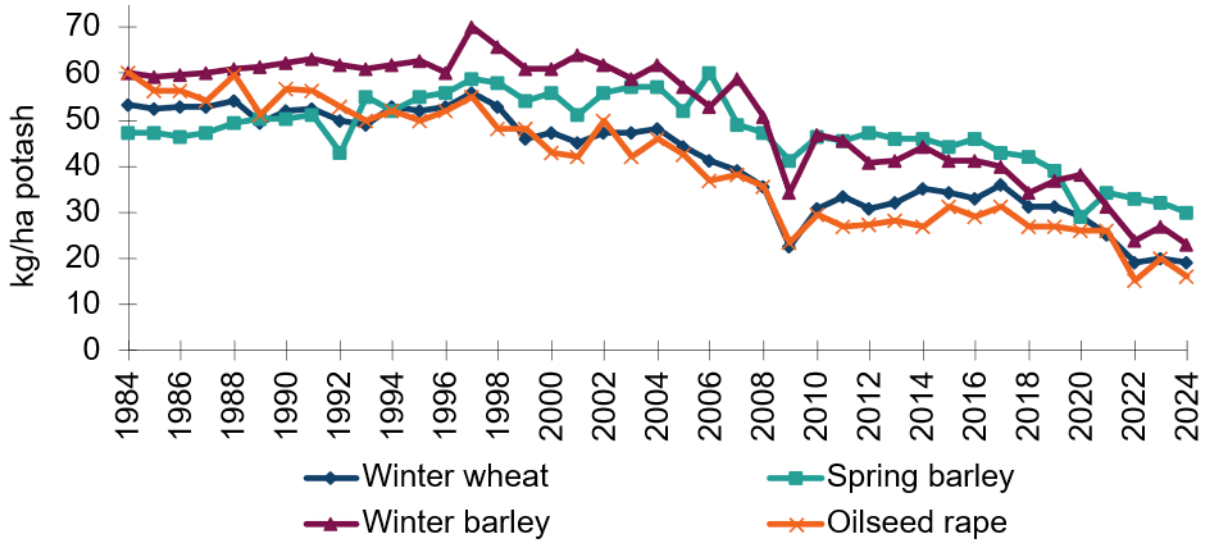


Figure A2.5c Overall application rates (kg/ha) of sulphur (SO_3) on major arable crops, Great Britain 1993 – 2024

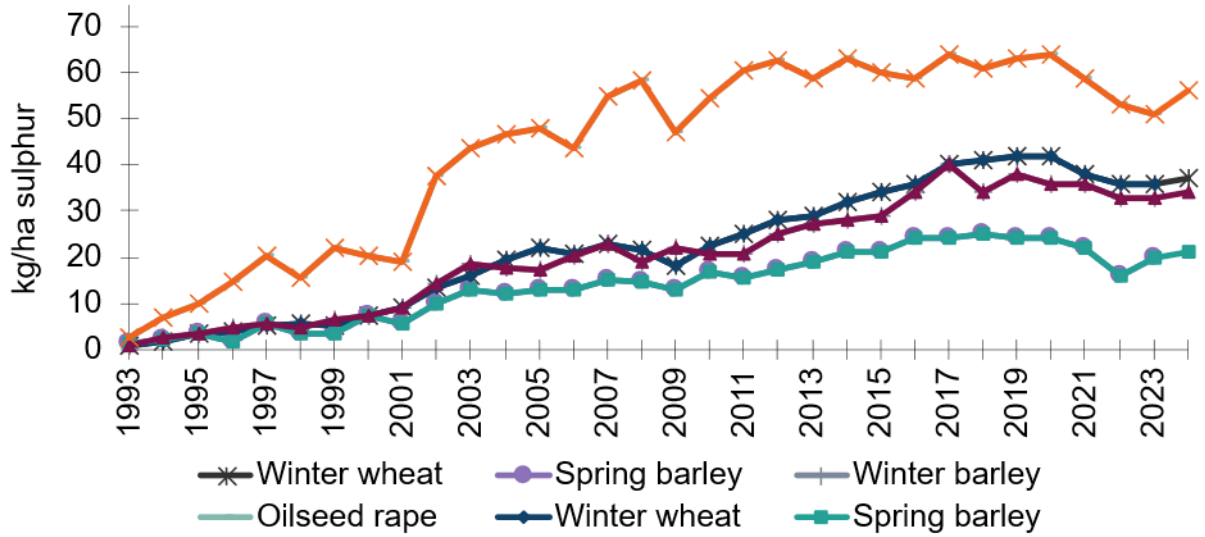
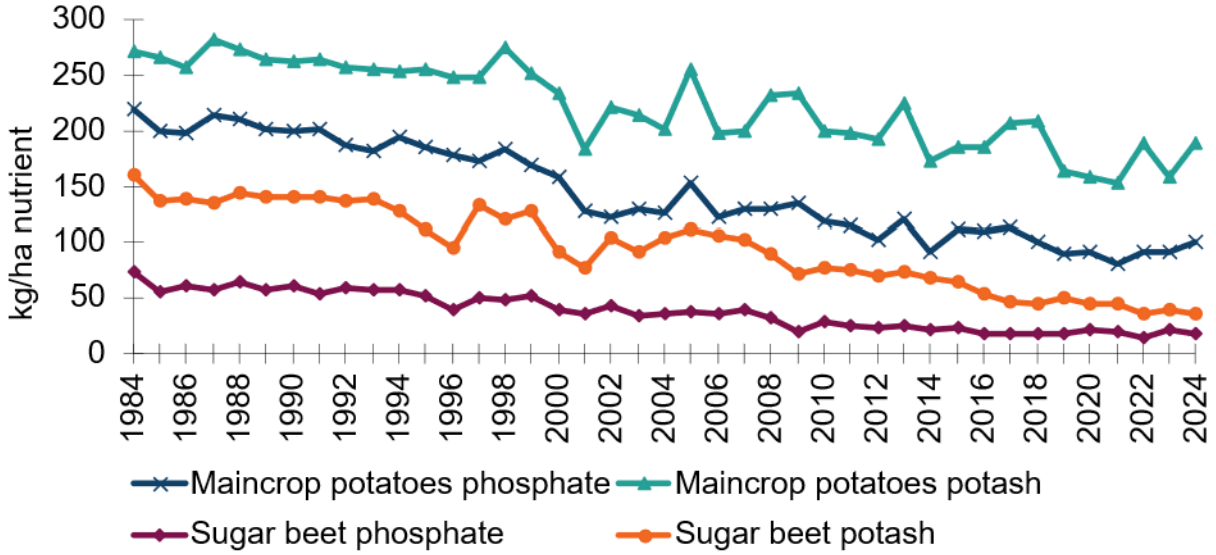


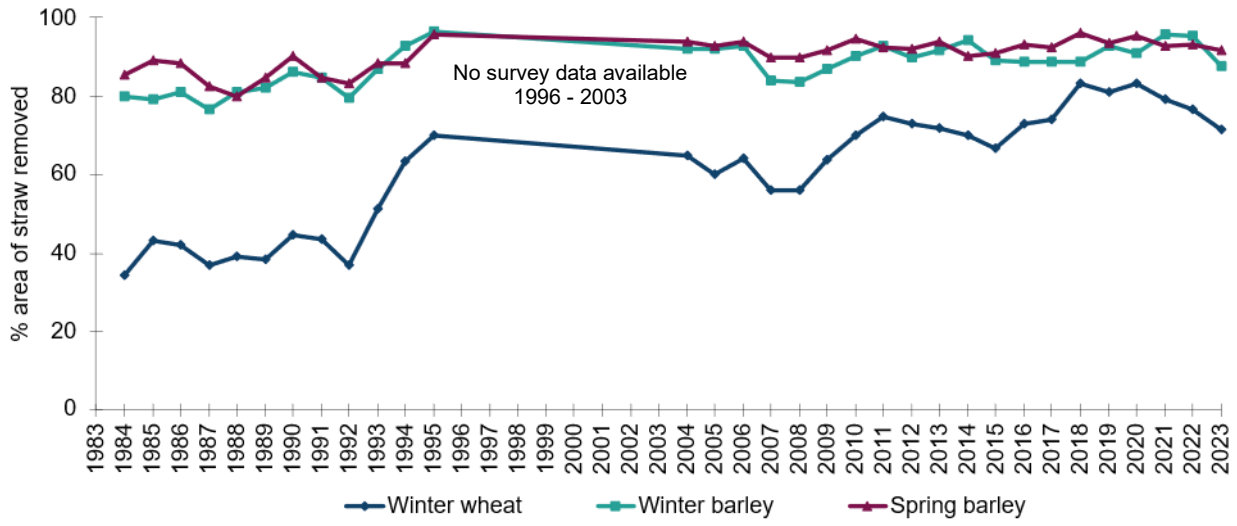
Figure A2.5d Overall application rates (kg/ha) of phosphate and potash on sugar beet and potatoes, Great Britain 1984 – 2024



A2.3 LONGER TERM TRENDS IN STRAW REMOVAL, FROM 1984

Estimates of the percentage of straw removed from wheat and barley fields are shown in Figure A2.6. Wheat and barley straw contain a significant quantity of nutrients, especially potash. The removal of straw from the field after harvest also removes these nutrients, which would otherwise be returned to the soil when the straw is incorporated. These straws contain on average 1.2-1.5 kg P_2O_5 (phosphate) per tonne, and 9.5-12.5 kg K_2O (potash) per tonne, and it is estimated that for every tonne of cereal grain harvested, 0.5 tonnes of straw can be baled and removed from the field. Thus, the removal of wheat or barley straw will increase the removal of phosphate by about 10% more than if the grain alone were removed, while the amount of potash removed would be approximately doubled.

Figure A2.6 Percentage of straw removed from wheat and barley fields, England & Wales crop years 1984 – 1995, Great Britain crop years 2004 – 2023



Data collected as part of the 2024 Survey related to the fate of the straw from the 2023 harvest so is reported against 2023. In 2023, 72% of the winter wheat straw was removed from the fields, with the percentages for winter and spring barley higher still at 88% and 92% respectively.

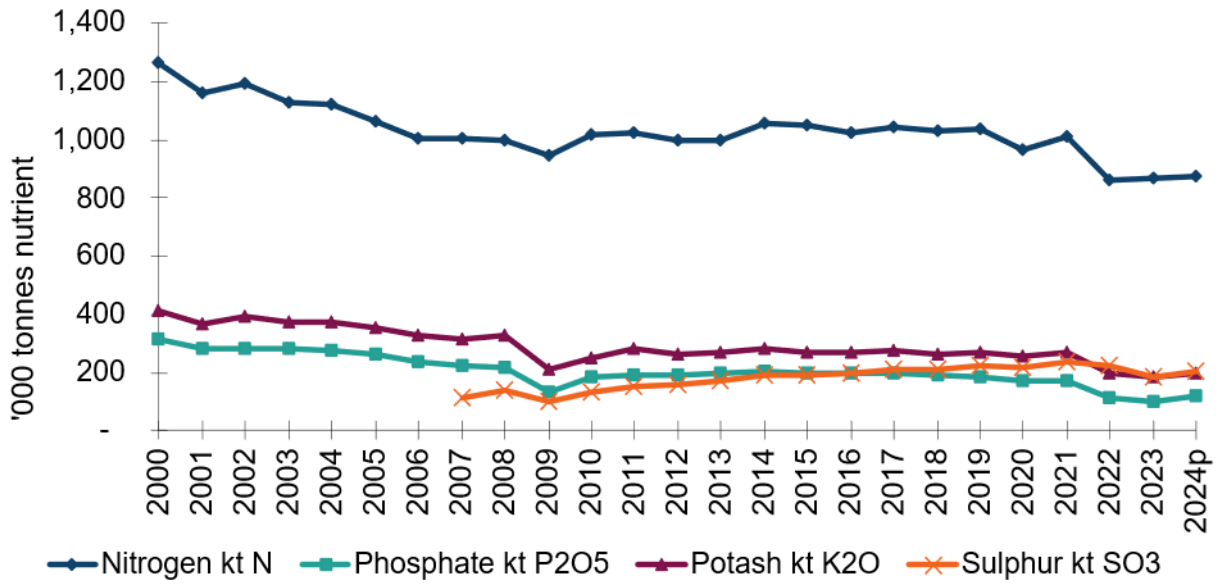
Data for the period 1984-95 were sourced from MAFF/Defra straw disposal surveys, those for the period 2004-21 from this Survey. No data are available for the period 1996-2003. The straw burning ban was introduced in 1993. This resulted in a significant increase in the percentage of straw removed, up to 63% and 93% for wheat and barley respectively, for the 1994 harvest.

A2.4 TOTAL QUANTITIES OF NITROGEN, PHOSPHATE, POTASH AND SULPHUR USED IN THE UK

Estimates of quantities of nitrogen, phosphate, potash and sulphur used in the UK since 2003 are illustrated in Figure A2.7. Longer term data, since 2000, can be located in Appendix table AA1.7; nutrient consumption from 1966 is available in the separate BSFP Dataset. These data are based on BSFP findings and trade and sales data. They are compiled by the AIC in conjunction with Defra using the methodology described in Appendix 3.2.5. Users should note that these figures relate also to the whole of the UK, whereas the other figures presented in this report relate just to Great Britain.

Total nitrogen use in the UK increased from 590 thousand tonnes in 1966 up to 1,674 thousand tonnes in 1987 before declining gradually to 1,001 thousand tonnes in 2008. The drop in 2009 was related to high fertiliser prices. Between 2010 and 2019 nitrogen use has remained relatively stable. The reduction in nitrogen use observed in 2020 was related to weather and cropping factors. From the peak in 1987, UK nitrogen use since has fallen by approximately 40%. Estimated nitrogen use in 2024 increased slightly on the previous year, to 872 thousand tonnes. 2022 was the lowest level seen since 1970, driven predominantly by supply shortage and price increases, in part as a result of the conflict in Ukraine.

Figure A2.7 Quantities of major nutrients used, United Kingdom 2000 – 2024



Phosphate use in the UK has fallen since the mid-1980s but since 2007 this decline has slowed. The low use of 129 thousand tonnes in 2009 was price related. Between 2010 and 2019 total phosphate use was more stable, between 184 and 201 thousand tonnes. Results for 2020 and 2021 showed a further reduction of this nutrient, (174 thousand tonnes of phosphate was used in 2020). At this level of usage volumes are only 40% of the annual average used between 1966 and 1995. This reduction somewhat reversed in 2024, increasing 14 thousand tonnes on the year, to 116 thousand tonnes. A softening of pricing and supply challenges from the year earlier helped to drive this recovery.

Potash use in the UK was highest in the mid-1980s through to 1999, after which there has been a sustained decline. Potash use in 2022 recorded a steeper decline, following a decade of reasonable stability. This reduced further in 2023 to 184 thousand tonnes. During 2024, potash use recovered to 2022 levels, to 198 thousand tonnes. As with phosphate, an easing in global price increases and reduction in supply issues were key drivers of this recovery.

Between 2009 and 2021, sulphur use recorded a steady increase, reaching highs of 239 thousand tonnes in 2021. This growth was reversed in the subsequent two years, with usage levels of 182 thousand tonnes reported in 2023, the lowest usage volume since 2014. Sulphur use in 2024 has reversed this downward trend, with usage volumes of 205 thousand tonnes. However, this is still the second lowest volume in the last eight years.

SECTION B

USE OF ORGANIC MANURES – GREAT BRITAIN, 2024

Introduction

Whilst the BSFP has focused historically on the application of manufactured fertilisers, in the last 15 years it has also collected increasingly detailed information on the use of organic manures. In previous years, farmers were asked where their manure applications fell within pre-specified 'high', 'medium' and 'low' ranges. From 2007, and to better quantify the organic manure data, farmers were asked to provide a specific rate of application which could then be weighted in the same way as the manufactured fertiliser data to deliver a national picture of organic manure usage. However, users should note that the underlying sample design is constructed to measure manufactured fertiliser usage and may not represent the population of farmers using organic manures as robustly.

In this chapter, data on slurries have been collected in cubic metres (m^3) and data on solid manures have been collected in tonnes. For the purpose of analysis and presentation, one cubic metre of slurry has been assumed to have the mass of one tonne.

B1 FARMS HANDLING ORGANIC MANURES

Organic manures applied to agricultural land may be produced on farm by livestock as slurries, farmyard manure (FYM) and poultry manures, or imported from other sources such as treated sewage sludges (also called bio-solids) and some industrial 'wastes' such as compost, paper waste or brewery effluent.

Table B1.1a Numbers and percentage (%) of farms applying each type of manure in Great Britain, 2024

	Count of farms in survey	% of farms in population	Total manure quantity (Mt; Mm^3)*	% of total quantity of all manure
No manure	416	37%	[z]	[z]
Any form of manure	890	63%	98	100%
Farm manure types				
Cattle FYM	640	46%	33	34%
Cattle slurry	250	17%	46	47%
Pig FYM	26	1%	1	1%
Pig slurry	11	1%	1	1%
Layer manure	19	1%	0	0%
Broiler/ turkey litter	39	2%	1	1%
Digestate, farm**	17	1%	3	3%
Other farm manure	50	5%	3	4%
Non-farm manure type				
Bio-solids	42	2%	3	4%
Digestate, imported***	42	2%	4	4%
Compost	14	1%	1	1%
Other non-farm	2	[c]	[c]	[c]

Notes: some farmers may use more than one type of manure.

* Mt (million tonnes) relates to solid manures; Mm^3 (million cubic metres) to liquid manures.

** digestate, farm, refers to digestate produced on the farm.

*** digestate, imported, refers to digestate imported onto the farm.

Of the 1,306 farms in the 2024 Survey, 890 used organic manures on at least one field on the farm, representing 63% of the Survey population. The details are shown in Table B1.1a.

Table B1.1b Percentage (%) of farms applying each type of manure in Great Britain, 2020 – 2024

Manure type being applied	2020 % farms	2021 % farms	2022 % farms	2023 % farms	2024 % farms
No manure	35.0	35.1	33.1	36.4	36.9
Cattle FYM	49.0	49.0	50.9	47.1	45.8
Cattle slurry	16.4	17.6	16.5	16.7	16.7
Pig FYM	2.0	1.3	1.4	1.4	1.5
Pig slurry	0.4	0.8	0.5	0.3	0.5
Layer manure	0.8	0.8	2.0	1.2	0.7
Broiler/ Turkey litter	2.4	2.6	2.8	2.0	1.8
Other farm manure	5.7	5.6	4.9	4.8	4.7
Digestate	[x]	[x]	[x]	2.4	2.9
Bio-solids	[x]	[x]	[x]	1.5	1.9
Compost	[x]	[x]	[x]	0.7	0.9
Other non-farm manure	4.8	4.4	7.2	0.2	0.1

Notes: Prior to 2023, ‘Digestate’, ‘Bio-solids’ and ‘Compost’ were in ‘Other non-farm manure’.
Prior to 2023, ‘Other FYM’ was reported separately from ‘Other farm manure’.

Cattle manure from beef and dairy farms is by far the largest volume of manure type generated in Great Britain. The percentage of farms using cattle FYM and cattle slurry was reasonably consistent over the last 5 years with use in 2024 being 46% and 17% of farms, respectively. Digestate was presented as a category for the first time in 2023 and was used by just under 3% of farms in 2024.

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Table B1.1c Dressing cover of organic manure in Great Britain, 2015 – 2024

	Winter wheat	Spring barley	Winter oilseed rape	Sugar beet	Maize	All crops	Grass under 5 years	Grass 5 years & over	All grass	All crops and grass
	%	%	%	%	%	%	%	%	%	%
2015	21	26	17	54	89	23	53	29	33	29
2016	19	31	20	41	95	23	48	31	34	29
2017	22	31	18	46	82	25	46	31	34	30
2018	25	30	24	46	88	27	52	33	37	32
2019	24	29	23	38	85	26	48	34	36	42
2020	24	27	24	36	85	25	51	32	35	31
2021	23	31	32	35	79	26	55	34	37	32
2022	24	35	31	34	85	28	52	35	37	33
2023	22	33	28	23	87	27	57	32	36	32
2024	23	28	31	32	87	27	48	33	35	31

Dressing cover of organic manure on crops averaged 27% in the five-year period 2020-2024. The proportions of both categories of grass receiving a dressing of manure were higher than crops in 2024 at 33% on grass 5 years and over and 48% on grass under 5 years old. This was consistently higher than 'all crops' over the five years displayed in table B1.1c.

Not all the manure generated by a farm is necessarily retained for use on that farm and excess manure/slurry can be exported for use elsewhere. Up to the 2013 Survey, the report included data on the quantities of manure which were imported onto farm or exported from farms and the number of farms involved. However these were all consistently very low and led to the conclusion that this activity was too small to be of significance or to provide robust data, resulting in collection of these data being discontinued (see 2013 BSFP report, Tables D1.2, D1.3a&b)[4].

The percentage of farms that used each type of slurry application method in Great Britain are shown in Table B1.2. This table takes account of all applications whether they are made by the farmers themselves or contractors. These data represent the number of farms rather than volume or area. Band-trailing hose became the most widespread method on cropped fields for the first time in 2024. This is a change from 2023, when broadcasting was the most prevalent method of application. Broadcasting on cropped fields decreased 29 percentage points on the year, to 38% of cropped fields. Farms spreading cattle slurry on cropped fields, by far the largest slurry type by volume, decreased from 72% in 2023 to 42% broadcast in 2024. Broadcast remained the most widespread method on grass fields as shown in Table B1.2b, albeit demonstrating a 15 percentage point decrease on the year.

[4] https://www.gov.uk/government/collections/fertiliser-usage

Table B1.2a Application methods used by farms applying slurry to cropped fields, Great Britain 2024. Percentages represent number of farms.

Application method* on cropped fields	Slurry type			Total farms applying slurry or digestate
	Farms applying cattle slurry	Farms applying pig slurry	Farms applying digestate	
Broadcast	42%	22%	34%	38%
Band – trailing hose	55%	78%	58%	58%
Band – trailing shoe	5%	6%	2%	4%
Shallow injected	3%	6%	7%	4%
Deep injected	0%	0%	1%	0%
Other surface application**	2%	0%	0%	1%
Non-broadcast***	64%	78%	68%	66%
Number of farms in sample*	68	10	44	121

Notes: Grass fields have been excluded from this table.
* Farms may use more than one application method and may apply more than one slurry type.
** Other surface application methods include by rain gun and by rotating boom.
*** Non broadcast includes band-trailing hose, band trailing shoe, shallow and deep injected.

Table B1.2b Application methods used by farms applying slurry to grassland, Great Britain 2024. Percentages represent number of farms.

Application method* on grassland	Slurry type			Total farms applying slurry or digestate
	Farms applying cattle slurry	Farms applying pig slurry	Farms applying digestate	
Broadcast	60%	21%	29%	57%
Band – trailing hose	37%	79%	55%	38%
Band – trailing shoe	4%	0%	0%	4%
Shallow injected	2%	9%	16%	4%
Deep injected	0%	0%	0%	0%
Other surface application**	1%	0%	0%	1%
Non-broadcast***	44%	79%	71%	46%
Number of farms in sample*	233	5	22	258

Notes: Cropped (non-grass) fields have been excluded from this table.
* Farms may use more than one application method and may apply more than one slurry type.
** Other surface application methods include by rain gun and by rotating boom.
*** Non broadcast includes band-trailing hose, band trailing shoe, shallow and deep injected.

Whilst some of these application methods (e.g. shallow injection or deep injection) apply slurry below the surface of the field, the majority require secondary cultivation to incorporate the manure/slurry into the soil. Assessment of how often organic manures are incorporated into the soil is complicated by the fact that some farmers make more than one application or apply more than one type of manure and may incorporate each of these differently. As manure on grass fields is seldom incorporated (unless by injection or they are destined for re-seeding), grass fields have been excluded from the incorporation analysis.

Table B1.3 gives estimates of the volume and area of manure/slurry incorporation on cropping fields by manure type and immediacy of incorporation. Farmyard manure is the most extensively incorporated at 97% of the volume applied, with 88% of it incorporated within a week of spreading on cropping fields. Some of the slurries or digestate that are shown as being 'not incorporated' could have been applied using a trailing hose (or similar) system. This would provide mitigation of ammonia loss where it was not possible to incorporate, for example when applied to winter cropped fields in the spring.

Table B1.3 Percentage (%) of organic manure incorporated (area and quantity) on cropping fields by incorporation time and manure/slurry type, Great Britain 2024

Manure type	Incorporation time after spreading					Total applied
	not incorporated	within 6 hours	between 6 and 24 hours	between 1 and 7 days	more than 1 week	area and quantity
by area	% of area	% of area	% of area	% of area	% of area	'000 ha
FYM	4	10	42	32	12	694
Cattle slurry	26	18	23	28	5	139
Pig slurry	47	8	26	19	0	32
Poultry FYM	6	31	36	8	19	123
Biosolids	10	66	14	6	4	136
Digestate	40	18	21	16	5	176
Other	15	46	7	25	8	43
Total	13	21	32	24	10	1,343
by quantity	% of quantity	% of quantity	% of quantity	% of quantity	% of quantity	Mt; Mm^3
FYM	3	11	42	34	9	15.4
Cattle slurry	26	16	24	29	6	4.6
Pig slurry	52	2	27	20	0	1.0
Poultry FYM	4	35	34	7	20	0.9
Biosolids	8	69	9	5	9	3.3
Digestate	34	15	22	24	4	4.6
Other	24	42	2	26	5	1.6
Total	14	21	30	27	8	31.4

Farmers were asked to indicate what proportion of their livestock manures had been spread by a contractor (Table B1.4a). The percentage of farmers using a contractor to spread at least some of their FYM was 25% in 2024. Where contractors were used, they applied between 86% and 95% of the manure on average.

Table B1.4a Use of contractors (%) on farms applying manure to spread manures or slurry in current season, by main manure type, Great Britain 2024

Manure type	% of farms using a contractor for each manure type	% of each manure applied by contractor	% of each manure applied by contractor, where contractor is used
	%	%	%
FYM	25	24	95
Cattle slurry	36	35	86
Digestate	73	66	91
Other	44	40	95
Total	**30**	**34**	**90**

Use of contractors to spread manures was fairly consistent over the five-year period 2020-2024. An average of 29% of farms (Table B1.4b) used a contractor and they spread an average of 88% of the manure spread on those farms.

Table B1.4b Use of contractors (%) on farms applying manure to spread manures or slurry, Great Britain 2010 – 2024

	% of farms using a contractor	% of available manure applied by contractor	Average % of manure applied by contractor, where contractor is used
	%	%	%
2010	29	27	84
2011	28	29	86
2012	32	32	84
2013	30	30	88
2014	36	39	87
2015	34	33	89
2016	34	32	83
2017	33	30	92
2018	30	30	90
2019	30	29	90
2020	27	27	90
2021	29	28	88
2022	33	28	87
2023	27	25	86
2024	30	34	90

Historical note: Over four seasons between 2015 and 2019, excluding 2017, the Survey collected data on the periods of storage, and the months of establishment and spreading of manure stored in field heaps. The results seen from these data were considered to be sufficiently indicative of the timings and use of outdoor manure storage that they provided adequate information without the need for continuing collection of these data. The results are available in the relevant previous editions of the Survey[5].

[5] https://www.gov.uk/government/collections/fertiliser-usage

B2 USE OF ORGANIC MANURES

Recent and current fertiliser recommendations are consistent in their advice to farmers to take note of the nutrient contributions from manures when calculating fertiliser input requirements. When making comparisons of the data presented in this report several factors should be considered:

- the extent to which individual farmers have accounted for the nutrients in the manures cannot be judged from these data,
- the data presented for 'with/without' manure are not a paired comparison of otherwise identical fields,
- fields which have not received manures may be on farms which have no manure and are thus managed in a different way,
- in grassland systems, fields which have not received manures may be managed differently (e.g. grazed only) compared with manured fields which may be cut more than once as well as grazed,
- for crops, the overall application rate for manufactured fertiliser is likely, by definition, to include some fields which have received no manufactured fertiliser. For the corresponding 'with manure' data, it may indicate that the manure applied was judged to supply all the nutrients required,
- for grassland, the average field rate for manufactured fertiliser has been used to avoid distorting the data by inclusion of 'unmanaged' grass, which receives no manufactured fertiliser. However, this has the effect of excluding any managed fields on which no manufactured fertiliser was applied because the manure was considered sufficient, thus obscuring any substitution effect,
- the dataset of fields where manures are used includes fields which may have received only a very small amount of manure (see section B3). On those fields receiving large dressings, there may be a greater adjustment in mineral fertiliser,
- where reductions in phosphate and potash fertiliser have not been made despite an application of manure, this may indicate a desire to build up low soil reserves of these nutrients.

The proportion of the sown area, of all crops plus grassland, receiving each of the main types of manure is shown in Table B2.1a, with cattle FYM and cattle slurry being the most extensively applied manures.

Table B2.1a Percentage (%) of sown area (all crops and grass) that received each organic manure type, Great Britain 2020 – 2024

Manure type	2020 %	2021 %	2022 %	2023 %	2024 %
Cattle FYM	15.4	16.4	17.1	15.9	15.1
Cattle slurry	8.3	9.3	8.6	9.0	8.3
Pig FYM	0.7	0.7	0.7	0.6	0.5
Pig slurry	0.2	0.5	0.4	0.2	0.3
Layer manure	0.6	0.4	0.7	0.4	0.5
Broiler/turkey litter	0.9	1.0	1.3	0.8	0.9
Other farm manure	1.2	1.3	0.9	1.0	0.9
All digestate	[x]	[x]	[x]	1.5	2.0
Bio-solids	1.6	1.3	1.6	1.1	1.2
Other non-farm	1.3	1.4	2.2	0.5	0.3

Note: some areas may have received more than one type of manure in a single year.

The percentage of the sown area that received an application of cattle FYM in 2024 was 15.1%, which is slightly below the five-year average (16.0%).

Table B2.1b Percentage (%) distribution of each organic manure type on all manured crops and grass area, Great Britain 2020 - 2024

Manure type	2020 %	2021 %	2022 %	2023 %	2024 %
Cattle FYM	55.1	54.5	54.5	55.0	53.9
Cattle slurry	29.7	31.1	27.4	31.0	29.5
Pig FYM	2.5	2.3	2.4	1.9	1.9
Pig slurry	0.6	1.7	1.4	0.9	1.0
Layer manure	2.0	1.2	2.1	1.4	1.7
Broiler/ turkey litter	3.1	3.5	4.2	2.9	3.1
Other farm manure	4.2	4.3	2.9	3.3	3.3
All digestate	[x]	[x]	[x]	5.2	7.0
Bio-solids	5.6	4.5	5.1	3.9	4.3
Other non-farm	4.5	4.6	7.2	1.7	1.2

Note: some areas may have received more than one type of manure in a single year.

The levels of nutrient in organic manures vary according to which type of manure is being applied as well as factors such as the size, age, gender, and market for the animals that produced it. Furthermore, the concentration of nutrients is dependent on the proportion of incorporated bedding, the length of time that the manure has been stored and, in the case of slurries particularly, diluting factors such as rainwater or dirty water which affect the proportion of dry matter. The BSFP does not ask detailed questions on the animals producing manures or the nutrient analysis of any organic applications made, but it is possible to use typical values for different manure types to estimate the *likely* nutrient levels delivered. Details of these values are given in Table B2.2.

Table B2.2 Typical dry matter % and related nutrient content in the fresh weight of common organic manure types[6]

Manure type (RB209 categories)	Dry matter %	Total N kg/t; kg/m^3	Total P_2O_5 kg/t; kg/m^3	Total K_2O kg/t; kg/m^3
Cattle FYM	25.0%	6.0	3.2	9.4
Pig FYM	25.0%	7.0	6.0	8.0
Sheep FYM	25.0%	7.0	3.2	8.0
Duck FYM	25.0%	6.5	5.5	7.5
Layer hen manure	40.0%	19.0	12.0	15.0
Poultry litter	60.0%	28.0	17.0	21.0
Cattle slurry	6.0%	2.6	1.2	2.5
Pig slurry	4.0%	3.6	1.5	2.2
Biosolids: Digested cake	25.0%	11.0	11.0	0.6
Biosolids: Thermally dried	95.0%	40.0	55.0	2.0
Biosolids: Lime stabilised	25.0%	8.5	7.0	0.8
Biosolids: Composted	40.0%	11.0	10.0	3.0
Digestate, food-based, whole	4.1%	4.8	1.1	2.4
Digestate, farm-sourced, whole	5.5%	3.6%	1.7	4.4
Compost, green	60.0%	7.5	3.0	6.8
Compost, green/food	60.0%	11.0	4.9	8.0

In Tables B2.3 and B2.3b, crops receiving manure applications have been classified as either “winter-sown”, “spring-sown” or “grass” and their average treated areas and manure application rates shown.

[6] Anon. (2018). Nutrient Management Guide (RB209). Agriculture and Horticulture Development Board (AHDB). https://ahdb.org.uk/nutrient-management-guide-rb209

Table B2.3a Treated areas and average field rates of manure applied to winter-sown and spring-sown crops and to grassland, by manure type, Great Britain 2024

	Manure type									
	Cattle FYM	Cattle slurry	Pig FYM	Pig slurry	Layer manure	Broiler/ turkey litter	Other farm manure	All digest-ate	Bio-solids	Other non-farm
Winter sown										
% total area with manure*	9.5%	1.9%	1.6 %	0.7 %	1.1 %	2.2 %	0.4 %	3.5 %	3.4 %	0.7 %
Total treated area ('000 ha)	251	51	42	20	29	58	10	93	91	18
Average field rate (t; m^3/ha)	21	27	21	33	7	7	17	23	23	26
Quantity (Mt; Mm^3)**	5.2	1.4	0.9	0.7	0.2	0.4	0.2	2.1	2.1	0.5
Fields in survey	259	44	21	13	20	36	8	57	48	14
Spring sown										
% total area with manure*	20.0%	4.7%	0.7 %	0.6 %	0.7 %	1.3 %	0.7 %	4.2 %	2.3 %	0.8 %
Total treated area ('000 ha)	371	87	12	12	12	24	14	78	43	15
Average field rate (t; m^3/ha)	23	36	25	27	8	7	56	28	28	35
Quantity (Mt; Mm^3)**	8.6	3.1	0.3	0.3	0.1	0.2	0.8	2.2	1.2	0.5
Fields in survey	335	82	13	8	8	23	12	40	19	13
Grass										
% total area with manure*	23.6%	26.7 %	[c]	0.1 %	0.3 %	0.3 %	1.8 %	2.3 %	[c]	[c]
Total treated area ('000 ha)	1,329	1,502	[c]	6	15	18	100	127	[c]	[c]
Average field rate (t; m^3/ha)	15	27	[c]	29	7	3	25	18	[c]	[c]
Quantity (Mt; Mm^3)**	19.4	41.3	[c]	0.2	0.1	0.1	2.5	2.3	[c]	[c]
Fields in survey	675	457	4	9	8	13	49	35	2	4

Notes: This table excludes crops that cannot be classified as either winter or spring-sown, such as permanent crops.

* Some fields may receive more than one type of manure.

** Mt (million tonnes) relates to solid manures; Mm^3 (million cubic metres) to liquid manures.

The majority of cattle manure and slurry applications were made to grassland, reflecting the practice of utilising the manure within the farm on which it is produced. Cattle slurry makes up 85% of all slurry volume (Table B2.3a) and 90% of cattle slurry was applied to grassland. Of the balance, the majority of cattle slurry applied to cropping fields is applied to spring-sown crops (Table B2.4). Data on pig slurry need to be treated with caution due to the relatively low number of farms using manure of this type. Conversely, whilst non-farm manures such as biosolids appear to be favoured on winter-sown cropping land it is notable that a proportion was applied to spring-sown crops. Overall, the 2024 profiles of the % treated area and average manure rates were broadly similar to those reported for 2023.

Table B2.3b Summary of land treated with cattle FYM, by broad crop group and farm type, Great Britain 2024

Land treated with cattle FYM	BSFP robust type category*					
	Cereals	Dairy	General cropping	Mixed	Other grazing livestock	All farm types***
Winter sown crops						
% of total treated area	31.3%	9.8%	13.8%	29.7%	15.1%	100.0%
Total treated area ('000 ha)	78	25	35	75	38	251
Average field rate (t/ha)	20	22	19	20	24	21
Quantity (Mt)**	1.6	0.5	0.6	1.5	0.9	5.2
Fields in survey	69	36	24	77	51	259
Spring sown crops						
% of total treated area	22.8%	18.3%	16.8%	23.0%	19.1%	100.0%
Total treated area ('000 ha)	84	68	62	85	71	371
Average field rate (t/ha)	18	28	21	25	24	23
Quantity (Mt)**	1.5	1.9	1.3	2.1	1.7	8.6
Fields in survey	43	73	42	82	95	335
Grass						
% of total treated area	1.0%	12.4%	4.0%	7.0%	75.6%	100.0%
Total treated area ('000 ha)	13	165	53	93	1,005	1,329
Average field rate (t/ha)	16	18	17	15	14	15
Quantity (Mt)**	0.2	3.0	0.9	1.4	13.9	19.4
Fields in survey	8	77	24	40	526	675

Notes: Only cattle FYM was applied in sufficient volume to warrant reporting by farm type.
* For Robust Groups see Appendix 5.
** Mt = million tonnes.
*** Percent of total treated areas may not sum to 100% because possible applications to Pig and Poultry Robust Groups are not included.

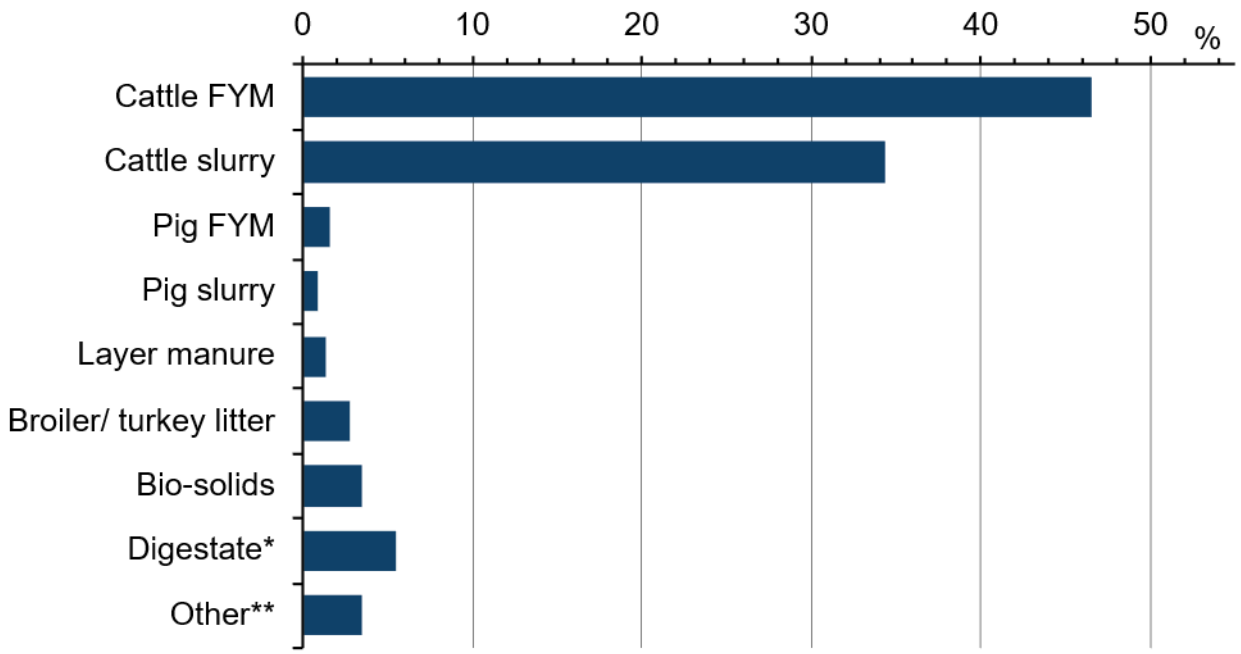
Table B2.3b shows a breakdown of the cattle FYM applications by farm type. Cereal farms account for the largest proportion of winter sown crop area treated with cattle FYM at 31.3%. For grass 75.6% of the area treated with cattle FYM was on 'Other grazing livestock' robust classification farms.

The time of year when manure was applied is shown in Table B2.4 as a proportion of fields receiving manure applications. Once again, the crops have been classified as either "winter sown", "spring sown" or "grass". This segmentation highlights the importance of different periods through the year for organic manure applications. Whilst there are variations between manure types, the applications that in general made the biggest contributions to the overall manure type totals were early autumn applications on winter-sown crops, and spring and summer applications on both spring-sown crops and grass. When comparing percentage values of different manures, it is important to recognise the very different quantities involved, as indicated by the percentages of treated areas at the foot of the table.

Table B2.4 Percentage (%) of each organic manure type by broad crop group and application timing, Great Britain 2024

	Manure type									
	Cattle FYM	Cattle slurry	Pig FYM	Pig slurry	Layer manure	Broiler/ turkey litter	Other farm manure	All digest-ate	Bio-solids	Other non-farm
	%	%	%	%	%	%	%	%	%	%
Winter sown crops										
August	3.6	0.6	28.1	10.3	10.3	25.5	1.4	6.7	19.2	11.0
September	8.0	1.8	34.3	16.8	36.6	14.5	6.2	5.9	34.2	25.1
October	1.0	0.4	4.5	0.0	0.0	10.6	0.2	1.8	9.4	10.5
Nov. to Jan.	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Feb. to April	0.2	0.6	0.0	26.4	4.4	1.9	0.3	14.0	3.5	0.0
May to July	0.4	0.0	0.0	0.0	0.0	5.1	0.0	4.6	0.0	0.0
Spring sown crops										
August	0.1	0.2	0.0	0.0	0.0	0.1	0.0	0.5	0.5	0.0
September	0.5	0.5	4.9	0.0	0.7	0.0	0.0	0.0	0.0	5.1
October	0.9	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	1.1
Nov. to Jan.	0.8	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Feb. to April	15.8	3.7	11.5	14.8	21.3	16.1	7.1	19.0	29.2	33.2
May to July	1.5	1.5	0.9	17.1	0.0	7.8	4.2	8.8	1.7	0.0
Grass										
August	5.1	6.3	0.0	0.0	0.0	0.0	9.2	5.4	0.0	0.0
September	4.9	2.3	2.2	0.6	0.0	0.0	5.0	3.1	2.0	0.5
October	3.1	1.6	7.1	0.0	0.0	0.0	2.0	2.8	0.0	8.1
Nov. to Jan.	3.6	4.1	0.0	0.0	0.0	0.0	15.2	2.5	0.0	0.0
Feb. to April	32.6	42.5	2.9	10.1	1.6	17.8	31.3	10.7	0.4	5.5
May to July	17.7	33.8	1.0	3.5	25.2	0.6	17.8	14.2	0.0	0.0
Total	100	100	100	100	100	100	100	100	100	100
Relative quantity of each manure, by its proportional cover of total manured area.										
	45.8	34.1	1.5	0.9	1.4	2.4	2.9	6.7	3.3	0.9

Figure B2.1 Percentage (%) of treated GB areas receiving manure by manure type (3 year average 2022-2024)



Note: * No three year average is available for digestate as it was a new reporting category for 2023.
** No direct three year average is available for other farm manure and other non-farm manure due to a change in categorisation owing to digestate being extracted from both and represented as a single category from 2023 onwards.

Figure B2.1 shows the relative volumes of different types of organic manure used in Great Britain. Cattle FYM and slurry supply the overwhelming majority of the area of British crops and grass receiving organic manures.

Figures B2.2a-g are derived from the three-year average of the 2022 to 2024 GB data presented in Table B2.4. Figure B2.2h is derived from the two-year average of the 2023 to 2024 GB data only, not having been collected separately in previous seasons. The proportions of each of these manure types spread onto the winter-sown and spring-sown crops and onto grassland crop groups are shown, together with the timings of applications. It is important to note that the actual quantities of each manure available for spreading varies very significantly between manure types as illustrated in Figure B2.1. The proportion of the total available manure represented by each type is shown on the individual Figure B2.2 charts.

Figure B2.2a Typical timings and applications of cattle FYM on GB winter and spring sown crops & grass (3 year average 2022-2024)

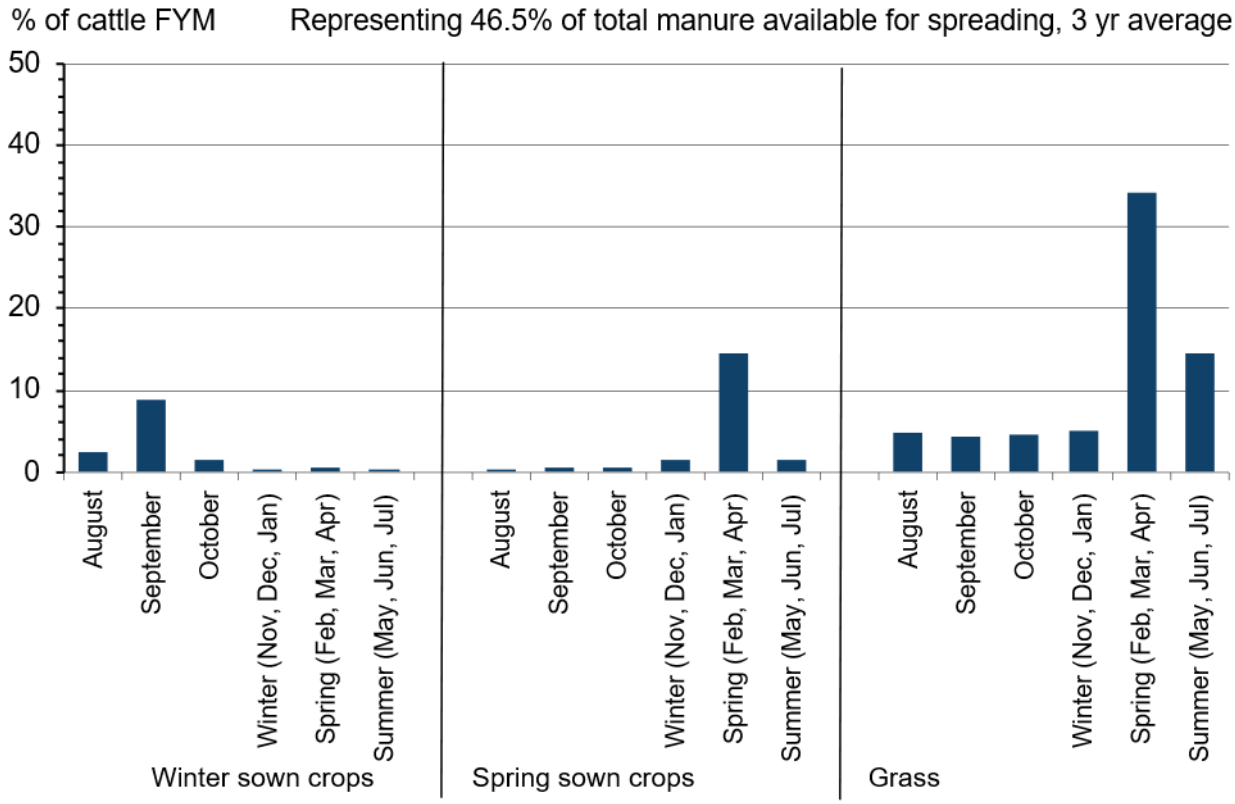


Figure B2.2b Typical timings and applications of cattle slurry on GB winter and spring sown crops & grass (3 year average 2022-2024)

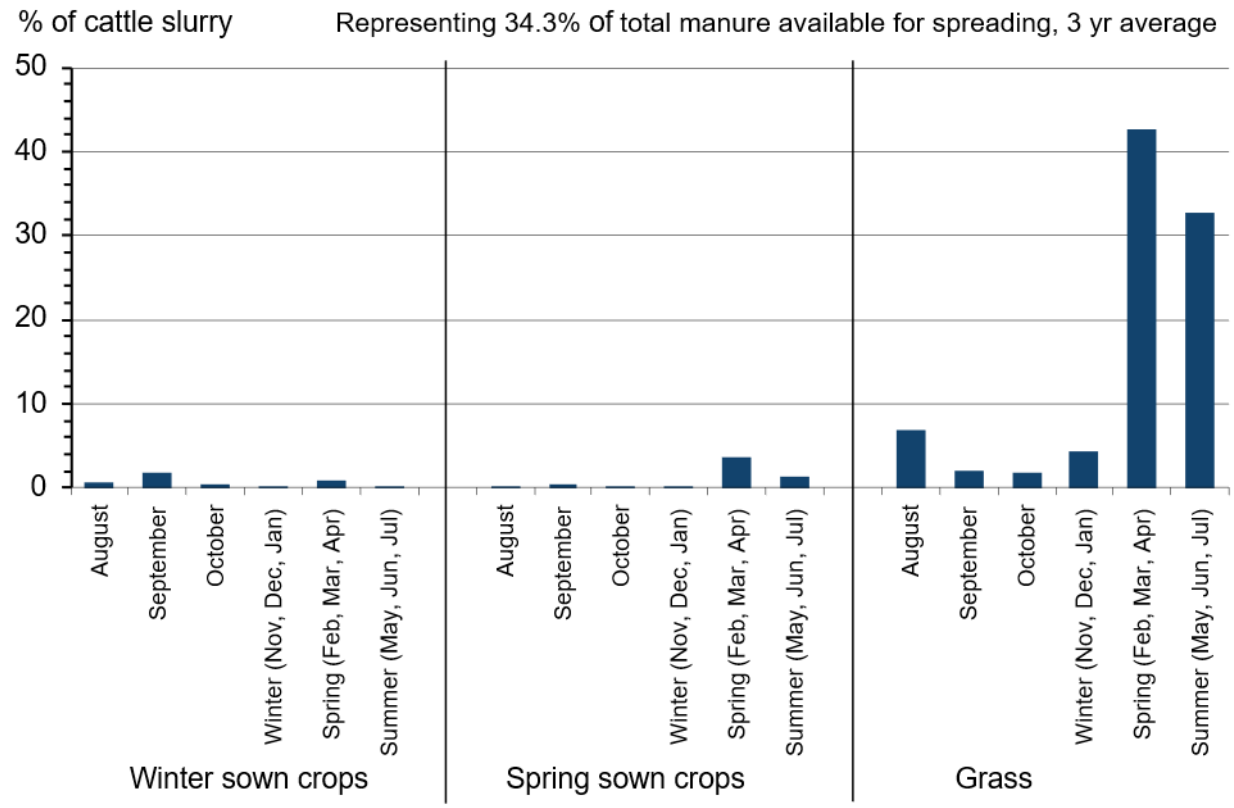


Figure B2.2c Typical timings and applications of pig FYM on GB winter and spring sown crops & grass (3 year average 2022-2024)

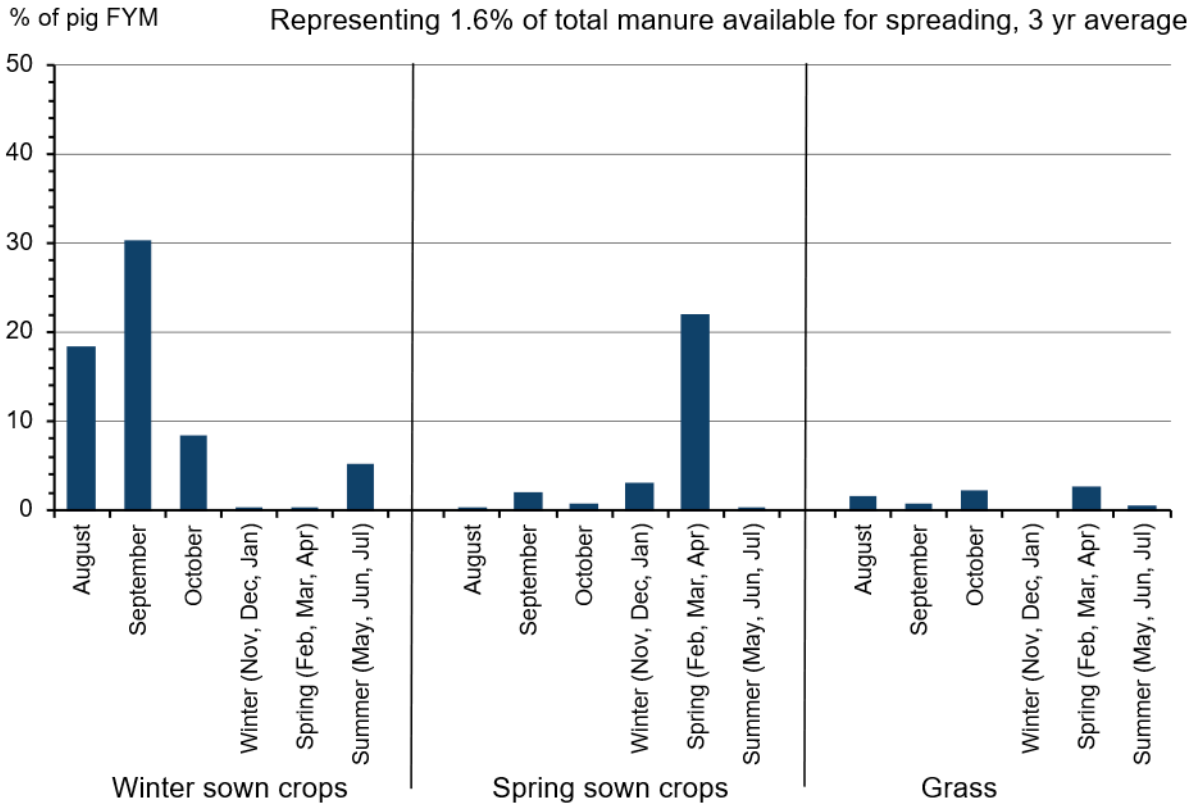


Figure B2.2d Typical timings and applications of pig slurry on GB winter and spring sown crops & grass (3 year average 2022-2024)

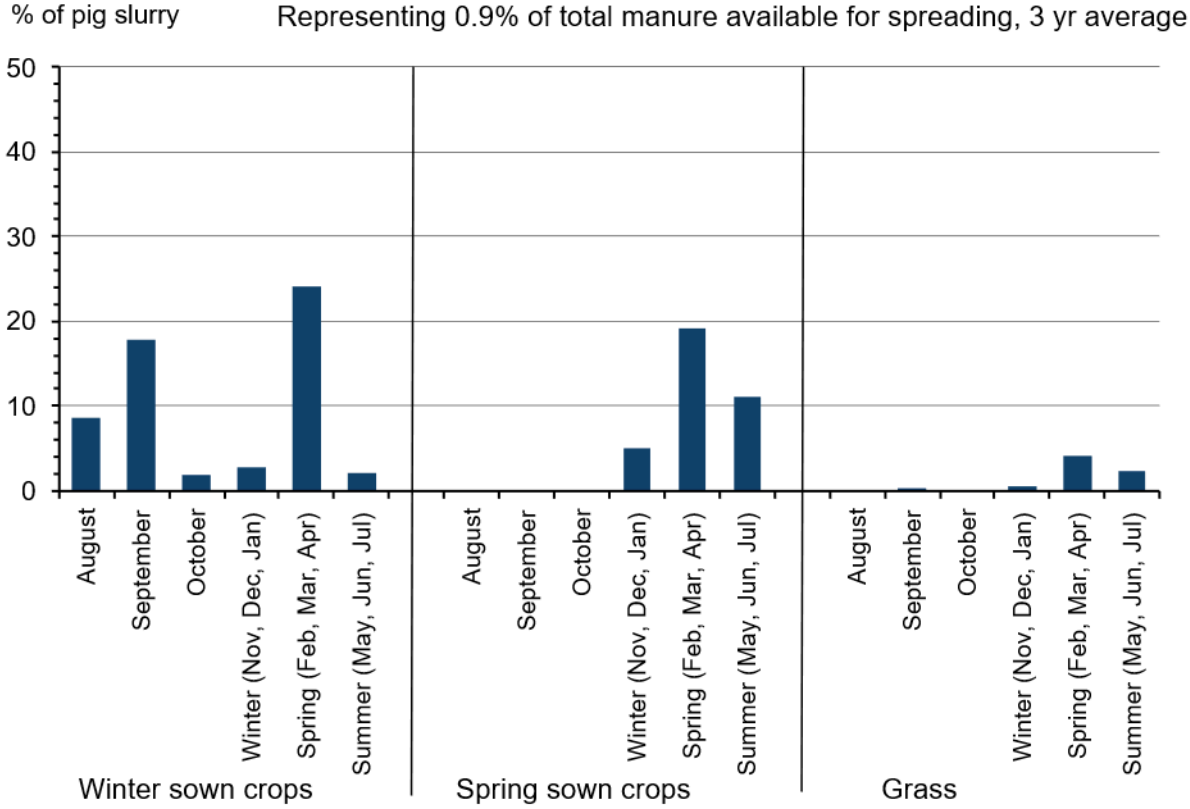


Figure B2.2e Typical timings and applications of layer manure on GB winter and spring sown crops & grass (3 year average 2022-2024)

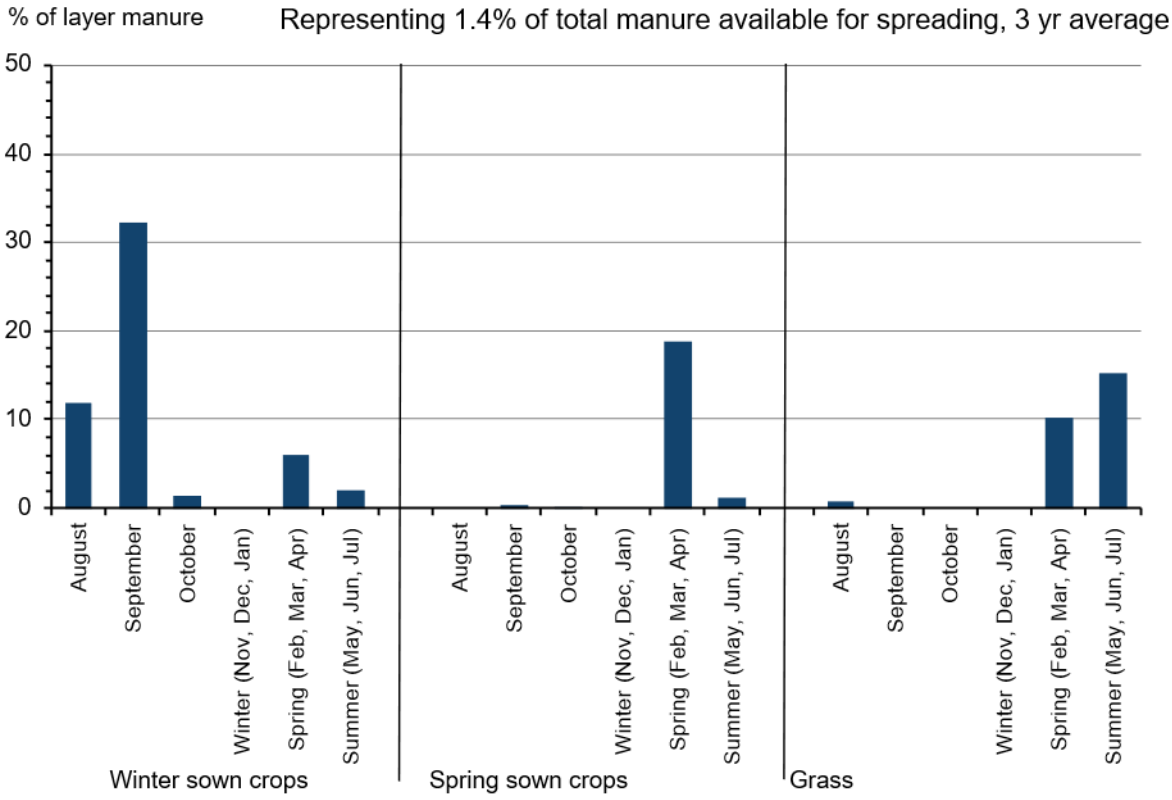


Figure B2.2f Typical timings and applications of poultry litter on GB winter and spring sown crops & grass (3 year average 2022-2024)

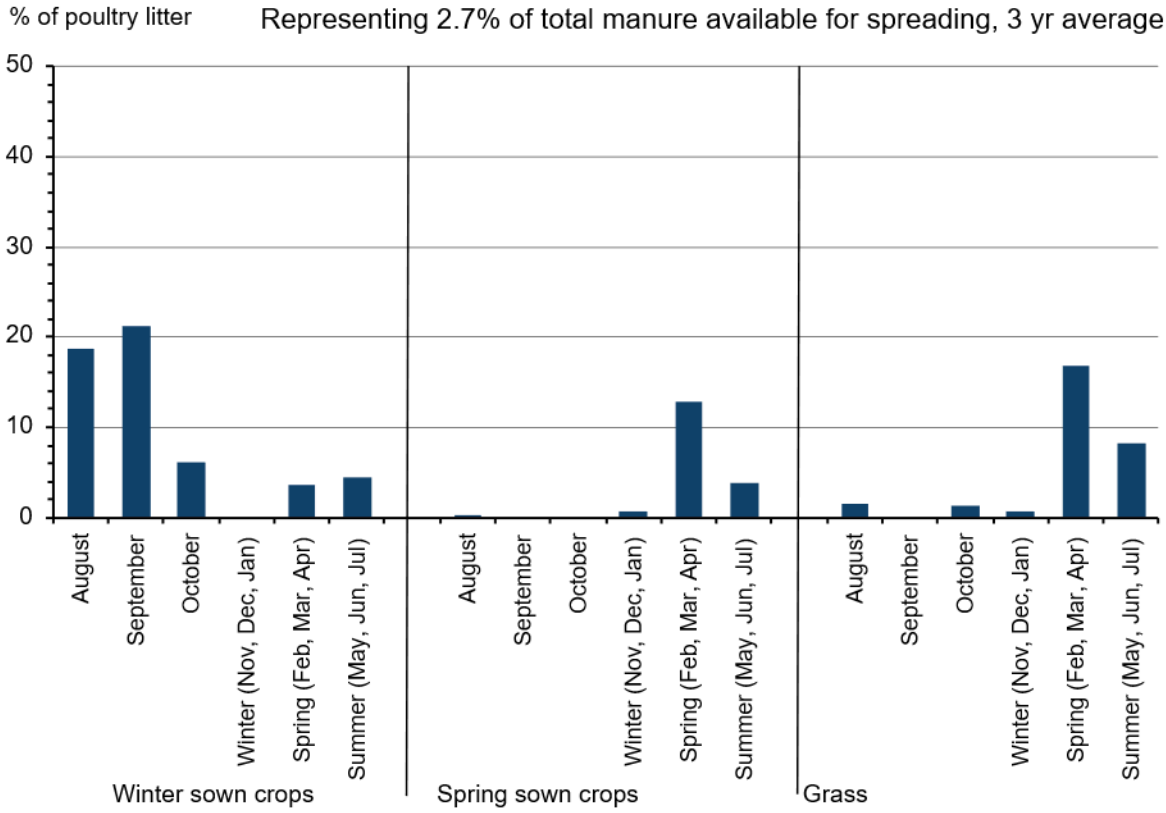


Figure B2.2g Typical timings and applications of biosolids on GB winter and spring sown crops & grass (3 year average 2022-2024)

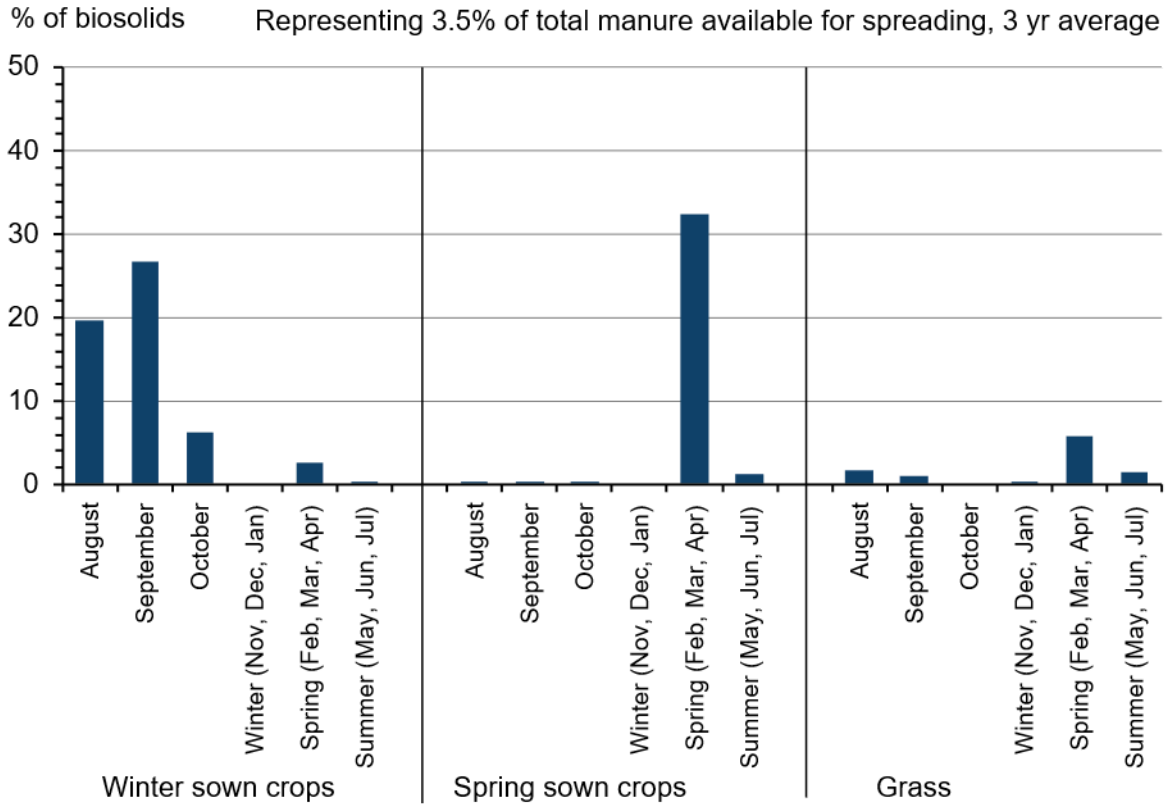
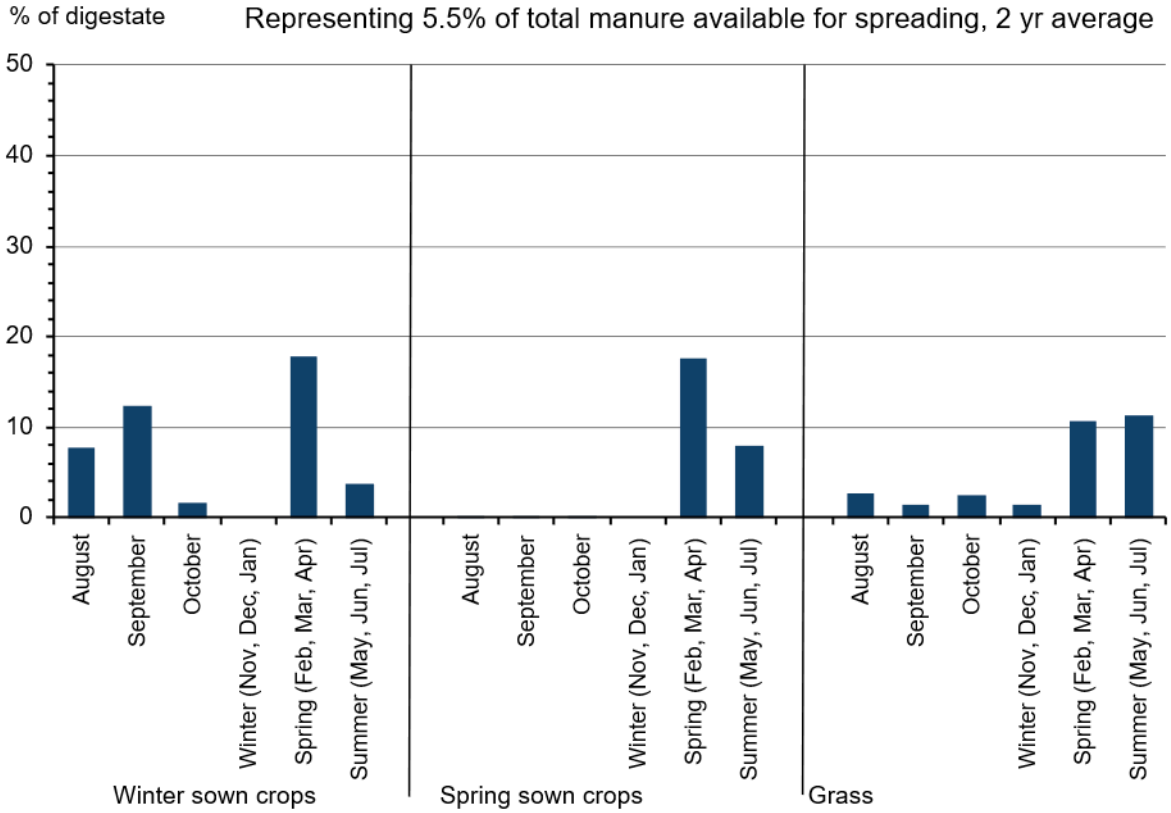


Figure B2.2h Typical timings and applications of digestate on GB winter and spring sown crops & grass (2 year average 2023-2024)



B3 Fertiliser value of organic manures

Organic manures are valuable recycled sources of the major plant nutrients nitrogen, phosphate, and potash and, can theoretically allow applications of manufactured fertiliser to be reduced where organic manures are applied[7]. While the actual nutrient content of organic manure is rarely known, standard default values are shown in Table B2.2.

Table B3.1a Dressing cover (%) and application rates (kg/ha) of manufactured fertiliser to crops in Great Britain, with and without applications of organic manure, and showing the relevant number of fields in the Survey, 2024

Dressing cover (%)	Nitrogen		Phosphate		Potash		Fields in survey	
	with manure %	without manure %	with manure %	without manure %	with manure %	without manure %	with manure	without manure
Winter wheat	99	99	17	34	25	39	239	729
Spring barley	97	98	52	48	56	53	174	420
Winter barley	85	98	33	37	35	39	123	283
Potatoes (maincrop)	97	85	77	88	90	92	16	19
Sugar beet	94	83	51	48	44	62	24	43
Winter oilseed rape	96	100	11	39	18	36	83	171

Average field rate (kg/ha)	Nitrogen		Phosphate		Potash		Fields in survey	
	with manure	without manure	with manure	without manure	with manure	without manure	with manure	without manure
Winter wheat	158	180	45	50	51	56	239	729
Spring barley	91	104	48	46	59	56	174	420
Winter barley	130	147	53	53	56	61	123	283
Potatoes (maincrop)	137	149	131	113	183	220	16	19
Sugar beet	73	80	34	34	61	62	24	43
Winter oilseed rape	159	168	55	51	51	53	83	171

Overall application rate (kg/ha)	Nitrogen		Phosphate		Potash		Fields in survey	
	with manure	without manure	with manure	without manure	with manure	without manure	with manure	without manure
Winter wheat	156	178	8	17	13	22	239	729
Spring barley	89	102	25	22	33	30	174	420
Winter barley	111	144	17	19	19	24	123	283
Potatoes (maincrop)	133	127	101	100	165	203	16	19
Sugar beet	68	67	17	16	27	38	24	43
Winter oilseed rape	153	167	6	20	9	19	83	171

[7] Anon. (2018). Nutrient Management Guide (RB209). Agriculture and Horticulture Development Board (AHDB). https://ahdb.org.uk/nutrient-management-guide-rb209

In the Survey, farmers were not asked directly whether they had made an adjustment to fertiliser inputs because of manure use. However, an indication of possible adjustments has been derived by comparing fields that received manure with those that did not. Fields used in organic production systems, which use no mineral fertilisers, have been excluded from these comparisons, since they would distort the influence of manures on mineral application rates. Table B3.1a shows the dressing cover, average field rate and overall fertiliser rates for the main crops in Great Britain, with and without manure inputs.

For all the major crops, except sugar beet and potatoes, the overall application rate of nitrogen from manufactured mineral fertiliser was higher on fields where organic manures were not applied in 2024. The difference in overall nitrogen application rates, with and without manure, ranged from 13 kg/ha for spring barley, 14 kg/ha for winter oilseed rape, to 22 kg/ha for winter wheat and 33 kg/ha for winter barley. The data for potatoes and sugar beet should be treated with caution as these are derived from a small number of fields. The Survey does not collect reasons why manufactured fertiliser application rates may vary when used with or without organic manures. It is possible that certain fields have been managed to achieve a desired nutrient status, and a strategy of this sort may require unusually high or low applications of specific nutrients. Where only a small number of fields are surveyed, such a strategy may exert an influential bias on the overall figures for a crop in the report.

Differences in overall application rates with and without manures for nitrogen, phosphate, and potash for the period 2020 to 2024 are shown in Table B3.1b below. The application of lower rates on manured fields held true for nitrogen for all major combinable crops throughout the period. Overall application rates were lower on manured fields for phosphate and potash on winter wheat in every year from 2020-2024. Other crops show greater variability between manured and unmanured field rates for the different nutrients which may in part be due to the smaller number of fields of each of these crops in the Survey causing higher statistical variability.

Table B3.1b Overall application rates (kg/ha) of manufactured fertiliser application to crops in Great Britain, with and without applications of organic manure, 2020 – 2024

Nitrogen (kg/ha)	2020		2021		2022		2023		2024	
	with manure	without manure	with manure	without manure	with manure	without manure	with manure	without manure	with manure	without manure
Winter wheat	170	181	164	194	149	174	157	180	156	178
Spring barley	85	106	94	102	85	99	89	101	89	102
Winter barley	132	143	129	145	117	136	121	143	111	144
Potatoes (maincrop)	123	122	115	131	175	159	122	151	133	127
Sugar beet	82	62	69	66	72	53	73	65	68	67
Winter oilseed rape	141	180	152	175	139	159	143	172	153	167
Phosphate (kg/ha)	**2020**		**2021**		**2022**		**2023**		**2024**	
	with manure	without manure	with manure	without manure	with manure	without manure	with manure	without manure	with manure	without manure
Winter wheat	20	26	13	22	9	17	10	16	8	17
Spring barley	22	26	26	30	19	26	24	24	25	22
Winter barley	24	27	19	26	14	18	14	18	17	19
Potatoes (maincrop)	78	98	44	98	57	120	72	100	101	100
Sugar beet	21	23	14	21	10	17	16	22	17	16
Winter oilseed rape	13	32	6	31	7	21	5	22	6	20
Potash (kg/ha)	**2020**		**2021**		**2022**		**2023**		**2024**	
	with manure	without manure	with manure	without manure	with manure	without manure	with manure	without manure	with manure	without manure
Winter wheat	24	31	17	28	12	21	14	21	13	22
Spring barley	26	31	33	36	25	38	28	35	33	30
Winter barley	36	39	29	32	24	25	20	29	19	24
Potatoes (maincrop)	152	159	135	163	208	183	177	152	165	203
Sugar beet	25	56	26	53	21	42	23	44	27	38
Winter oilseed rape	17	29	10	34	7	19	10	24	9	19

Data for grassland are presented separately because grass is managed differently according to the amount of production required. Intensive milk production requires large volumes of grass and is likely to receive higher inputs of both manure and mineral fertilisers than grass for beef or sheep systems. Table B3.2 shows the average field rate of fertiliser applied to grassland in different management systems (as defined by robust farm type groups) with and without applications of manure. Average field rates have been used for grassland because some grass fields receive no mineral fertiliser, not because of manure use, but because the amount of grass production required does not warrant fertiliser input.

Table B3.2 Average field rates (kg/ha) of manufactured fertiliser application on grassland with and without applications of organic manure by robust farm type group, with number of fields, Great Britain 2024

	Nitrogen (kg/ha)		Phosphate (kg/ha)		Potash (kg/ha)		Fields in survey	
	with manure	without manure	with manure	without manure	with manure	without manure	with manure	without manure
Cereals								
Grass under 5 years old*	65	103	8	37	8	54	10	70
Grass 5 years and over*	80	81	4	33	14	48	18	236
All grass	73	90	6	35	11	51	28	306
Dairy								
Grass under 5 years old	147	87	22	29	50	34	86	27
Grass 5 years and over	120	103	17	17	40	22	176	122
All grass	127	99	18	20	42	25	262	149
General cropping								
Grass under 5 years old*	82	96	40	36	40	59	14	32
Grass 5 years and over*	113	81	22	24	27	53	34	114
All grass	104	85	23	27	28	54	48	146
Mixed								
Grass under 5 years old*	96	98	7	31	16	51	25	89
Grass 5 years and over*	95	61	25	16	35	24	29	198
All grass	96	71	19	21	29	32	54	287
Other grazing livestock								
Grass under 5 years old	75	69	28	24	34	27	159	133
Grass 5 years and over	68	57	21	14	27	16	517	601
All grass	70	59	22	15	28	18	676	734
All farm types								
Grass under 5 years old	105	87	25	29	35	40	296	353
Grass 5 years and over	89	68	20	16	29	22	778	1,280
All grass	93	72	21	19	30	26	1,074	1,633

Note: The field numbers in “All farm types” exceed the sum of the components in the table as it also includes pig and poultry farms.

* Estimates are based on a small number of observations and should therefore be treated with caution.

When looking at all farm types taken together, the rates of nitrogen fertiliser were mostly higher on fields where manures were also used. This therefore suggests a different relationship between manure and mineral fertiliser than on crops. Different grass fields can have very different productive potentials and thus where a high level of production is expected, and required, the field will receive a considerably higher nutrient input than low yielding fields. Thus both manure and mineral fertiliser will contribute to nutrient inputs to fields with high potential, noting that there is a limit to the permitted application rate of manure.

Mineral fertiliser rates were consistently higher on short term grass than permanent grassland. The data for certain robust groups, notably cereals, general cropping and mixed farms are derived from relatively few fields, so need to be treated with due caution.

As so many fields on dairy farms receive manure, a separate analysis was carried out to examine the influence of grass management (Table B3.3). All grazing land also receives manure deposited naturally by livestock, but this is not measured as part of the Survey.

Table B3.3 Average field rates (kg/ha) of manufactured fertiliser application on dairy grassland with and without applications of organic manure, with numbers of fields, Great Britain 2020 – 2024

All cut for hay	Nitrogen (kg/ha)		Phosphate (kg/ha)		Potash (kg/ha)		Fields in survey	
	with manure	without manure	with manure	without manure	with manure	without manure	with manure	without manure
2020	104	72	[c]	18	[c]	31	13	13
2021	112	81	38	15	33	20	24	12
2022	105	90	30	[c]	36	20	21	18
2023	106	87	21	27	42	37	17	16
2024	51	108	12	22	37	32	14	16
All cut for silage	**Nitrogen (kg/ha)**		**Phosphate (kg/ha)**		**Potash (kg/ha)**		**Fields in survey**	
	with manure	without manure	with manure	without manure	with manure	without manure	with manure	without manure
2020	171	181	27	36	51	57	203	38
2021	141	141	27	30	48	52	201	50
2022	135	135	19	23	30	35	222	43
2023	139	108	26	27	35	34	201	46
2024	140	113	21	25	47	29	185	38
All grazing	**Nitrogen (kg/ha)**		**Phosphate (kg/ha)**		**Potash (kg/ha)**		**Fields in survey**	
	with manure	without manure	with manure	without manure	with manure	without manure	with manure	without manure
2020	154	137	23	27	41	37	236	135
2021	130	117	24	24	39	32	252	136
2022	115	120	18	23	25	31	278	157
2023	121	111	25	21	33	26	231	154
2024	111	98	18	20	33	26	203	144

Application rates of nitrogen fertilisers were generally higher for grass to be cut for silage. Average field rates on grazed grass were higher on those fields receiving a dressing of manure. In 2024 the average field rate of nitrogen on dairy grassland cut for hay was very low, (Table B3.3). It is believed that this is attributable to the small number of fields and varied management practice. Data for grass cut for hay should be treated with caution as the number of fields managed this way is low.

Over the five-year period 2020-2024, mineral fertiliser application rates, whilst variable, were higher for grass cut for silage than other grass management systems.

SECTION C

FARMING PRACTICES

Farmers were asked a series of questions about the care taken in application of fertilisers and manures and in record keeping. The results are presented in this section.

C1 SPREADER CHECKING

In 2024, 65% of farms spread their own fertiliser compared with 71% of farms in 2020. Over the same five-year period the percentage of farms without a spreader has increased to 22% in 2024. Use of contractors has remained in the range of 10-13% of farms since 2020 (Table C1.1).

Table C1.1 Percentages (%) of farms that were without a solid fertiliser spreader, used a contractor to spread solid manufactured fertiliser or owned at least one fertiliser spreader. Great Britain 2020 – 2024

All respondents*	2020	2021	2022	2023	2024
	%	%	%	%	%
No spreader	16	15	19	21	22
Contractor applied	13	11	10	12	13
Spread fertiliser with own spreader(s)	71	74	71	67	65

Note: *May add up to more than 100% because those with no spreader may use a contractor.

In 2024, of those farms who had at least one spreader, 56% indicated they check the accuracy of mineral fertiliser spreaders using catch trays on an annual basis (Table C1.2). Farmers checking more frequently than this comprises 7%, checking at each change of fertiliser. 13% of farmers never check their spreaders for accuracy and a further 2% of farmers considered that spreader accuracy did not need to be checked. Of those farms with a spreader 58% indicated that they used a specific measure to avoid under or over application on headlands, for example, deflector plates.

Table C1.2 Percentage (%) frequency of checking solid fertiliser spread patterns using catch trays on those farms with at least one fertiliser spreader, Great Britain 2020 – 2024

Respondents with fertiliser spreader(s)	2020	2021	2022	2023	2024
	%	%	%	%	%
At each change of fertiliser type	6	6	7	7	7
Less than once a year	22	22	17	22	22
Once a year	49	48	47	52	56
Never checked	17	20	25	16	13
Factory set & doesn't need checking	4	4	4	3	2
Other	2	0	0	0	0
Totals	100	100	100	100	100

Practices of checking are consistent over the five-year period 2020-2024, although the percentage of farms never checking their spreaders was below the five-year average of 18%.

C2 RECORD KEEPING

Table C2.1 Prevalence of record keeping methods, by farm type, Great Britain 2024. Only includes farms where each nutrient type was applied during the 2024 crop year.

BSFP robust group*	Record keeping method	Manufactured fertiliser records		Organic manure records	
		% farms	% area	% farms	% area
Cereals	Computer program	46	60	42	56
	Farm diary	35	36	36	37
	Farm notebook/pocketbook	10	9	8	6
	File record sheet (file in office)	22	18	20	14
	Other paper record	1	1	1	1
	No records kept	0	0	0	1
Dairy	Computer program	30	42	30	40
	Farm diary	67	55	59	51
	Farm notebook/pocketbook	24	17	23	15
	File record sheet (file in office)	24	23	28	27
	Other paper record	0	1	0	0
	No records kept	2	1	3	2
General cropping	Computer program	44	55	36	49
	Farm diary	53	41	53	42
	Farm notebook/pocketbook	18	12	19	13
	File record sheet (file in office)	34	27	31	28
	Other paper record	2	0	0	0
	No records kept	2	0	4	2
Mixed	Computer program	30	47	32	49
	Farm diary	48	49	64	59
	Farm notebook/pocketbook	7	11	6	13
	File record sheet (file in office)	30	30	42	35
	Other paper record	0	0	2	2
	No records kept	1	1	3	2
Other grazing livestock	Computer program	13	13	10	12
	Farm diary	61	64	56	60
	Farm notebook/pocketbook	23	17	16	14
	File record sheet (file in office)	16	18	17	19
	Other paper record	1	1	2	2
	No records kept	1	2	2	2
All farm types	Computer program	36	48	25	39
	Farm diary	52	49	56	54
	Farm notebook/pocketbook	16	13	16	13
	File record sheet (file in office)	18	17	22	19
	Other paper record	1	1	1	1
	No records kept	1	1	2	2

Notes: more than one method may be used. * For BSFP Robust Group see Appendix 5.

Farm diaries continued to be the most common method for recording both fertiliser and manure use (Table C2.1), when looking at 'All farm types' in 2024. Computers were used for recording fertiliser applications on 36% of farms that applied manufactured fertiliser, representing 48% in area terms. No records were kept on 1% of farms and this was the same when considered on an area basis. Computerised record keeping was less common for organic manures, occurring on 25% of relevant farms. The method of record keeping for 'all farm types' was broadly similar for both manufactured and organic fertilisers.

The approach to record keeping varied between different farm types. For manufactured fertilisers, use of computers was highest on 'cereals' farms at 46%, and lower at 30% on 'dairy' and 'mixed' and 13% on 'other livestock' farms, where a higher proportion used farm diaries. Farms of all types except 'cereals' favoured diaries for recording applications of organic manures.

Table C2.2 Percentage (%) of farms using different record keeping methods, Great Britain 2020-24. Only includes farms where each nutrient type was applied during the crop year.

Manufactured fertilisers*	2020 %	2021 %	2022 %^	2023 %	2024 %
Computer program	29	29	30	30	36
Farm diary	45	56	52	50	52
Farm notebook/pocketbook	15	15	16	16	16
File record sheet (file in office)	25	20	23	22	18
Other paper record	5	2	1	1	1
No records kept	3	3	2	1	1

Organic manures*	2020 %	2021 %	2022 %	2023 %	2024 %
Computer program	20	20	20	22	25
Farm diary	53	58	56	54	56
Farm notebook/pocketbook	15	15	16	15	16
File record sheet (file in office)	24	20	22	23	22
Other paper record	5	3	1	2	1
No records kept	7	6	6	4	2

Note: * Columns may add up to more than 100% because more than one method may be used.

Recording methods for manufactured fertilisers show some variations across the five-year period 2020-2024, with farm diaries remaining the most widely used recording method. For organic manures, records of some type were kept on 93-98% of farms for the five-year period.

C3 SOIL TESTING

Table C3.1 Soil testing for different variables: percentage (%) of cropped and grass area tested, Great Britain 2020 - 2024

	Crop area %					
	Standard P, K, Mg, pH	Nitrogen	pH (lime only)	Precision Farming* purposes	Broad spectrum analysis	Soil organic matter test, 'Soil health'
	%	%	%	%	%	%
2020	29	15	7	7	[x]	[x]
2021	32	15	6	10	[x]	[x]
2022	36	20	7	13	[x]	[x]
2023	37	20	6	13	[x]	[x]
2024	40	19	7	13	20	18

	Grass area %					
	Standard P, K, Mg, pH	Nitrogen	pH (lime only)	Precision Farming* purposes	Broad spectrum analysis	Soil organic matter test, 'Soil health'
	%	%	%	%	%	%
2020	6	2	2	1	[x]	[x]
2021	7	1	3	1	[x]	[x]
2022	9	3	3	2	[x]	[x]
2023	12	5	3	2	[x]	[x]
2024	13	4	3	2	3	3

* Soil sampling for Precision Farming purposes involves taking composite samples from different defined locations in the field, each for individual analysis, to help determine the pattern of nutrient and pH spatial variability within the field.

Table C3.1 shows the percentage of the cropping and grass area that was soil tested for the crop years 2020–2024. It is usual practice, especially for crop fields, to test a sub-set of them in any given year. Standard P, K, Mg, pH was the most commonly used soil test for the period, with an average of 35% of the cropping area and 9% of the grass area. All types of soil tests were more prevalent on crops than on grass, for all years 2020-24.

C4 MITIGATION OF AMMONIA LOSSES

Table C4.1 shows the use of solid urea straight nitrogen, liquid urea ammonium nitrate (UAN), or both products, containing urease inhibitors, which reduce gaseous losses of ammonia (a known air pollutant). An ammonia emission inhibitor to mitigate losses of ammonia following the application of a urea-containing fertiliser will usually involve inhibition of the activity of the enzyme urease but can include emission control through physical encapsulation of the solid product or other technology.

Interpretation of the table is not straightforward as the approach to the question was changed and made more specific in 2022. This had the effect of reducing the weighted area (%) attributed to the positive responses and the 'Don't Knows'. In 2024, on a weighted area basis, 32% of total solid urea /UAN fertilisers contained an inhibitor. In 2024, 36% of solid urea and 29% of UAN contained a urease inhibitor.

Table C4.1 Use (% weighted area) of urea fertilisers containing a urease inhibitor on cropping or grass fields, Great Britain 2020 – 2024

Urea (solid)	Product contains a urease inhibitor	Product does not contain a urease inhibitor	Don't know	Total
	%	%	%	%
2020	10	68	22	100
2021	5	69	26	100
2022	8	83	9	100
2023	20	73	7	100
2024	36	57	8	101

UAN (liquid)	Product contains a urease inhibitor	Product does not contain a urease inhibitor	Don't know	Total
	%	%	%	%
2020	1	75	24	100
2021	1	70	29	100
2022	6	84	10	100
2023	11	83	6	100
2024	29	65	6	100

Urea and UAN	Product contains a urease inhibitor	Product does not contain a urease inhibitor	Don't know	Total
	%	%	%	%
2020	10	70	21	101
2021	12	65	22	99
2022	6	85	9	100
2023	16	77	7	100
2024	32	61	7	100

Note: Due to rounding, totals may not sum to 100%.

C5 PROFESSIONAL QUALIFICATIONS

In 2018, 2021, 2022 and 2023 farmers were asked about the professional qualifications they or other relevant people on the farm held and the extent to which they keep them up to date with Continuous Professional Development. The results are shown in Table C5.1. The National Register of Sprayer Operators (NRoSO) qualifies the competence of the holder to operate a farm sprayer. BASIS qualifications demonstrate the competence of the holder to make good agrochemical recommendations. FACTS qualification assesses the competence of the holder to make fertiliser and manure recommendations.

Table C5.1 Professional qualifications held on respondent farms, Great Britain 2018, 2021, 2022, 2023 and 2024

Qualifications on farm	Respondents' professional qualifications held - % farms				
	2018 %	2021 %	2022 %	2023 %	2024 %
NRoSO	20	19	23	22	25
BASIS	8	10	9	10	10
FACTS	4	6	5	5	7
Other	7	11	10	9	4
None of the above	69	64	63	64	66

Table C5.2 Percentage (%) of farms maintaining validity through Continuous Professional Development (CPD) of qualifications held, Great Britain 2018, 2021, 2022, 2023 and 2024

Qualifications	Kept up to date (CPD) where professional qualifications held - % farms				
	2018 %	2021 %	2022 %	2023 %	2024 %
Yes, kept up to date					
NRoSO	89	88	93	93	94
BASIS	67	73	75	83	75
FACTS	77	80	86	96	81
No, did not keep up to date					
NRoSO	8	5	3	4	3
BASIS	29	18	22	17	20
FACTS	21	13	9	3	12
Don't know					
NRoSO	3	7	3	3	3
BASIS	4	10	4	1	5
FACTS	2	7	6	1	8

The NRoSO continued to be the most popular professional qualification held on respondent farms in 2024 (25% of farms). Of those with a NRoSO accreditation in 2024, 94% of farms kept this up to date with Continuous Professional Development (CPD), which was a slight increase over the percentage reported in 2023. Between 2018 and 2024 there was a slight reduction in the proportion of farms on which no one held any of the qualifications listed.

C6 SOURCES OF ADVICE

Table C6.1 Percentage of farms (%) receiving different sources of professional advice, Great Britain 2018, 2021, 2022, 2023 and 2024

Professional advice sought	All farms				
	2018	2021	2022	2023	2024
	% farms	% farms	% farms	% farms	% farms
Crop protection agronomist	55	51	52	54	58
Fertiliser advisor	33	29	24	30	26
Feed Advisor	21	17	17	23	18
Veterinary surgeon	50	44	40	45	41
Countryside or wildlife advisor	17	15	14	14	16
Land agent	15	15	14	17	17
Business advisor	14	13	12	9	11
Water advisor	14	11	9	10	12
None of the above	17	20	22	15	11
Other	4	3	3	6	4
Total number of farms ('000)	**89.0**	**88.1**	**88.0**	**86.1**	**86.0**
Professional advice sought	Farms with crops				
	2018	2021	2022	2023	2024
	% farms	% farms	% farms	% farms	% farms
Crop protection agronomist	88	84	84	85	89
Fertiliser advisor	48	39	35	42	33
Feed Advisor	24	18	17	22	17
Veterinary surgeon	47	42	37	38	33
Countryside or wildlife advisor	21	18	15	15	16
Land agent	19	20	18	22	21
Business advisor	16	15	13	10	11
Water advisor	18	13	11	12	13
None of the above	5	6	8	5	3
Other	4	3	4	4	3
Total number of farms ('000)	**47.5**	**48.0**	**47.5**	**46.0**	**44.9**
Professional advice sought	Farms with grass				
	2018	2021	2022	2023	2024
	% farms	% farms	% farms	% farms	% farms
Crop protection agronomist	48	46	47	49	53
Fertiliser advisor	29	26	22	29	25
Feed Advisor	22	19	19	25	21
Veterinary surgeon	55	49	45	50	46
Countryside or wildlife advisor	16	13	14	14	16
Land agent	13	14	13	17	18
Business advisor	13	13	12	9	11
Water advisor	13	10	8	10	11
None of the above	18	22	24	16	13
Other	5	3	3	6	5
Total number of farms ('000)	**79.7**	**78.8**	**77.4**	**76.1**	**74.8**

Respondents were asked about the sources of professional advice that they use (Table C6.1). Users should note that some farms will have both crops and grass and will appear in both categories. A crop protection agronomist was the most commonly used source, on 51-58% of

all farms across 2018, 2021, 2022, 2023 and 2024. This figure increased to 84-89% when farms with cropping were considered. On farms with grass (which will include farms which specialise in cropping), a veterinary surgeon was the most prevalent source of advice in all years except for 2022 and 2024 where advice from a crop protection agronomist was slightly more popular. The proportion of all farms that did not use any of the listed advice sources was 15% in 2023 and 11% in 2024. Professional advice used on an area basis is presented in Table C6.2.

Table C6.2 Percentage of farmed area (%) on farms receiving different sources of professional advice, Great Britain 2018, 2021, 2022, 2023 and 2024

Professional advice source	Received advice - % of area				
All farms	2018 % area	2021 %area	2022 %area	2023 %area	2024 %area
Crop protection agronomist	70	65	66	68	70
Fertiliser advisor	43	36	31	33	30
Feed Advisor	27	21	20	26	22
Veterinary surgeon	53	47	42	45	41
Countryside or wildlife advisor	24	19	18	16	19
Land agent	21	19	18	20	20
Business advisor	18	15	16	12	12
Water advisor	19	13	12	12	14
None of the above	10	11	13	8	6
Other	5	3	4	7	5
Total farm area (million ha)	**10.4**	**10.3**	**10.2**	**10.2**	**10.2**
Farms with crops	2018 % area	2021 %area	2022 %area	2023 %area	2024 %area
Crop protection agronomist	94	90	90	91	92
Fertiliser advisor	56	47	40	43	34
Feed Advisor	21	13	12	15	13
Veterinary surgeon	38	31	25	26	23
Countryside or wildlife advisor	29	23	20	19	21
Land agent	27	22	21	22	23
Business advisor	22	15	16	13	13
Water advisor	23	14	13	13	16
None of the above	2	5	6	3	2
Other	2	3	4	3	3
Total crop area (million ha)	**4.6**	**4.6**	**4.5**	**4.5**	**4.6**
Farms with grass	2018 % area	2021 %area	2022 %area	2023 %area	2024 %area
Crop protection agronomist	49	44	46	48	52
Fertiliser advisor	32	26	23	25	26
Feed Advisor	32	28	26	34	30
Veterinary surgeon	65	59	56	60	57
Countryside or wildlife advisor	19	16	16	14	17
Land agent	16	17	16	19	18
Business advisor	15	15	16	12	11
Water advisor	15	13	11	11	13
None of the above	15	17	19	12	10
Other	7	3	5	9	7
Total grass area (million ha)	**5.7**	**5.6**	**5.7**	**5.7**	**5.6**

C7 COVER CROPS

Respondents were asked whether they were growing cover and/or catch crops in the crop year 2024. Of those farms with crops, 28% indicated that they were growing cover and/or catch crops during the 2023/24 cropping season. Those holdings who indicated they were growing cover/catch crops were responsible for 37% of the total cropping area in Great Britain (Table C7.1).

Table C7.1 Percentage of farms with crops growing cover and/or catch crops, Great Britain 2024

Cover and/or catch crops grown	Farms with crops	
	% farms	% area
Yes	28	37
No	72	63

For the holdings growing cover/catch crops, cover/catch crops were grown on 26% of their cropping area. For Great Britian overall, when cropping farms without cover/catch crops are taken into account, cover/catch crops accounted for 10% of the total cropped area in the 2023/2024 growing season. (Table 7.2).

Table C7.2 Cover crop area as a percentage of holding cropping area and total cropping area, Great Britain 2024

	Farms with crops
	% area
Cover/catch crop area as % of cropping area of farms growing cover crops	26
Cover/catch crop area as % of total GB cropping area	10

During the crop year 2024, farmers were also asked about their application of secondary and micro nutrients, and the application methods used to apply these nutrients. Further, they were queried on boron application, covering crops, time of application, application method and product. On analysis, it became apparent that no clear data could be provided. Thus, no analysis of these questions appears in this report.

APPENDICES

APPENDIX 1: LONGER TERM TRENDS IN FERTILISER USE – DATA TABLES

Table AA1.1 Total overall nitrogen application rates (kg/ha), England & Wales 1972 - 2024 and Scotland and Great Britain 1983 – 2024

	Crops			Grass			All crops and grass		
	England & Wales	Scotland	Great Britain	England & Wales	Scotland	Great Britain	England & Wales	Scotland	Great Britain
1972	91	[x]	[x]	83	[x]	[x]	[x]	[x]	[x]
1973	89	[x]	[x]	85	[x]	[x]	[x]	[x]	[x]
1974	85	[x]	[x]	91	[x]	[x]	89	[x]	[x]
1975	86	[x]	[x]	99	[x]	[x]	93	[x]	[x]
1976	96	[x]	[x]	98	[x]	[x]	97	[x]	[x]
1977	100	[x]	[x]	110	[x]	[x]	111	[x]	[x]
1978	105	[x]	[x]	113	[x]	[x]	114	[x]	[x]
1979	113	[x]	[x]	117	[x]	[x]	121	[x]	[x]
1980	121	[x]	[x]	119	[x]	[x]	120	[x]	[x]
1981	135	[x]	[x]	125	[x]	[x]	130	[x]	[x]
1982	141	[x]	[x]	123	[x]	[x]	132	[x]	[x]
1983	154	113	149	125	131	126	139	124	136
1984	162	121	157	132	127	131	147	125	143
1985	161	131	157	131	130	131	146	130	144
1986	156	119	152	135	120	132	146	120	142
1987	160	139	157	133	116	130	147	125	143
1988	149	125	146	116	132	119	133	129	132
1989	150	128	147	127	111	124	139	118	136
1990	149	131	147	132	116	129	141	122	138
1991	154	128	151	133	111	129	143	117	139
1992	147	125	145	104	111	106	126	116	125
1993	137	130	137	112	114	112	124	119	124
1994	149	128	147	117	112	116	133	118	130
1995	151	140	149	119	114	118	134	124	132
1996	148	122	145	118	100	115	133	108	128
1997	151	134	149	123	124	123	137	128	136
1998	146	131	144	107	119	109	127	124	126
1999	143	126	141	108	117	110	126	121	125
2000	154	135	149	95	110	99	124	118	123
2001	144	147	145	90	113	94	114	127	116
2002	153	143	150	85	105	89	116	119	117
2003	152	135	149	79	102	83	112	114	113
2004	150	133	148	73	93	77	108	107	108
2005	149	132	147	72	84	75	109	102	108
2006	145	119	142	69	86	72	106	98	104
2007	148	119	144	64	72	65	106	89	103
2008	141	109	137	52	66	55	97	81	94
2009	140	111	137	54	69	57	98	84	95
2010	149	113	145	62	64	63	105	80	101
2011	150	119	146	57	59	57	103	79	99
2012	147	121	144	54	60	55	98	79	95
2013	138	124	136	57	68	59	95	87	94
2014	149	127	146	58	67	60	101	87	99
2015	149	130	146	53	67	56	100	89	98
2016	145	118	141	53	69	56	96	86	94
2017	141	118	137	51	68	54	92	86	91
2018	145	118	142	54	67	57	97	85	95
2019	141	109	137	51	67	54	94	82	92
2020	123	109	121	53	56	53	85	73	83
2021	134	103	130	48	63	51	89	77	87
2022	121	101	118	32	42	34	73	63	71
2023	127	111	125	38	41	38	79	65	77
2024	124	105	121	33	39	34	76	62	73

Note: Years are harvest not calendar years (e.g. 2024 refers to the 2023-2024 crop year).

Table AA1.2 Dressing cover (% area) of autumn or winter-applied (August to January) nitrogen on winter cereals and winter oilseed rape and average application rate (kg/ha) for winter oilseed rape, England & Wales 1990 – 1998 and Great Britain 1999 – 2024

	Winter wheat	Winter barley	Winter oilseed rape	
	Dressing cover	Dressing cover	Dressing cover	Application rate
	%	%	%	kg N/ha
England & Wales				
1990	10%	16%	45%	42
1991	11%	12%	49%	46
1992	8%	10%	50%	44
1993	8%	8%	41%	42
1994	12%	16%	44%	39
1995	11%	13%	48%	38
1996	11%	12%	51%	37
1997	12%	11%	44%	36
1998	7%	12%	34%	38
Great Britain				
1999	6%	10%	35%	43
2000	7%	11%	33%	42
2001	7%	14%	43%	43
2002	8%	16%	41%	47
2003	5%	9%	42%	39
2004	6%	9%	35%	40
2005	4%	9%	42%	40
2006	5%	7%	28%	34
2007	3%	5%	27%	41
2008	3%	6%	31%	33
2009	2%	3%	26%	31
2010	2%	7%	29%	33
2011	2%	3%	35%	29
2012	2%	5%	31%	27
2013	2%	4%	32%	28
2014	2%	5%	32%	29
2015	2%	3%	38%	32
2016	3%	4%	35%	31
2017	3%	3%	42%	30
2018	5%	4%	41%	31
2019	3%	5%	36%	28
2020	5%	7%	36%	32
2021	3%	5%	29%	33
2022	2%	4%	19%	32
2023	3%	4%	19%	32
2024	5%	5%	24%	35

Table AA1.3 Overall phosphate application rates (kg/ha), England & Wales 1972 - 2024 and Scotland and Great Britain 1983 – 2024

	Crops			Grass			All crops and grass		
	England & Wales	Scotland	Great Britain	England & Wales	Scotland	Great Britain	England & Wales	Scotland	Great Britain
	kg P_2O_5/ha			kg P_2O_5/ha			kg P_2O_5/ha		
1972	56	[x]	[x]	34	[x]	[x]	[x]	[x]	[x]
1973	54	[x]	[x]	34	[x]	[x]	[x]	[x]	[x]
1974	51	[x]	[x]	27	[x]	[x]	39	[x]	[x]
1975	46	[x]	[x]	27	[x]	[x]	34	[x]	[x]
1976	50	[x]	[x]	29	[x]	[x]	38	[x]	[x]
1977	51	[x]	[x]	26	[x]	[x]	37	[x]	[x]
1978	49	[x]	[x]	28	[x]	[x]	39	[x]	[x]
1979	49	[x]	[x]	27	[x]	[x]	38	[x]	[x]
1980	49	[x]	[x]	27	[x]	[x]	37	[x]	[x]
1981	51	[x]	[x]	25	[x]	[x]	38	[x]	[x]
1982	55	[x]	[x]	24	[x]	[x]	39	[x]	[x]
1983	54	63	55	26	36	28	39	47	40
1984	61	68	62	25	33	26	42	48	42
1985	56	70	58	24	30	25	40	46	41
1986	56	63	57	22	27	23	40	42	40
1987	56	71	58	23	28	24	39	45	40
1988	54	65	56	21	31	23	38	45	39
1989	52	67	54	23	31	24	38	45	39
1990	51	68	53	24	28	25	38	43	39
1991	53	65	54	23	24	23	38	40	38
1992	51	67	54	19	30	22	35	43	38
1993	49	65	52	19	28	21	33	41	35
1994	51	69	53	23	28	24	37	43	38
1995	50	68	53	22	31	24	36	45	37
1996	51	65	52	22	26	23	36	40	36
1997	53	69	55	24	32	25	38	46	39
1998	49	66	51	20	27	21	34	43	35
1999	43	64	45	19	27	20	31	42	32
2000	44	60	47	18	30	20	31	42	32
2001	40	60	43	16	29	19	27	41	29
2002	41	62	44	18	26	20	29	39	31
2003	37	61	40	16	26	18	26	39	28
2004	38	63	41	15	27	17	25	40	28
2005	37	56	40	15	22	16	25	35	27
2006	32	53	35	14	22	16	23	33	25
2007	32	53	34	12	19	14	22	32	23
2008	28	50	30	9	16	10	18	28	20
2009	19	49	23	7	15	9	13	27	15
2010	27	50	30	9	16	10	18	27	19
2011	27	50	29	8	14	9	17	25	19
2012	25	50	28	8	14	9	16	25	17
2013	25	51	28	8	14	9	16	27	18
2014	26	50	29	8	15	10	17	26	18
2015	26	51	29	8	13	9	17	27	18
2016	26	50	29	7	14	9	16	27	18
2017	26	54	30	7	16	8	15	29	18
2018	24	50	27	7	13	8	15	26	17
2019	23	44	26	7	13	8	15	24	16
2020	21	41	24	7	12	8	13	21	15
2021	19	44	22	6	12	7	12	23	14
2022	14	38	17	3	8	4	8	18	10
2023	14	38	17	4	7	4	8	18	10
2024	13	43	17	3	7	4	8	20	10

Table AA1.4 Overall potash application rates (kg/ha), England & Wales 1972 - 2024 and Scotland and Great Britain 1983 – 2024

	Crops			Grass			All crops and grass		
	England & Wales	Scotland	Great Britain	England & Wales	Scotland	Great Britain	England & Wales	Scotland	Great Britain
	kg K_2O/ha			kg K_2O/ha			kg K_2O/ha		
1972	63	[x]	[x]	20	[x]	[x]	[x]	[x]	[x]
1973	60	[x]	[x]	22	[x]	[x]	[x]	[x]	[x]
1974	56	[x]	[x]	20	[x]	[x]	36	[x]	[x]
1975	51	[x]	[x]	21	[x]	[x]	34	[x]	[x]
1976	56	[x]	[x]	23	[x]	[x]	37	[x]	[x]
1977	56	[x]	[x]	23	[x]	[x]	39	[x]	[x]
1978	56	[x]	[x]	25	[x]	[x]	41	[x]	[x]
1979	53	[x]	[x]	27	[x]	[x]	40	[x]	[x]
1980	54	[x]	[x]	26	[x]	[x]	40	[x]	[x]
1981	56	[x]	[x]	26	[x]	[x]	41	[x]	[x]
1982	61	[x]	[x]	28	[x]	[x]	44	[x]	[x]
1983	60	62	60	28	36	29	44	46	43
1984	68	67	68	33	35	33	50	49	49
1985	63	67	64	32	34	32	48	47	48
1986	62	61	62	33	30	33	48	43	47
1987	63	70	64	33	31	33	48	47	48
1988	63	66	63	30	34	31	47	47	47
1989	60	73	62	34	36	34	48	51	48
1990	62	74	64	36	35	36	49	50	49
1991	62	72	63	35	31	34	49	47	49
1992	59	72	63	26	34	28	43	48	45
1993	58	72	60	27	34	29	42	47	43
1994	62	74	63	31	31	31	46	46	46
1995	59	72	61	30	34	31	44	48	45
1996	59	73	61	31	28	30	45	44	44
1997	66	74	67	35	36	35	50	50	50
1998	63	73	64	28	36	29	45	51	46
1999	55	71	57	27	32	28	41	48	42
2000	54	67	55	24	33	26	39	47	40
2001	48	72	52	23	33	24	34	49	37
2002	55	72	57	24	30	25	38	46	40
2003	51	73	54	20	31	22	34	46	36
2004	52	72	55	21	30	22	35	46	37
2005	51	65	53	19	26	20	34	40	35
2006	46	68	48	19	28	21	32	42	33
2007	44	69	47	17	23	18	30	40	32
2008	40	67	43	12	20	13	26	37	27
2009	29	64	33	10	20	12	19	35	22
2010	33	67	38	13	19	14	23	35	25
2011	35	65	39	11	16	12	23	32	25
2012	34	68	37	11	17	12	22	33	23
2013	36	68	40	11	19	13	22	36	25
2014	35	67	39	12	20	14	23	35	25
2015	33	65	38	11	17	12	22	34	24
2016	34	68	39	10	20	12	21	36	24
2017	31	71	37	9	21	12	20	39	23
2018	29	73	35	10	18	12	19	38	22
2019	30	60	34	9	20	11	19	34	22
2020	25	56	29	10	18	11	17	30	19
2021	23	58	28	9	18	11	16	31	18
2022	20	49	24	4	11	6	11	24	14
2023	19	51	23	5	10	6	11	25	14
2024	17	56	22	5	10	6	11	27	13

Table AA1.5 Overall sulphur (SO_3) application rates (kg/ha), Great Britain 2004 – 2024

	Crops			Grass			All crops and grass		
	England & Wales	Scotland	Great Britain	England & Wales	Scotland	Great Britain	England & Wales	Scotland	Great Britain
	kg SO_3/ha			kg SO_3/ha			kg SO_3/ha		
2004	19	18	19	2	2	2	10	8	9
2005	21	18	21	2	3	2	11	8	11
2006	20	18	20	2	4	3	11	9	11
2007	23	17	24	3	2	2	14	7	13
2008	23	16	22	1	2	2	12	7	11
2009	19	15	19	1	2	2	10	7	10
2010	24	18	23	2	3	2	13	8	12
2011	26	21	26	2	2	2	14	8	13
2012	29	25	29	2	3	2	15	10	14
2013	27	25	27	3	2	2	14	10	13
2014	31	28	31	4	3	4	17	11	16
2015	31	33	31	3	3	3	17	14	16
2016	32	24	31	3	4	3	17	11	16
2017	35	27	34	3	4	3	18	12	17
2018	36	30	35	5	4	4	19	13	18
2019	37	25	35	4	6	5	20	13	18
2020	31	29	31	5	6	5	17	14	16
2021	31	26	30	5	6	5	17	13	16
2022	28	21	27	3	4	3	15	10	14
2023	29	25	28	4	5	5	16	12	15
2024	30	23	29	5	3	4	16	10	15

Table AA1.6a Nitrogen dressing covers (%), Great Britain 2004 – 2024

	Crops			Grass			All crops and grass		
	England & Wales	Scotland	Great Britain	England & Wales	Scotland	Great Britain	England & Wales	Scotland	Great Britain
	%	%	%	%	%	%	%	%	%
2004	91	96	91	68	82	70	78	87	80
2005	90	97	91	65	84	68	77	88	79
2006	90	95	91	67	83	70	78	87	80
2007	91	96	91	63	77	66	77	84	78
2008	90	94	91	55	71	58	72	79	73
2009	89	95	90	55	72	59	72	81	74
2010	89	95	90	60	72	63	75	79	75
2011	91	94	92	59	70	61	75	77	76
2012	91	95	91	59	67	61	74	76	74
2013	91	98	92	60	71	62	74	80	75
2014	92	97	92	60	72	62	75	80	76
2015	90	96	91	56	76	60	73	83	75
2016	89	97	90	53	76	58	70	83	72
2017	88	96	89	52	74	56	69	82	71
2018	91	95	91	56	71	59	72	80	74
2019	91	94	91	54	73	58	71	81	73
2020	89	93	89	54	65	56	70	74	70
2021	88	92	89	55	75	59	71	81	72
2022	86	93	87	38	59	42	60	71	62
2023	88	92	88	42	49	44	63	64	63
2024	87	91	87	39	52	42	61	66	62

Table AA1.6b Phosphate dressing covers (%), Great Britain 2004 – 2024

	Crops			Grass			All crops and grass		
	England & Wales	Scotland	Great Britain	England & Wales	Scotland	Great Britain	England & Wales	Scotland	Great Britain
	%	%	%	%	%	%	%	%	%
2004	61	93	65	55	77	59	58	83	61
2005	60	88	63	50	75	55	55	80	59
2006	52	89	57	52	75	56	52	79	57
2007	50	86	54	47	67	51	48	74	52
2008	46	88	52	37	61	42	42	71	47
2009	34	86	40	33	59	38	34	69	39
2010	45	87	50	37	64	43	41	71	46
2011	45	82	49	36	58	41	41	66	45
2012	42	87	47	37	57	41	39	67	44
2013	43	86	48	38	59	42	40	68	45
2014	44	85	49	36	61	41	40	69	45
2015	43	85	49	35	65	41	39	72	45
2016	44	85	49	32	63	38	37	70	43
2017	44	91	50	30	65	37	36	75	43
2018	41	87	48	33	57	38	37	68	42
2019	43	83	48	32	58	37	37	67	42
2020	40	85	46	31	53	35	35	63	40
2021	35	84	41	31	59	37	33	68	39
2022	29	76	35	18	37	22	23	51	28
2023	29	76	35	19	35	22	24	49	28
2024	28	79	35	17	36	21	22	52	27

Table AA1.6c Potash dressing covers (%), Great Britain 2004 – 2024

	Crops			Grass			All crops and grass		
	England & Wales	Scotland	Great Britain	England & Wales	Scotland	Great Britain	England & Wales	Scotland	Great Britain
	%	%	%	%	%	%	%	%	%
2004	63	93	67	56	75	59	59	82	63
2005	61	90	65	51	71	55	56	78	60
2006	56	91	60	52	71	56	54	78	58
2007	54	90	58	47	65	51	51	74	54
2008	50	90	55	38	61	42	44	71	48
2009	37	88	43	34	61	39	35	71	41
2010	44	89	50	39	63	44	42	72	47
2011	46	84	50	38	57	42	42	66	46
2012	42	90	47	38	58	42	40	68	44
2013	46	87	51	39	59	43	42	69	47
2014	45	86	50	37	63	43	41	70	46
2015	45	88	50	35	65	42	40	73	46
2016	44	83	50	33	64	39	38	72	44
2017	44	91	50	31	66	38	37	75	43
2018	41	88	47	35	59	40	38	69	43
2019	44	83	50	34	60	39	39	68	44
2020	39	84	44	33	54	37	35	64	40
2021	37	84	43	34	59	39	35	68	41
2022	31	76	37	19	37	22	25	51	29
2023	33	77	39	20	38	24	26	52	31
2024	31	81	38	19	38	22	24	53	29

Table AA1.6d Sulphur dressing covers (%), Great Britain 2004 – 2024

	Crops			Grass			All crops and grass		
	England & Wales	Scotland	Great Britain	England & Wales	Scotland	Great Britain	England & Wales	Scotland	Great Britain
	%	%	%	%	%	%	%	%	%
2004	32	39	33	5	9	6	17	20	18
2005	35	36	35	5	9	6	19	19	19
2006	38	41	38	6	12	7	21	22	21
2007	42	36	42	5	6	5	24	17	23
2008	41	32	40	4	6	5	22	15	21
2009	35	36	35	5	7	5	20	17	20
2010	39	43	40	5	9	6	22	20	22
2011	42	42	42	6	7	6	24	19	23
2012	47	46	47	6	10	7	26	22	25
2013	47	41	47	8	8	8	26	19	25
2014	52	47	51	11	9	11	30	21	29
2015	53	48	52	9	12	10	31	25	30
2016	55	49	54	9	11	9	30	24	29
2017	58	53	57	9	12	10	32	27	31
2018	62	58	62	11	12	12	35	28	34
2019	63	58	62	13	20	14	36	33	36
2020	58	60	59	14	21	15	34	34	34
2021	60	55	60	14	22	16	36	33	35
2022	55	49	54	10	15	37	30	27	33
2023	56	53	55	12	16	12	32	29	32
2024	57	56	57	12	15	13	33	29	32

Table AA1.6e FYM dressing covers (%), Great Britain 2004 – 2024

	Crops			Grass			All crops and grass		
	England & Wales	Scotland	Great Britain	England & Wales	Scotland	Great Britain	England & Wales	Scotland	Great Britain
	%	%	%	%	%	%	%	%	%
2004	18	24	19	42	26	39	31	25	30
2005	20	24	20	40	31	38	30	28	30
2006	20	35	22	43	29	40	32	31	32
2007	17	29	19	38	21	35	28	24	27
2008	20	33	22	37	21	34	29	26	29
2009	18	30	20	37	33	37	28	32	28
2010	20	31	21	38	24	35	29	26	29
2011	21	33	22	37	25	35	29	28	29
2012	23	28	24	37	23	34	31	24	30
2013	22	29	23	40	25	37	31	26	31
2014	21	30	22	35	24	32	28	26	28
2015	23	23	23	35	27	33	29	26	29
2016	22	31	23	37	23	34	30	26	29
2017	24	31	25	34	30	34	29	30	30
2018	26	33	27	37	36	37	32	35	32
2019	25	32	26	37	34	36	31	33	32
2020	24	33	26	37	29	35	31	30	31
2021	24	41	26	37	37	37	31	38	32
2022	27	39	28	38	36	37	33	37	33
2023	25	38	27	36	33	36	31	35	32
2024	25	38	27	37	27	35	31	31	31

Table AA1.7 Quantities of major fertiliser nutrients used, UK 2000-2024 (25 years)

Crop year	Mineral fertiliser nutrients																Mineral fertiliser kt product					
	Nitrogen kt N				Phosphate kt P_2O_5				Potash kt K_2O				Sulphur kt SO_3				Nitrogen (N & NS)			Compounds, blends		
	England & Wales	Scotland	N Ireland	UK	England & Wales	Scotland	N Ireland	UK	England & Wales	Scotland	N Ireland	UK	England & Wales	Scotland	N Ireland	UK	Great Britain	N Ireland	UK	Great Britain	N Ireland	UK
2000	1,005	150	113	1,268	237	59	21	317	322	61	26	409	[x]	[x]	[x]	[x]	2,294	135	2,429	2,519	329	2,848
2001	876	180	106	1,162	201	57	21	279	274	69	26	369	[x]	[x]	[x]	[x]	1,838	99	1,936	2,142	329	2,471
2002	915	187	95	1,197	209	55	19	283	297	70	24	391	58	8	[x]	[x]	2,250	85	2,335	2,211	300	2,511
2003	853	170	108	1,131	203	60	19	282	283	66	26	375	75	11	[x]	[x]	1,911	85	1,996	2,171	335	2,506
2004	875	150	100	1,125	205	57	16	278	288	65	22	375	95	14	[x]	[x]	1,939	91	2,030	2,254	296	2,550
2005	834	150	77	1,061	192	55	12	259	267	67	18	352	94	13	[x]	[x]	2,067	75	2,142	1,999	222	2,221
2006	780	153	70	1,003	173	51	11	235	243	66	16	325	88	13	[x]	[x]	1,885	75	1,959	1,932	202	2,134
2007	802	126	80	1,008	169	46	9	224	241	59	17	317	94	13	6	114	1,924	108	2,032	1,833	207	2,039
2008	800	127	74	1,001	160	49	6	215	244	68	13	325	114	16	6	136	2,197	130	2,326	1,675	153	1,827
2009	767	124	57	948	91	34	4	129	148	52	8	208	82	12	7	101	2,050	113	2,163	1,013	103	1,116
2010	813	127	76	1,016	134	44	6	184	182	57	12	251	107	15	7	129	2,220	134	2,355	1,384	145	1,529
2011	824	124	74	1,022	145	42	5	192	213	59	11	283	124	18	8	150	2,293	143	2,436	1,446	137	1,583
2012	809	125	66	1,000	140	43	5	188	193	56	10	259	130	19	8	156	2,271	112	2,383	1,352	132	1,483
2013	781	139	79	999	141	46	7	194	194	60	13	267	142	20	10	172	2,160	118	2,277	1,410	185	1,594
2014	838	151	71	1,060	146	48	7	201	206	65	13	284	160	23	9	192	2,449	117	2,566	1,482	166	1,647
2015	819	155	75	1,049	142	48	6	196	196	64	12	272	157	22	14	193	2,469	108	2,577	1,348	157	1,505
2016	801	155	71	1,026	139	51	7	197	188	69	13	270	162	23	9	194	2,378	121	2,499	1,349	155	1,504
2017	806	157	78	1,041	133	54	8	195	185	77	14	276	175	25	11	211	2,450	133	2,583	1,361	171	1,532
2018	804	147	82	1,033	131	48	9	188	174	72	16	262	176	25	12	210	2,446	126	2,571	1,296	192	1,488
2019	810	150	79	1,038	132	46	7	186	182	68	14	264	183	25	14	220	2,505	130	2,635	1,301	172	1,473
2020	757	131	79	967	127	39	8	174	177	63	14	253	177	29	14	219	2,276	120	2,396	1,328	177	1,505
2021	797	135	82	1,014	118	45	8	171	180	69	17	266	194	29	*17*	239	2,406	131	*2,536*	*1,389*	*181*	*1,570*
2022	687	118	57	862	73	32	5	110	131	55	11	197	190	26	*12*	226	2,243	102	*2,345*	*939*	*110*	*1,049*
2023	692	114	65	871	67	29	6	102	122	51	11	184	148	23	12	182	2,174	123	2,297	818	115	933
2024 [p]	*690*	*112*	*70*	*872*	*73*	*36*	*7*	*116*	*126*	*60*	*12*	*198*	*170*	*21*	*14*	*205*	*2,138*	*129*	*2,267*	*892*	*129*	*1,021*

Note: Years are harvest not calendar years (e.g. 2024 refers to the 2023-24 crop year). Data for 2024[p] are provisional.
Nitrogen, phosphate and potash data since 1966 are available in the BSFP Dataset: https://www.gov.uk/government/statistical-data-sets/british-survey-of-fertiliser-practice-dataset

APPENDIX 2 - TABLES

CONTENTS

GREAT BRITAIN TABLES 2024

ENGLAND AND WALES TABLES 2024

SCOTLAND TABLES 2024

Symbols used in the tables:

c is used where data have been suppressed because they are from fewer than 5 fields.
x is used where data are not available.
z is used where data are not applicable.
p is used where data are provisional.

Table GB1.1, Total fertiliser use, Great Britain 2024

	Crop area receiving dressing (%)					Average field rate (kg/ha)				Overall application rate (kg/ha)				Fields in survey
	N	P_2O_5	K_2O	SO_3	FYM	N	P_2O_5	K_2O	SO_3	N	P_2O_5	K_2O	SO_3	
Spring wheat	92	22	18	48	17	140	32	30	49	128	7	5	24	59
Winter wheat	98	30	35	67	23	175	49	55	55	172	15	19	37	978
Spring barley	97	48	53	56	28	100	47	57	37	97	22	30	21	609
Winter barley	94	35	38	65	26	143	53	60	52	135	19	23	34	410
Oats	88	29	34	59	20	102	44	53	41	90	13	18	24	203
Rye/triticale/durum wheat	94	17	33	50	21	117	45	82	55	110	7	27	27	28
Potatoes (seed or earlies)	c	c	c	c	c	c	c	c	c	c	c	c	c	3
Potatoes (maincrop)	89	84	91	42	37	145	119	207	c	128	100	188	c	36
Sugar beet	87	49	56	53	32	78	34	62	36	67	17	35	19	67
Spring oilseed rape	c	c	c	c	c	c	c	c	c	c	c	c	c	1
Winter oilseed rape	99	31	31	78	31	166	52	53	72	163	16	16	57	252
Linseed	96	2	2	38	7	81	c	c	36	78	c	c	14	24
Forage maize	69	46	17	25	87	60	36	61	27	42	17	10	7	187
Rootcrops for stockfeed	60	40	44	6	50	71	35	45	31	42	14	20	2	44
Leafy forage crops	50	38	38	10	39	61	38	42	33	31	15	16	3	50
Arable silage/other fodder crops	43	15	19	20	35	76	32	35	51	33	5	7	10	98
Peas – human consumption	0	7	10	10	0	c	c	c	c	c	c	c	c	23
Peas – animal consumption	5	21	31	18	0	c	51	65	47	c	11	20	8	33
Beans – animal consumption	1	15	20	15	3	c	32	43	25	c	5	9	4	171
Vegetables (brassicae)	41	62	88	66	40	c	c	102	18	c	c	90	12	9
Vegetables (other)	66	59	59	35	8	83	39	66	43	54	23	39	15	35
Soft fruit	65	35	35	35	0	60	c	c	c	39	c	c	c	10
Top fruit	48	16	36	3	0	54	c	58	c	26	c	21	c	25
Other crops	51	19	17	28	15	86	73	85	60	43	14	14	16	55
All crops	87	35	38	57	27	139	49	60	51	121	17	22	29	3,410
Grass under 5 years old	70	30	32	25	48	96	27	38	42	67	8	12	10	723
Grass 5 years and over	37	20	21	11	33	78	18	25	32	29	3	5	3	2,264
All grass	42	21	22	13	35	82	19	28	34	34	4	6	4	2,987
All crops and grass	62	27	29	32	31	118	36	46	47	73	10	13	15	6,397

Source: British Survey of Fertiliser Practice, 2024.

Note. Sulphur rates on potatoes are not shown as some growers apply additional sulphur to acidify the soil for this crop. These applications cannot be separated from those intended as a fertiliser nutrient.

Table GB1.2, Use of straight fertiliser, Great Britain, 2024

	Crop area receiving dressing (%)			Average field rate (kg/ha)			Overall application rate (kg/ha)			Fields in survey
	N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O	
Spring wheat	90	5	1	139	48	68	125	2	1	59
Winter wheat	98	9	18	172	55	52	169	5	9	978
Spring barley	87	4	12	90	50	54	78	2	6	609
Winter barley	92	10	14	139	54	58	129	5	8	410
Oats	84	8	14	100	52	52	84	4	8	203
Rye/triticale/durum wheat	93	10	28	117	c	84	109	c	23	28
Potatoes (seed or earlies)	c	c	c	c	c	c	c	c	c	3
Potatoes (maincrop)	50	10	39	116	c	241	58	c	93	36
Sugar beet	75	10	30	80	c	69	60	c	21	67
Spring oilseed rape	c	c	c	c	c	c	c	c	c	1
Winter oilseed rape	98	10	17	161	54	55	159	6	9	252
Linseed	96	2	2	81	c	c	78	c	c	24
Forage maize	47	1	9	70	c	91	33	c	8	187
Rootcrops for stockfeed	24	0	2	83	c	c	20	c	c	44
Leafy forage crops	31	0	0	50	c	c	16	c	c	50
Arable silage/other fodder crops	32	1	5	74	c	c	23	c	c	98
Peas – human consumption	0	4	10	c	c	c	c	c	c	23
Peas – animal consumption	1	9	19	c	c	68	c	c	13	33
Beans – animal consumption	0	3	10	c	42	36	c	1	3	171
Vegetables (brassicae)	40	0	26	c	c	c	c	c	c	9
Vegetables (other)	49	18	23	93	c	c	46	c	c	35
Soft fruit	60	0	0	44	c	c	27	c	c	10
Top fruit	48	0	14	50	c	c	24	c	c	25
Other crops	39	0	3	80	c	c	31	c	c	55
All crops	82	7	15	137	55	61	113	4	9	3,410
Grass under 5 years old	47	3	3	100	39	59	47	1	2	723
Grass 5 years and over	20	0	1	90	65	75	18	0	1	2,264
All grass	23	0	1	93	46	69	22	0	1	2,987
All crops and grass	50	3	7	126	54	62	63	2	5	6,397

Source: British Survey of Fertiliser Practice, 2024

Table GB1.3, Use of compound fertiliser, Great Britain, 2024

	Crop area receiving dressing (%)				Average field rate (kg/ha)				Overall application rate (kg/ha)				Fields in survey
	N	P_2O_5	K_2O	SO_3	N	P_2O_5	K_2O	SO_3	N	P_2O_5	K_2O	SO_3	
Spring wheat	9	17	17	5	43	27	27	14	4	5	5	1	59
Winter wheat	8	21	19	5	42	46	54	28	3	10	10	2	978
Spring barley	38	45	43	15	52	46	55	26	20	20	24	4	609
Winter barley	11	27	25	9	54	51	58	29	6	13	14	3	410
Oats	15	21	20	6	41	42	52	29	6	9	11	2	203
Rye/triticale/durum wheat	1	7	7	2	c	c	c	c	c	c	c	c	28
Potatoes (seed or earlies)	c	c	c	c	c	c	c	c	c	c	c	c	3
Potatoes (maincrop)	74	73	61	20	95	108	157	c	70	79	95	c	36
Sugar beet	21	39	32	16	35	31	44	25	7	12	14	4	67
Spring oilseed rape	c	c	c	c	c	c	c	c	c	c	c	c	1
Winter oilseed rape	13	22	15	6	35	48	46	19	4	10	7	1	252
Linseed	0	0	0	0	c	c	c	c	c	c	c	c	24
Forage maize	43	45	8	4	21	36	27	7	9	16	2	0	187
Rootcrops for stockfeed	38	40	42	4	59	35	43	c	22	14	18	c	44
Leafy forage crops	32	38	38	10	48	38	42	29	15	15	16	3	50
Arable silage/other fodder crops	13	13	14	4	75	22	28	14	9	3	4	1	98
Peas – human consumption	0	3	0	0	c	c	c	c	c	c	c	c	23
Peas – animal consumption	4	12	12	6	c	c	c	c	c	c	c	c	33
Beans – animal consumption	1	13	12	7	c	30	44	16	c	4	5	1	171
Vegetables (brassicae)	41	62	62	0	c	c	c	c	c	c	c	c	9
Vegetables (other)	31	40	40	16	28	41	44	41	9	17	18	7	35
Soft fruit	32	35	35	24	c	c	c	c	c	c	c	c	10
Top fruit	9	16	22	3	21	c	27	c	2	c	6	c	25
Other crops	18	19	14	2	68	73	92	c	12	14	13	c	55
All crops	18	28	24	8	47	47	55	28	8	13	13	2	3,410
Grass under 5 years old	28	28	29	7	69	26	35	20	20	7	10	1	723
Grass 5 years and over	21	19	20	5	55	17	23	19	11	3	5	1	2,264
All grass	22	21	21	5	57	19	25	19	12	4	5	1	2,987
All crops and grass	20	24	23	6	53	33	40	24	11	8	9	2	6,397

Source: British Survey of Fertiliser Practice, 2024

Note. Sulphur rates on potatoes are not shown as some growers apply additional sulphur to acidify the soil for this crop. These applications cannot be separated from those intended as a fertiliser nutrient.

Table GB1.4, Use of lime, Great Britain, 2024

	Crop area receiving dressing (%)						Average field rate (tonnes/ha)							
	Limestone (ground, screened)	Chalk	Magnesian limestone	Sugar beet lime	Other	All	Limestone (ground, screened)	Chalk	Magnesian limestone	Sugar beet lime	Other	All	Fields limed	Fields in survey
	%	%	%	%	%	%	t/ha	t/ha	t/ha	t/ha	t/ha	t/ha		
Spring wheat	c	c	c	c	c	c	c	c	c	c	c	c	3	59
Winter wheat	5.5	0.8	0.2	0.0	c	6.5	4.1	4.9	7.4	8.0	c	4.3	59	978
Spring barley	7.7	0.7	1.0	0.0	0.7	10.2	4.5	2.0	4.7	5.0	0.3	4.1	55	609
Winter barley	4.2	0.3	0.5	c	0.1	5.1	3.8	3.8	2.4	c	0.7	3.6	30	410
Oats	4.8	0.6	0.9	1.0	3.3	10.5	4.7	2.3	5.0	2.1	15.7	7.8	13	203
Rye/triticale/durum wheat	c	c	c	c	c	c	c	c	c	c	c	c	0	28
Potatoes (seed or earlies)	c	c	c	c	c	c	c	c	c	c	c	c	0	3
Potatoes (maincrop)	c	c	c	c	c	c	c	c	c	c	c	c	0	36
Sugar beet	18.6	1.9	c	14.7	0.1	35.3	4.8	4.0	c	4.8	5.0	4.8	20	67
Spring oilseed rape	c	c	c	c	c	c	c	c	c	c	c	c	0	1
Winter oilseed rape	4.7	c	0.1	0.8	c	5.6	3.6	c	2.4	5.0	c	3.8	14	252
Linseed	c	c	c	c	c	c	c	c	c	c	c	c	0	24
Forage maize	8.8	0.5	c	c	c	9.2	4.1	4.5	c	c	c	4.1	17	187
Rootcrops for stockfeed	30.0	c	c	c	3.1	33.1	5.1	c	c	c	0.3	4.6	11	44
Leafy forage crops	11.7	c	0.7	c	4.1	16.5	4.5	c	5.0	c	0.9	3.6	16	50
Arable silage/other fodder crops	8.6	c	c	c	1.6	10.2	3.7	c	c	c	0.3	3.1	7	98
Peas – human consumption	c	c	c	c	c	c	c	c	c	c	c	c	1	23
Peas – animal consumption	c	c	c	c	c	c	c	c	c	c	c	c	3	33
Beans – animal consumption	c	c	c	c	c	c	c	c	c	c	c	c	1	171
Vegetables (brassicae)	c	c	c	c	c	c	c	c	c	c	c	c	0	9
Vegetables (other)	c	c	c	c	c	c	c	c	c	c	c	c	2	35
Soft fruit	c	c	c	c	c	c	c	c	c	c	c	c	1	10
Top fruit	c	c	c	c	c	c	c	c	c	c	c	c	3	25
Other crops	c	c	c	c	c	c	c	c	c	c	c	c	0	55
All crops	6.1	0.6	0.4	0.4	0.4	7.9	4.1	3.8	4.6	4.6	6.4	4.3	256	3,410
Grass under 5 years old	5.7	c	0.7	c	1.1	7.6	4.7	c	2.2	c	8.0	5.0	52	723
Grass 5 years and over	2.2	c	0.2	0.0	0.3	2.7	2.9	c	3.9	3.7	0.3	2.7	95	2,264
All grass	2.7	c	0.2	0.0	0.4	3.3	3.4	c	3.2	3.7	3.2	3.4	147	2,987
All crops and grass	4.2	0.3	0.3	0.2	0.4	5.4	3.9	3.8	4.0	4.6	4.6	4.0	403	6,397

Source: British Survey of Fertiliser Practice 2024

Table GB2.1, Average fertiliser practice by grassland utilisation, Great Britain, 2024

	Crop area receiving dressing (%)					Average field rate (kg/ha)				Overall application rate (kg/ha)				Fields in survey
	N	P_2O_5	K_2O	SO_3	FYM	N	P_2O_5	K_2O	SO_3	N	P_2O_5	K_2O	SO_3	
Grazed not mown	27	15	14	7	17	64	14	16	31	17	2	2	2	1,398
Grazed mown	64	33	37	20	64	87	23	33	35	55	8	12	7	1,303
All grazings	40	21	22	12	33	76	19	26	33	30	4	6	4	2,701
Cut for silage - grazed	74	36	40	25	69	93	24	35	36	69	9	14	9	896
Cut for silage - not grazed	81	23	27	29	76	139	21	45	48	112	5	12	14	165
All cut for silage	75	34	38	25	70	101	24	36	38	76	8	14	10	1,061
Cut for hay - grazed	44	26	27	10	53	67	19	25	38	29	5	7	4	441
Cut for hay - not grazed	53	16	24	24	44	92	26	58	31	49	4	14	7	92
All cut for hay	45	24	27	13	52	72	19	30	36	32	5	8	5	533
All mowings	65	31	35	22	64	95	23	35	36	62	7	12	8	1,553
All grass	42	21	22	13	35	82	19	28	34	34	4	6	4	2,987

Source: British Survey of Fertiliser Practice, 2024

Table GB3.0a, Product use by month of application, Great Britain, 2024

Percents by row	Sep %	Oct %	Nov %	Dec %	Jan %	Feb %	Mar %	Apr %	May %	Jun %	Jul %	Aug %	Total product %
Straight N	0	0	0	0	0	5	32	37	18	4	3	1	100
Straight P	9	9	16	0	4	4	23	23	10	0	1	2	100
Straight K	3	3	12	0	2	8	33	27	8	1	0	1	100
Compounds	6	6	0	0	0	1	17	38	18	7	3	2	100
All fertilisers	2	2	1	0	1	4	28	36	17	5	3	1	100

Source: British Survey of Fertiliser Practice, 2024

Table GB3.0b, Nutrient use by month of application, Great Britain, 2024

Percents by row	Sep %	Oct %	Nov %	Dec %	Jan %	Feb %	Mar %	Apr %	May %	Jun %	Jul %	Aug %	Total nutrient %
Nitrogen	0	0	0	0	0	4	30	37	18	5	3	1	100
Phosphate	9	10	4	0	1	2	18	35	14	3	1	3	100
Potash	6	8	4	0	1	3	22	34	13	4	2	2	100
Sulphur	1	0	1	0	1	9	40	30	13	3	2	1	100
Total	2	2	1	0	1	4	29	36	17	4	3	1	100

Note: All fertilisers includes other straight fertilisers (e.g. trace elements).
'Product' refers to the total tonnage of the products used by the farmers in the survey year 2024.
'Nutrient' refers to the tonnage of each nutrient contained in the product used (e.g. 100 kg of a 20:10:10 compound contains 20 kg of N, 10 kg of P_2O_5 and 10 kg of K_2O, while 100 kg of ammonium nitrate (straight N) contains typically 34.5 kg of N).
Estimates of total nutrients are show in in Appendix 3, table AA 1.6.

Source: British Survey of Fertiliser Practice, 2024

Table GB3.1, Product type as percentage of all product used by crop group, Great Britain, 2024

Percents by column	Spring cereal %	Winter cereal %	Potatoes %	Sugar beet %	Oilseed rape %	Other crops %	All crops %	Grass for grazing %	Grass for hay %	Grass for silage %	Grass not spec %	All grass %	All crops and grass %
Ammonium Nitrate (AN) (+/-S)	35.8	41.2	10.5	24.1	31.9	24.2	36.9	26.7	22.7	28.7	13.6	28.2	34.8
Urea (+/-S)	8.2	13.6	1.0	5.7	16.4	5.8	11.8	10.8	14.5	12.2	7.8	11.6	11.7
Calcium Ammonium Nitrate (CAN) (+/-S)	3.0	1.9	1.1	3.0	2.8	2.0	2.2	3.5	2.1	3.2	0.0	3.3	2.5
Urea Ammonium Nitrate (UAN) (+/-S)	16.1	21.6	3.5	10.3	32.0	11.0	20.1	3.1	3.3	4.0	15.7	3.9	16.2
Foliar Urea (+-S)	1.4	1.7	0.1	2.1	1.3	1.9	1.6	0.1	0.1	0.1	0.0	0.1	1.2
Other Straight Nitrogen (N) (+/-S)	0.5	0.7	0.7	0.0	1.2	1.8	0.8	0.9	0.4	0.6	0.0	0.8	0.8
Triple Superphosphate (TSP)	1.5	2.3	4.2	0.9	2.0	2.5	2.1	0.3	0.0	0.4	6.2	0.4	1.7
Other Straight Phosphate (P)	0.0	0.0	0.0	0.8	0.0	0.8	0.1	0.0	0.0	0.0	0.0	0.0	0.1
Muriate of Potash (MOP)	2.1	2.5	7.5	1.0	1.8	5.6	2.6	0.8	1.3	0.8	9.4	0.9	2.2
Other Straight Potash (K)	1.2	2.1	2.8	20.1	1.8	2.9	2.4	0.5	0.9	0.3	0.0	0.5	1.9
Phosphate+Potash product (PK) (+/-S)	4.6	6.7	3.1	14.5	3.3	8.4	6.2	2.5	3.8	2.1	0.0	2.3	5.2
Nitrogen+Potash product (NK) (+/-S)	0.8	0.6	2.0	0.0	0.3	2.1	0.8	4.0	2.5	5.1	0.0	4.3	1.6
Low N NP/NPK product (<19 N) (+/-S)	14.9	2.6	63.1	6.0	3.6	19.8	7.8	3.6	4.6	3.1	22.7	3.5	6.8
High N NP/NPK product (>=19 N) (+/-S)	9.8	2.1	0.0	7.6	1.1	10.4	4.2	42.9	43.7	39.0	24.6	40.0	12.9
Other fertiliser product	0.1	0.3	0.5	3.8	0.6	1.0	0.4	0.1	0.0	0.1	0.0	0.1	0.3

	Spring cereal	Winter cereal	Potatoes	Sugar beet	Oilseed rape	Other crops	All crops	Grass for grazing	Grass for hay	Grass for silage	Grass not spec	All grass	All crops and grass
Total product ('000 tonnes)	475	1,336	46	42	221	101	2,223	583	86	411	5	700	2,922

Source: British Survey of Fertiliser Practice, 2024

Table GB3.2a, Use of product type by crop group, split by type of crop, Great Britain, 2024

Percents by row	Spring cereal %	Winter cereal %	Potatoes %	Sugar beet %	Oilseed rape %	Other crops %	% of fertiliser product on All crops %
Ammonium Nitrate (AN) (+/-S)	20.1	65.8	0.7	1.5	8.6	3.3	76.5
Urea (+/-S)	13.8	70.4	0.1	0.7	13.2	1.7	76.7
Calcium Ammonium Nitrate (CAN) (+/-S)	31.3	51.1	0.2	1.9	11.9	3.5	72.3
Urea Ammonium Nitrate (UAN) (+/-S)	17.1	65.3	0.4	0.9	13.4	2.9	94.8
Foliar Urea (+-S)	15.2	70.5	0.1	3.5	8.6	2.1	99.6
Other Straight Nitrogen (N) (+/-S)	9.0	57.4	0.4	0.0	19.2	14.1	76.6
Triple Superphosphate (TSP)	12.4	63.9	5.1	2.1	11.3	5.2	94.3
Other Straight Phosphate (P)	0.0	0.0	0.0	58.0	0.0	42.0	82.5
Muriate of Potash (MOP)	18.5	48.7	11.4	1.0	8.7	11.6	90.7
Other Straight Potash (K)	12.2	54.9	3.6	16.9	6.5	5.8	91.4
Phosphate+Potash product (PK) (+/-S)	17.1	65.2	0.7	4.3	5.6	7.2	91.5
Nitrogen+Potash product (NK) (+/-S)	25.2	44.2	13.1	0.0	5.2	12.3	23.1
Low N NP/NPK product (<19% N) (+/-S)	51.2	16.5	15.6	2.4	4.2	10.1	89.1
High N NP/NPK product (>=19% N) (+/-S)	54.1	25.8	0.0	2.5	2.9	14.7	21.6
Other fertiliser product	1.8	51.5	9.5	11.9	16.5	8.8	90.7
Total product	21.4	60.1	2.1	1.9	10.0	4.6	76.1

Source: British Survey of Fertiliser Practice, 2024

Table GB3.2b, Use of product type on grass, split by type of grass, Great Britain, 2024

Percents by row	Grass for grazing %	Grass for hay %	Grass for silage %	Grass not specified %	% of fertiliser product on All grass %
Ammonium Nitrate (AN) (+/-S)	76.5	10.2	61.4	0.9	23.5
Urea (+/-S)	78.9	16.9	62.6	0.2	23.3
Calcium Ammonium Nitrate (CAN) (+/-S)	91.7	3.4	62.2	0.0	27.7
Urea Ammonium Nitrate (UAN) (+/-S)	56.6	12.2	64.9	2.8	5.2
Foliar Urea (+-S)	74.1	25.9	53.4	0.0	0.4
Other Straight Nitrogen (N) (+/-S)	99.1	2.6	40.2	0.0	23.4
Triple Superphosphate (TSP)	42.8	0.0	46.6	27.5	5.7
Other Straight Phosphate (P)	100.0	0.0	100.0	0.0	17.5
Muriate of Potash (MOP)	43.4	34.3	37.7	16.2	9.3
Other Straight Potash (K)	78.5	14.9	60.7	0.0	8.6
Phosphate+Potash product (PK) (+/-S)	96.5	25.4	42.0	0.0	8.5
Nitrogen+Potash product (NK) (+/-S)	76.8	6.7	76.7	0.0	76.9
Low N NP/NPK product (<19% N) (+/-S)	91.5	24.4	46.9	1.1	10.9
High N NP/NPK product (>=19% N) (+/-S)	93.6	12.4	54.5	0.1	78.4
Other fertiliser product	100.0	0.0	81.7	0.0	9.3
Total product	83.3	12.2	58.7	0.7	23.9

Note: The same grass field can have multiple uses in the same crop year, therefore percentages may sum to >100%

Source: British Survey of Fertiliser Practice, 2024

Table GB3.2c, Total use of product, Great Britain, 2024

Percents by row	All crops	All grass	All crops and grass	Total product ('000 tonnes)
Ammonium Nitrate (AN) (+/-S)	76.5%	23.5%	100.0%	946
Urea (+/-S)	76.7%	23.3%	100.0%	353
Calcium Ammonium Nitrate (CAN) (+/-S)	72.3%	27.7%	100.0%	74
Urea Ammonium Nitrate (UAN) (+/-S)	94.8%	5.2%	100.0%	616
Foliar Urea (+-S)	99.6%	0.4%	100.0%	49
Other Straight Nitrogen (N) (+/-S)	76.6%	23.4%	100.0%	34
Triple Superphosphate (TSP)	94.3%	5.7%	100.0%	44
Other Straight Phosphate (P)	82.5%	17.5%	100.0%	1
Muriate of Potash (MOP)	90.7%	9.3%	100.0%	58
Other Straight Potash (K)	91.4%	8.6%	100.0%	52
Phosphate+Potash product (PK) (+/-S)	91.5%	8.5%	100.0%	134
Nitrogen+Potash product (NK) (+/-S)	23.1%	76.9%	100.0%	44
Low N NP/NPK product (<19% N) (+/-S)	89.1%	10.9%	100.0%	182
High N NP/NPK product (>=19% N) (+/-S)	21.6%	78.4%	100.0%	326
Other fertiliser product	90.7%	9.3%	100.0%	10
Total product	76.1%	23.9%	100.0%	2,922

Source: British Survey of Fertiliser Practice, 2024

Table GB3.3, Product use by month of application, Great Britain, 2024

Percents by row	Jan %	Feb %	Mar %	Apr %	May %	Jun %	Jul %	Aug %	Sep %	Oct %	Nov %	Dec %	Total product '000 tonnes
Ammonium Nitrate (AN) (+/-S)	0.1	2.3	25.1	40.1	21.7	5.4	3.4	1.3	0.3	0.1	0.2	0.0	946
Urea (+/-S)	0.8	8.8	46.7	26.7	10.9	3.1	2.2	0.6	0.1	0.1	0.0	0.0	353
Calcium Ammonium Nitrate (CAN) (+/-S)	0.0	1.5	27.6	26.0	31.7	5.9	4.6	2.1	0.5	0.1	0.0	0.0	74
Urea Ammonium Nitrate (UAN) (+/-S)	0.8	5.9	36.1	39.3	13.9	2.0	1.1	0.3	0.3	0.2	0.0	0.1	616
Foliar Urea (+-S)	0.0	6.0	16.8	31.5	12.3	25.6	5.8	1.1	1.0	0.0	0.0	0.0	49
Other Straight Nitrogen (N) (+/-S)	0.0	5.5	42.1	28.7	14.7	2.3	2.5	3.8	0.5	0.0	0.0	0.0	34
Triple Superphosphate (TSP)	3.8	3.9	22.1	21.5	9.5	0.4	0.6	4.9	9.0	8.8	15.6	0.0	44
Other Straight Phosphate (P)	0.0	0.0	15.7	49.6	0.0	0.0	0.0	0.0	34.7	0.0	0.0	0.0	1
Muriate of Potash (MOP)	3.8	4.7	31.2	24.7	9.9	1.4	0.0	0.7	4.1	6.2	13.3	0.0	58
Other Straight Potash (K)	0.8	12.4	35.3	30.0	6.3	1.5	0.0	2.1	1.6	0.0	10.0	0.0	52
Phosphate+Potash product (PK) (+/-S)	0.8	2.5	16.7	13.3	4.0	0.3	0.1	3.3	27.2	30.3	1.1	0.3	134
Nitrogen+Potash product (NK) (+/-S)	0.2	0.3	11.5	23.0	24.0	25.2	9.1	6.7	0.0	0.0	0.0	0.0	44
Low N NP/NPK product (<19% N) (+/-S)	0.0	2.7	19.1	52.7	16.6	1.5	1.2	2.4	2.0	1.3	0.4	0.0	182
High N NP/NPK product (>=19% N) (+/-S)	0.1	0.3	15.8	42.8	24.2	10.0	4.8	1.3	0.3	0.3	0.1	0.0	326
Other fertiliser product	0.0	17.0	36.9	27.2	4.3	2.9	0.0	0.0	11.7	0.0	0.0	0.0	10
Total product	0.5	4.0	28.4	36.5	17.2	4.8	2.6	1.4	1.9	1.8	0.8	0.0	2,922

Source: British Survey of Fertiliser Practice, 2024

Table GB4.1, Average fertiliser practice on cereal farms, Great Britain, 2024

	Crop area receiving dressing (%)				Average field rate (kg/ha)			Overall application rate (kg/ha)			Fields in survey
	N	P_2O_5	K_2O	FYM	N	P_2O_5	K_2O	N	P_2O_5	K_2O	
Spring wheat	89	22	17	14	145	32	25	130	7	4	37
Winter wheat	99	29	34	18	182	46	52	180	14	17	566
Spring barley	97	39	46	15	103	47	55	100	18	26	253
Winter barley	98	28	31	13	149	48	55	146	13	17	186
Oats	95	26	32	10	106	46	54	101	12	17	104
Rye/triticale/durum wheat	93	11	18	25	105	c	76	97	c	14	19
Potatoes (seed or earlies)	c	c	c	c	c	c	c	c	c	c	0
Potatoes (maincrop)	c	c	c	c	c	c	c	c	c	c	3
Sugar beet	87	69	52	23	66	38	81	57	26	42	22
Spring oilseed rape	c	c	c	c	c	c	c	c	c	c	1
Winter oilseed rape	99	26	29	30	166	51	50	164	13	14	170
Linseed	96	2	2	7	82	c	c	79	c	c	23
Forage maize	71	54	14	80	62	39	79	44	21	11	56
Rootcrops for stockfeed	c	c	c	c	c	c	c	c	c	c	4
Leafy forage crops	c	c	c	c	c	c	c	c	c	c	1
Arable silage/other fodder crops	59	21	23	45	82	c	c	49	c	c	24
Peas – human consumption	0	11	11	0	c	c	c	c	c	c	10
Peas – animal consumption	1	14	23	0	c	c	63	c	c	15	21
Beans – animal consumption	1	17	23	0	c	30	41	c	5	9	119
Vegetables (brassicae)	c	c	c	c	c	c	c	c	c	c	2
Vegetables (other)	34	67	67	0	c	c	c	c	c	c	7
Soft fruit	c	c	c	c	c	c	c	c	c	c	1
Top fruit	c	c	c	c	c	c	c	c	c	c	3
Other crops	71	14	9	17	95	c	c	67	c	c	27
All crops	89	30	33	18	149	46	54	134	14	18	1,659
Grass under 5 years old	69	26	30	17	96	31	46	67	8	14	82
Grass 5 years and over	25	8	8	9	81	28	42	21	2	4	272
All grass	34	11	13	10	87	29	44	29	3	6	354
All crops and grass	81	27	30	17	145	45	53	117	12	16	2,013

The data in this table apply to farms in the 'cereals' robust group, as detailed in Appendix 5

Source: British Survey of Fertiliser Practice, 2024

Table GB4.2, Average fertiliser practice on general cropping and horticultural farms, Great Britain, 2024

	Crop area receiving dressing (%)				Average field rate (kg/ha)			Overall application rate (kg/ha)			Fields in survey
	N	P_2O_5	K_2O	FYM	N	P_2O_5	K_2O	N	P_2O_5	K_2O	
Spring wheat	100	25	25	0	155	c	c	155	c	c	7
Winter wheat	97	34	40	15	166	55	65	162	19	26	153
Spring barley	98	50	52	32	111	47	67	109	24	35	113
Winter barley	95	49	49	17	128	64	69	121	31	34	59
Oats	67	33	41	32	91	40	57	61	13	23	32
Rye/triticale/durum wheat	c	c	c	c	c	c	c	c	c	c	4
Potatoes (seed or earlies)	c	c	c	c	c	c	c	c	c	c	3
Potatoes (maincrop)	86	79	89	35	134	108	192	116	86	171	26
Sugar beet	89	37	60	35	86	31	54	76	11	32	40
Spring oilseed rape	c	c	c	c	c	c	c	c	c	c	0
Winter oilseed rape	96	43	41	25	171	56	61	165	24	25	50
Linseed	c	c	c	c	c	c	c	c	c	c	0
Forage maize	84	31	28	83	80	38	99	68	12	27	19
Rootcrops for stockfeed	c	c	c	c	c	c	c	c	c	c	1
Leafy forage crops	c	c	c	c	c	c	c	c	c	c	4
Arable silage/other fodder crops	19	18	0	18	c	c	c	c	c	c	14
Peas – human consumption	0	4	10	0	c	c	c	c	c	c	12
Peas – animal consumption	20	49	59	0	c	c	c	c	c	c	9
Beans – animal consumption	7	24	16	9	c	c	c	c	c	c	12
Vegetables (brassicae)	0	0	81	61	c	c	c	c	c	c	5
Vegetables (other)	79	57	57	9	67	20	61	53	11	34	27
Soft fruit	64	33	33	0	62	c	c	39	c	c	9
Top fruit	40	16	39	0	40	c	62	16	c	24	20
Other crops	23	6	9	15	c	c	c	c	c	c	10
All crops	86	40	45	23	134	55	75	115	22	34	629
Grass under 5 years old	55	10	10	43	90	36	57	50	3	6	60
Grass 5 years and over	31	10	13	22	93	24	43	29	2	6	174
All grass	35	10	13	25	92	26	45	32	3	6	234
All crops and grass	70	30	34	24	127	52	71	88	16	25	863

The data in this table apply to farms in the 'general cropping' and 'horticulture' robust groups, as detailed in Appendix 5.

Source: British Survey of Fertiliser Practice, 2024

Table GB4.3, Average fertiliser practice on dairy farms, Great Britain, 2024

	Crop area receiving dressing (%)				Average field rate (kg/ha)			Overall application rate (kg/ha)			Fields in survey
	N	P_2O_5	K_2O	FYM	N	P_2O_5	K_2O	N	P_2O_5	K_2O	
Spring wheat	c	c	c	c	c	c	c	c	c	c	3
Winter wheat	96	17	16	60	144	40	45	138	7	7	49
Spring barley	88	53	53	64	89	22	26	78	12	14	28
Winter barley	81	28	27	60	118	39	43	96	11	12	33
Oats	84	28	28	70	87	c	c	73	c	c	9
Rye/triticale/durum wheat	c	c	c	c	c	c	c	c	c	c	0
Potatoes (seed or earlies)	c	c	c	c	c	c	c	c	c	c	0
Potatoes (maincrop)	c	c	c	c	c	c	c	c	c	c	1
Sugar beet	c	c	c	c	c	c	c	c	c	c	0
Spring oilseed rape	c	c	c	c	c	c	c	c	c	c	0
Winter oilseed rape	100	54	34	66	148	40	c	148	22	c	6
Linseed	c	c	c	c	c	c	c	c	c	c	1
Forage maize	72	51	18	95	52	32	23	38	16	4	60
Rootcrops for stockfeed	c	c	c	c	c	c	c	c	c	c	3
Leafy forage crops	0	16	16	59	c	c	c	c	c	c	5
Arable silage/other fodder crops	18	9	9	39	c	c	c	c	c	c	29
Peas – human consumption	c	c	c	c	c	c	c	c	c	c	0
Peas – animal consumption	c	c	c	c	c	c	c	c	c	c	0
Beans – animal consumption	0	0	0	0	c	c	c	c	c	c	5
Vegetables (brassicae)	c	c	c	c	c	c	c	c	c	c	0
Vegetables (other)	c	c	c	c	c	c	c	c	c	c	0
Soft fruit	c	c	c	c	c	c	c	c	c	c	0
Top fruit	c	c	c	c	c	c	c	c	c	c	0
Other crops	0	0	0	62	c	c	c	c	c	c	5
All crops	75	34	22	70	101	32	33	76	11	7	237
Grass under 5 years old	82	17	21	78	132	25	45	108	4	9	126
Grass 5 years and over	70	20	21	65	115	17	34	81	3	7	340
All grass	73	19	21	68	119	18	37	87	4	8	466
All crops and grass	73	22	21	68	115	23	36	84	5	8	703

The data in this table apply to farms in the 'dairy' robust group, as detailed in Appendix 5.

Source: British Survey of Fertiliser Practice, 2024

Table GB4.4, Average fertiliser practice on other livestock farms, Great Britain, 2024

	Crop area receiving dressing (%)				Average field rate (kg/ha)			Overall application rate (kg/ha)			Fields in survey
	N	P_2O_5	K_2O	FYM	N	P_2O_5	K_2O	N	P_2O_5	K_2O	
Spring wheat	c	c	c	c	c	c	c	c	c	c	1
Winter wheat	97	40	47	62	124	40	56	121	16	26	36
Spring barley	96	70	71	56	85	45	51	81	31	36	89
Winter barley	78	44	45	85	102	49	57	79	22	26	41
Oats	82	64	64	30	76	40	42	63	26	27	23
Rye/triticale/durum wheat	c	c	c	c	c	c	c	c	c	c	3
Potatoes (seed or earlies)	c	c	c	c	c	c	c	c	c	c	0
Potatoes (maincrop)	c	c	c	c	c	c	c	c	c	c	2
Sugar beet	c	c	c	c	c	c	c	c	c	c	0
Spring oilseed rape	c	c	c	c	c	c	c	c	c	c	0
Winter oilseed rape	c	c	c	c	c	c	c	c	c	c	2
Linseed	c	c	c	c	c	c	c	c	c	c	0
Forage maize	32	15	19	87	54	42	52	17	6	10	29
Rootcrops for stockfeed	96	74	78	69	70	33	42	67	24	33	26
Leafy forage crops	66	69	69	32	54	32	36	35	22	25	27
Arable silage/other fodder crops	49	11	18	32	36	c	63	18	c	12	19
Peas – human consumption	c	c	c	c	c	c	c	c	c	c	1
Peas – animal consumption	c	c	c	c	c	c	c	c	c	c	0
Beans – animal consumption	c	c	c	c	c	c	c	c	c	c	2
Vegetables (brassicae)	c	c	c	c	c	c	c	c	c	c	1
Vegetables (other)	c	c	c	c	c	c	c	c	c	c	0
Soft fruit	c	c	c	c	c	c	c	c	c	c	0
Top fruit	c	c	c	c	c	c	c	c	c	c	0
Other crops	c	c	c	c	c	c	c	c	c	c	3
All crops	76	49	53	59	90	50	65	69	24	34	305
Grass under 5 years old	66	42	44	50	72	26	31	48	11	14	330
Grass 5 years and over	33	22	23	34	63	17	21	21	4	5	1,212
All grass	36	24	25	35	64	18	23	23	4	6	1,542
All crops and grass	38	26	27	37	67	22	28	26	6	7	1,847

The data in this table apply to farms in the 'LFA grazing livestock' and 'lowland grazing livestock' robust groups, as detailed in Appendix 5.

Source: British Survey of Fertiliser Practice, 2024

Table GB4.5, Average fertiliser practice on mixed farms, Great Britain, 2024

	Crop area receiving dressing (%)				Average field rate (kg/ha)			Overall application rate (kg/ha)			Fields in survey
	N	P_2O_5	K_2O	FYM	N	P_2O_5	K_2O	N	P_2O_5	K_2O	
Spring wheat	100	29	29	35	104	27	36	104	8	10	10
Winter wheat	96	33	47	45	168	56	53	162	19	25	157
Spring barley	100	62	69	43	90	50	57	89	31	39	121
Winter barley	88	57	62	51	154	56	68	135	32	42	83
Oats	79	28	33	41	102	50	49	81	14	16	34
Rye/triticale/durum wheat	c	c	c	c	c	c	c	c	c	c	2
Potatoes (seed or earlies)	c	c	c	c	c	c	c	c	c	c	0
Potatoes (maincrop)	c	c	c	c	c	c	c	c	c	c	4
Sugar beet	c	c	c	c	c	c	c	c	c	c	4
Spring oilseed rape	c	c	c	c	c	c	c	c	c	c	0
Winter oilseed rape	99	37	27	42	160	53	59	159	19	16	20
Linseed	c	c	c	c	c	c	c	c	c	c	0
Forage maize	86	62	7	75	48	53	c	41	33	c	22
Rootcrops for stockfeed	60	19	27	22	69	c	c	41	c	c	10
Leafy forage crops	43	23	23	26	85	c	c	36	c	c	13
Arable silage/other fodder crops	41	6	39	24	103	c	28	43	c	11	12
Peas – human consumption	c	c	c	c	c	c	c	c	c	c	0
Peas – animal consumption	c	c	c	c	c	c	c	c	c	c	3
Beans – animal consumption	1	4	13	22	c	c	c	c	c	c	28
Vegetables (brassicae)	c	c	c	c	c	c	c	c	c	c	1
Vegetables (other)	c	c	c	c	c	c	c	c	c	c	1
Soft fruit	c	c	c	c	c	c	c	c	c	c	0
Top fruit	c	c	c	c	c	c	c	c	c	c	2
Other crops	61	61	61	0	c	c	c	c	c	c	8
All crops	89	45	51	43	125	53	57	111	24	29	535
Grass under 5 years old	69	34	34	30	98	29	46	68	10	16	121
Grass 5 years and over	37	20	21	18	67	17	26	25	3	5	253
All grass	44	23	24	20	76	21	31	33	5	8	374
All crops and grass	64	33	36	31	107	41	48	69	13	17	909

The data in this table apply to farms in the 'mixed' robust group, as detailed in Appendix 5

Source: British Survey of Fertiliser Practice, 2024

Table GB5.1, Average fertiliser practice on crops and grassland by River Basin District, Great Britain, 2024

		Crop area receiving dressing (%)				Average field rate (kg/ha)			Overall application rate (kg/ha)			Fields in survey
		N	P_2O_5	K_2O	FYM	N	P_2O_5	K_2O	N	P_2O_5	K_2O	
Scotland (other than in Solway Tweed)	All crops	94	84	85	38	115	55	70	108	46	59	345
	All grass	53	39	40	26	68	20	26	36	8	10	320
	All crops and grass	70	58	59	31	94	40	52	65	23	30	665
Solway Tweed	All crops	81	52	57	39	121	49	62	98	26	35	136
	All grass	52	31	33	33	85	19	28	45	6	9	283
	All crops and grass	58	35	38	34	95	28	38	55	10	14	419
Northumbria	All crops	77	23	27	36	176	48	57	136	11	15	80
	All grass	18	13	14	26	75	28	37	14	4	5	155
	All crops and grass	33	15	18	29	135	36	45	45	5	8	235
Humber	All crops	87	27	28	26	149	51	68	130	14	19	662
	All grass	39	14	14	40	89	16	23	35	2	3	351
	All crops and grass	67	22	22	32	134	41	56	90	9	12	1,013
Anglian	All crops	90	28	28	14	149	47	56	133	13	16	837
	All grass	26	13	12	12	83	44	30	22	6	4	166
	All crops and grass	80	26	26	14	145	47	54	116	12	14	1,003
Thames	All crops	86	20	32	29	141	40	44	122	8	14	354
	All grass	32	2	4	14	92	36	34	30	1	1	171
	All crops and grass	68	14	22	24	134	40	43	91	6	10	525
South East	All crops	85	42	51	23	134	53	55	114	22	28	77
	All grass	34	10	9	33	91	36	51	31	3	5	49
	All crops and grass	60	26	30	28	121	50	54	72	13	16	126
South West	All crops	83	35	40	40	112	45	52	94	16	20	373
	All grass	35	11	14	41	84	16	26	29	2	3	470
	All crops and grass	49	18	21	41	98	32	40	48	6	8	843
Severn (in England)	All crops	82	29	35	34	132	41	55	109	12	20	379
	All grass	31	9	11	35	82	32	52	26	3	6	246
	All crops and grass	57	19	23	34	118	39	55	67	7	13	625
All Wales	All crops	79	47	41	65	93	30	55	74	14	22	103
	All grass	49	31	31	41	74	17	24	36	5	8	512
	All crops and grass	51	32	31	42	76	19	27	39	6	9	615
North West	All crops	94	15	14	28	175	85	118	165	13	17	57
	All grass	49	21	24	50	108	12	23	53	3	6	256
	All crops and grass	54	21	23	47	122	19	31	66	4	7	313
Not allocated to an RBD	All crops and grass	55	18	37	46	66	33	71	37	6	27	15

Note: the majority of the Dee River Basin District is included in the Wales data, with the area of the Dee RBD in England being too small to provide usable data. Therefore, English Dee data are incorporated with those few returns not allocated to a River Basin District are not shown separately. See Appendix 6 for a map showing River Basin Districts in Great Britain.
Source: British Survey of Fertiliser Practice, 2024

Table EW1.1, Total fertiliser use, England & Wales, 2024

	Crop area receiving dressing (%)					Average field rate (kg/ha)				Overall application rate (kg/ha)				Fields in survey
	N	P_2O_5	K_2O	SO_3	FYM	N	P_2O_5	K_2O	SO_3	N	P_2O_5	K_2O	SO_3	
Spring wheat	92	22	18	48	17	140	32	30	49	128	7	5	24	59
Winter wheat	98	27	33	67	23	177	48	53	56	174	13	17	37	887
Spring barley	97	29	35	57	21	103	40	45	39	100	11	16	23	438
Winter barley	96	30	32	65	23	143	48	55	51	137	14	18	33	355
Oats	89	23	27	61	17	104	45	49	43	92	10	13	26	173
Rye/triticale/durum wheat	93	19	25	46	20	108	45	54	54	100	9	14	25	24
Potatoes (seed or earlies)	c	c	c	c	c	c	c	c	c	c	c	c	c	1
Potatoes (maincrop)	91	81	90	46	39	151	122	216	c	138	99	194	c	31
Sugar beet	87	49	56	53	32	78	34	62	36	67	17	35	19	67
Spring oilseed rape	c	c	c	c	c	c	c	c	c	c	c	c	c	1
Winter oilseed rape	99	24	25	79	33	167	50	48	74	165	12	12	58	221
Linseed	96	2	2	38	7	81	c	c	36	78	c	c	14	24
Forage maize	70	47	17	25	87	60	36	61	27	42	17	10	7	184
Rootcrops for stockfeed	57	36	40	3	51	71	31	42	c	40	11	17	c	38
Leafy forage crops	40	22	22	0	40	49	22	25	c	20	5	5	c	30
Arable silage/other fodder crops	38	11	14	22	26	74	41	43	54	29	4	6	12	86
Peas – human consumption	0	8	11	11	0	c	c	c	c	c	c	c	c	19
Peas – animal consumption	5	21	31	18	0	c	51	65	47	c	11	20	8	33
Beans – animal consumption	1	16	20	15	2	c	31	41	25	c	5	8	4	161
Vegetables (brassicae)	41	62	88	66	40	c	c	102	18	c	c	90	12	9
Vegetables (other)	65	60	60	36	8	81	39	67	43	52	23	40	15	33
Soft fruit	65	35	35	35	0	60	c	c	c	39	c	c	c	10
Top fruit	48	16	36	3	0	54	c	58	c	26	c	21	c	25
Other crops	47	10	8	32	17	84	84	115	60	40	9	9	19	52
All crops	87	28	31	57	25	143	46	56	52	124	13	17	30	2,961
Grass under 5 years old	67	20	23	23	52	99	27	39	49	66	5	9	11	574
Grass 5 years and over	35	17	18	10	34	81	18	26	34	28	3	5	4	1,921
All grass	39	17	19	12	37	85	19	28	38	33	3	5	5	2,495
All crops and grass	61	22	24	33	31	123	35	45	49	76	8	11	16	5,456

Source: British Survey of Fertiliser Practice 2024

Note: Sulphur rates on potatoes are not shown as some growers apply additional sulphur to acidify the soil for this crop. These applications cannot be separated from those intended as a fertiliser nutrient.

Table EW1.2, Use of straight fertiliser, England & Wales, 2024

	Crop area receiving dressing (%)			Average field rate (kg/ha)			Overall application rate (kg/ha)			Fields in survey
	N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O	
Spring wheat	90	5	1	139	48	68	125	2	1	59
Winter wheat	98	8	18	174	55	50	171	5	9	887
Spring barley	92	4	13	98	50	48	91	2	6	438
Winter barley	94	9	14	141	54	55	133	5	8	355
Oats	86	8	14	103	54	48	89	4	6	173
Rye/triticale/durum wheat	92	11	20	108	c	49	99	c	10	24
Potatoes (seed or earlies)	c	c	c	c	c	c	c	c	c	1
Potatoes (maincrop)	56	8	36	117	c	261	66	c	94	31
Sugar beet	75	10	30	80	c	69	60	c	21	67
Spring oilseed rape	c	c	c	c	c	c	c	c	c	1
Winter oilseed rape	99	9	15	164	56	53	162	5	8	221
Linseed	96	2	2	81	c	c	78	c	c	24
Forage maize	47	1	9	70	c	91	33	c	8	184
Rootcrops for stockfeed	23	0	3	87	c	c	20	c	c	38
Leafy forage crops	25	0	0	59	c	c	15	c	c	30
Arable silage/other fodder crops	32	2	4	77	c	c	25	c	c	86
Peas – human consumption	0	4	11	c	c	c	c	c	c	19
Peas – animal consumption	1	9	19	c	c	68	c	c	13	33
Beans – animal consumption	0	3	10	c	42	33	c	1	3	161
Vegetables (brassicae)	40	0	26	c	c	c	c	c	c	9
Vegetables (other)	48	19	24	91	c	c	44	c	c	33
Soft fruit	60	0	0	44	c	c	27	c	c	10
Top fruit	48	0	14	50	c	c	24	c	c	25
Other crops	45	0	3	80	c	c	36	c	c	52
All crops	83	7	15	143	56	58	119	4	9	2,961
Grass under 5 years old	53	3	4	103	38	58	55	1	2	574
Grass 5 years and over	20	0	1	95	c	92	19	c	1	1,921
All grass	24	0	1	98	43	76	23	0	1	2,495
All crops and grass	52	3	8	132	55	60	68	2	5	5,456

Source: British Survey of Fertiliser Practice 2024

Table EW1.3, Use of compound fertiliser, England & Wales, 2024

	Crop area receiving dressing (%)				Average field rate (kg/ha)				Overall application rate (kg/ha)				Fields in survey
	N	P_2O_5	K_2O	SO_3	N	P_2O_5	K_2O	SO_3	N	P_2O_5	K_2O	SO_3	
Spring wheat	9	17	17	5	43	27	27	14	4	5	5	1	59
Winter wheat	6	19	17	4	45	45	50	26	3	8	8	1	887
Spring barley	16	24	23	8	55	38	41	27	9	9	9	2	438
Winter barley	7	21	19	6	55	46	52	26	4	10	10	1	355
Oats	9	15	14	5	39	40	49	26	3	6	7	1	173
Rye/triticale/durum wheat	1	8	8	2	c	c	c	c	c	c	c	c	24
Potatoes (seed or earlies)	c	c	c	c	c	c	c	c	c	c	c	c	1
Potatoes (maincrop)	74	74	63	22	97	106	159	c	72	78	100	c	31
Sugar beet	21	39	32	16	35	31	44	25	7	12	14	4	67
Spring oilseed rape	c	c	c	c	c	c	c	c	c	c	c	c	1
Winter oilseed rape	8	16	10	4	32	45	38	20	3	7	4	1	221
Linseed	0	0	0	0	c	c	c	c	c	c	c	c	24
Forage maize	44	45	8	4	21	36	27	7	9	16	2	0	184
Rootcrops for stockfeed	34	36	38	0	59	31	40	c	20	11	15	c	38
Leafy forage crops	15	22	22	0	31	22	25	c	5	5	5	c	30
Arable silage/other fodder crops	8	9	9	5	47	26	36	14	4	2	3	1	86
Peas – human consumption	0	3	0	0	c	c	c	c	c	c	c	c	19
Peas – animal consumption	4	12	12	6	c	c	c	c	c	c	c	c	33
Beans – animal consumption	1	12	12	7	c	29	43	16	c	4	5	1	161
Vegetables (brassicae)	41	62	62	0	c	c	c	c	c	c	c	c	9
Vegetables (other)	32	41	41	17	28	42	45	41	9	17	18	7	33
Soft fruit	32	35	35	24	c	c	c	c	c	c	c	c	10
Top fruit	9	16	22	3	21	c	27	c	2	c	6	c	25
Other crops	9	10	5	2	41	84	159	c	4	9	8	c	52
All crops	11	21	17	5	45	43	50	28	5	9	9	1	2,961
Grass under 5 years old	18	17	19	5	66	24	34	25	12	4	6	1	574
Grass 5 years and over	18	17	17	4	53	18	23	20	10	3	4	1	1,921
All grass	18	17	18	4	54	19	25	21	10	3	4	1	2,495
All crops and grass	15	19	17	5	51	31	37	24	8	6	6	1	5,456

Source: British Survey of Fertiliser Practice 2024

Note: Sulphur rates on potatoes are not shown as some growers apply additional sulphur to acidify the soil for this crop. These applications cannot be separated from those intended as a fertiliser nutrient.

Table EW1.4, Use of lime, England & Wales, 2024

	Crop area receiving dressing (%)						Average field rate (tonnes/ha)							
	Limestone (ground, screened)	Chalk	Magnesian limestone	Sugar beet lime	Other	All	Limestone (ground, screened)	Chalk	Magnesian limestone	Sugar beet lime	Other	All	Fields limed	Fields in survey
	%	%	%	%	%	%	t/ha	t/ha	t/ha	t/ha	t/ha	t/ha		
Spring wheat	c	c	c	c	c	c	c	c	c	c	c	c	3	59
Winter wheat	5.3	0.9	0.1	0.0	c	6.2	4.0	4.9	12.6	8.0	c	4.2	49	887
Spring barley	1.8	1.1	c	0.1	0.1	3.0	4.6	2.0	c	5.0	0.4	3.5	13	438
Winter barley	3.3	0.4	0.5	c	0.1	4.3	3.6	3.8	2.0	c	0.7	3.3	20	355
Oats	3.2	0.7	c	1.1	3.9	9.0	4.0	2.3	c	2.1	15.7	8.8	7	173
Rye/triticale/durum wheat	c	c	c	c	c	c	c	c	c	c	c	c	0	24
Potatoes (seed or earlies)	c	c	c	c	c	c	c	c	c	c	c	c	0	1
Potatoes (maincrop)	c	c	c	c	c	c	c	c	c	c	c	c	0	31
Sugar beet	18.6	1.9	c	14.7	0.1	35.3	4.8	4.0	c	4.8	5.0	4.8	20	67
Spring oilseed rape	c	c	c	c	c	c	c	c	c	c	c	c	0	1
Winter oilseed rape	3.5	c	c	0.9	c	4.4	3.3	c	c	5.0	c	3.6	8	221
Linseed	c	c	c	c	c	c	c	c	c	c	c	c	0	24
Forage maize	8.9	0.5	c	c	c	9.3	4.1	4.5	c	c	c	4.1	17	184
Rootcrops for stockfeed	30.2	c	c	c	3.3	33.6	5.1	c	c	c	0.3	4.6	9	38
Leafy forage crops	12.9	c	c	c	2.8	15.7	4.3	c	c	c	0.3	3.6	10	30
Arable silage/other fodder crops	3.7	c	c	c	1.9	5.7	1.2	c	c	c	0.3	0.9	6	86
Peas – human consumption	c	c	c	c	c	c	c	c	c	c	c	c	1	19
Peas – animal consumption	c	c	c	c	c	c	c	c	c	c	c	c	3	33
Beans – animal consumption	c	c	c	c	c	c	c	c	c	c	c	c	1	161
Vegetables (brassicae)	c	c	c	c	c	c	c	c	c	c	c	c	0	9
Vegetables (other)	c	c	c	c	c	c	c	c	c	c	c	c	2	33
Soft fruit	c	c	c	c	c	c	c	c	c	c	c	c	1	10
Top fruit	c	c	c	c	c	c	c	c	c	c	c	c	3	25
Other crops	c	c	c	c	c	c	c	c	c	c	c	c	0	52
All crops	4.7	0.7	0.1	0.5	0.3	6.2	3.9	3.8	4.2	4.6	9.6	4.2	173	2,961
Grass under 5 years old	3.3	c	c	c	1.5	4.8	4.4	c	c	c	8.0	5.5	35	574
Grass 5 years and over	1.6	c	0.2	0.0	0.2	2.0	2.7	c	4.0	3.7	0.4	2.6	63	1,921
All grass	1.9	c	0.2	0.0	0.4	2.4	3.1	c	4.0	3.7	4.4	3.3	98	2,495
All crops and grass	3.2	0.3	0.1	0.2	0.3	4.2	3.6	3.8	4.1	4.6	6.5	3.9	271	5,456

Source: British Survey of Fertiliser Practice, 2024

Table EW1.5, Percentage of crop area by field application rate – Nitrogen, England & Wales, 2024

Percents by row		kg/ha 0	<25	25-	50-	75-	100-	125-	150-	175-	200-	225-	250-	275-	300-	325-	350-	375-	400+	Fields in survey
Spring wheat	%	8	2	0	3	12	14	23	18	12	9	-	-	-	-	-	-	-	-	59
Winter wheat	%	2	0	2	3	6	7	10	18	15	20	7	6	3	1	1	-	-	-	887
Spring barley	%	3	1	8	13	20	32	14	8	0	1	-	-	-	-	-	-	-	-	438
Winter barley	%	4	0	2	6	7	15	19	25	16	3	1	1	-	-	-	-	-	-	355
Oats	%	11	3	5	11	24	24	14	4	1	4	1	-	-	-	-	-	-	-	173
Rye/triticale/durum wheat	%	7	0	13	25	3	12	10	17	12	-	-	-	-	-	-	-	-	-	24
Potatoes (seed or earlies)	%	c	c	c	c	c	c	c	c	c	c	c	c	-	-	-	-	-	-	1
Potatoes (maincrop)	%	9	0	0	4	15	22	0	17	20	3	3	6	-	-	-	-	-	-	31
Sugar beet	%	13	8	23	8	14	29	2	3	-	-	-	-	-	-	-	-	-	-	67
Spring oilseed rape	%	c	c	c	c	c	c	c	c	c	c	c	c	c	-	-	-	-	-	1
Winter oilseed rape	%	1	0	4	2	5	9	17	13	20	16	6	3	4	-	-	-	-	-	221
Linseed	%	4	4	18	11	26	36	-	-	-	-	-	-	-	-	-	-	-	-	24
Forage maize	%	30	18	12	16	11	9	3	0	1	-	-	-	-	-	-	-	-	-	184
Rootcrops for stockfeed	%	43	3	19	7	21	3	3	0	0	0	2	-	-	-	-	-	-	-	38
Leafy forage crops	%	60	3	18	6	13	-	-	-	-	-	-	-	-	-	-	-	-	-	30
Arable silage/other fodder crops	%	62	6	10	8	3	5	2	5	1	-	-	-	-	-	-	-	-	-	86
Peas – human consumption	%	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19
Peas – animal consumption	%	95	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33
Beans – animal consumption	%	99	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	161
Vegetables (brassicae)	%	59	0	0	1	0	40	-	-	-	-	-	-	-	-	-	-	-	-	9
Vegetables (other)	%	35	29	8	3	6	1	0	0	10	9	-	-	-	-	-	-	-	-	33
Soft fruit	%	35	38	3	0	0	0	24	-	-	-	-	-	-	-	-	-	-	-	10
Top fruit	%	52	8	25	10	0	2	0	0	3	-	-	-	-	-	-	-	-	-	25
Other crops	%	53	2	10	13	6	3	7	5	-	-	-	-	-	-	-	-	-	-	52
All crops	%	13	2	5	7	9	13	11	13	10	10	3	3	2	-	-	-	-	-	2,961
Grass under 5 years old	%	33	3	12	16	11	6	6	4	2	1	1	2	0	1	-	-	-	-	574
Grass 5 years and over	%	65	2	9	10	4	2	2	2	1	1	-	-	-	-	-	-	-	-	1,921
All grass	%	61	3	9	10	5	3	3	3	1	1	1	-	-	-	-	-	-	-	2,495
All crops and grass	%	39	2	7	9	7	8	7	7	5	5	2	1	1	-	-	-	-	-	5,456

Source: British Survey of Fertiliser Practice, 2024. Note: The symbol '-' in a cell represents zero application after the highest rate, for visual clarity in interpreting the data displayed.

Table EW1.6, Percentage of crop by field application rate – Phosphate, England & Wales, 2024

Percents by row		kg/ha 0	<25	25-	50-	75-	100-	125-	150-	175-	200-	225-	250-	275-	300-	325-	350-	375-	400+	Fields in survey
Spring wheat	%	78	5	15	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	59
Winter wheat	%	73	4	13	7	2	-	-	-	-	-	-	-	-	-	-	-	-	-	887
Spring barley	%	71	8	11	8	2	-	-	-	-	-	-	-	-	-	-	-	-	-	438
Winter barley	%	70	4	16	7	2	1	-	-	-	-	-	-	-	-	-	-	-	-	355
Oats	%	77	3	10	7	2	-	-	-	-	-	-	-	-	-	-	-	-	-	173
Rye/triticale/durum wheat	%	81	0	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24
Potatoes (seed or earlies)	%	c	c	c	c	c	c	c	c	c	-	-	-	-	-	-	-	-	-	1
Potatoes (maincrop)	%	19	5	0	7	26	17	3	12	5	-	-	-	-	-	-	-	-	-	31
Sugar beet	%	51	22	22	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	67
Spring oilseed rape	%	c	c	c	c	c	c	-	-	-	-	-	-	-	-	-	-	-	-	1
Winter oilseed rape	%	76	4	10	7	2	1	-	-	-	-	-	-	-	-	-	-	-	-	221
Linseed	%	98	0	0	2	0	-	-	-	-	-	-	-	-	-	-	-	-	-	24
Forage maize	%	53	21	9	15	2	-	-	-	-	-	-	-	-	-	-	-	-	-	184
Rootcrops for stockfeed	%	64	20	7	6	4	-	-	-	-	-	-	-	-	-	-	-	-	-	38
Leafy forage crops	%	78	17	3	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	30
Arable silage/other fodder crops	%	89	5	3	1	0	2	-	-	-	-	-	-	-	-	-	-	-	-	86
Peas – human consumption	%	92	0	4	0	0	3	-	-	-	-	-	-	-	-	-	-	-	-	19
Peas – animal consumption	%	79	0	10	8	3	-	-	-	-	-	-	-	-	-	-	-	-	-	33
Beans – animal consumption	%	84	7	6	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	161
Vegetables (brassicae)	%	38	0	20	1	40	-	-	-	-	-	-	-	-	-	-	-	-	-	9
Vegetables (other)	%	40	37	9	1	3	10	-	-	-	-	-	-	-	-	-	-	-	-	33
Soft fruit	%	65	8	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10
Top fruit	%	84	3	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25
Other crops	%	90	0	0	7	0	0	0	2	-	-	-	-	-	-	-	-	-	-	52
All crops	%	72	6	12	7	2	1	-	-	-	-	-	-	-	-	-	-	-	-	2,961
Grass under 5 years old	%	80	10	8	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	574
Grass 5 years and over	%	83	13	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,921
All grass	%	83	13	4	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,495
All crops and grass	%	78	10	8	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	5,456

Source: British Survey of Fertiliser Practice, 2024. Note: The symbol '-' in a cell represents zero application after the highest rate, for visual clarity in interpreting the data displayed.

Table EW1.7 Percentage of crop area by field application rate – Potash, England & Wales, 2024

Percents by row		kg/ha 0	<25	25-	50-	75-	100-	125-	150-	175-	200-	225-	250-	275-	300-	325-	350-	375-	400+	Fields in survey
Spring wheat	%	82	4	13	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	59
Winter wheat	%	67	6	11	9	3	2	1	-	-	-	-	-	-	-	-	-	-	-	887
Spring barley	%	65	10	10	11	3	1	-	-	-	-	-	-	-	-	-	-	-	-	438
Winter barley	%	68	7	7	14	2	2	1	-	-	-	-	-	-	-	-	-	-	-	355
Oats	%	73	10	6	3	6	1	0	1	-	-	-	-	-	-	-	-	-	-	173
Rye/triticale/durum wheat	%	75	0	10	13	2	-	-	-	-	-	-	-	-	-	-	-	-	-	24
Potatoes (seed or earlies)	%	c	c	c	c	c	c	c	c	-	-	-	-	-	-	-	-	-	-	1
Potatoes (maincrop)	%	10	0	7	0	8	7	5	11	4	4	2	2	0	23	7	2	6	-	31
Sugar beet	%	44	13	12	12	11	6	0	2	1	-	-	-	-	-	-	-	-	-	67
Spring oilseed rape	%	c	c	c	c	c	c	-	-	-	-	-	-	-	-	-	-	-	-	1
Winter oilseed rape	%	75	6	10	5	1	2	-	-	-	-	-	-	-	-	-	-	-	-	221
Linseed	%	98	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24
Forage maize	%	83	6	3	3	2	2	0	1	1	-	-	-	-	-	-	-	-	-	184
Rootcrops for stockfeed	%	60	14	11	9	5	1	1	-	-	-	-	-	-	-	-	-	-	-	38
Leafy forage crops	%	78	17	3	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	30
Arable silage/other fodder crops	%	86	6	3	3	0	0	0	1	-	-	-	-	-	-	-	-	-	-	86
Peas – human consumption	%	89	0	0	8	4	-	-	-	-	-	-	-	-	-	-	-	-	-	19
Peas – animal consumption	%	69	5	0	12	15	-	-	-	-	-	-	-	-	-	-	-	-	-	33
Beans – animal consumption	%	80	8	7	1	4	1	-	-	-	-	-	-	-	-	-	-	-	-	161
Vegetables (brassicae)	%	12	0	47	1	0	0	0	0	40	-	-	-	-	-	-	-	-	-	9
Vegetables (other)	%	40	14	2	15	10	19	-	-	-	-	-	-	-	-	-	-	-	-	33
Soft fruit	%	65	8	0	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10
Top fruit	%	64	9	13	0	1	13	-	-	-	-	-	-	-	-	-	-	-	-	25
Other crops	%	92	3	0	1	0	3	-	-	-	-	-	-	-	-	-	-	-	-	52
All crops	%	69	7	9	8	3	2	1	-	-	-	-	-	-	-	-	-	-	-	2,961
Grass under 5 years old	%	77	9	6	5	2	-	-	-	-	-	-	-	-	-	-	-	-	-	574
Grass 5 years and over	%	82	12	4	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,921
All grass	%	81	11	4	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2,495
All crops and grass	%	76	9	7	5	2	1	-	-	-	-	-	-	-	-	-	-	-	-	5,456

Source: British Survey of Fertiliser Practice, 2024. Note: The symbol '-' in a cell represents zero application after the highest rate, for visual clarity in interpreting the data displayed.

Table EW1.8, Percentage of crop area by field application rate – Sulphur, England & Wales, 2024

Percents by row		kg/ha 0	<25	25-	50-	75-	100-	125-	150-	175-	200-	225-	250-	275-	300-	325-	350-	375-	400+	Fields in survey
Spring wheat	%	52	6	12	26	4	-	-	-	-	-	-	-	-	-	-	-	-	-	59
Winter wheat	%	33	9	24	22	7	3	1	0	1	-	-	-	-	-	-	-	-	-	887
Spring barley	%	43	17	28	9	2	1	0	1	-	-	-	-	-	-	-	-	-	-	438
Winter barley	%	35	11	23	21	6	2	1	1	-	-	-	-	-	-	-	-	-	-	355
Oats	%	39	15	30	11	4	2	-	-	-	-	-	-	-	-	-	-	-	-	173
Rye/triticale/durum wheat	%	54	8	7	23	8	-	-	-	-	-	-	-	-	-	-	-	-	-	24
Potatoes (seed or earlies)	%	c	c	c	c	c	c	c	c	-	-	-	-	-	-	-	-	-	-	1
Potatoes (maincrop)	%	54	0	14	0	27	0	3	2	-	-	-	-	-	-	-	-	-	-	31
Sugar beet	%	47	27	14	8	2	2	-	-	-	-	-	-	-	-	-	-	-	-	67
Spring oilseed rape	%	c	c	c	c	c	c	c	c	c	-	-	-	-	-	-	-	-	-	1
Winter oilseed rape	%	21	5	20	18	19	8	4	3	2	-	-	-	-	-	-	-	-	-	221
Linseed	%	62	15	12	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24
Forage maize	%	75	14	8	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	184
Rootcrops for stockfeed	%	97	0	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	38
Leafy forage crops	%	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30
Arable silage/other fodder crops	%	78	7	6	4	2	2	0	1	-	-	-	-	-	-	-	-	-	-	86
Peas – human consumption	%	89	0	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19
Peas – animal consumption	%	82	5	4	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33
Beans – animal consumption	%	85	11	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	161
Vegetables (brassicae)	%	34	66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9
Vegetables (other)	%	64	21	1	0	3	10	-	-	-	-	-	-	-	-	-	-	-	-	33
Soft fruit	%	65	0	11	0	24	-	-	-	-	-	-	-	-	-	-	-	-	-	10
Top fruit	%	97	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25
Other crops	%	68	9	7	5	5	4	0	2	-	-	-	-	-	-	-	-	-	-	52
All crops	%	43	11	20	15	6	2	1	1	-	-	-	-	-	-	-	-	-	-	2,961
Grass under 5 years old	%	77	7	6	5	2	2	0	1	-	-	-	-	-	-	-	-	-	-	574
Grass 5 years and over	%	90	5	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,921
All grass	%	88	5	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2,495
All crops and grass	%	67	8	11	8	3	1	1	-	-	-	-	-	-	-	-	-	-	-	5,456

Source: British Survey of Fertiliser Practice, 2024. Note: Sulphur rates on potatoes should be treated with caution as some growers apply additional sulphur to acidify the soil for this crop.
Note: The symbol '-' in a cell represents zero application after the highest rate, for visual clarity in interpreting the data displayed.

Table EW2.1, Average fertiliser practice by grassland utilisation, England & Wales, 2024

	Crop area receiving dressing (%)					Average field rate (kg/ha)				Overall application rate (kg/ha)				Fields in survey
	N	P_2O_5	K_2O	SO_3	FYM	N	P_2O_5	K_2O	SO_3	N	P_2O_5	K_2O	SO_3	
Grazed not mown	24	12	11	7	18	70	15	18	35	17	2	2	2	1,143
Grazed mown	59	27	30	18	65	83	22	30	37	50	6	9	7	1,074
All grazings	36	17	18	11	34	77	19	25	36	28	3	4	4	2,217
Cut for silage - grazed	70	28	31	23	71	90	23	33	40	64	6	10	9	702
Cut for silage - not grazed	81	22	26	29	78	141	20	46	48	114	4	12	14	160
All cut for silage	72	27	30	24	73	102	22	35	42	74	6	11	10	862
Cut for hay - grazed	43	24	26	10	54	66	18	23	39	28	4	6	4	406
Cut for hay - not grazed	54	16	24	24	44	92	26	58	31	49	4	14	8	91
All cut for hay	45	23	26	12	52	71	19	29	36	32	4	7	4	497
All mowings	62	26	29	20	65	94	21	33	39	58	6	10	8	1,318
All grass	39	17	19	12	37	85	19	28	38	33	3	5	5	2,495

Source: British Survey of Fertiliser Practice, 2024

Table EW2.2, Percentage of grass area by field application rate – Nitrogen, England & Wales, 2024

Percents by row		kg/ha 0	<25	25-	50-	75-	100-	125-	150-	175-	200-	225-	250-	275-	300-	325-	350-	375-	400+	Fields in survey
Grazed not mown	%	76	2	7	7	3	1	1	1	-	-	-	-	-	-	-	-	-	-	1,143
Grazed mown	%	41	4	15	15	8	5	5	4	1	1	1	-	-	-	-	-	-	-	1,074
All grazings	%	64	3	10	10	5	3	3	2	1	1	-	-	-	-	-	-	-	-	2,217
Cut for silage – grazed	%	30	3	16	17	10	6	7	6	2	1	1	0	1	-	-	-	-	-	702
Cut for silage – not grazed	%	19	2	5	14	10	5	9	5	3	14	5	5	2	1	-	-	-	-	160
All cut for silage	%	28	3	13	16	10	6	8	6	2	4	2	1	1	-	-	-	-	-	862
Cut for hay – grazed	%	57	7	13	12	5	2	0	2	0	1	0	0	0	1	-	-	-	-	406
Cut for hay – not grazed	%	46	1	7	18	9	6	4	5	1	3	-	-	-	-	-	-	-	-	91
All cut for hay	%	55	6	12	13	5	3	1	3	0	1	0	0	0	1	-	-	-	-	497
All mowings	%	38	4	13	15	9	5	5	4	1	3	1	1	1	-	-	-	-	-	1,318
All grass	%	61	3	9	10	5	3	3	3	1	1	1	-	-	-	-	-	-	-	2,495

Source: British Survey of Fertiliser Practice, 2024.

Note: The symbol '-' in a cell represents zero application after the highest rate, for visual clarity in interpreting the data displayed.

Table EW2.3. Percentage of grass area by field application rate – Phosphate, England & Wales, 2024

Percents by row		kg/ha 0	<25	25-	50-	75-	100-	125-	150-	175-	200-	225-	250-	275-	300-	325-	350-	375-	400+	Fields in survey
Grazed not mown	%	88	10	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,143
Grazed mown	%	73	18	7	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,074
All grazings	%	83	13	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,217
Cut for silage - grazed	%	72	19	7	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	702
Cut for silage - not grazed	%	78	15	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	160
All cut for silage	%	73	18	7	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	862
Cut for hay - grazed	%	76	17	6	0	0	1	-	-	-	-	-	-	-	-	-	-	-	-	406
Cut for hay - not grazed	%	84	6	9	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91
All cut for hay	%	77	15	7	0	0	1	-	-	-	-	-	-	-	-	-	-	-	-	497
All mowings	%	74	17	7	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,318
All grass	%	83	13	4	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,495

Source: British Survey of Fertiliser Practice, 2024

Note: The symbol '-' in a cell represents zero application after the highest rate, for visual clarity in interpreting the data displayed.

Table EW2.4, Percentage of grass area by field application rate – Potash, England & Wales, 2024

Percents by row		kg/ha 0	<25	25-	50-	75-	100-	125-	150-	175-	200-	225-	250-	275-	300-	325-	350-	375-	400+	Fields in survey
Grazed not mown	%	89	9	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,143
Grazed mown	%	70	16	8	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	1,074
All grazings	%	82	12	4	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2,217
Cut for silage - grazed	%	69	16	9	4	2	0	0	1	-	-	-	-	-	-	-	-	-	-	702
Cut for silage - not grazed	%	74	9	7	7	0	1	2	1	-	-	-	-	-	-	-	-	-	-	160
All cut for silage	%	70	14	8	5	1	0	0	1	-	-	-	-	-	-	-	-	-	-	862
Cut for hay - grazed	%	74	17	6	1	1	0	1	-	-	-	-	-	-	-	-	-	-	-	406
Cut for hay - not grazed	%	76	5	9	2	1	7	-	-	-	-	-	-	-	-	-	-	-	-	91
All cut for hay	%	74	15	6	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	497
All mowings	%	71	15	8	4	1	1	1	-	-	-	-	-	-	-	-	-	-	-	1,318
All grass	%	81	11	4	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2,495

Source: British Survey of Fertiliser Practice, 2024

Note: The symbol '-' in a cell represents zero application after the highest rate, for visual clarity in interpreting the data displayed.

Table EW2.5, Percentage of grass area by field application rate – Sulphur, England & Wales, 2024

Percents by row		kg/ha																		Fields in survey
		0	<25	25-	50-	75-	100-	125-	150-	175-	200-	225-	250-	275-	300-	325-	350-	375-	400+	
Grazed not mown	%	93	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,143
Grazed mown	%	82	9	4	4	0	1	-	-	-	-	-	-	-	-	-	-	-	-	1,074
All grazings	%	89	5	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,217
Cut for silage - grazed	%	77	11	5	5	1	1	-	-	-	-	-	-	-	-	-	-	-	-	702
Cut for silage - not grazed	%	71	9	6	9	6	-	-	-	-	-	-	-	-	-	-	-	-	-	160
All cut for silage	%	76	10	5	6	2	1	-	-	-	-	-	-	-	-	-	-	-	-	862
Cut for hay - grazed	%	90	4	3	1	0	2	-	-	-	-	-	-	-	-	-	-	-	-	406
Cut for hay - not grazed	%	76	7	16	0	2	-	-	-	-	-	-	-	-	-	-	-	-	-	91
All cut for hay	%	88	5	5	1	0	1	-	-	-	-	-	-	-	-	-	-	-	-	497
All mowings	%	80	9	5	4	1	1	-	-	-	-	-	-	-	-	-	-	-	-	1,318
All grass	%	88	5	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2,495

Source: British Survey of Fertiliser Practice, 2024

Note: The symbol '-' in a cell represents zero application after the highest rate, for visual clarity in interpreting the data displayed.

Table EW3.0a, Product use by month of application, England & Wales, 2024

Percents by row	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Total product
	%	%	%	%	%	%	%	%	%	%	%	%	%
Straight N	0	0	0	0	0	5	34	37	15	4	2	1	100
Straight P	10	9	18	0	5	3	23	19	11	0	0	3	100
Straight K	3	3	14	0	3	9	34	24	8	1	0	2	100
Compounds	7	9	1	0	0	2	21	29	17	7	4	3	100
All fertilisers	2	2	1	0	1	4	31	35	15	5	3	1	100

Source: British Survey of Fertiliser Practice, 2024

Table EW3.0b, Nutrient use by month of application, England & Wales, 2024

Percents by row	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Total nutrient
	%	%	%	%	%	%	%	%	%	%	%	%	%
Nitrogen	0	0	0	0	0	4	33	37	16	5	3	1	100
Phosphate	9	14	5	0	2	3	22	25	14	2	2	3	100
Potash	7	11	7	0	2	4	27	24	12	4	2	2	100
Sulphur	1	1	1	0	1	10	42	29	11	3	2	0	100
Total	2	2	1	0	1	5	33	34	15	4	2	1	100

Source: British Survey of Fertiliser Practice, 2024

Note: All fertilisers includes other straight fertilisers (e.g. trace elements)
'Product' refers to the total tonnage of the products used by the farmers in the survey year 2024
'Nutrient' refers to the tonnage of each nutrient contained in the products used (e.g. 100kg of a 20:10:10 compound contains 20 kg of N, 10 kg of P_2O_5 and 10 kg of K_2O, while 100 kg of ammonium nitrate (straight N) contains typically 34.5 kg of N)
Estimates of total nutrients are shown in Appendix 1, Table AA1.6

Table EW3.1, Product type as a percentage of all product used by crop group, England & Wales, 2024

Percents by column	Spring cereal	Winter cereal	Potatoes	Sugar beet	Oilseed rape	Other crops	All crops	Grass for grazing	Grass for hay	Grass for silage	Grass not specified	All grass	All crops and grass
	%	%	%	%	%	%	%	%	%	%	%	%	%
Ammonium Nitrate (AN) (+/-S)	42.1	42.6	11.7	24.1	33.7	25.4	39.1	32.4	24.7	35.4	14.2	33.4	37.8
Urea (+/-S)	10.7	14.2	1.2	5.7	16.9	5.7	12.7	12.4	15.0	14.6	8.1	13.2	12.8
Calcium Ammonium Nitrate (CAN) (+/-S)	0.9	1.3	1.3	3.0	2.4	2.0	1.4	2.6	1.7	2.2	0.0	2.4	1.7
Urea Ammonium Nitrate (UAN) (+/-S)	20.1	21.8	4.1	10.3	32.5	12.4	21.2	3.2	3.8	4.4	16.3	4.2	17.4
Foliar Urea (+-S)	2.0	1.9	0.1	2.1	1.5	2.1	1.9	0.2	0.1	0.2	0.0	0.2	1.5
Other Straight Nitrogen (N) (+/-S)	0.8	0.8	0.0	0.0	1.4	2.0	0.9	1.2	0.4	0.9	0.0	1.0	0.9
Triple Superphosphate (TSP)	1.9	2.2	3.7	0.9	2.0	2.8	2.2	0.3	0.0	0.3	6.5	0.3	1.8
Other Straight Phosphate (P)	0.0	0.0	0.0	0.8	0.0	0.8	0.1	0.0	0.0	0.0	0.0	0.0	0.1
Muriate of Potash (MOP)	2.2	2.4	5.4	1.0	1.4	6.0	2.5	0.9	1.1	0.9	9.8	0.9	2.2
Other Straight Potash (K)	1.4	2.3	3.3	20.1	1.9	3.2	2.6	0.6	1.0	0.3	0.0	0.6	2.2
Phosphate+Potash product (PK) (+/-S)	5.4	6.1	3.6	14.5	2.6	8.4	5.9	2.6	3.5	2.0	0.0	2.3	5.1
Nitrogen+Potash product (NK) (+/-S)	0.7	0.6	2.3	0.0	0.3	2.2	0.7	4.4	2.5	5.6	0.0	4.7	1.6
Low N NP/NPK product (<19% N) (+/-S)	2.7	1.6	62.7	6.0	1.8	17.2	4.5	3.0	4.8	2.4	23.5	3.0	4.1
High N NP/NPK product (>=19% N) (+/-S)	9.1	2.0	0.0	7.6	0.9	8.6	3.7	36.1	41.4	30.7	21.6	33.7	10.5
Other fertiliser product	0.1	0.3	0.5	3.8	0.7	1.1	0.5	0.2	0.0	0.2	0.0	0.1	0.4

	Spring cereal	Winter cereal	Potatoes	Sugar beet	Oilseed rape	Other crops	All crops	Grass for grazing	Grass for hay	Grass for silage	Grass not specified	All grass	All crops and grass
Total product ('000 tonnes)	316	1221	40	42	195	92	1,907	419	78	311	5	535	2,442

Source: British Survey of Fertiliser Practice, 2024

Table EW3.2a, Use of product type on crops, split by type of crop, England & Wales, 2024

Percents by row	Spring cereal	Winter cereal	Potatoes	Sugar beet	Oilseed rape	Other crops	All crops
	%	%	%	%	%	%	%
Ammonium Nitrate (AN) (+/-S)	17.5	68.0	0.7	1.6	8.6	3.6	76.4
Urea (+/-S)	13.8	70.6	0.1	0.8	13.0	1.7	78.8
Calcium Ammonium Nitrate (CAN) (+/-S)	4.8	68.3	0.4	3.2	17.4	5.9	74.7
Urea Ammonium Nitrate (UAN) (+/-S)	16.8	65.8	0.5	0.9	12.8	3.1	95.3
Foliar Urea (+-S)	15.2	70.5	0.1	3.5	8.6	2.1	99.6
Other Straight Nitrogen (N) (+/-S)	9.4	56.1	0.0	0.0	19.9	14.6	75.9
Triple Superphosphate (TSP)	11.5	63.5	5.0	2.5	11.5	6.1	94.8
Other Straight Phosphate (P)	0.0	0.0	0.0	58.0	0.0	42.0	100.0
Muriate of Potash (MOP)	15.0	50.7	10.7	1.3	8.3	14.0	90.6
Other Straight Potash (K)	11.3	54.3	3.8	17.9	6.6	6.1	91.9
Phosphate+Potash product (PK) (+/-S)	16.8	64.7	0.9	5.2	4.1	8.3	90.8
Nitrogen+Potash product (NK) (+/-S)	22.1	43.2	16.8	0.0	3.4	14.5	21.5
Low N NP/NPK product (<19% N) (+/-S)	13.8	22.2	31.2	5.8	5.0	22.0	84.1
High N NP/NPK product (>=19% N) (+/-S)	48.6	32.7	0.0	4.2	3.0	11.5	21.4
Other fertiliser product	1.8	51.5	9.5	11.9	16.5	8.8	90.7
Total product	16.6	64.1	2.1	2.2	10.2	4.8	78.1

Source: British Survey of Fertiliser Practice, 2024

Table EW3.2b, Use of product type on grass, split by type of grass, England & Wales, 2024

Percents by row	Grass for grazing	Grass for hay	Grass for silage	Grass not specified	All grass
	%	%	%	%	%
Ammonium Nitrate (AN) (+/-S)	74.2	11.1	62.0	1.0	23.6
Urea (+/-S)	74.7	18.8	65.2	0.3	21.2
Calcium Ammonium Nitrate (CAN) (+/-S)	84.8	5.9	57.5	0.0	25.3
Urea Ammonium Nitrate (UAN) (+/-S)	48.2	14.6	67.6	3.3	4.7
Foliar Urea (+-S)	74.1	25.9	53.4	0.0	0.4
Other Straight Nitrogen (N) (+/-S)	99.1	2.6	40.2	0.0	24.1
Triple Superphosphate (TSP)	31.4	0.0	48.4	35.7	5.2
Other Straight Phosphate (P)	0.0	0.0	0.0	0.0	0.0
Muriate of Potash (MOP)	32.6	40.8	37.8	20.0	9.4
Other Straight Potash (K)	75.6	16.9	55.4	0.0	8.1
Phosphate+Potash product (PK) (+/-S)	96.1	25.4	38.7	0.0	9.2
Nitrogen+Potash product (NK) (+/-S)	72.7	7.3	73.1	0.0	78.5
Low N NP/NPK product (<19% N) (+/-S)	86.8	37.1	33.9	1.7	15.9
High N NP/NPK product (>=19% N) (+/-S)	89.9	16.5	50.3	0.1	78.6
Other fertiliser product	100.0	0.0	81.7	0.0	9.3
Total product	78.3	14.6	58.1	0.9	21.9

Note: The same grass field can have multiple uses in the same crop year, therefore percentages may sum to >100%.

Source: British Survey of Fertiliser Practice, 2024

Table EW3.2c, Total product use, split by type of crop, England & Wales, 2024

Percents by row	All crops	All grass	All crops and grass	Total product ('000 tonnes)
Ammonium Nitrate (AN) (+/-S)	76.4%	23.6%	100.0%	859
Urea (+/-S)	78.8%	21.2%	100.0%	323
Calcium Ammonium Nitrate (CAN) (+/-S)	74.7%	25.3%	100.0%	42
Urea Ammonium Nitrate (UAN) (+/-S)	95.3%	4.7%	100.0%	566
Foliar Urea (+-S)	99.6%	0.4%	100.0%	49
Other Straight Nitrogen (N) (+/-S)	75.9%	24.1%	100.0%	33
Triple Superphosphate (TSP)	94.8%	5.2%	100.0%	37
Other Straight Phosphate (P)	100.0%	0.0%	100.0%	1
Muriate of Potash (MOP)	90.6%	9.4%	100.0%	46
Other Straight Potash (K)	91.9%	8.1%	100.0%	49
Phosphate+Potash product (PK) (+/-S)	90.8%	9.2%	100.0%	112
Nitrogen+Potash product (NK) (+/-S)	21.5%	78.5%	100.0%	37
Low N NP/NPK product (<19% N) (+/-S)	84.1%	15.9%	100.0%	80
High N NP/NPK product (>=19% N) (+/-S)	21.4%	78.6%	100.0%	198
Other fertiliser product	90.7%	9.3%	100.0%	10
Total product	78.1%	21.9%	100.0%	2,442

Source: British Survey of Fertiliser Practice, 2024

Table EW3.3, Product use by month of application, England & Wales, 2024

Percents by row	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total product
	%	%	%	%	%	%	%	%	%	%	%	%	'000 tonnes
Ammonium Nitrate (AN) (+/-S)	0.2	2.3	26.3	40.7	19.8	5.5	3.5	1.2	0.3	0.1	0.2	0.0	859
Urea (+/-S)	0.8	9.1	48.4	26.5	9.7	2.9	1.8	0.6	0.1	0.1	0.0	0.0	323
Calcium Ammonium Nitrate (CAN) (+/-S)	0.0	2.6	40.1	30.7	15.1	4.7	3.3	2.5	1.0	0.1	0.0	0.0	42
Urea Ammonium Nitrate (UAN) (+/-S)	0.9	5.9	37.2	39.9	12.2	1.9	1.0	0.3	0.3	0.2	0.0	0.1	566
Foliar Urea (+-S)	0.0	6.0	16.8	31.5	12.3	25.6	5.8	1.1	1.0	0.0	0.0	0.0	49
Other Straight Nitrogen (N) (+/-S)	0.0	5.7	42.3	27.9	14.8	2.3	2.6	3.9	0.5	0.0	0.0	0.0	33
Triple Superphosphate (TSP)	4.5	3.3	21.9	17.9	10.7	0.1	0.4	5.8	9.3	8.6	17.5	0.0	37
Other Straight Phosphate (P)	0.0	0.0	19.0	38.9	0.0	0.0	0.0	0.0	42.0	0.0	0.0	0.0	1
Muriate of Potash (MOP)	4.8	4.0	34.0	18.4	9.3	0.5	0.0	0.9	4.8	6.6	16.7	0.0	46
Other Straight Potash (K)	0.8	13.2	33.7	29.9	6.1	1.6	0.0	2.2	1.7	0.0	10.6	0.0	49
Phosphate+Potash product (PK) (+/-S)	1.0	2.5	16.3	12.2	3.2	0.4	0.1	2.8	26.0	33.8	1.3	0.4	112
Nitrogen+Potash product (NK) (+/-S)	0.3	0.3	13.0	19.5	22.6	26.3	10.1	8.0	0.0	0.0	0.0	0.0	37
Low N NP/NPK product (<19% N) (+/-S)	0.0	4.9	33.3	30.9	22.5	1.1	2.2	2.5	0.3	1.4	0.8	0.0	80
High N NP/NPK product (>=19% N) (+/-S)	0.1	0.5	21.2	39.5	21.2	10.1	5.3	1.3	0.3	0.1	0.2	0.0	198
Other fertiliser product	0.0	17.0	36.9	27.2	4.3	2.9	0.0	0.0	11.7	0.0	0.0	0.0	10
Total product	0.6	4.4	31.5	35.0	15.2	4.7	2.5	1.3	1.8	1.9	1.0	0.0	2,442

Source: British Survey of Fertiliser Practice, 2024

Table EW4.1a, Average fertiliser practice on crops and grassland by GOR region, England & Wales, 2024

		Crop area receiving dressing (%)				Average field rate (kg/ha)			Overall application rate (kg/ha)			Fields in survey
		N	P_2O_5	K_2O	FYM	N	P_2O_5	K_2O	N	P_2O_5	K_2O	
North West	All crops	92	18	21	46	134	31	63	123	6	13	65
	All grass	52	24	27	48	99	13	27	51	3	7	345
	All crops and grass	55	23	26	47	103	14	29	56	3	8	410
North East	All crops	80	31	34	30	184	57	64	147	18	22	91
	All grass	18	13	14	22	76	28	37	14	4	5	163
	All crops and grass	35	18	20	24	143	42	50	50	7	10	254
Eastern	All crops	91	29	30	15	149	50	59	135	15	18	607
	All grass	21	8	8	12	90	65	23	19	5	2	108
	All crops and grass	80	26	27	14	146	50	57	118	13	15	715
Yorkshire	All crops	87	34	33	27	149	53	74	130	18	24	444
and the	All grass	37	18	17	39	78	17	24	29	3	4	245
Humber	All crops and grass	66	28	26	32	133	44	60	88	12	16	689
West	All crops	88	22	32	36	137	43	65	120	10	21	276
Midlands	All grass	38	6	10	40	93	26	47	35	2	5	192
	All crops and grass	61	14	20	38	122	39	60	75	5	12	468
East	All crops	88	20	20	17	153	38	43	134	8	9	470
Midlands	All grass	31	13	13	28	83	22	28	26	3	4	146
	All crops and grass	72	18	18	20	145	35	40	105	6	7	616
South West	All crops	80	36	40	36	114	43	49	91	15	19	562
	All grass	34	12	13	40	85	21	29	29	2	4	593
	All crops and grass	50	20	23	38	101	35	41	51	7	9	1,155
South East	All crops	85	21	35	28	142	48	48	120	10	17	343
	All grass	37	6	7	21	91	31	39	33	2	3	191
	All crops and grass	67	15	24	25	131	46	47	87	7	11	534
Wales	All crops	79	47	41	65	93	30	55	74	14	22	103
	All grass	49	31	31	41	74	17	24	36	5	8	512
	All crops and grass	51	32	31	42	76	19	27	39	6	9	615

Note: See Appendix 4 for a list of GOR regions. Source: British Survey of Fertiliser Practice, 2024

Table EW4.1b, average fertiliser practice on crops and grassland by BSFP region, England & Wales, 2024

		Crop area receiving dressing (%)				Average field rate (kg/ha)			Overall application rate (kg/ha)			Fields in survey
		N	P_2O_5	K_2O	FYM	N	P_2O_5	K_2O	N	P_2O_5	K_2O	
Wessex	All crops	77	30	37	35	115	43	44	89	13	16	314
	All grass	28	8	9	34	89	27	35	24	2	3	258
	All crops and grass	49	18	21	34	107	39	42	53	7	9	572
Anglia	All crops	91	29	30	15	149	50	59	135	15	18	607
	All grass	21	8	8	12	90	65	23	19	5	2	108
	All crops and grass	80	26	27	14	146	50	57	118	13	15	715
Northern	All crops	82	24	28	35	175	59	67	145	14	19	101
	All grass	38	23	25	35	85	15	22	33	3	5	404
	All crops and grass	44	23	25	35	108	22	28	48	5	7	505
North East	All crops	87	35	33	27	150	52	71	131	18	24	474
	All grass	38	20	20	40	78	19	29	29	4	6	284
	All crops and grass	66	28	27	32	132	42	58	87	12	16	758
North Mercia	All crops	91	19	23	53	130	45	56	118	8	13	136
	All grass	48	7	11	52	114	20	49	54	1	6	180
	All crops and grass	60	10	15	52	120	33	52	72	3	8	316
South Mercia	All crops	82	30	43	24	137	38	63	113	11	27	190
	All grass	22	5	9	29	85	22	71	19	1	6	97
	All crops and grass	55	19	28	26	128	36	64	71	7	18	287
East Midlands	All crops	88	20	20	17	153	38	43	134	8	9	470
	All grass	31	13	13	28	83	22	28	26	3	4	146
	All crops and grass	72	18	18	20	145	35	40	105	6	7	616
South East	All crops	85	21	35	28	142	48	48	120	10	17	343
	All grass	37	6	7	21	91	31	39	33	2	3	191
	All crops and grass	67	15	24	25	131	46	47	87	7	11	534
South West	All crops	88	46	42	42	112	48	64	99	22	27	223
	All grass	43	16	18	46	83	18	27	35	3	5	315
	All crops and grass	53	23	24	45	94	32	42	50	7	10	538
Wales	All crops	79	47	41	65	93	30	55	74	14	22	103
	All grass	49	31	31	41	74	17	24	36	5	8	512
	All crops and grass	51	32	31	42	76	19	27	39	6	9	615

Source: British Survey of Fertiliser Practice, 2024. Note: See Appendix 4 for a list of BSFP regions.

Table EW4.1c, Average fertiliser practice on crops and grassland by River Basin district, England & Wales 2024

		Crop area receiving dressing (%)				Average field rate (kg/ha)			Overall application rate (kg/ha)			Fields in survey
		N	P_2O_5	K_2O	FYM	N	P_2O_5	K_2O	N	P_2O_5	K_2O	
Solway Tweed	All crops	96	69	64	33	142	59	70	137	40	45	47
	All grass	53	31	32	35	75	14	21	40	4	7	123
	All crops and grass	60	37	38	34	93	28	35	56	10	13	170
Northumbria	All crops	77	23	27	36	176	48	57	136	11	15	80
	All grass	18	13	14	26	75	28	37	14	4	5	155
	All crops and grass	33	15	18	29	135	36	45	45	5	8	235
Humber	All crops	87	27	28	26	149	51	68	130	14	19	662
	All grass	39	14	14	40	89	16	23	35	2	3	351
	All crops and grass	67	22	22	32	134	41	56	90	9	12	1,013
Anglian	All crops	90	28	28	14	149	47	56	133	13	16	837
	All grass	26	13	12	12	83	44	30	22	6	4	166
	All crops and grass	80	26	26	14	145	47	54	116	12	14	1,003
Thames	All crops	86	20	32	29	141	40	44	122	8	14	354
	All grass	32	2	4	14	92	36	34	30	1	1	171
	All crops and grass	68	14	22	24	134	40	43	91	6	10	525
South East	All crops	85	42	51	23	134	53	55	114	22	28	77
	All grass	34	10	9	33	91	36	51	31	3	5	49
	All crops and grass	60	26	30	28	121	50	54	72	13	16	126
South West	All crops	83	35	40	40	112	45	52	94	16	20	373
	All grass	35	11	14	41	84	16	26	29	2	3	470
	All crops and grass	49	18	21	41	98	32	40	48	6	8	843
Severn (in England)	All crops	82	29	35	34	132	41	55	109	12	20	379
	All grass	31	9	11	35	82	32	52	26	3	6	246
	All crops and grass	57	19	23	34	118	39	55	67	7	13	625
All Wales	All crops	79	47	41	65	93	30	55	74	14	22	103
	All grass	49	31	31	41	74	17	24	36	5	8	512
	All crops and grass	51	32	31	42	76	19	27	39	6	9	615
North West	All crops	94	15	14	28	175	85	118	165	13	17	57
	All grass	49	21	24	50	108	12	23	53	3	6	256
	All crops and grass	54	21	23	47	122	19	31	66	4	7	313
Not allocated to an RBD	All crops and grass	55	18	37	46	66	33	71	37	6	27	15

Note: the majority of the Dee River Basin District is included in the Wales data, with the area of the Dee RBD in England being too small to provide usable data. Therefore, English Dee data are incorporated with those few returns not allocated to a River Basin District are not shown separately. See Appendix 6 for a map showing River Basin Districts in Great Britain.

Source: British Survey of Fertiliser Practice, 2024

Table EW5.1, Total fertiliser use, England, 2024

	Crop area receiving dressing (%)					Average field rate (kg/ha)				Overall application rate (kg/ha)				Fields in Survey
	N	P_2O_5	K_2O	SO_3	FYM	N	P_2O_5	K_2O	SO_3	N	P_2O_5	K_2O	SO_3	
Spring wheat	91	23	19	47	15	142	32	30	50	130	7	5	24	58
Winter wheat	99	27	33	67	22	177	48	53	56	175	13	17	37	872
Spring barley	97	28	35	58	21	103	40	44	39	100	11	15	23	424
Winter barley	96	30	32	66	22	144	48	54	51	137	14	17	34	342
Oats	89	22	27	61	16	104	46	50	43	92	10	13	26	169
Rye/triticale/durum wheat	93	19	25	46	20	108	45	54	54	100	9	14	25	24
Potatoes (seed or earlies)	c	c	c	c	c	c	c	c	c	c	c	c	c	1
Potatoes (maincrop)	91	81	90	46	39	151	122	216	c	138	99	194	c	31
Sugar beet	87	49	56	53	32	78	34	62	36	67	17	35	19	67
Spring oilseed rape	c	c	c	c	c	c	c	c	c	c	c	c	c	1
Winter oilseed rape	99	24	25	79	33	167	51	48	74	165	12	12	59	218
Linseed	96	2	2	35	7	79	c	c	31	75	c	c	11	23
Forage maize	69	45	18	26	86	63	39	60	29	44	17	11	7	166
Rootcrops for stockfeed	44	13	18	4	40	87	45	54	c	38	6	10	c	24
Leafy forage crops	36	13	13	0	39	55	17	23	c	20	2	3	c	20
Arable silage/other fodder crops	37	9	12	23	25	74	45	46	54	28	4	6	13	79
Peas – human consumption	0	8	11	11	0	c	c	c	c	c	c	c	c	19
Peas – animal consumption	5	21	31	18	0	c	51	65	47	c	11	20	8	33
Beans – animal consumption	1	15	20	15	2	c	31	41	25	c	5	8	4	159
Vegetables (brassicae)	41	62	88	66	40	c	c	102	18	c	c	90	12	9
Vegetables (other)	65	60	60	36	8	81	39	67	43	52	23	40	15	33
Soft fruit	65	35	35	35	0	60	c	c	c	39	c	c	c	10
Top fruit	48	16	36	3	0	54	c	58	c	26	c	21	c	25
Other crops	48	11	8	33	15	84	84	115	60	41	9	10	20	51
All crops	87	27	31	57	24	144	47	56	52	125	13	17	30	2,858
Grass under 5 years old	66	16	19	25	47	102	28	45	45	68	5	8	11	436
Grass 5 years and over	32	13	15	11	34	85	19	27	34	27	2	4	4	1,547
All grass	36	13	15	13	35	89	20	30	37	32	3	5	5	1,983
All crops and grass	63	21	23	36	30	129	39	48	50	81	8	11	18	4,841

Note: Sulphur rates on potatoes are not shown as some growers apply additional sulphur to acidify the soil for this crop. These applications cannot be separated from those intended as a fertiliser nutrient.

Source: British Survey of Fertiliser Practice, 2024

Table SC1.1, Total fertiliser use, Scotland, 2024

	Crop area receiving dressing (%)					Average field rate (kg/ha)				Overall application rate (kg/ha)				Fields in Survey
	N	P_2O_5	K_2O	SO_3	FYM	N	P_2O_5	K_2O	SO_3	N	P_2O_5	K_2O	SO_3	
Winter wheat	97	76	72	72	25	151	53	69	50	146	40	49	36	91
Spring barley	97	89	91	53	43	96	51	67	31	93	46	60	17	171
Winter barley	83	78	81	68	49	144	65	75	56	120	51	61	38	55
Oats	80	61	72	49	36	94	44	59	30	76	27	43	14	30
Potatoes	82	100	100	5	43	80	133	156	c	66	133	156	c	7
Winter oilseed rape	97	79	77	75	12	157	55	65	57	152	43	50	43	31
Other crops	55	36	49	17	41	99	45	64	41	55	16	31	7	64
All crops	91	79	81	56	38	115	54	69	41	105	43	56	23	449
Grass under 5 years old	77	59	60	29	35	88	28	37	27	67	16	22	8	149
Grass 5 years and over	47	31	33	12	26	69	17	24	22	32	5	8	3	343
All grass	52	36	38	15	27	74	20	27	23	39	7	10	3	492
All crops and grass	66	52	53	29	31	94	38	50	35	62	20	27	10	941

Note: Sulphur rates on potatoes are not shown as some growers apply additional sulphur to acidify the soil for this crop. These applications cannot be separated from those intended as a fertiliser nutrient.

Source: British Survey of Fertiliser Practice, 2024

Table SC1.2 Use of straight fertiliser, Scotland, 2024

	Crop area receiving dressing (%)			Average field rate (kg/ha)			Overall application rate (kg/ha)			Fields in Survey
	N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O	
Winter wheat	97	23	20	138	52	69	134	12	14	91
Spring barley	75	3	9	67	50	73	51	2	7	171
Winter barley	78	16	18	130	56	76	101	9	14	55
Oats	71	8	19	81	c	c	57	c	c	30
Potatoes	14	28	72	c	c	c	c	c	c	7
Winter oilseed rape	97	17	27	138	c	67	134	c	18	31
Other crops	27	0	12	97	c	116	27	c	14	64
All crops	76	9	15	97	51	80	74	5	12	449
Grass under 5 years old	31	1	1	81	c	c	25	c	c	149
Grass 5 years and over	20	1	2	67	c	48	13	c	1	343
All grass	22	1	2	71	58	49	15	0	1	492
All crops and grass	41	4	6	88	52	75	36	2	5	941

Source: British Survey of Fertiliser Practice, 2024

Table SC1.3, Use of compound fertiliser, Scotland, 2024

	Crop area receiving dressing (%)				Average field rate (kg/ha)				Overall application rate (kg/ha)				Fields in Survey
	N	P_2O_5	K_2O	SO_3	N	P_2O_5	K_2O	SO_3	N	P_2O_5	K_2O	SO_3	
Winter wheat	35	53	51	27	36	54	68	33	13	29	35	9	91
Spring barley	83	87	85	28	51	50	63	26	42	44	54	7	171
Winter barley	37	69	66	34	52	60	71	33	19	41	47	11	55
Oats	45	53	53	11	42	45	56	c	19	24	30	c	30
Potatoes	72	72	54	5	80	159	c	c	58	115	c	c	7
Winter oilseed rape	47	68	55	25	40	53	58	19	19	36	32	5	31
Other crops	35	36	37	8	82	45	47	25	28	16	18	2	64
All crops	62	72	69	25	50	53	63	28	31	38	44	7	449
Grass under 5 years old	59	59	59	12	72	28	36	15	42	16	22	2	149
Grass 5 years and over	32	31	32	6	60	16	22	16	19	5	7	1	343
All grass	37	36	36	7	63	19	26	16	23	7	10	1	492
All crops and grass	46	49	48	14	57	37	45	24	26	18	22	3	941

Source: British Survey of Fertiliser Practice, 2024

Table SC1.4, Use of lime, Scotland, 2024

	Crop area receiving dressing (%)						Average field rate (tonnes/ha)						Fields limed	Fields in Survey
	Limestone (ground, screened)	Chalk	Magnesian limestone	Sugar beet lime	Other	All	Limestone (ground, screened)	Chalk	Magnesian limestone	Sugar beet lime	Other	All		
	%	%	%	%	%	%	t/ha	t/ha	t/ha	t/ha	t/ha	t/ha		
Winter wheat	8.7	c	1.8	c	c	10.4	5.0	c	5.0	c	c	5.0	10	91
Spring barley	20.1	c	3.1	c	1.8	25.0	4.5	c	4.7	c	0.3	4.3	42	171
Winter barley	11.0	c	0.6	c	c	11.7	4.2	c	5.0	c	c	4.2	10	55
Oats	13.2	c	5.3	c	c	18.5	5.6	c	5.0	c	c	5.4	6	30
Potatoes	c	c	c	c	c	c	c	c	c	c	c	c	0	7
Winter oilseed rape	13.5	c	1.0	c	c	14.6	4.4	c	2.4	c	c	4.2	6	31
Other crops	11.5	c	0.3	c	1.0	12.8	5.0	c	5.0	c	1.5	4.7	9	64
All crops	15.4	c	2.3	c	1.0	18.7	4.6	c	4.7	c	0.4	4.4	83	449
Grass under 5 years old	13.0	c	2.9	c	c	15.9	5.0	c	2.2	c	c	4.5	17	149
Grass 5 years and over	4.7	c	0.1	c	0.7	5.4	3.2	c	2.5	c	0.2	2.8	32	343
All grass	6.1	c	0.6	c	0.6	7.3	3.9	c	2.2	c	0.2	3.5	49	492
All crops and grass	9.5	c	1.2	c	0.7	11.4	4.3	c	4.0	c	0.3	4.0	132	941

Source: British Survey of Fertiliser Practice, 2024

Table SC1.5, Percentage of crop area by field application rate – Nitrogen, Scotland, 2024

Percents by row		kg/ha 0	<25	25-	50-	75-	100-	125-	150-	175-	200-	225-	250-	275-	300-	325-	350-	375-	400+	Fields in Survey
Winter wheat	%	3	0	3	6	10	9	15	17	22	12	1	0	0	2	-	-	-	-	91
Spring barley	%	3	0	9	14	28	25	15	4	1	-	-	-	-	-	-	-	-	-	171
Winter barley	%	17	0	5	1	2	18	6	21	28	1	-	-	-	-	-	-	-	-	55
Oats	%	20	0	11	3	27	30	10	-	-	-	-	-	-	-	-	-	-	-	30
Potatoes	%	18	0	0	66	5	0	11	-	-	-	-	-	-	-	-	-	-	-	7
Winter oilseed rape	%	3	0	0	0	17	19	15	9	12	16	3	0	6	-	-	-	-	-	31
Other crops	%	45	2	8	4	17	12	8	4	0	0	0	2	-	-	-	-	-	-	64
All crops	%	9	0	7	10	21	20	13	8	8	3	-	-	-	-	-	-	-	-	449
Grass under 5 years old	%	23	8	15	15	8	8	12	4	2	4	1	-	-	-	-	-	-	-	149
Grass 5 years and over	%	53	6	11	14	8	3	2	2	1	-	-	-	-	-	-	-	-	-	343
All grass	%	48	7	11	14	8	4	4	3	1	1	-	-	-	-	-	-	-	-	492
All crops and grass	%	34	4	10	13	12	10	7	5	3	2	-	-	-	-	-	-	-	-	941

Source: British Survey of Fertiliser Practice, 2024

Note: The symbol '-' in a cell represents zero application after the highest rate, for visual clarity in interpreting the data displayed.

Table SC1.6, Percentage of crop area by field application rate – Phosphate, Scotland 2024

Percents by row		kg/ha																		Fields in Survey
		0	<25	25-	50-	75-	100-	125-	150-	175-	200-	225-	250-	275-	300-	325-	350-	375-	400+	
Winter wheat	%	24	5	24	38	6	2	1	-	-	-	-	-	-	-	-	-	-	-	91
Spring barley	%	11	7	29	42	11	-	-	-	-	-	-	-	-	-	-	-	-	-	171
Winter barley	%	22	3	16	44	9	4	0	2	-	-	-	-	-	-	-	-	-	-	55
Oats	%	39	6	33	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30
Potatoes	%	0	0	18	17	0	9	11	0	18	26	-	-	-	-	-	-	-	-	7
Winter oilseed rape	%	21	1	27	45	5	-	-	-	-	-	-	-	-	-	-	-	-	-	31
Other crops	%	64	14	5	13	4	-	-	-	-	-	-	-	-	-	-	-	-	-	64
All crops	%	21	6	25	38	8	1	-	-	-	-	-	-	-	-	-	-	-	-	449
Grass under 5 years old	%	41	30	16	8	3	1	-	-	-	-	-	-	-	-	-	-	-	-	149
Grass 5 years and over	%	69	25	5	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	343
All grass	%	64	26	7	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	492
All crops and grass	%	48	19	13	15	3	-	-	-	-	-	-	-	-	-	-	-	-	-	941

Source: British Survey of Fertiliser Practice, 2024

Note: The symbol '-' in a cell represents zero application after the highest rate, for visual clarity in interpreting the data displayed.

Table SC1.7, Percentage of crop area by field application rate – Potash, Scotland, 2024

Percents by row		kg/ha																		Fields in Survey
		0	<25	25-	50-	75-	100-	125-	150-	175-	200-	225-	250-	275-	300-	325-	350-	375-	400+	
Winter wheat	%	28	2	18	20	20	11	-	-	-	-	-	-	-	-	-	-	-	-	91
Spring barley	%	9	4	15	38	26	6	1	2	-	-	-	-	-	-	-	-	-	-	171
Winter barley	%	19	1	7	38	28	5	1	-	-	-	-	-	-	-	-	-	-	-	55
Oats	%	28	0	16	39	17	-	-	-	-	-	-	-	-	-	-	-	-	-	30
Potatoes	%	0	0	0	18	26	0	0	0	0	37	18	-	-	-	-	-	-	-	7
Winter oilseed rape	%	23	4	10	39	23	-	-	-	-	-	-	-	-	-	-	-	-	-	31
Other crops	%	51	12	8	15	5	4	0	0	4	-	-	-	-	-	-	-	-	-	64
All crops	%	19	4	14	33	23	6	0	1	0	1	-	-	-	-	-	-	-	-	449
Grass under 5 years old	%	40	24	17	11	7	1	1	-	-	-	-	-	-	-	-	-	-	-	149
Grass 5 years and over	%	67	21	9	2	0	1	-	-	-	-	-	-	-	-	-	-	-	-	343
All grass	%	62	21	10	4	1	1	-	-	-	-	-	-	-	-	-	-	-	-	492
All crops and grass	%	47	15	11	14	9	2	-	-	-	-	-	-	-	-	-	-	-	-	941

Source: British Survey of Fertiliser Practice, 2024

Note: The symbol '-' in a cell represents zero application after the highest rate, for visual clarity in interpreting the data displayed.

Table SC1.8, Percentage of crop area by field application rate – Sulphur, Scotland, 2024

Percents by row		kg/ha 0	<25	25-	50-	75-	100-	125-	150-	175-	200-	225-	250-	275-	300-	325-	350-	375-	400+	Fields in Survey
Winter wheat	%	28	21	19	18	10	4	-	-	-	-	-	-	-	-	-	-	-	-	91
Spring barley	%	47	23	24	6	1	-	-	-	-	-	-	-	-	-	-	-	-	-	171
Winter barley	%	32	16	17	11	17	2	4	-	-	-	-	-	-	-	-	-	-	-	55
Oats	%	51	26	18	0	0	5	-	-	-	-	-	-	-	-	-	-	-	-	30
Potatoes	%	95	0	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7
Winter oilseed rape	%	25	16	15	25	15	0	3	-	-	-	-	-	-	-	-	-	-	-	31
Other crops	%	83	3	11	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	64
All crops	%	44	20	20	9	5	1	1	-	-	-	-	-	-	-	-	-	-	-	449
Grass under 5 years old	%	71	14	7	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	149
Grass 5 years and over	%	88	8	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	343
All grass	%	85	9	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	492
All crops and grass	%	71	13	10	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	941

Source: British Survey of Fertiliser Practice, 2024

Note: The symbol '-' in a cell represents zero application after the highest rate, for visual clarity in interpreting the data displayed.

Table SC2.1, Average fertiliser practice by grassland utilisation, Scotland, 2024

	Crop area receiving dressing (%)					Average field rate (kg/ha)				Overall application rate (kg/ha)				Fields in Survey
	N	P_2O_5	K_2O	SO_3	FYM	N	P_2O_5	K_2O	SO_3	N	P_2O_5	K_2O	SO_3	
Grazed not mown	40	25	25	9	14	52	13	14	19	20	3	4	2	255
Grazed mown	81	61	66	29	59	99	27	39	27	81	16	26	8	229
All grazings	52	36	38	15	27	74	20	27	23	39	7	10	3	484
Cut for silage - grazed	85	63	69	30	61	101	27	38	26	86	17	26	8	194
Cut for silage - not grazed	82	79	79	4	9	c	c	c	c	c	c	c	c	5
All cut for silage	85	63	69	30	60	100	27	38	26	85	17	26	8	199
Cut for hay - grazed	57	47	47	21	49	81	23	42	35	46	11	20	7	35
Cut for hay - not grazed	c	c	c	c	c	c	c	c	c	c	c	c	c	1
All cut for hay	56	46	46	20	48	81	23	42	35	45	11	19	7	36
All mowings	81	61	66	29	58	98	27	39	27	80	16	26	8	235
All grass	52	36	38	15	27	74	20	27	23	39	7	10	3	492

Source: British Survey of Fertiliser Practice, 2024

Table SC2.2, Percentage of grass area by field application rate – Nitrogen, Scotland 2024

Percents by row		kg/ha 0	<25	25-	50-	75-	100-	125-	150-	175-	200-	225-	250-	275-	300-	325-	350-	375-	400+	Fields in Survey
Grazed not mown	%	60	7	13	12	6	1	-	-	-	-	-	-	-	-	-	-	-	-	255
Grazed mown	%	19	5	7	19	12	11	13	8	3	3	1	-	-	-	-	-	-	-	229
All grazings	%	48	7	11	14	8	4	4	3	1	1	-	-	-	-	-	-	-	-	484
Cut for silage - grazed	%	15	6	6	20	12	10	13	9	3	4	1	-	-	-	-	-	-	-	194
Cut for silage - not grazed	%	18	0	32	47	0	4	-	-	-	-	-	-	-	-	-	-	-	-	5
All cut for silage	%	15	6	6	21	12	10	13	9	3	4	1	-	-	-	-	-	-	-	199
Cut for hay - grazed	%	43	2	12	6	14	15	8	-	-	-	-	-	-	-	-	-	-	-	35
Cut for hay - not grazed	%	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	1
All cut for hay	%	44	2	12	6	13	14	8	-	-	-	-	-	-	-	-	-	-	-	36
All mowings	%	19	5	7	19	12	10	12	8	3	3	1	-	-	-	-	-	-	-	235
All grass	%	48	7	11	14	8	4	4	3	1	1	-	-	-	-	-	-	-	-	492

Source: British Survey of Fertiliser Practice, 2024

Note: The symbol '-' in a cell represents zero application after the highest rate, for visual clarity in interpreting the data displayed.

Table SC2.3, Percentage of grass area by field application rate – Phosphate, Scotland, 2024

Percents by row		kg/ha																		Fields in Survey
		0	<25	25-	50-	75-	100-	125-	150-	175-	200-	225-	250-	275-	300-	325-	350-	375-	400+	
Grazed not mown	%	75	24	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	255
Grazed mown	%	39	32	19	8	2	-	-	-	-	-	-	-	-	-	-	-	-	-	229
All grazings	%	64	26	6	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	484
Cut for silage - grazed	%	37	32	20	8	2	-	-	-	-	-	-	-	-	-	-	-	-	-	194
Cut for silage - not grazed	%	21	0	79	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
All cut for silage	%	37	32	21	8	2	-	-	-	-	-	-	-	-	-	-	-	-	-	199
Cut for hay - grazed	%	53	32	8	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35
Cut for hay - not grazed	%	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
All cut for hay	%	54	31	8	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36
All mowings	%	39	32	19	8	2	-	-	-	-	-	-	-	-	-	-	-	-	-	235
All grass	%	64	26	7	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	492

Source: British Survey of Fertiliser Practice, 2024

Note: The symbol '-' in a cell represents zero application after the highest rate, for visual clarity in interpreting the data displayed.

Table SC2.4, Percentage of grass area by field application rate – Potash, Scotland 2024

Percents by row		kg/ha																		Fields in Survey
		0	<25	25-	50-	75-	100-	125-	150-	175-	200-	225-	250-	275-	300-	325-	350-	375-	400+	
Grazed not mown	%	75	21	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	255
Grazed mown	%	34	23	23	13	4	2	1	-	-	-	-	-	-	-	-	-	-	-	229
All grazings	%	62	21	10	4	1	1	-	-	-	-	-	-	-	-	-	-	-	-	484
Cut for silage - grazed	%	31	24	25	12	4	2	1	-	-	-	-	-	-	-	-	-	-	-	194
Cut for silage - not grazed	%	21	0	79	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
All cut for silage	%	31	23	26	12	4	2	1	-	-	-	-	-	-	-	-	-	-	-	199
Cut for hay - grazed	%	53	17	9	18	2	0	0	1	-	-	-	-	-	-	-	-	-	-	35
Cut for hay - not grazed	%	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	1
All cut for hay	%	54	16	9	18	2	0	0	1	-	-	-	-	-	-	-	-	-	-	36
All mowings	%	34	22	24	12	4	2	1	-	-	-	-	-	-	-	-	-	-	-	235
All grass	%	62	21	10	4	1	1	-	-	-	-	-	-	-	-	-	-	-	-	492

Source: British Survey of Fertiliser Practice, 2024

Note: The symbol '-' in a cell represents zero application after the highest rate, for visual clarity in interpreting the data displayed.

Table SC2.5, Percentage of grass area by field application rate – Sulphur, Scotland, 2024

Percents by row		kg/ha																		Fields in Survey
		0	<25	25-	50-	75-	100-	125-	150-	175-	200-	225-	250-	275-	300-	325-	350-	375-	400+	
Grazed not mown	%	91	7	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	255
Grazed mown	%	71	14	11	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	229
All grazings	%	85	9	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	484
Cut for silage - grazed	%	70	16	10	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	194
Cut for silage - not grazed	%	96	0	0	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
All cut for silage	%	70	15	9	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	199
Cut for hay - grazed	%	79	1	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35
Cut for hay - not grazed	%	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
All cut for hay	%	80	1	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36
All mowings	%	71	14	11	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	235
All grass	%	85	9	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	492

Source: British Survey of Fertiliser Practice, 2024

Note: The symbol '-' in a cell represents zero application after the highest rate, for visual clarity in interpreting the data displayed.

Table SC3.0a, Product use by month of application, Scotland, 2024

Percents by row	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Total product
	%	%	%	%	%	%	%	%	%	%	%	%	%
Straight N	0	0	0	0	0	3	18	31	38	5	4	2	100
Straight P	7	10	5	0	0	7	23	42	3	2	2	0	100
Straight K	1	4	0	0	0	6	28	46	11	4	0	0	100
Compounds	4	2	0	0	0	1	8	54	21	6	2	2	100
All fertilisers	2	1	0	0	0	2	13	44	27	5	3	2	100

Source: British Survey of Fertiliser Practice, 2024

Table SC3.0b, Nutrient use by month of application, Scotland, 2024

Percents by row	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Total nutrient
	%	%	%	%	%	%	%	%	%	%	%	%	%
Nitrogen	0	0	0	0	0	2	13	41	31	6	4	2	100
Phosphate	8	4	0	0	0	1	11	55	14	3	1	3	100
Potash	5	3	0	0	0	2	12	56	15	4	1	2	100
Sulphur	1	0	0	0	0	3	20	40	28	3	4	1	100
Total	3	1	0	0	0	2	13	46	25	5	3	2	100

Note: All fertilisers includes other straight fertilisers (e.g. trace elements)
'Product' refers to the total tonnage of the products used by the farmers in the survey year 2024
'Nutrient' refers to the tonnage of each nutrient contained in the products used (e.g. 100 kg of a 20:10:10 compound contains 20 kg of N, 10 kg of P_2O_5 and 10 kg of K_2O, while 100 kg of ammonium nitrate (straight N) contains typically 34.5 kg of N)
Estimates of total nutrients are shown in Appendix 1, Table AA1.6

Source: British Survey of Fertiliser Practice, 2024

APPENDIX 3 – REPORT HISTORY, DEFINITIONS AND METHODOLOGY

APP 3.1 INTRODUCTION AND STRUCTURE OF THE REPORT

The British Survey of Fertiliser Practice (BSFP) is the primary source of data on organic and inorganic fertiliser use in Great Britain. The results from the Survey are used by the British fertiliser industry, by Government and by the wider agricultural and environmental community. It is essential that the claims made from the Survey are underpinned by an effective methodology. Section AA2 describes this methodology, detailing measures undertaken to avoid bias and unreliability. National changes in relative cropping areas are discussed in Section AA3.

Section A provides a commentary of recent changes in survey data and longer-term trends. It includes estimates of total fertiliser use which are given in Table AA1.7. These data are derived from BSFP findings, confidential trade and sales data and HMRC import/export statistics. Appendix 2 presents the main tables of results from the Survey, grouped by geographic coverage. They include major crop groups, grassland, product types and farm types plus information on timing of applications. Figures for estimates of 'total', 'straight' and 'compound' nutrient rates are presented in separate tables. Section B provides an analysis of the application of organic manures and manufactured fertilisers. Section C contains more general information on farm practices such as spreader checking, record keeping and soil testing. Datasets for key data series are available via the Fertiliser usage section of the GOV.UK website.

APP 3.1.1 HISTORY

The Survey has been in existence, in various forms, since 1942 for England & Wales. It was extended to Scotland in 1983. Historical data from 1942 to 1997 have been summarised in several reviews spanning this period [8, 9, 10, 11]. Since 1992 the Survey has reported amalgamated data for Great Britain, in addition to the results for England & Wales and for Scotland. Weighted results for the major combinable crops and grassland were also recalculated from the national surveys to provide additional data for these crops for Great Britain from 1983.

The current methods of survey design and implementation are the result of adaptation of the original design from Rothamsted Experimental Station, undertaken by Edinburgh Data Library at the University of Edinburgh between 1992 and 1998. From 1999 until 2003 design and analysis was undertaken by the Rural Business Unit at the University of Cambridge and from 2004 by Kynetec (formerly GfK Kynetec), who also retained responsibility for conducting the fieldwork. Under Government rules, the contract for the Survey was retendered in 2018 and Kynetec were awarded the contract again.

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[8] Yates, F. and Boyd, D.A. (1965). Two decades of Surveys of Fertiliser Practice. *Outlook on Agriculture* **5**, 203-210.

[9] Church, B.M. and Lewis, D.A. (1977). Fertiliser use on farm crops, England and Wales: Information from the Survey of Fertiliser Practice, 1942-1976. *Outlook on Agriculture* **9**, 186-193.

[10] Chalmers, A.G., Kershaw, C.D. and Leech, P.K. (1990). Fertiliser use on farm crops in Great Britain: Results from the Survey of Fertiliser Practice, 1969-1988. *Outlook on Agriculture* **19**, 269-278.

[11] Chalmers, A.G., Renwick, A.W., Johnston, A.E. and Dawson, C.J. (1999). Design, development and use of a national survey of fertiliser applications. *Proceedings International Fertiliser Society* **437**.

APP 3.2 SURVEY METHODOLOGY

APP 3.2.1 SAMPLE

This Survey is based on a sample of holdings in order to reduce burdens and manage resources. The Survey sample is selected from the population of agricultural holdings compiled by Defra and Devolved Administrations using the June Survey of Agriculture and Horticulture (large sample surveys conducted annually at national level which record information on farm size, cropping, stocking and employment, to be referred to as the 'June Agricultural Survey'). In each year, two samples are extracted from the June Agricultural Survey, one for England & Wales and one for Scotland. The British Survey of Fertiliser Practice only includes holdings with a total area of equal to, or more than, 20 hectares under crops and grass (excluding rough grazing). Section APP 3.2.1.1 illustrates more information regarding minor holdings.

In England & Wales, farms are classified into one of three types, cropping, livestock and horticulture. Farms are then further classified into four size groups. In Scotland, a similar number of size groups are used but farms are classified into only two types, 'mainly cropping' and 'mainly livestock'.

These higher-level farm types are based on groupings of the standard UK farm classifications (called 'robust' types). Farms with a robust type of 'Other' (robust type 10) are not included in the sample. See APP 3.2.7 paragraph 10 for more details.

In 2024, the target sample size was 1,500 farms. This sample size has been designed to achieve a statistically representative sample at the national level. The number of farms to be sampled is allocated to each of the farm type and size combinations (strata) in proportion to the total area of crops and grass recorded in the June Agricultural Survey (using the latest available data). The exception to this is for horticultural farms in England and Wales, which are sampled at a higher rate to ensure sufficient numbers for a robust estimate to be made. See Tables AA3.1 and AA3.2 for the number of farms selected.

Where possible, three reserve farms are selected for each farm in the main sample. The reserves will be the geographically nearest holdings (using the County/Parish/Holding (CPH) number) of the same farm type and size group as the farm they are matched to. The Survey is voluntary. Each farm in the main sample is contacted; if for whatever reason a farm is not able to take part in the Survey, the first reserve for that farm is then contacted. If this farm also declines, then the second and if necessary, the third reserve is contacted. If all four farms decline, then no farm is recruited into the Survey for that particular sampling unit.

To help improve the Survey response and to reduce the year-on-year variability, a core of respondents completes the Survey each year. This approach was introduced in 2000, when approximately one third of the sample agreed to stay in the Survey for a number of years. Between 2006 and 2007 a review of the panel structure was undertaken to ensure that the proportion of respondents who had participated on the panel for five consecutive years or more constituted no more than 20% of the total sample. In 2024, 74% of the panel had responded in the previous year. The profile of the Survey panel in terms of farm size was 78% >200ha, 74% 100-200ha, 66% 50-100ha and 69% >20-50ha.

For the 2024 BSFP the achieved sample size was 1,306 holdings, four more holdings than in 2023. It should be noted that the underlying sample design is constructed to measure manufactured fertiliser usage and may not wholly represent the population of farmers using organic manures, so some of these data, especially where sample sizes are small, need to be treated with appropriate caution.

The sample responses are raised to be representative of the national population by using the inverse of the achieved sampling fraction (i.e. the number of holdings in the population is divided by the achieved sample size in each strata) as the weight. The validity of the derived weights is assessed by calculating a weighted crop area for the most extensively grown crops by this method and comparing this to the latest available crop area estimates from the June Agricultural Survey.

Table AA3.1 Derivation of the stratified random sample for the 2024 Survey, England & Wales

	Farm holdings population in 2024	Total crops and grass in 2024 (%)	Notional sampling fraction[1] (%)	Target sample size	Achieved sample size	Achieved sample fraction[2] (%)
Livestock and mixed						
(Robust types: specialist pigs, specialist poultry, dairy, cattle and sheep [LFA & lowland], mixed)						
Crops & grass area						
20-50 ha	15,608	6.0%	0.47%	74	82	0.53%
51-100 ha	12,705	10.5%	1.02%	130	120	0.94%
101-200 ha	9,198	14.7%	1.97%	181	187	2.03%
200+ ha	4,600	19.4%	5.20%	239	218	4.74%
Total livestock & mixed	42,111	50.6%	1.48%	625	607	1.44%
Crops						
(Robust types:cereals, general cropping)						
Crops & grass area						
20-50 ha	7,986	3.1%	0.47%	38	50	0.63%
51-100 ha	7,010	5.8%	1.02%	71	66	0.94%
101-200 ha	5,866	9.6%	2.02%	119	116	1.98%
200+ ha	5,972	29.4%	6.07%	362	235	3.94%
Total crops	26,834	47.8%	2.20%	590	467	1.74%
Horticulture						
(Robust type: horticulture)						
Crops & grass area						
20-50 ha	747	0.3%	0.82%	6	5	0.67%
51-100 ha	429	0.3%	1.80%	8	3	0.70%
101-200 ha	227	0.4%	3.62%	8	4	1.76%
200+ ha	124	0.6%	10.43%	13	8	6.45%
Total horticulture	1,527	1.6%	2.29%	35	20	1.31%
Total for England & Wales	70,472	100%		1,250	1,094	1.55%

[1] The notional sampling fraction is found by expressing the target sample size as a percentage of the farm holdings in population in 2024.
[2] The achieved sampling fraction is found by expressing the achieved sample size as a percentage of the farm holdings in population in 2024.

Table AA3.2 Derivation of the stratified random sample for the 2024 Survey, Scotland

	Farm holdings population in 2024	Total crops and grass in 2024(%)	Notional sampling fraction[1] (%)	Target sample size	Achieved sample size	Achieved sample fraction[2] (%)
Cereal / general						
(Robust types: cereals, general cropping, horticulture)						
Crops & grass area						
20-50 ha	727	1.4%	0.48%	3	5	0.69%
51-100 ha	908	3.8%	1.03%	9	9	0.99%
101-200 ha	949	7.7%	2.02%	19	19	2.00%
200+ ha	646	13.0%	5.04%	33	20	3.10%
Total cereals / general	3,230	25.8%	2.00%	65	53	1.64%
Livestock and mixed						
(Robust types: specialist pigs, specialist poultry, dairy, cattle and sheep [LFA & lowland], mixed)						
Crops & grass area						
20-50 ha	4,511	8.2%	0.45%	21	15	0.33%
51-100 ha	3,420	13.9%	1.01%	35	29	0.85%
101-200 ha	2,859	22.5%	1.97%	56	46	1.61%
200+ ha	1,501	29.6%	4.92%	74	69	4.60%
Total livestock & mixed	12,291	74.2%	1.51%	185	159	1.29%
Total Scotland	15,521	100%		250	212	1.37%

[1] The notional sampling fraction is found by expressing the target sample size as a percentage of the farm holdings in the population in 2024.
[2] The achieved sampling fraction is found by expressing the achieved sample size as a percentage of the farm holdings in the population in 2024.

APP 3.2.1.1 Information on minor holdings

Holdings with only 20 hectares or less allotted to crops and grass (in total) are excluded from the BSFP sample. These smaller farms account for a significant proportion of the number of holdings but a much smaller proportion of the area of crops and grass. Using the 20 hectare threshold reduces the number of farms which need to be sampled so reducing burdens and costs without significant adverse impact on the survey coverage and hence the quality of the data. Table AA3.2.1 illustrates the scale of minor holdings in Great Britain (2024), enabling an understanding of the scale of minor holdings that are excluded from the survey, and therefore not represented by the statistics in this report.

Minor holdings account for 53% of all agricultural holdings but only 1% of crop area and 8% of grassland.

Table AA3.2.1 Holdings below and above the BSFP minimum threshold in Great Britain, 2024

	Below BSFP threshold	Above BSFP threshold	All agricultural holdings in Great Britain	Share on holdings below BSFP threshold
Number of holdings	97,398	87,773	185,171	53%
Total crop area (ha)	51,416	4,791,349	4,842,765	1%
Total grass area (excluding rough grazing) (ha)	533,603	5,783,090	6,316,693	8%
Total crops and grass area (ha)	1,783,139	14,024,836	15,807,975	11%

Source: Defra June Survey of Agriculture and Horticulture, Welsh Government and ScotGov.

APP 3.2.1.2 SAMPLING VARIATION

Table AA3.2.2a Standard errors of application rates for the major crops in Great Britain, 2024

Crop	Standard errors for overall application rates (kg/ha)						Fields in sample
	Total N	Straight N	Comound N	Total P_2O_5	Total K_2O	Total SO_3	
Winter wheat	2.7	2.8	0.8	1.1	1.4	1.5	978
Oilseed rape	3.8	3.9	1.0	1.8	2.0	2.7	253
Winter barley	2.8	3.0	1.2	1.7	2.0	1.8	410
Spring barley	1.9	2.2	1.3	1.2	1.5	1.2	609
Maincrop potatoes	13.4	12.6	11.9	12.6	19.5	7.1	36
Sugar beet	5.8	5.9	3.0	3.2	5.9	3.8	67
All crops	2.0	2.2	0.8	0.8	1.0	0.9	3,410
All grass	1.5	1.3	0.8	0.3	0.5	0.4	2,987

Crop	Standard errors for average field rates (kg/ha)						Fields in sample
	Total N	Straight N	Comound N	Total P_2O_5	Total K_2O	Total SO_3	
Winter wheat	2.5	2.6	4.8	1.6	1.9	1.6	978
Oilseed rape	3.6	3.6	3.3	2.8	3.4	2.5	253
Winter barley	2.4	2.5	5.3	2.4	2.7	1.9	410
Spring barley	1.7	1.9	2.1	1.4	1.9	1.5	609
Maincrop potatoes	11.2	18.8	12.1	12.0	18.9	11.6	36
Sugar beet	5.4	5.2	11.8	4.9	7.5	4.7	67
All crops	1.9	2.0	1.8	1.3	2.0	1.2	3,410
All grass	1.9	2.6	1.8	1.0	1.4	1.6	2,987

Table AA3.2.2b Standard errors of application rates for the major crops in England & Wales, 2024

Crop	Standard errors for overall application rates (kg/ha)						Fields in sample
	Total N	Straight N	Compound N	Total P_2O_5	Total K_2O	Total SO_3	
Winter wheat	2.8	3.0	0.8	1.1	1.3	1.6	887
Oilseed rape	4.0	4.0	0.9	1.8	1.9	3.0	222
Winter barley	2.9	3.1	1.2	1.6	1.9	1.9	355
Spring barley	2.2	2.4	1.3	1.1	1.5	1.4	438
Maincrop potatoes	14.7	14.3	13.5	14.0	22.0	8.1	31
Sugar beet	5.8	5.9	3.0	3.2	5.9	3.8	67
All crops	2.3	2.5	0.8	0.8	1.0	1.1	2,961
All grass	1.6	1.5	0.7	0.3	0.5	0.5	2,495

Crop	Standard errors for average field rates (kg/ha)						Fields in sample
	Total N	Straight N	Compound N	Total P_2O_5	Total K_2O	Total SO_3	
Winter wheat	2.6	2.7	7.0	1.7	2.1	1.7	887
Oilseed rape	3.8	3.7	4.5	3.6	4.4	2.7	222
Winter barley	2.5	2.6	7.3	2.7	3.2	2.0	355
Spring barley	1.9	2.1	3.5	2.0	2.6	1.7	438
Maincrop potatoes	11.8	19.2	13.7	13.4	21.2	11.9	31
Sugar beet	5.4	5.2	11.8	4.9	7.5	4.7	67
All crops	2.1	2.2	2.4	1.7	2.6	1.4	2,961
All grass	2.2	2.9	1.9	1.2	1.6	1.9	2,495

Table AA3.2.2c Standard errors of application rates for the major crops in Scotland, 2024

Crop	Standard errors for overall application rates (kg/ha)						Fields in sample
	Total N	Straight N	Compound N	Total P_2O_5	Total K_2O	Total SO_3	
Winter wheat	8.4	8.8	2.7	4.2	5.1	5.0	91
Oilseed rape	12.2	12.3	4.3	5.2	6.1	7.3	31
Winter barley	9.8	10.0	4.3	5.5	5.7	5.6	55
Spring barley	3.6	3.7	2.7	2.2	2.8	1.8	171
Potatoes	16.0	10.2	18.6	25.7	29.7	4.3	7
All crops	3.9	4.4	2.5	2.1	2.6	1.9	449
All grass	3.0	2.0	2.5	1.1	1.4	0.7	492

Crop	Standard errors for average field rates (kg/ha)						Fields in sample
	Total N	Straight N	Compound N	Total P_2O_5	Total K_2O	Total SO_3	
Winter wheat	7.6	8.0	2.9	3.9	3.8	5.1	91
Oilseed rape	11.1	11.6	4.9	3.7	4.0	6.7	31
Winter barley	7.5	7.5	6.9	5.1	4.2	6.2	55
Spring barley	3.2	3.4	2.5	1.8	2.6	2.4	171
Potatoes	12.6	16.7	16.5	25.7	29.7	0.0	7
All crops	3.7	4.8	2.3	1.8	2.3	2.6	449
All grass	3.2	4.2	3.8	1.8	2.6	2.3	492

The standard errors quoted in Tables AA3.2.2 a-c are a measure of the standard deviation of the mean and are used to judge the accuracy of the results for each cell in the table. This is the standard statistical process where the standard deviation of each cell is calculated first and then divided by the square root of the number of data points within that cell. Approximate 95% confidence limits will be the quoted value +/-2 standard errors.

APP 3.2.2 DATA COLLECTION

Data collection was done between July 2024 and February 2025. In addition to collecting information on the fertiliser use on each field, the recorder collected general information on the holding and the use of lime and organic manures and slurries.

Estimated quantities of nitrogen, phosphate and potash fertiliser consumed annually in the UK since 2000 are shown in Table AA1.7. These data are based on BSFP findings, HMRC import/export statistics and confidential trade and sales data which are contributed by Agricultural Industries Confederation (AIC) industry members who represent approximately 90% of the market. They are compiled by the AIC in conjunction with Defra. Further information is provided in Section APP 3.2.5.

APP 3.2.3 DATA QUALITY ASSURANCE

Experienced and knowledgeable field staff are used to collect the required information. They make use of information from a variety of different records kept by farmers. Farm diaries are the most common method used on farm. Further information is provided in Section C. At data entry, any omitted responses, figures outside pre-agreed limits or other discrepancies are flagged for checking and followed up, often by contacting the survey respondent. Total crop areas reported under this Survey are checked against information held in the June Agricultural Survey. Additionally, 10% of interviews undertaken will be subject to a call back by an

independent reviewer to check responses to individual questions as part of data quality assurance arrangements. The aggregated figures are checked for consistency and trend analysis against historic data and are subject to independent expert peer review.

APP 3.2.4 ACCURACY AND RELIABILITY OF THE INFORMATION

The use of sampling in this Survey means that there will be certain limitations associated with the data. The sampling methodology used is described more fully in Section APP 3.2.1 but essentially uses a random stratified sampling strategy approach, with an element of a core panel, to obtain a representative sample. A response rate of 22% was achieved in 2024. Sampling errors arise because even with careful selection, the sample cannot be exactly representative of all the population. The size of the sampling error will depend on the size of the sample (the larger the sample the smaller the error) but also on the variance of the data. An indication of the extent to which the sample result deviates from the population can be obtained from measuring the standard error associated with the data.

The standard errors are relatively small for the grouped 'all crops and 'all crops and grass', and for the main arable crops of wheat, oilseed rape and barley. The standard errors are higher for sugar beet and potatoes where sample sizes (crop area, number of respondents) are smaller.

Figures reported for some of the smaller crops, where the sample size is relatively low, need to be treated with appropriate caution. Sample size information is provided in the tables in Appendix 2 and help to provide an indication of reliability. For crops where the sample size is relatively small it is advisable to use data from several years and to assess trends over a longer period rather than just considering year on year changes.

For potatoes in particular, part of the reason for apparent fluctuations in estimates of nutrient application rates may be because fewer numbers of fields of potatoes are covered by the Survey than would be expected from a sample survey. This is because fields of potatoes on respondent's farms may be let out and grown by a third party, so it is not possible to record information in the Survey. Furthermore, fields of potatoes grown by a respondent, but not on their own farm, are not captured in the Survey.

The statistics on the pattern of fertiliser practice reported for Great Britain largely reflect practice in England and Wales due to its greater area of total crops and grassland: about 8.7 million hectares in England and Wales and about 1.9 million hectares in Scotland. The estimates of the average field rates provide a better indication than overall application rates of actual usage levels and also of any annual variation in fertiliser practice on farms. The overall application rate considers both the average field rate and the proportion of the crop area treated, giving an overview of the crop in total. The definitions of the terms used are set out in Section APP 3.2.7 of this report.

Additionally, the Survey design has been constructed to measure use of manufactured fertilisers, thus may not be wholly representative of manure use. Some of these data, especially where sample sizes are small, need to be treated with caution.

APP 3.2.5 METHODOLOGY FOR ESTIMATES OF TOTAL UK FERTILISER USE

Estimated quantities of nitrogen, phosphate and potash fertiliser consumed annually in the UK since 1974 are shown in Table AA1.7. These data are based on BSFP findings, HMRC import data and confidential trade and sales data which are contributed by AIC industry members

who represent approximately 90% of the market. They are compiled by the AIC with input and peer review by an expert group convened by the AIC and in liaison with Defra.

It would be possible to use BSFP data alone to estimate total fertiliser use by taking the average rate for each individual crop and multiplying by the June crop area estimate and summing these to give an overall usage. However, the relatively low coverage of the BSFP survey for some crops, means that the alternative approach of combining BSFP data with trade and sales data provides more robust total usage estimates than using BSFP data alone. This method also considers use on small farms (<20 ha) and use in Northern Ireland.

The AIC survey their relevant members (15 businesses) monthly to collect information on fertiliser deliveries. The BSFP fertiliser statistics published and used in the industry and agricultural sector are by fertiliser year (growing season, July to June), not by calendar year. They are available at the AIC website.

Individual returns are quality assured by trend analysis against historic data and also against the aggregate trend. Any omitted data or anomalous figures outside trend or other pre-defined limits are checked and followed up, usually by contacting the survey respondent.

The AIC also purchase monthly HMRC trade statistics on imports and exports of fertilisers; these data are actively used and scrutinised, and where appropriate challenged by the trade. Twice a year, in December and June, and on an annual basis, aggregated figures for total fertiliser deliveries for the main types of fertiliser are calculated, together with nutrient contents. These are assessed with the import and export figures to derive the base total fertiliser usage figures. The N:P:K ratio from the BSFP Survey is compared with the AIC derived figures to confirm the nutrient quantities relative to each other. Further small adjustments may be made based on other confidential information on stocks or non-fertiliser use of imported urea.

These AIC usage figures are compared to usage figures derived from BSFP and June Agricultural Survey crop area figures and the relationship between the ratios of N, P and K from both sets of data are checked and compared. Any inconsistencies or anomalies identified in the data are identified and followed up and any necessary corrections are made to ensure comparability and consistency across all data.

Each year the AIC figures are reviewed, and quality assured for credibility and consistency across sources by a group of experts contributing knowledge on production, use and trade. The final agreed aggregated total UK usage figures are subject to independent peer review and checked for consistency and trend analysis, considering known agronomic and market factors.

The total fertiliser use is then split by country. The figures for Northern Ireland are taken from their fertiliser survey and the remaining GB figures are split between England plus Wales and Scotland by applying the proportions derived from the BSFP data. The NI Survey provides data by quarter, amalgamated by calendar year.

APP 3.2.6 REVISIONS

The figures presented in this report are finalised.

We will provide information on any further revisions we make to the report or the datasets if any inaccuracies or errors occur.

APP 3.2.7 DEFINITIONS OF TERMS

1. For the purpose of the Survey, the term **Great Britain** (or **Britain**) is defined to cover England (including the Isle of Wight), Wales (including Anglesey) and mainland Scotland.

2. The **survey year** (which is the same as the **crop year**) ran from autumn 2023 to autumn 2024, corresponding to the 2024 crop year and 2024 harvest. The recording period for fertiliser applications made during this growing season varied for different crop and grass groups.

3. For the purposes of this Survey, a **field** is defined as any single area of land measuring more than 0.2 ha (half an acre) which had a uniform cropping and fertiliser history from autumn 2021. For data collection and processing purposes, separate fields with identical cropping and fertiliser management on the same farm are blocked together as one 'field', to represent the total combined area of those fields. Areas within the same natural boundary receiving different treatments (crops and fertilisers) were recorded separately. Fallow land has always been collected by the Survey, but is not included in the calculations of this report.

4. In the report, **Crops** are defined as all crops except grass, glasshouse crops and uncropped land. **Grass** refers to all forms of grassland which may be grazed, conserved, or grown for seed production; rough grazing is excluded.

5. The abbreviation **N** is used for nitrogen, **P_2O_5** for phosphate, **K_2O** for potash, **SO_3** for sulphur, and **FYM (Farm Yard Manure)** for all types of organic manure e.g., slurries and solid manures. The phrase **total use** includes both straight (single nutrient) and compound (multi nutrient) products. Fertiliser products containing nitrogen and sulphur only are classified with straight nitrogen. Rates are expressed in terms of the equivalent nutrient content, taking into account the nutrient content in the product used. The nutrient content of the common fertiliser products including the dry matter content and nutrient content of various organic manures used are given in the Nutrient Management Guide (RB209) which is available at https://ahdb.org.uk/nutrient-management-guide-rb209.

6. The **average field rate** is a measure of the fertiliser nutrient application rate over the sown area of fields that received some dressing of that nutrient. Average field rate is measured in kilograms of nutrient per hectare (kg/ha).

7. **Dressing cover** is the proportion of the sown area that has received any application of the nutrient or a manure and is expressed as a percentage.

8. The **overall application rate** is a measure of the fertiliser nutrient application rate over the sown area of all fields, irrespective of whether they received dressing of that nutrient or not. Overall application rate is measured in kilograms of nutrient per hectare (kg/ha). The overall application rate is calculated by multiplying the average field rate by the percent dressing cover. The overall application rate is always less than or equal to the average field rate due to the inclusion of any area that has not received an application of the nutrient in the calculation of the overall application rate.

9. **Sown area** is the area of a field that has been planted with a crop or grass. It excludes headlands, field margins, buffer strips and other agri-environment features.

10. The UK farm type system, aggregates a wide range of defined farm types into ten 'robust' types:
    (1) Cereals
    (2) General Cropping
    (3) Horticulture
    (4) Specialist Pigs
    (5) Specialist Poultry
    (6) Dairy
    (7) Cattle and Sheep (LFA)
    (8) Cattle and Sheep (lowland)
    (9) Mixed
    (10) Other

    Individual farms are allocated a particular farm type according to the SGMs (Standard Gross Margins) applied to the farm's activity as recorded by the June Agricultural Survey. SGMs are a set of coefficients which estimate a £ value for one hectare of each crop or one head of livestock.

    Prior to 2004, the UK agricultural departments amalgamated the robust types 'Specialist Pigs' and 'Specialist Poultry' as the single robust type 'Pigs and Poultry'. 2006 was the first year that the BSFP adopted the revised classification following analysis that showed this would not lead to under-representation of either of these farm types through marginalisation. The composition of 'robust' types is presented in greater detail in Appendix 5. The sampling framework outlined in Section AA3.2.1 can be related to robust types as set out below. Revisions to the definitions of farm types can be found at the following link:
    https://www.gov.uk/structure-of-the-agricultural-industry-survey-notes-and-guidance

    Data presented in Appendix 2 tables GB4.1 to GB4.5 are derived from the robust types shown below.

Table number	Robust group in table title	Robust type name	Robust number
GB4.1	cereal farms	Cereals	1
GB4.2	general cropping	General cropping and horticulture	2, 3
GB4.3	dairy farms	Dairy	6
GB4.4	other livestock	LFA and lowland grazing livestock	7, 8
GB4.5	mixed farms	Mixed	9

    These robust type groupings are also used in tables B2.3b, B3.2 and C2.1. Due to the small number of specialist pigs and poultry farms interviewed in the Survey, data collected from these robust types have not been presented in any of the tables listed above.

11. Regional analysis of the Survey data for England was classified in two ways in 2024. Appendix 2, Table EW4.1a is based on the **Government Office Regions** (GORs) in common with other Defra surveys. Appendix 2, Table EW4.1b is based on the former MAFF (Ministry of Agriculture, Fisheries and Food) administrative regions, which were revised in 1996 to take account of changes to county boundaries and nomenclature resulting from the introduction of Unitary Local Authorities between April 1995 and April 1998. These revised regions, termed **BSFP regions**, have been the basis for regional analysis within the Survey historically and are detailed in Appendix 4.

APP 3.2.8 TYPES OF FERTILISER

Of the 16 essential plant nutrients, the four key ones required in relatively large amounts for crops to achieve their optimal yield potential are nitrogen, phosphorus, potassium, and sulphur. Where nutrients are not available in sufficient quantity in the soil, fertiliser products are applied to supply the nutrient needs of the plant. Plant roots take up the nutrients dissolved in the water in the soil. The nutrients must be in the correct chemical form so that they are in a suitable water-soluble form for plants to be able to use them.

There are two broad types of fertiliser. Manufactured fertilisers tend to be relatively concentrated and supply essential nutrients in a mineral form which usually are immediately available for plant use. The other type is organic fertilisers which can be plant- or animal-based, such as manure, slurry, compost, or poultry litter. Organic fertilisers are in their natural form or have undergone minimal processing. They are usually less concentrated than manufactured fertilisers, and often the nutrients they contain may need further breaking down in the soil by bacteria and other soil organisms before they are in a form available to plants. The chemical composition can vary greatly, and they tend to be slower acting and less predictable in their action.

Nitrogen is important for building DNA and proteins in plants. It encourages growth of stems and leaves by promoting protein and chlorophyll. Provided there are adequate supplies of water and other nutrients, nitrogen usually has a large effect on crop growth, yield and quality. Whatever the source, to be usable in the soil by plants, it must be in the form of inorganic ammonium or nitrate ions. The main forms of inorganic nitrogen fertilisers are ammonium nitrate, urea, ammonium phosphates, and ammonium sulphate.

Phosphorus is essential for photosynthesis and respiration. It promotes early root formation and growth and enhances seed and fruit production. It is also important for energy production and storage. In the context of fertilisers, it is measured and defined as P_2O_5. Phosphate fertilisers include ammonium phosphate and superphosphate. The majority of phosphorus in most soil is in essentially insoluble forms, and unavailable to plants. Phosphorus is very immobile in soil, and the forms that are created and their availability, are dependent on factors such as the soil pH, temperature, and moisture. Plant roots take up nearly all phosphorus as either the primary or secondary orthophosphate anion ($H_2PO_4^-$ or HPO_4^{-2}, respectively). Generally, the maximum availability of phosphorus occurs in soils within a pH range of 6.0-7.0.

Potassium contributes to many plant functions apart from managing the water status, including shoot and root tip growth, cell extension, photosynthesis and the reduction of drought and disease stress. It is used in the process of building and transporting starches, sugars, and proteins, so is important for grain and fruit yield. Potassium chloride (commonly called muriate of potash) is the most common form of potassium fertiliser used in agriculture. Other forms include potassium sulphate, potassium magnesium sulphate and potassium nitrate. In the context of fertilisers, it is measured and defined in this Report as K_2O. It is usually taken up from the soil in greater quantities than the other main fertilisers. Crops which are harvested green such as grass and green vegetables will remove relatively large quantities of potassium from the soil.

Sulphur is an essential plant nutrient. It is a component of most proteins and it activates certain enzyme systems. In the past sulphur demand was satisfied through atmospheric deposition. With the significant decline of sulphur from the atmosphere, there is a need for sulphur application to crops and grass and it is often applied together with nitrogen fertilisers. Crops such as oilseed rape are particularly sensitive to sulphur deficiency and so require a relatively high input of sulphur. It is measured and defined in this Report as SO_3.

More details are provided in the Nutrient Management Guide (RB209), published by the Agriculture and Horticulture Development Board (AHDB) at https://ahdb.org.uk/nutrient-management-guide-rb209.

APP 3.3 GENERAL TRENDS AND ISSUES

APP 3.3.1 CROP AREAS AND WEATHER CONDITIONS

Annual changes in relative cropping areas, as well as any changes in fertiliser practice for individual crops, may affect nutrient application rates when aggregated across the main crop groupings. Table AA3.3.1 provides a summary of June Agricultural Survey estimates for areas of individual major crops, crop groupings and total crops and grassland categories in 2023 and 2024 and illustrates percentage changes in relative cropping areas over the past five years. In Great Britain in 2024, 10.5 million hectares were used for either crops or grassland (excluding rough grazing). Of this, 40% (4.2 million hectares) was crops, with the remaining 60% (6.3 million hectares) being grassland.

The crop areas in Table AA3.3.1 refer to the only the sown area of fields, as do the results of the BSFP. Field margins, buffer strips and other agri-environment features are included in 'Bare fallow' in Table AA3.3.1.

Table AA3.3.1 Cropping and grassland areas ('000 ha) in Great Britain, 2023 – 2024

Crops	June 2023 '000s ha	June 2024 '000s ha	% change since 2023	% change since 2019	2024 crop areas as % of total cropping area
Wheat	1,712	1,523	-11.0	-15.8	36.0
Barley – winter	446	377	-15.5	-15.1	8.9
– spring	669	796	19.0	14.0	18.8
Total cereals[1]	**3,056**	**2,936**	**-3.9**	**-7.7**	**69.5**
Oilseed rape – total	390	292	-25.1	-44.8	6.9
– winter	386	286	-25.9	-43.5	6.8
– spring	4	6	50.0	20.0	0.1
Sugar beet	99	103	4.0	-4.6	2.4
Potatoes[2]	112	115	2.7	-17.9	2.7
Linseed	21	18	-14.3	20.0	0.4
Peas/beans[3]	274	223	-18.6	26.0	5.3
Maize/other fodder	326	351	7.7	9.7	8.3
Vegetables	99	96	-3.5	-15.5	2.3
Total crops[4]	**4,456**	**4,225**	**-5.2**	**-8.6**	**100**
Bare fallow[5]	311	311	-	32.9	
Grassland					
Less than 5 years old	1,117	1,133	1.4	8.4	17.9
5 years and older	5,395	5,183	-3.9	-6.5	82.1
Total grass[6]	**6,512**	**6,317**	**-3.0**	**-4.2**	**100**
Total crops and grass[7]	**10,968**	**10,542**	**-3.9**	**-6.0**	

For notes see overleaf.

[1] Including minor cereals (oats, rye, triticale, mixed corn).
[2] Early + maincrop potatoes.
[3] Harvested dry for animal consumption and, for dried peas, human consumption.
[4] Including other crops, but not fruit, protected cropping, ornamentals or bare fallow.
[5] Historically including set-aside.
[6] Managed grassland, excluding rough grazing.
[7] Total cropping + total grassland.

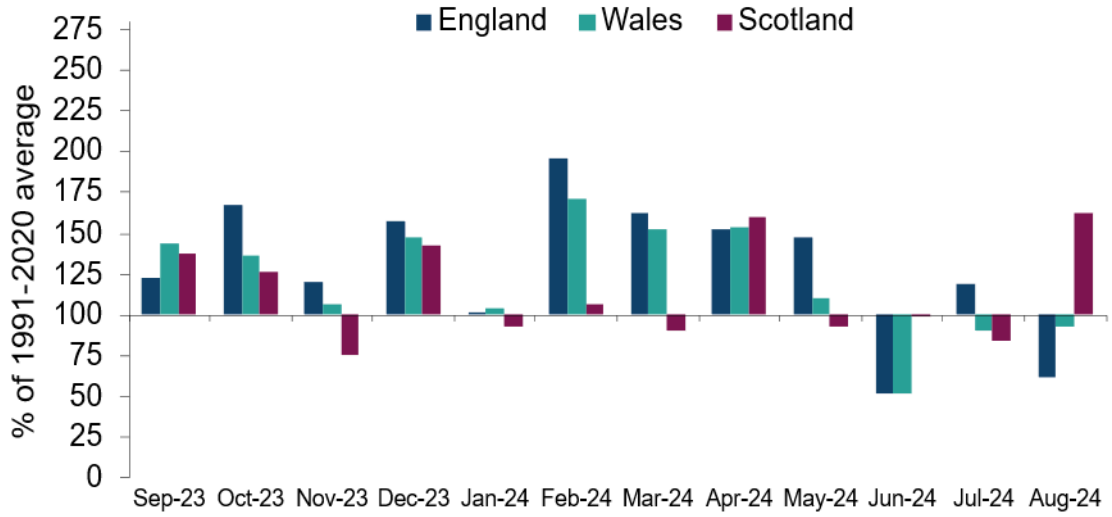
Sources: Annual Defra/Scottish Government/Welsh Assembly Government (WAG) June Agricultural Survey data.

Comparing the 2023 and 2024 crop years, the area sown to cereals remains largely consistent. There was an 11% reduction in the wheat area and a 19% increase in the spring barley area. The oilseed rape area decreased with continued difficulty in managing pests in this crop. The sugar beet and the potato areas increased, with bare fallow unchanged between the 2023 and 2024 crop years.

Unusual seasonal weather conditions can influence fertiliser usage in some years. For example:

- A very wet (or very dry) autumn might delay the establishment of winter sown crops or alter the ratio of winter to spring sown crops, with their different fertiliser requirements.
- Prolonged wet weather can increase leached losses of some nutrients, particularly nitrogen and sulphur. Weather conditions also affect other aspects of soil chemistry and nutrient availability.
- Adverse weather conditions can disrupt planned activities, such as fertiliser spreading.
- Growing conditions determine plant growth and can therefore affect nutrient requirements.

Figure AA3.3.1 Monthly rainfall as a percentage of the long-term average[12]



Autumn 2023 was warmer and wetter than average. Settled weather in early September brought many warm, dry and sunny days with a significant late season heatwave. October was unsettled and a very wet month. Much of eastern Scotland, eastern England and south east England saw well over twice the average monthly rainfall. Four named storms affected the UK between late September and mid November and flooding impacted all three nations.

[12] https://www.metoffice.gov.uk/research/climate/maps-and-data/uk-temperature-rainfall-and-sunshine-anomaly-graphs

The winter was milder than average overall, but very variable with cold wintry spells in early December and mid January. December and January saw turbulent, unsettled weather with storms in both months. High pressure became established in mid January bringing sunny dry conditions and a marked drop in temperature. The end of the month saw a return to stormy conditions and February was mild and wet.

Spring was warm, unsettled, very wet and dull with a succession of low pressure systems bringing wind and rain. Overall, this was provisionally the warmest spring on record for the UK. There was a cold start to March with snow in the south west of England. It was a wet season with heavy rain in southern and central England during March, in northern England and Scotland during April and across the country during May.

Summer was cooler than average with northerly winds bringing cold Arctic air to the UK in June and July. Scattered showers brought some rain in June, but overall accumulations were below average. August began with thunderstorms in southern England and storm Lilian brought heavy rain and strong winds to northern England, Wales and parts of Scotland. 2023/2024 saw the most named storms since the naming system was introduced in 2015. It was the coolest summer since 2015, but summer rainfall was average for the UK as a whole[13].

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[13] https://www.metoffice.gov.uk/research/climate/maps-and-data/summaries/index

APPENDIX 4

APP 4.1 ENGLISH COUNTIES WITHIN BSFP AND DEFRA REGIONS

List of English counties indicating the BSFP and Government Office Regions (GOR) within which they fall.

	County	BSFP REGION	GOR
1	Bedfordshire	Anglia	Eastern
2	Berkshire	South-East	South East
3	Buckinghamshire	South-East	South East
4	Cleveland	North-East	North East
5	Cambridgeshire	Anglia	Eastern
6	Cheshire	North Mercia	North West
7	Cornwall	South-West	South West
8	Cumbria	Northern	North West
9	Derbyshire	East Midlands	East Midlands
10	Devon	South-West	South West
11	Dorset	Wessex	South West
12	Durham	North-East	North East
13	Essex	Anglia	Eastern
14	Gloucestershire	South Mercia	South West
15	Hampshire	South-East	South East
16	Isle of Wight	South-East	South East
17	Hereford & Worcester	South Mercia	West Midlands
18	Hertfordshire	Anglia	Eastern
20	Kent	South-East	South East
21	Lancashire	Northern	North West
22	Leicestershire	East Midlands	East Midlands
24	Lincolnshire	Eastern	East Midlands
25	Merseyside	North Mercia	North West
26/27	Greater London (E)	South-East	London
28	Norfolk	Anglia	Eastern
29	Northamptonshire	East Midlands	East Midlands
30	Tyne and Wear	Northern	North East
31	Northumberland	Northern	North East
32	Nottinghamshire	East Midlands	East Midlands
33	Oxfordshire	South-East	South East
34	N Somerset and S Gloucestershire	Wessex	South West
35	Shropshire	North Mercia	West Midlands
36	Somerset	Wessex	South West
37	Staffordshire	North Mercia	West Midlands
38	Suffolk	Anglia	Eastern
39	Isles of Scilly		
40	Surrey	South-East	South East
41	East Sussex	South-East	South East
42	West Sussex	South-East	South East
43	Warwickshire	South Mercia	West Midlands
44	Greater Manchester	North Mercia	North West
45	Wiltshire	Wessex	South West
46	West Midlands	South Mercia	West Midlands
47	South Yorkshire	North-East	Yorkshire and the Humber
48	North Yorkshire (Northallerton)	North-East	Yorkshire and the Humber
49	West Yorkshire	North-East	Yorkshire and the Humber
50	North Yorkshire (Beverley)	North-East	Yorkshire and the Humber
51	East Riding of Yorks. and North Lincs	North-East	Yorkshire and the Humber

APPENDIX 5

APP 5.1 UK FARM CLASSIFICATION SYSTEM

UK farm classification system (Revised 2004): composition of robust, main and other types by constituent EC type.

Robust types		Main types		Constituent EC types[1]
1	Cereals	1	Cereals	[1312]
2	General Cropping	2	General Cropping	[1412], 142, 143, [1443], 602, 603, 604, [6052]
3	Horticulture	3	Specialist fruit	3211
		4	Specialist glass	2012, 2022, 2032
		5	Specialist Hardy Nursery Stock	[3401]
		6	Other horticulture	2011, 2013, 2021, 2023, 2031,2033, 2034, 311, 312, 313, 314, [3402], 601, 6061, 6062
4	Specialist Pigs	7	Specialist pigs	5011, 5012, 5013
5	Specialist Poultry	8	Specialist poultry	5021, 5022, 5023
6	Dairy	9	Dairy (LFA)	411, 412 (LFA)
		10	Dairy (lowland)	411, 412 (non-LFA)
7	LFA Grazing Livestock	11	Specialist sheep (SDA)	441 (SDA)
		12	Specialist beef (SDA)	421,422 (SDA)
		13	Mixed Grazing Livestock (SDA)	431, 432, 442, 443, [4443], [4444] (SDA)
		14	Various Grazing Livestock (DA)	421, 422, 431, 432, 441, 442, 443, [4443], [4444] (DA)
8	Lowland Grazing Livestock[2]	15	Various Grazing Livestock (lowland)	421, 422, 431, 432, 441, 442, 443, [4443], [4444] (non-LFA)
9	Mixed	16	Cropping and dairy	811, 812
		17	Cropping, cattle and sheep	[8132], [8142]
		18	Cropping, pigs and poultry	821
		19	Cropping and mixed livestock	822, 8232
		20	Mixed livestock	5031, 5032, 711, [7122], 721, 722, 723
10	Other[3]	21	Specialist set-aside	[1311]
		22	Specialist grass and forage	[1411], [1444], [4442], [6051], [7121], [8131], [8141]
		23	Specialist horses	[4441]
		24	Non-classifiable holdings: fallow	[91]
		25	Non-classifiable holdings: other	[92]

[1] 2004 EC Typology described in Commission Decision 85/377/EEC as amended by Commission Decisions 94/376/EC, 96/393/EC and 99/725/EC with minor modifications to adapt it to United Kingdom conditions. These minor modifications are indicated by the EC farm type number being shown in square brackets. Definitions for these modified EC farm types are available from the Defra contact shown at the front of this publication. EC types 132, 133, 1441, 1442, 3212, 3213, 322, 323, 330, and 8231 have not been allocated in the classification, since these types of production do not occur in the United Kingdom at a significant level.

[2] Definitions of LFA (Less Favoured Area), lowland, SDA (Severely Disadvantaged Area), and DA (Disadvantaged Area) farms are available on request from the Defra contact shown at the front of this publication.

[3] Not included in the British Survey of Fertiliser Practice.

APPENDIX 6

APP 6.1 River Basin Districts, Great Britain.

See related data in Appendix 2, Table EW4.1c.