aic agricultural industries confederation

Fertiliser Statistics 2005 Report

We live in a world where too often the old axiom of "never let the facts spoil a good story" seems to be ever more the rule.

That is why these annual fertiliser statistics are so important to our industries as manufacturers and distributors. They represent hard facts; reliable data gathered year after year since the 1950s to show what really is happening in our sector and on the land of our farmer customers.

As agriculture and the foodchain faces increasing pressure to not only protect the environment, but also to prove it is doing so, the annual Survey of Fertiliser Practice is a vital source of hard facts. Their importance is highlighted by the recognition and acceptability which they have to both government and industry alike.

Each year there are some shifts in usage, but taking the long view we believe this unique set of data shows that application rates per hectare of crop have remained remarkably consistent and in the main very much in line with the guidelines given in RB209 and from industry.

David Heather
Head of AIC Fertiliser Sector

Andy Yates
Chairman, AIC Fertiliser Statistics Committee

Table 1: Overall rates of fertiliser usage, Great Britain

			kg/ha				
			1999/00	2000/01	2001/02	2002/03	2003/04
Arable	Total Nitrogen		**151**	**142**	**152**	**148**	**152**
	Compound N	**N**	20	25	23	22	20
	Straight N		131	117	129	126	132
	Total Phosphate	**P_2O_5**	**46**	**43**	**44**	**41**	**41**
	Total Potash	**K_2O**	**55**	**53**	**57**	**57**	**55**
Grass	Total Nitrogen		**100**	**94**	**92**	**83**	**77**
	Compound N	**N**	56	55	57	53	50
	Straight N		44	39	35	30	27
	Total Phosphate	**P_2O_5**	**20**	**18**	**17**	**18**	**17**
	Total Potash	**K_2O**	**26**	**24**	**23**	**22**	**22**
Arable & Grass	Total Nitrogen		**124**	**114**	**118**	**111**	**110**
	Compound N	**N**	38	41	42	40	37
	Straight N		86	73	76	71	73
	Total Phosphate	**P_2O_5**	**31**	**29**	**30**	**28**	**28**
	Total Potash	**K_2O**	**40**	**37**	**40**	**37**	**37**

Sources: British Survey of Fertiliser Practice and Defra statistics

Table 2: Areas of main crops and managed grass in the UK ('000 ha)

The table shows the areas of the major crops including grassland in the UK, and the total area on which fertilisers and manures could be required. The relative areas show that grass occupies about 60% of this area, and cereals about 27%.

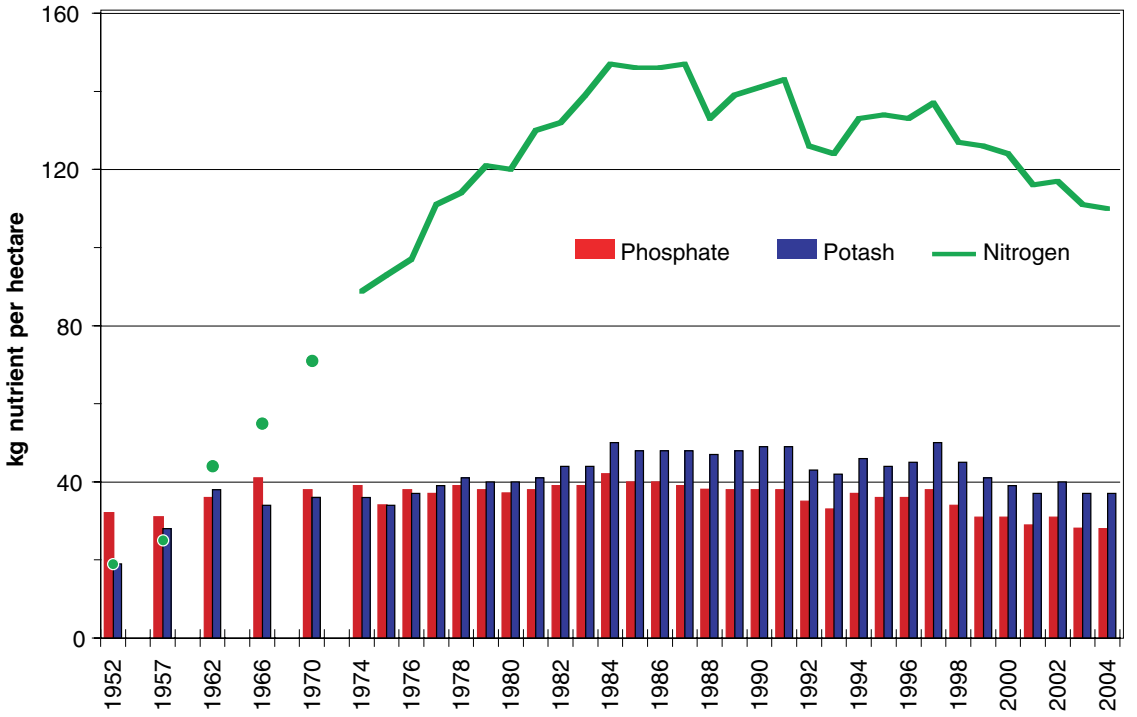
Growing season:	1999/00 5-yrs ago	2000/01	2001/02	2002/03	**2003/04**	1 year % change 2003-04	5 year % change 2000-04	crop area as % of total 2003/04
Wheat	2086	1635	1996	1837	**1990**	+ 8.3	- 4.6	17.3
Barley	1128	1245	1101	1078	**1010**	- 6.3	- 10.5	8.8
Total cereals	3348	3014	3245	3060	**3133**	+ 2.4	- 6.4	27.2
Potatoes	166	165	158	145	**149**	+ 2.8	- 10.2	1.3
Sugar beet	173	177	169	162	**154**	- 4.9	- 11.0	1.3
Oilseeds	404	435	369	492	**528**	+ 7.3	+ 30.7	4.6
Peas/beans (dry)	208	276	249	235	**242**	+ 3.0	+ 16.3	2.1
Other crops (excl. grass)	367	388	382	384	**380**	- 1.0	+ 3.5	3.3
Industrial crops on set-aside	72	48	76	84	**60**	- 28.6	- 16.7	0.5
Grass, < 5 yrs old	1226	1205	1243	1201	**1246**	+ 3.7	+ 1.6	10.8
Grass, 5 yrs old+	5364	5584	5519	5683	**5620**	- 1.1	+ 4.8	48.8
Total UK area*	**11328**	**11292**	**11410**	**11446**	**11512**	**+ 0.6**	**+ 1.6**	**100.0**
Set-aside (total)	**567**	**800**	**612**	**681**	**560**	- 17.3	- 1.2	

** Area of potentially fertilised arable and managed grass, including industrial crops on set-aside.*

Source: Defra statistics

Figure 1: Changes in overall fertiliser nutrient application rates, England & Wales

The figure illustrates changes in the rates of the major fertiliser nutrients applied to crops in England & Wales, shown as the overall rate of application to all crops and grass in kg/ha of nitrogen, phosphate and potash. The recent decline, particulary noticeable in the application rate of N, is mainly due to reduced rates being used on grassland.



Source: British Survey of Fertiliser Practice

Table 3: UK consumption of fertiliser nutrients ('000 tonnes)

Growing season:	**1993/94** 10 yrs ago	**1999/00**	**2000/01**	**2001/02**	**2002/03**	**2003/04**	1 year % change **2003-04**	10 year % change **1994-04**
Nitrogen (N)	1248	1268	1162	1197	**1131**	**1130**	- 0.1	- 9.5
Phosphate (P_2O_5)	391	317	279	283	**282**	**278**	- 1.4	- 28.9
Potash (K_2O)	458	409	369	391	**375**	**376**	+ 0.3	- 17.9
Total Plant Food	**2097**	**1994**	**1810**	**1871**	**1788**	**1784**	**- 0.2**	**- 14.9**

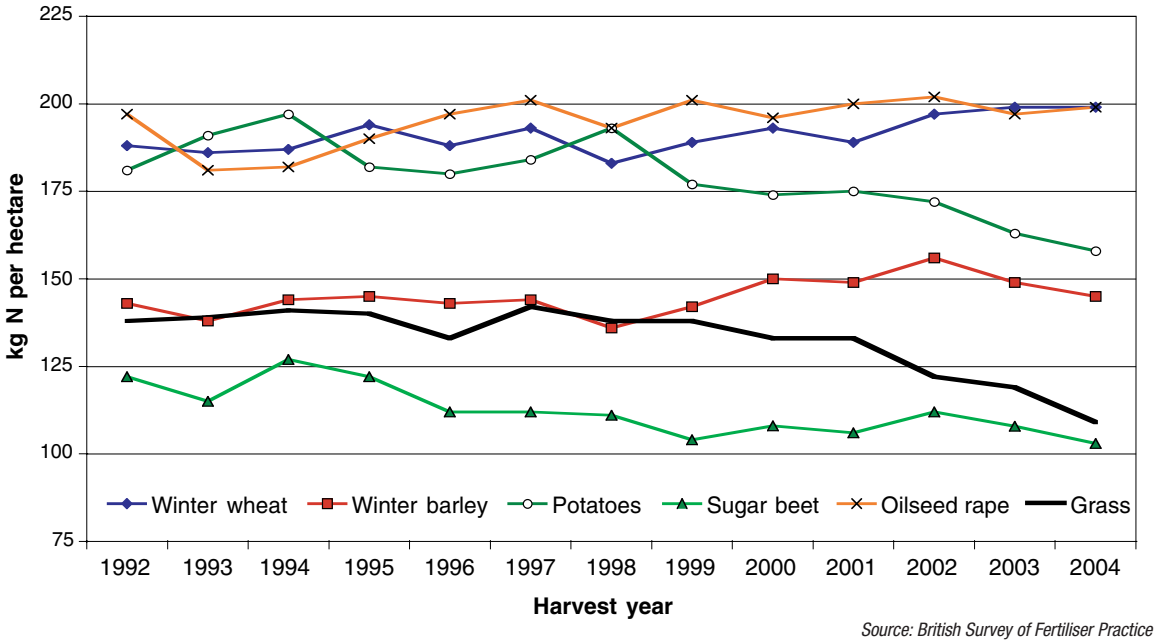
Source: AIC Statistics

This table shows the total quantities of nitrogen, phosphate and potash used as fertiliser in the UK in recent years. These figures vary according to the total area of crops as well as to the application rates, and are significantly affected by changes in the area required to be set-aside.

It can be seen that the total plant food used in 2003/04 was 15% less than that used 10 years previously, despite the set-aside area being 23% smaller (560,000 ha in 2003/04 compared with 720,000 ha in 1993/04).

Figure 2: Application rates of nitrogen fertiliser when used on some major crops in Great Britain

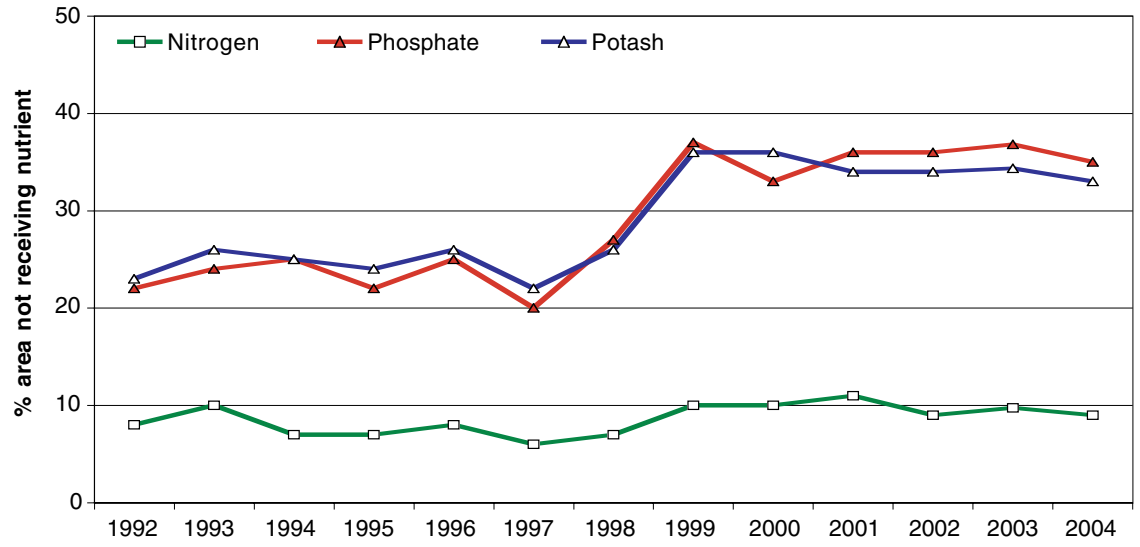
The application rates of nitrogen fertiliser when used can be seen to have been increasing slowly on winter wheat and oilseed rape in Great Britain, with rates on sugar beet and potatoes decreasing somewhat over the period, and the rate on grass showing significant decline. These rates are those applied on average, on fields where nitrogen fertiliser is applied.



Source: British Survey of Fertiliser Practice

Figure 3: Percentage of arable area in Great Britain not receiving mineral fertiliser

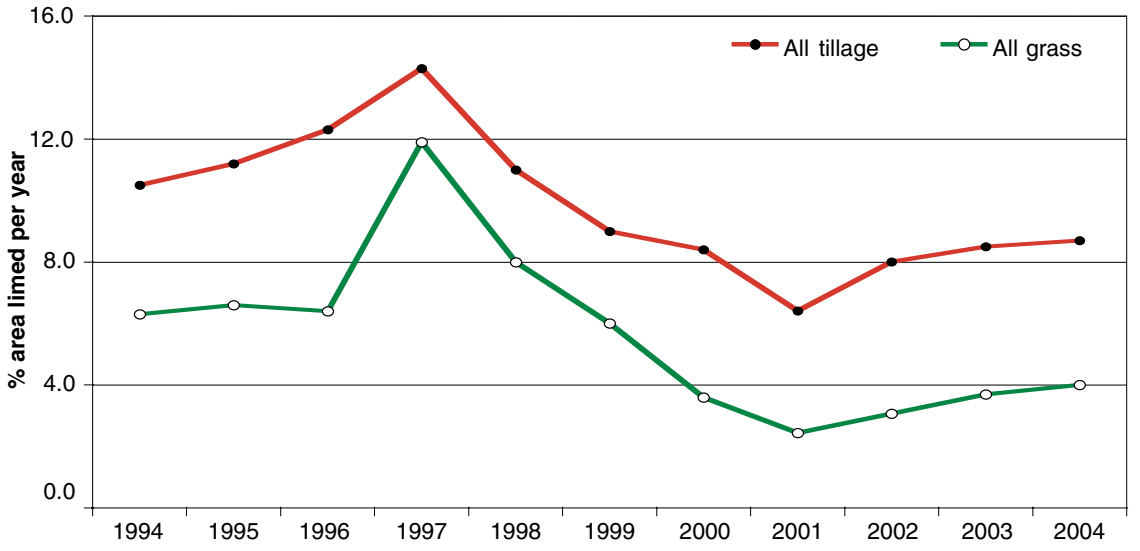
An illustration of the signicant increase in 1999 in the cropped arable area in Britain (mainly combinable crops) which did not receive phosphate or potash, compared with lesser variations in the area not receiving nitrogen. If manures are not available (only 15% of winter wheat land received manures in 2004) then this non-application of P and K reduces soil fertility.



Source: British Survey of Fertiliser Practice

Figure 4: Annual percentages of arable and grassland areas receiving lime in Great Britain

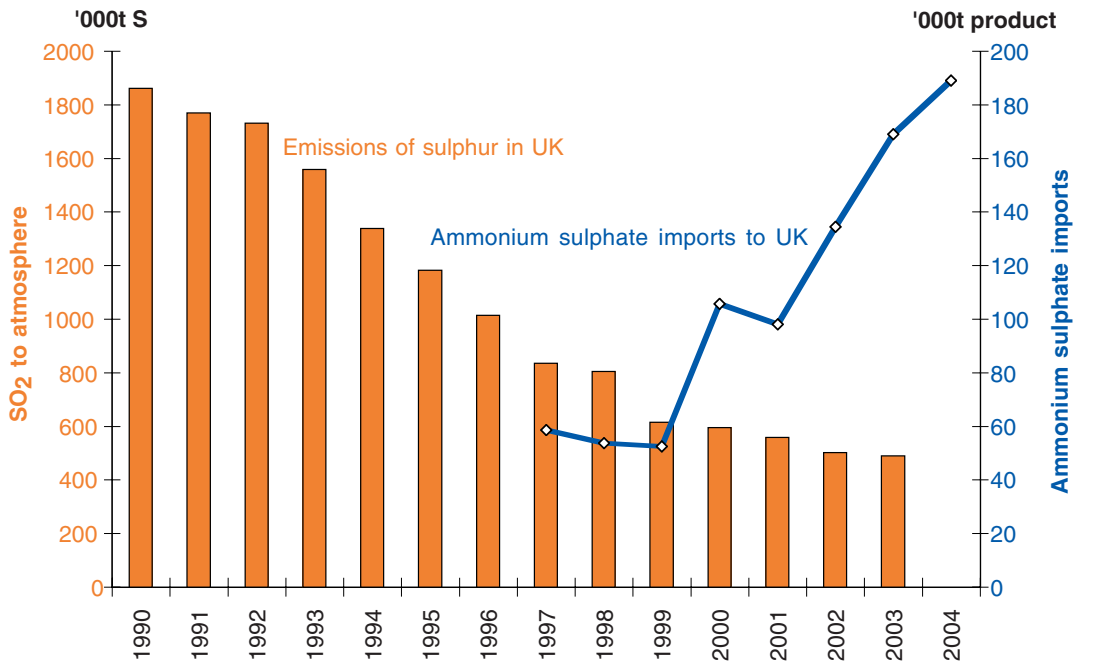
The percentages of the tillage and grass areas in Great Britain which received a dressing of lime (on average 5 t/ha) in recent years; these figures are also indicative for England and Wales. However in Scotland, while only 3.6% of the managed grassland area received lime in 2004, 12% of the tillage area, dominated by the barley crop, was limed.



Source: British Survey of Fertiliser Practice

Figure 5: Reduction in sulphur emissions and increase in sulphate imports

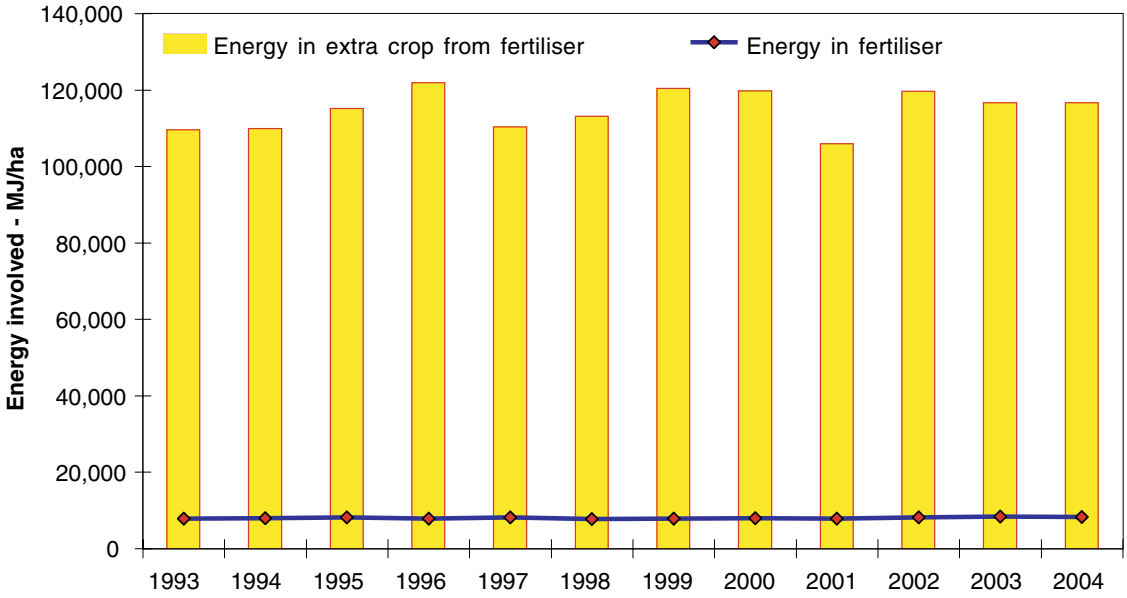
The figure shows the decline in emissions of sulphur to the atmosphere in the UK beween 1990 and 2003, with an associated increase in the imports of ammonium sulphate. Emissions have now fallen by about 85% since 1970 with 75% of current emissions being from public power generation. Sulphur is an essential constituent of protein and the reduction in emissions has led to deficiencies in crops, which now require the application of sulphur-containing fertilisers such as ammonium sulphate.



Sources: BTS Ltd and Defra / AEAT Statistics

Figure 6: Positive energy balances from the use of fertiliser

The figure illustrates the effect of fertilisers in increasing the amount of solar energy (and therefore carbon) fixed by the average UK wheat crop. In this case it has been assumed that the yield of wheat was doubled by the use of fertilisers and the chart indicates only the extra energy contained in the crop as a result of the fertilisation. The energy in the fertiliser includes all used in production, packaging and transport.



This summary uses Government data on land use, AIC statistics and The British Survey of Fertiliser Practice (BSFP).
The British Survey of Fertiliser Practice, funded jointly by Defra and the Scottish Executive, Environment and Rural Affairs Department, is an independent annual report of fertiliser application rates providing data for farmers and environmentalists, regulators and the industry. It also provides information on lime use and organic manure application. The Survey shows generally good fertiliser practice in Britain with mineral fertilisers being used closely in line with accepted recommendations.

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