Table 1 Areas of main crops and managed grass in the UK ('000 ha)

Growing season:	1998/99 5-yrs ago	1999/00	2000/01	2001/02	**2002/03**	1 year % change 2002-03	5 year % change 1999-03	crop area as % of total 2002/03
Wheat	1847	2086	1635	1996	**1837**	- 8.0	- 0.5	16.0
Barley	1179	1128	1245	1101	**1078**	- 2.1	- 8.6	9.4
Total cereals	3141	3348	3014	3245	**3060**	- 5.7	- 2.6	26.7
Potatoes	178	166	165	158	**145**	- 8.2	- 18.5	1.3
Sugar beet	183	173	177	169	**162**	- 4.1	- 11.5	1.4
Oilseeds	627	404	435	369	**492**	+ 33.3	- 21.5	4.3
Peas/beans (dry)	202	208	276	249	**235**	- 5.6	+ 16.3	2.1
Other crops (excl. grass)	377	367	388	382	**384**	+ 0.5	+ 1.9	3.4
Industrial crops on setaside	120	72	48	76	**84**	+ 10.5	- 30.0	0.7
Grass, < 5 yrs old	1226	1226	1205	1243	**1201**	- 3.4	- 2.0	10.5
Grass, 5 yrs old+	5449	5364	5584	5519	**5683**	+ 3.0	+ 4.3	49.7
Total UK area*	**11503**	**11328**	**11292**	**11410**	**11446**	**+ 0.3**	**- 0.5**	**100.0**
Setaside (total)	**572**	**567**	**800**	**612**	**681**	+ 11.3	+ 19.1	

* Area of potentially fertilised arable and managed grass, including industrial crops on setaside.

Source: DEFRA Statistics

Table 1: 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%.

<u>Figure 1:</u> 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, particularly in the application rate of N, is mainly due to reduced rates being used on grassland.

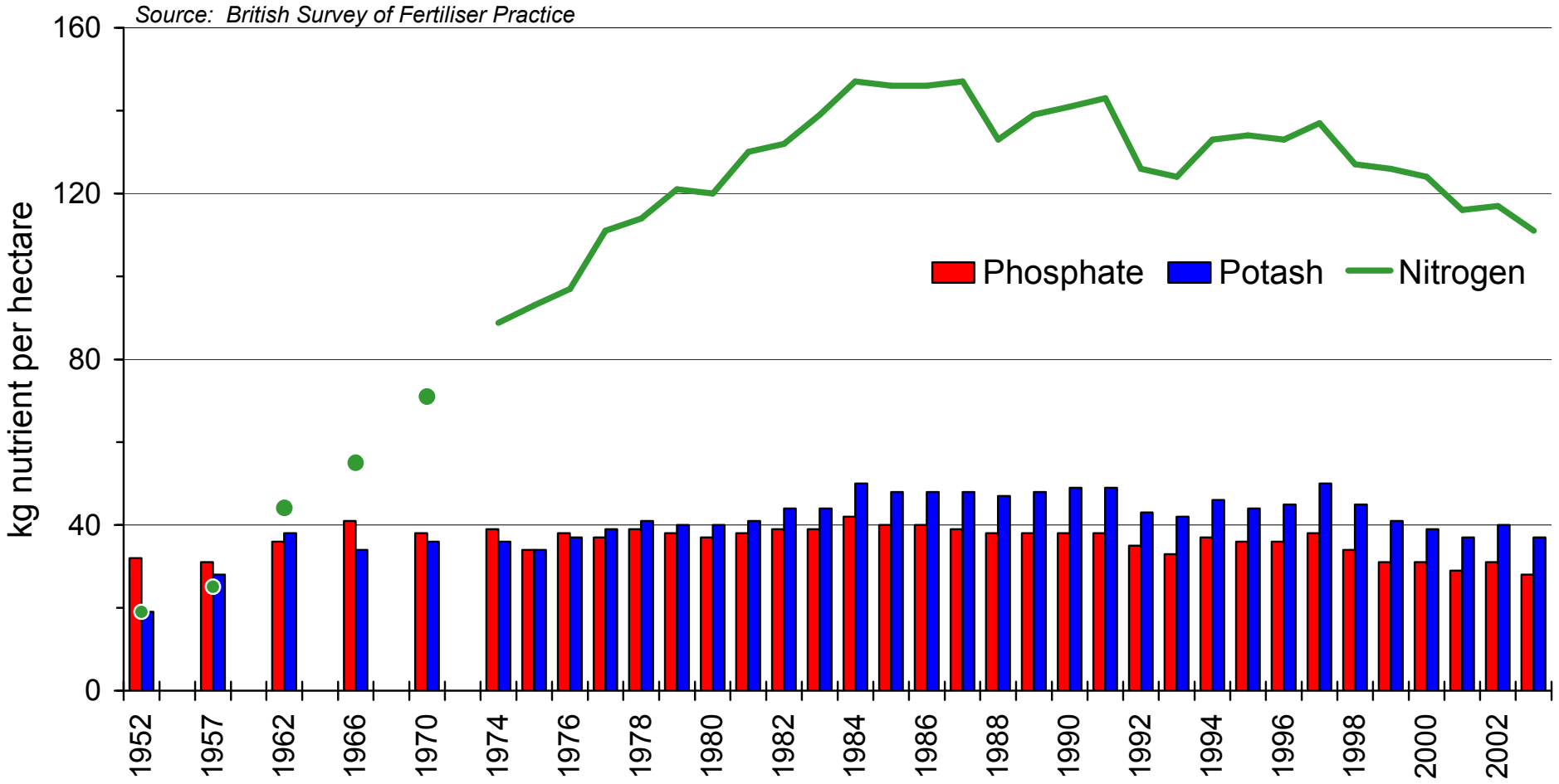
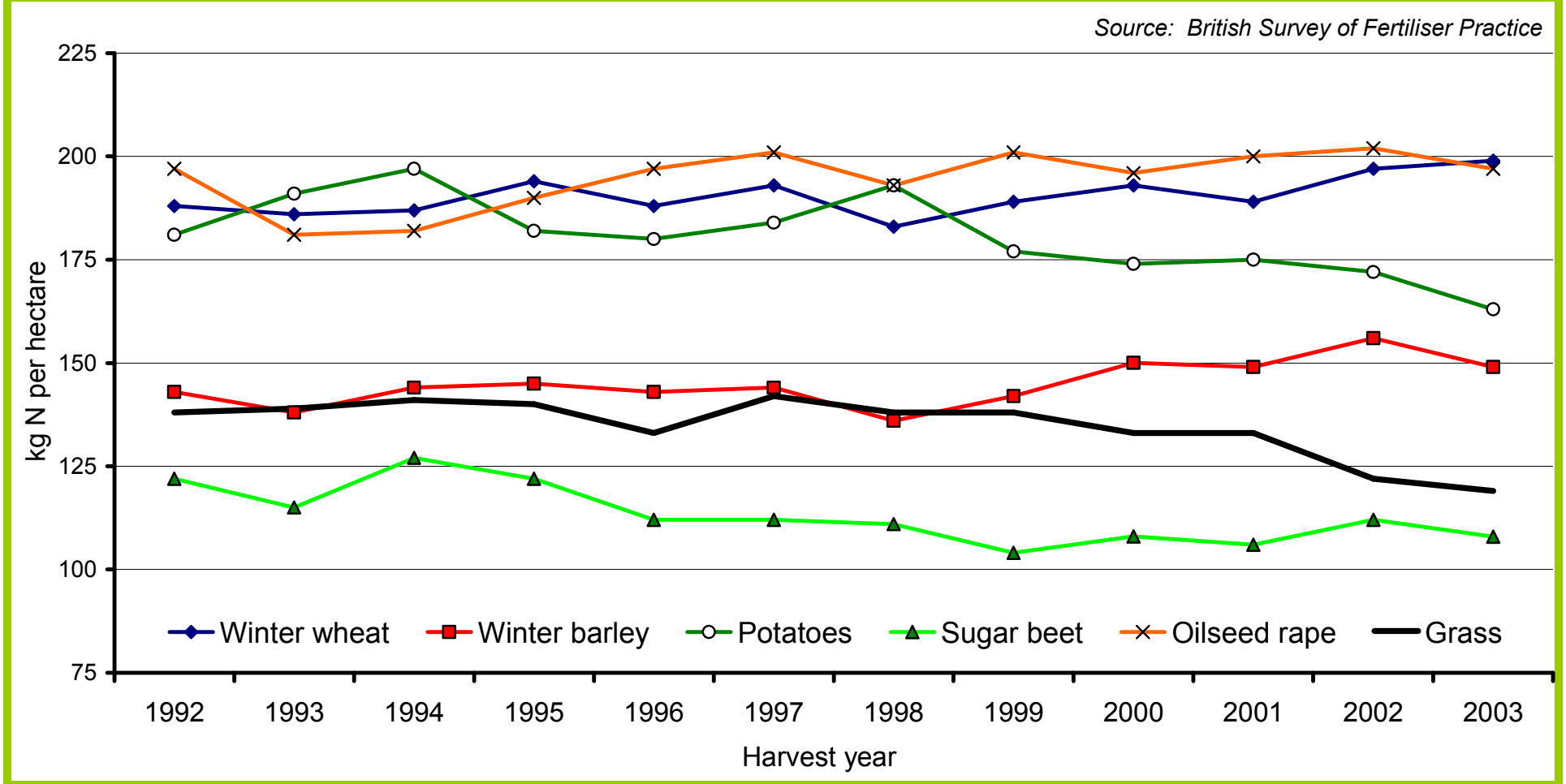


Table 2 Overall rates of fertiliser usage, Great Britain

			kg/ha				
			1998/99	1999/00	2000/01	2001/02	2002/03
Arable	Total Nitrogen		**143**	**151**	**142**	**152**	**148**
	Compound N	N	21	20	25	23	22
	Straight N		122	131	117	129	126
	Total Phosphate	P_2O_5	**48**	**46**	**43**	**44**	**41**
	Total Potash	K_2O	**59**	**55**	**53**	**57**	**57**
Grass	Total Nitrogen		**115**	**100**	**94**	**92**	**83**
	Compound N	N	60	56	55	57	53
	Straight N		55	44	39	35	30
	Total Phosphate	P_2O_5	**22**	**20**	**18**	**17**	**18**
	Total Potash	K_2O	**29**	**26**	**24**	**23**	**22**
Arable & Grass	Total Nitrogen		**127**	**124**	**114**	**118**	**111**
	Compound N	N	42	38	41	42	40
	Straight N		85	86	73	76	71
	Total Phosphate	P_2O_5	**33**	**31**	**29**	**30**	**28**
	Total Potash	K_2O	**42**	**40**	**37**	**40**	**37**

Sources: British Survey of Fertiliser Practice and DEFRA Statistics

<u>Figure 2:</u> The application rates of nitrogen fertiliser when used can be seen to have been increasing slowly on the main combinable crops 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.



<u>Figure 3:</u> An illustration of the significant 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 18% of arable land received manures in 2003) then this non-application of P and K reduces soil fertility.

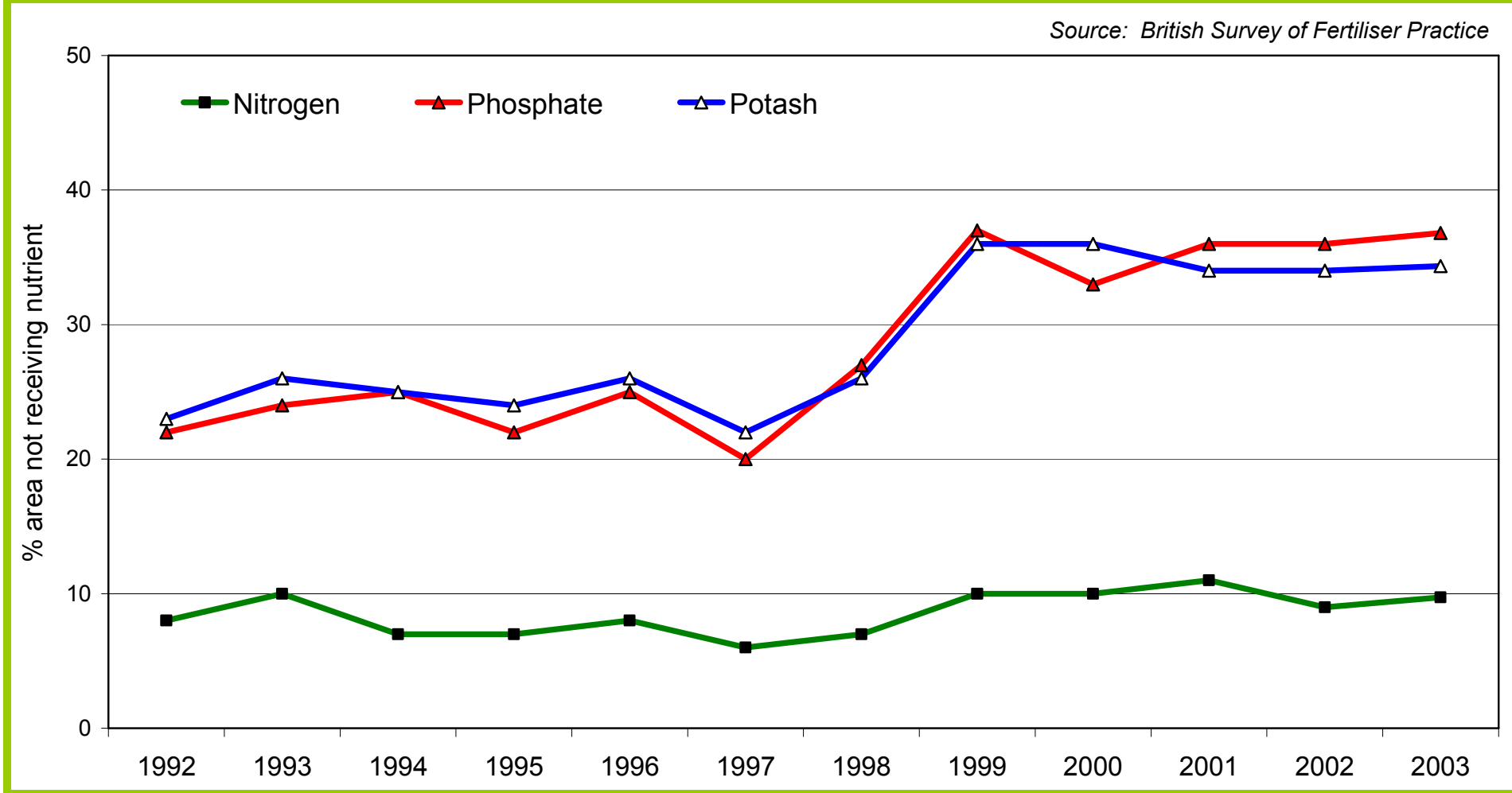
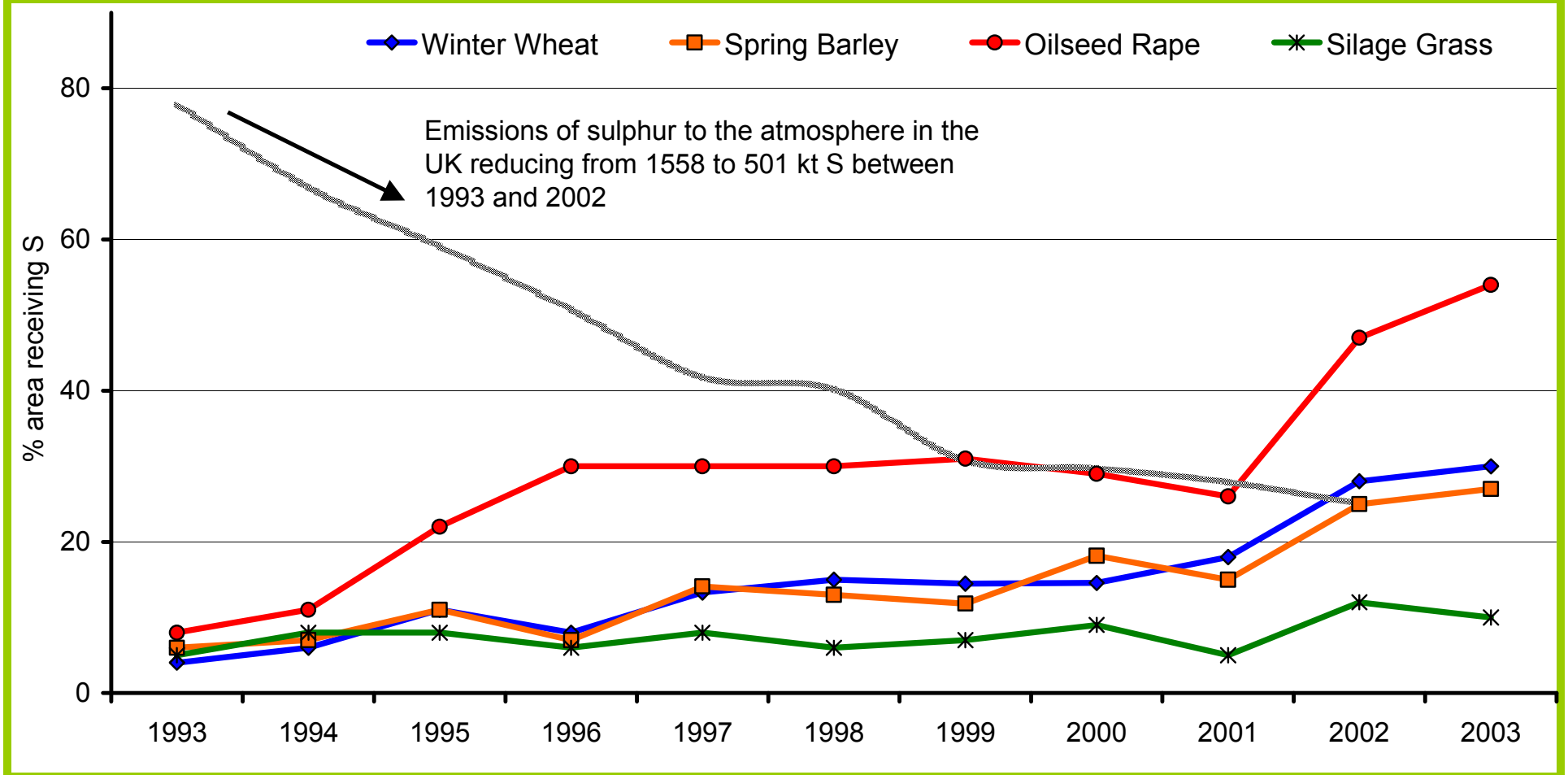
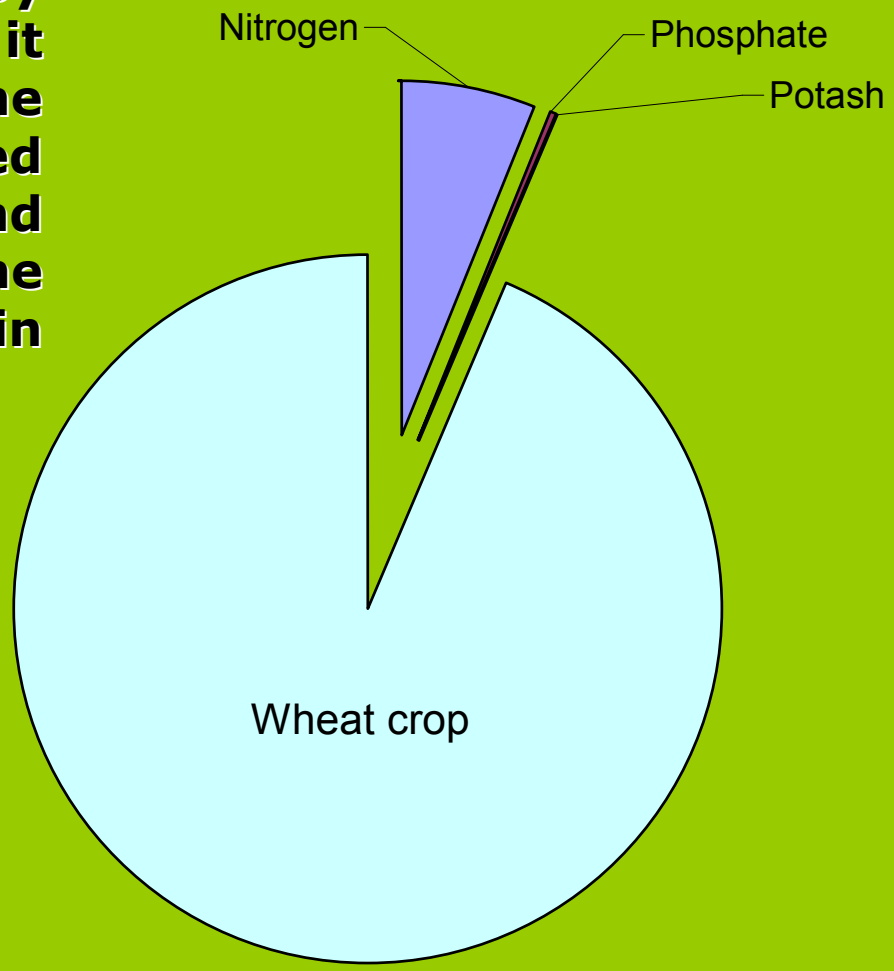


Figure 4: The decline in emissions of sulphur to the atmosphere in the UK from 1,558 kt to 501 kt S between 1993 and 2002 and the increase during this period in the areas of some crops receiving sulphur-containing fertilisers. Sulphur is an essential constituent of protein and the reduction in emissions has led to deficiencies in crops, which now require the application of sulphate fertilisers.



<u>Figure 5:</u> The effect of fertilisers in increasing the amount of solar energy (and therefore carbon) fixed by crop plants. In this case it has been assumed that the yield of wheat was doubled by the use of fertilisers and the chart shows only the extra energy contained in the crop as a result.



Energy required to produce the fertilisers used and the total energy in the resulting increased output of the wheat crop

<u>Figure 6:</u> Analysis of pack type shows the decline in the use of the 50 kg bag for fertilisers in the UK and the growth in the use of intermediate bulk containers (IBCs, 'big bags'). By 2002 the total energy content of this packaging was only 18% of what it was in 1987.

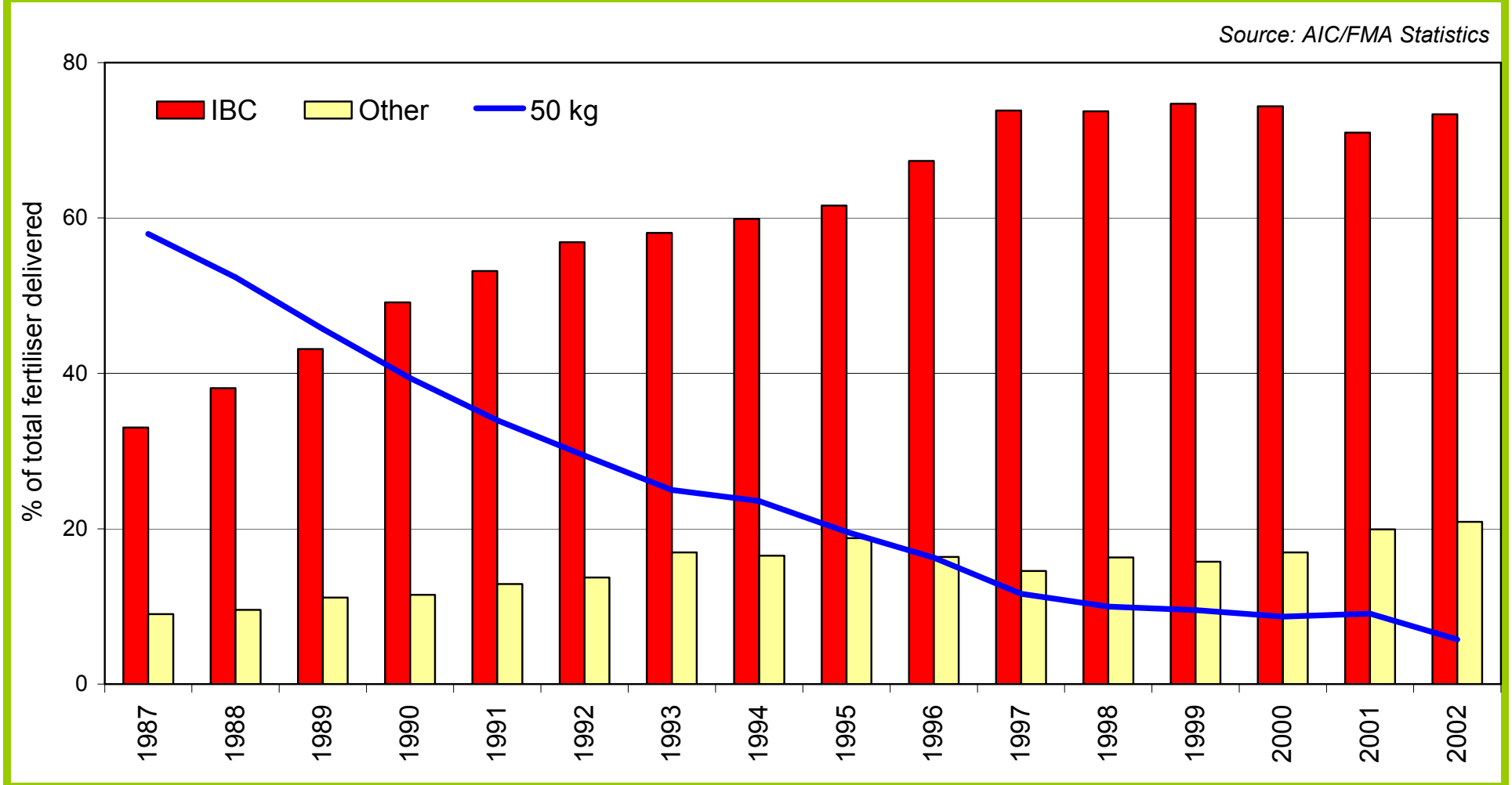


Table 3 UK consumption of fertiliser nutrients ('000 tonnes)

Growing season:	1992/93 10 yrs ago	1998/99	1999/00	2000/01	2001/02	2002/03	1 year % change 2002-03	10 year % change 1993-03
Nitrogen (N)	1219	1284	1268	1162	1197	**1131**	- 5.5	- 7.2
Phosphate (P_2O_5)	360	347	317	279	283	**282**	- 0.4	- 21.7
Potash (K_2O)	430	451	409	369	391	**375**	- 4.1	- 12.8
Total Plant Food	**2009**	**2082**	**1994**	**1810**	**1871**	**1788**	**- 4.4**	**- 11.0**

Source: AIC Statistics

Table 3: 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 annual changes in the area required to be set-aside. However it can be seen that the total plant food used in 2002/03 was 11% less than that used in the first year following the introduction of set-aside, with both seasons having similar areas of set-aside (~680 kha).