aic agricultural industries confederation

Fertiliser Statistics

2008 Report

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Duis aliquam scelerisque enim. Aliquam tincidunt lacinia dolor. Praesent ut lorem vel felis ullamcorper interdum. Ut ipsum. Proin augue. Pellentesque in nulla. Fusce a nisl. Sed at nibh. Aenean tristique, odio eu tempus vehicula, diam nisl auctor purus, nec ultrices pede massa id mi. Cras varius. Nunc tincidunt, tortor in scelerisque consequat, ipsum urna.

Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Morbi dapibus nunc. Integer feugiat, mi at fermentum vehicula, libero tellus bibendum justo, nec pharetra elit nisi sed ante. Mauris eleifend, ipsum quis facilisis semper, ligula tortor ultricies augue, tincidunt tristique elit erat sit amet risus. Duis tristique nisi ac neque. Phasellus et pede. Duis auctor, metus sed pharetra bibendum, mi mi imperdiet nibh, ullamcorper iaculis sem risus nec pede. Etiam ultricies. Cras eu nibh. Donec imperdiet porttitor justo. Aenean tortor est, ultricies ac, tempus sit amet, porttitor ut, tellus. Etiam id ipsum faucibu.

Eileen Pullinger
AIC Fertiliser Sector Head

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

Growing season:	2002/03 5-yrs ago	2003/04	2004/05	2005/06	2006/07	1 year % change 2006-07	5 year % change 2003-07	crop area as % of total 2006/07
Wheat	1837	1990	1867	1833	**1816**	- 0.9	- 1.1	15.7
Barley	1078	1010	938	881	**898**	+ 1.9	- 16.7	7.8
Total cereals	3056	3130	2920	2861	**2871**	+ 0.3	- 6.1	24.8
Potatoes	145	149	137	140	**140**	+ 0.0	- 3.4	1.2
Sugar beet	162	154	148	130	**125**	- 3.8	- 22.8	1.1
Oilseeds	492	528	564	532	**613**	+ 15.4	+ 24.6	5.3
Peas/beans (dry)	235	242	239	231	**161**	- 30.3	- 31.5	1.4
Other crops (excl. grass)	384	387	429	444	**440**	- 0.9	+ 14.6	3.8
Industrial crops on set-aside	84	60	77	79	**82**	+ 3.8	- 2.4	0.7
Grass, < 5 yrs old	1201	1246	1193	1137	**1176**	+ 3.4	- 2.1	10.2
Grass, 5 yrs old+	5683	5620	5711	5967	**5965**	+ 0.0	+ 5.0	51.5
Total UK area*	**11442**	**11516**	**11418**	**11520**	**11573**	**+ 0.4**	**+ 1.1**	**100.0**
Set-aside (total) + fallow	718	588	699	663	**605**	- 8.7	- 15.7	

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

Source: Defra Statistics

Some charts in this report illustrate data for England & Wales because these are the longest-running data sets in the UK. Amalgamated GB data are only available in detail since 1992.

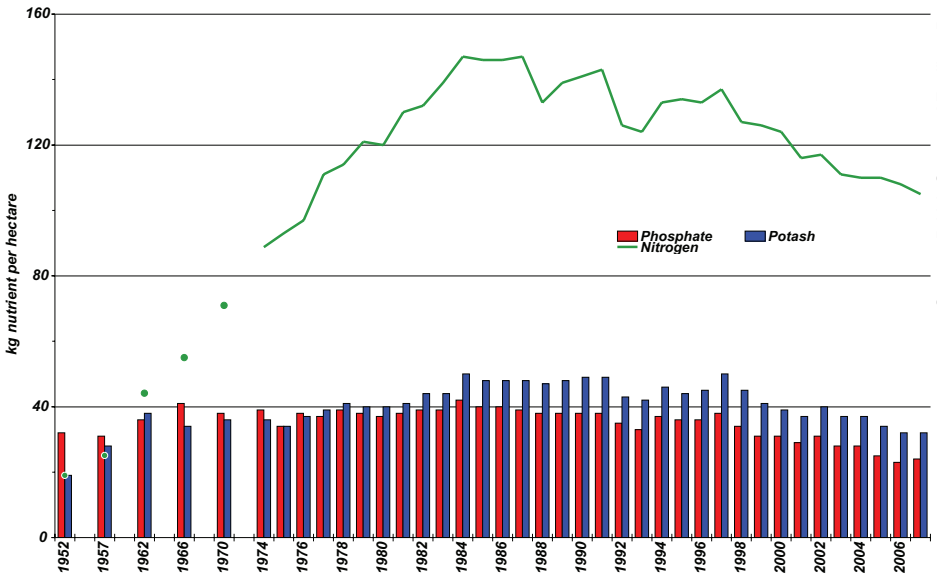
Table 2: Overall rates of fertiliser usage, Great Britain

			kg/ha				
			2002/03	2003/04	2004/05	2005/06	2006/07
Arable	Total Nitrogen		148	152	150	147	148
	Compound N	N	22	20	20	18	15
	Straight N		126	132	130	129	133
	Total Phosphate	P_2O_5	41	41	40	35	34
	Total Potash	K_2O	57	55	54	49	47
Grass	Total Nitrogen		83	77	74	72	65
	Compound N	N	53	50	47	44	39
	Straight N		30	27	27	28	26
	Total Phosphate	P_2O_5	18	17	16	16	14
	Total Potash	K_2O	22	22	20	21	18
Arable & Grass	Total Nitrogen		111	110	109	107	105
	Compound N	N	40	37	35	33	28
	Straight N		71	73	74	74	77
	Total Phosphate	P_2O_5	28	28	27	25	24
	Total Potash	K_2O	37	37	35	34	32

Source: British Survey of Fertiliser Practice

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

For a sixth successive year overall application rates in kg/ha for the main fertiliser nutrients have reduced (Figure 1). While virtually all nitrogen reduction occurred on grassland, phosphate and potash rates declined in both the grassland and arable sectors (Table 2). These reductions are reflected in the overall tonnage of nutrients used (Table 3). The latest annual change is less than previously, but 10 year analysis shows combined nutrient use reduced by over a third, with fertiliser phosphate use down by over 45%. The overall nitrogen application rate is now at a level last seen 30 years ago; phosphate and potash use is lower than 50 years ago. Phosphate deliveries are now the same as during WW2.



Source: British Survey of Fertiliser Practice

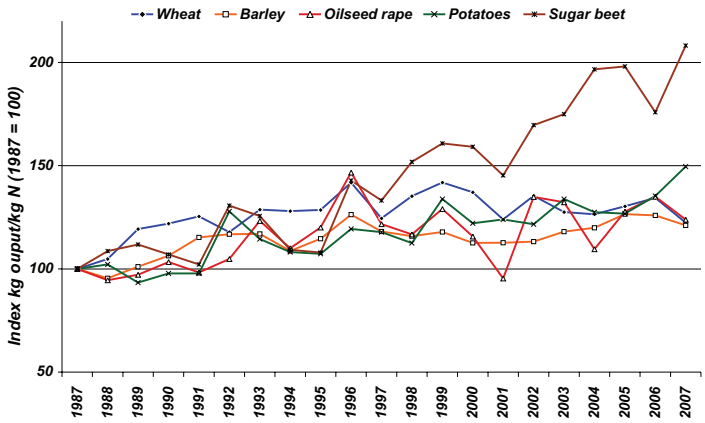
Table 3: UK consumption of fertiliser nutrients ('000 tonnes)

Growing season:	1996/97 10 yrs ago	2002/03	2003/04	2004/05	2005/06	2006/07	1 year % change 2006-07	10 year % change 1997-07
Nitrogen (N)	1440	1131	1130	1061	1003	1008	+ 0.5	- 30.0
Phosphate (P_2O_5)	412	282	278	259	235	224	- 4.7	- 45.6
Potash (K_2O)	501	375	376	352	325	317	- 2.5	- 36.7
Total Plant Food	2353	1788	1784	1672	1563	1549	- 0.9	- 34.2

Source: AIC Statistics

Figure 2: Changes in the apparent efficiency in the use of nitrogen, England & Wales

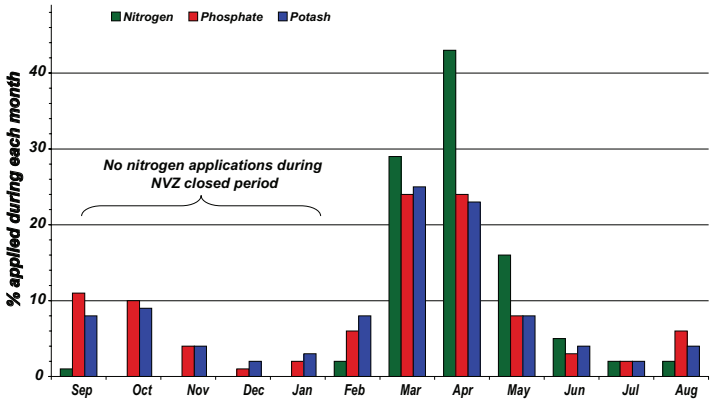
The chart illustrates the apparent relative efficiency with which a number of arable crops are calculated to use applied nitrogen fertiliser. Performance is generally improving, although the effect of the relatively low grain yields from harvest 2007 is apparent. The trend towards specialisation with fewer potato and sugar beet growers appears to be reflected in improving nitrogen use efficiencies.



Source: British Survey of Fertiliser Practice

Figure 3: Timing of application of fertiliser nutrients to land in Great Britain, 2006/07

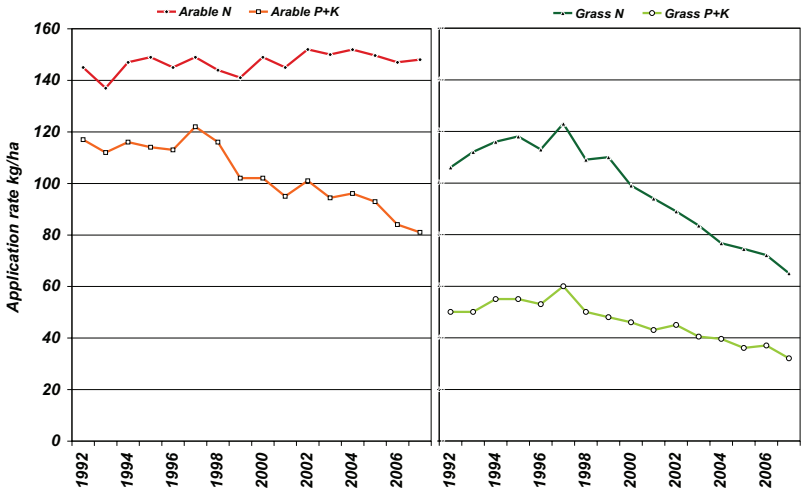
The British Survey of Fertiliser Practice provides information on application timing of nutrients derived from mineral fertilisers. Figure 3 shows that 88% of all fertiliser nitrogen was applied during the March-May spring growth period, with virtually no applications from mid-September to the end of January. During this period fertiliser nitrogen use is restricted in NVZ areas, but it appears that this good practice also applies outside the restricted areas.



Source: British Survey of Fertiliser Practice

Figure 4: Nitrogen application rates on grass and arable areas in Britain compared with P+K rates

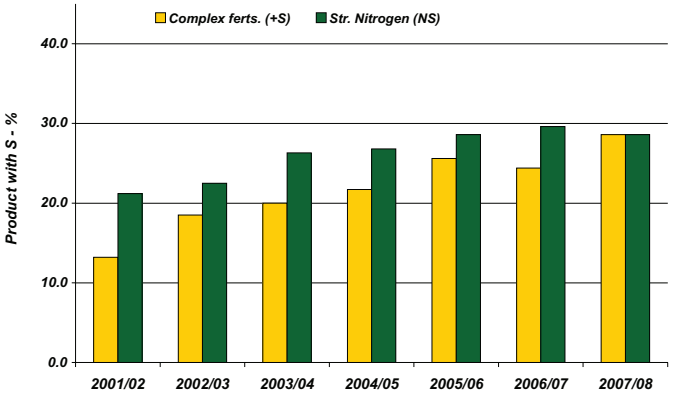
Figure 4 illustrates the anomaly of overall application practices for the three main nutrients differing between arable and grassland. All nutrients are required in balance, thus the apparent divergence in the arable sector continues to be a cause for serious concern. Nitrogen is predominantly applied separately from phosphate and potash to arable crops. In 2006/07 90% of arable nitrogen was applied alone as a straight (or with added sulphur), whereas on grassland most was applied as an NPK product (60%).



Source: British Survey of Fertiliser Practice

Figure 5: Estimate of the proportion of fertiliser products containing sulphur in the UK market

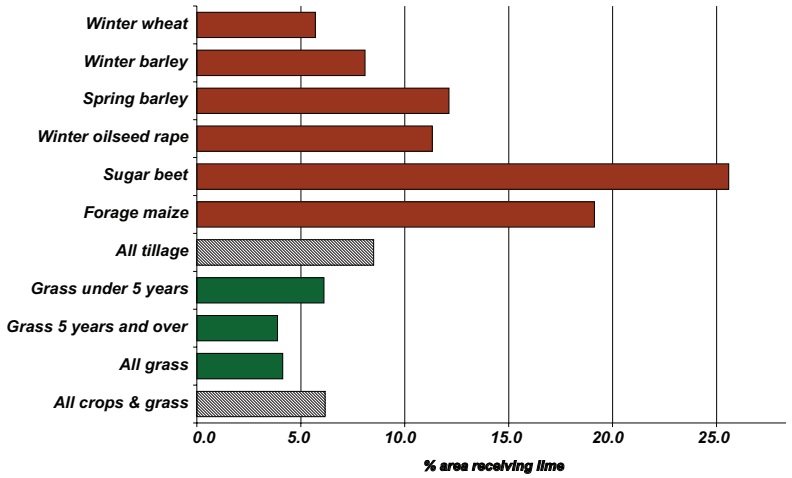
Figure 5 provides an indication of the extent to which sulphur is now included in compound and nitrogen fertilisers. The deposition of atmospheric sulphur on arable land is now so low that very many crops benefit from an application of this essential nutrient. The proportion of fertilisers containing sulphur is expected to continue to increase. An adequate supply of sulphur is essential for efficient nitrogen use by crops.



Source: AIC Statistics

Figure 6: Percentage area of different crops receiving lime – GB average per year over last 10 years

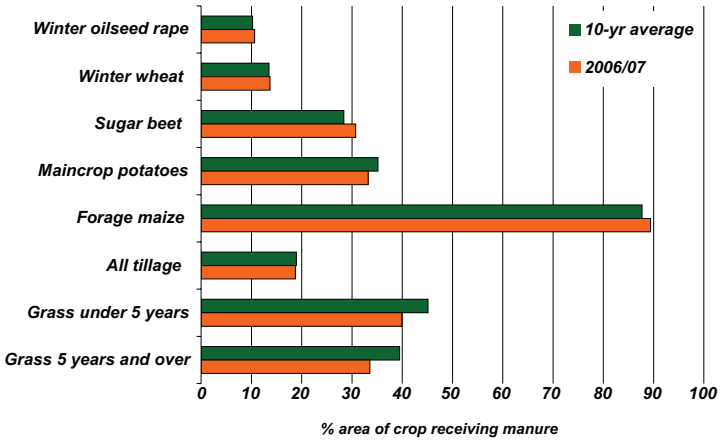
The frequency of lime application has remained fairly constant over recent years, although for both arable and grassland the cover is less than during the 1990s. Figure 6 suggests that sugar beet in the rotation is significant as a stimulant to lime use. It will be interesting to see if the recent reduction in this crop's acreage in northern and western England affects lime usage in those areas. In 2006/07 an average 8.8% of arable land and 3.1% of all grassland was limed in Britain.



Source: British Survey of Fertiliser Practice

Figure 7: Percent areas of major crops in Britain receiving organic manures, 10-yr average and current

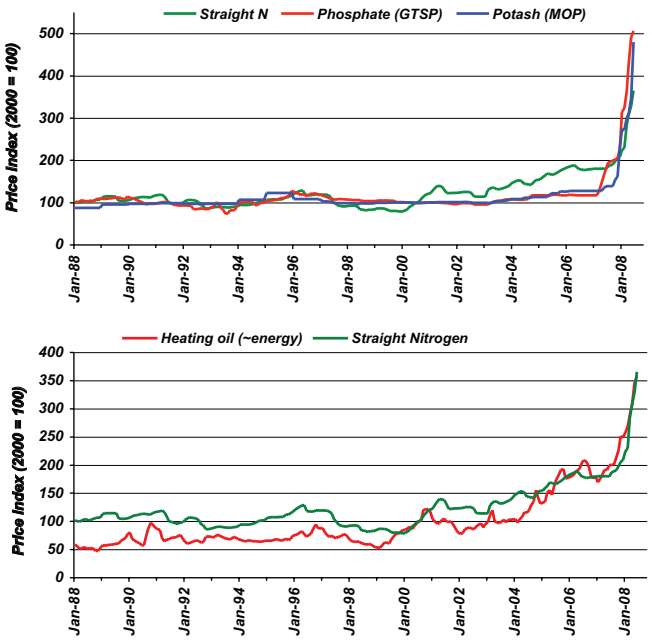
The areas of each of the main crop types receiving a dressing of manure in Britain remains very constant, with little difference in the distribution pattern for 2006/07 compared with the 10-year average. While overall cover on arable crops has changed very little, cover on grassland has been in slow decline over the past decade, probably due to reducing livestock numbers.



Source: British Survey of Fertiliser Practice

Figure 8: Trends in relative prices of fertiliser inputs in the UK

The upper chart in Figure 8 shows that the price of phosphate and potash had effectively not risen for at least 20 years, during which time significant increases in production costs had occurred. As with all globally traded products, if there is a surplus of supply capacity over demand, prices rise little. However, when supply and demand come into balance or when demand exceeds supply, the competition to purchase an essential product can have a major effect on price. This has occurred simultaneously for both phosphate and potash, and globally prices have risen steeply. At the same time the price of nitrogen fertiliser has risen, driven mainly by increased energy price, as illustrated in the lower chart where a close price relationship is clear. The main cost in nitrogen production is 'energy', particularly natural gas, although most natural gas – over 80% – is required to supply hydrogen which combined with nitrogen from the air produces ammonia. The natural gas price is driven by world demand, with changes in the price of nitrogen fertilisers largely reflect world gas price.



Source: Defra statistics

This summary uses Government data on land use, statistics and The British Survey of Fertiliser Practice (BSFP). The Survey, 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 practice in Britain with mineral fertilisers being used closely in line with accepted recommendations.

Agricultural Industries Confederation
Confederation House
East of England Showground
Peterborough PE2 6XE
Tel:01733 385230 Fax:01733 385270
Email:enquiries@agindustries.org.uk
website:www.agindustries.org.uk

265142 Oct 08