

Production and supply situation for organic feed grain in the UK

There is a lack of reliable data on the level of production and demand for most organic products. This has recently been highlighted by the rapid change in the balance between supply and demand for organic feed grain, which has resulted in a severe shortage of grain and rapid and significant price rises following the harvest of 2006. This paper has been prepared following a presentation made to Scottish organic egg producers in March 2007. The assistance of a number of grain traders and processors is acknowledged. We are also grateful to Susanne Padel of IRS, Aberystwyth, for her comments.

Background

Since 2005 there has been a marked increase in organic milk, pork, egg and poultry sales. These sectors have a particularly high cereal requirement but the organic red meat sectors are also expanding rapidly. In a recent report, the Red Meat Industry Forum forecasts an increase of 70% in organic beef sales between 2005 and 2010. The change in livestock numbers between 2004 and 2006 is presented in Table 1 below.

Table 1: Estimate of UK organic and in-conversion livestock numbers

No of head	2004	2005	2006
Poultry	2,166,152	2,431,555	3,439,548
Cattle	126,813	174,751	214,276
Sheep	440,674	571,615	691,000

Source: Defra OASIS 2006

Drivers for growth

The UK organic retail market increased from £1.2 billion during 2004/05 to an estimated £1.6 billion during 2005/06 (Soil Association, 2006). In addition the reduction, in August 2005, in the proportion of non-organic feed permitted in organic livestock diets has also led to increased demand for organic grains and pulses. Whilst the demand has increased very rapidly, the potential for a rapid increase in production is limited. Historically, grassland (leys, permanent pasture and rough grazing) make up most of the organic land in UK (and Europe), and there was a low rate of conversion during 2003 and 2004. Coupled with this, there is a built-in delay for potential expansion as a result of the two-year conversion process. These factors combined have resulted in a severe shortage of organic cereals both in the UK and the rest of Europe.

Estimated demand and supply of organic grain in the UK

Ballpark calculations based on discussions with representatives of the trade suggest that the UK organic grain requirement for trading in 2006 was 246,000 tonnes, estimated to rise to 295,000 tonnes during 2007 (Table 2).

Table 2: Estimated UK organic grain requirement for trading (tonnes)¹

		Estimated 2006	Predicted 2007
Feed	Cereals & pulses	129,000	155,000
	Imported feed grain incl. soya, etc	52,000	62,000
	Total animal feed²	181,000	217,000
Human	Grain for human consumption	65,000	78,000
Total grain requirement		246,000	295,000

Source: Own estimates based on survey of trade representatives

¹ Does not include grain grown and consumed on-farm

² Split approximately $\frac{2}{3}$ for monogastrics, $\frac{1}{3}$ for ruminants. Includes approximately 2500t in 2006 for the expanding organic fish food market.

It is difficult to estimate the availability of grain for trading because a large proportion of grain is retained on farm for home feeding. The responses of Scottish organic producers in the annual SAC Organic Market Link producer surveys have indicated that the proportions of grain available for trading in the past three years have been 68%, 50% and 45% in 2004, 2005 and 2006 respectively. In Table 3 below these percentages have been assumed to apply across the UK. The Table shows the area of organic cereal land (including in-conversion land) and presents an estimate of the quantity of grain available for trading.

Table 3: Organic and in conversion cereal land and production in the UK

Year published	Area of cereals (ha) ¹	Total production (t) (assuming average yield of 4t/ha)	Percent available for trade	Quantity available for trade (t)
2004	42,375	169,500	68	115,260
2005	39,231	156,900	50	78,582
2006	47,694	190,800	45	85,849
2007	60,000 ²	240,000	45	108,000

¹ Source: Defra OASIS 2006

² Estimate based on following assumptions:

- Total area of ploughable (rotational) land in UK in 2006: 176334 ha including 32705 ha in-conversion plus 143629 ha organic (Source: Defra)
- Area of ploughable land in conversion in Scotland increased by 300% between 2005 and 2006. Assume a 100% increase across the UK. Thus area of ploughable land in conversion in UK in 2007 is 32705 ha * 2 = 65000 ha.
- Thus total area of ploughable land (organic plus in-conversion) in UK in 2007 is 143629 ha plus 65000 ha = 208629 ha
- Assume 30% of ploughable land is in cereals, therefore estimated area of land in cereals for 2007 is 208629 ha * 0.3 = 62588ha.

Table 4 below combines the estimates from Tables 2 and 3 to provide an estimate of the shortfall in grain supply in 2006-07 and 2007-08.

Table 4: Estimated UK organic cereal shortfall of feed grain required for trading, 2006/2007 and 2007/2008 (tonnes)

	2006 - 2007	2007 - 2008
Estimated UK feed requirement (traded grain)	129,000	155,000
UK grain available for trading	85,849	108,000
Estimated UK shortfall in home-produced grain	43,151	47,000

Source: Own estimate

Additional land requirement

An estimate was made of the additional land required to meet this shortfall of 47,000 tonnes of traded grain.

- a) Assume that 45% of total UK production is available for trading, thus total additional grain production required is $47000 * 100/45 = 104000$ tonnes.
- b) Assuming an average yield of 4t/ha, this would require an additional 26000 ha of organic grain.
- c) Assuming that only 30% of ploughable (rotational) land is in grain at any one time, a total of $26000 \text{ ha} * 100/30 = \mathbf{87,000 \text{ ha of ploughable land}}$ will be required.

The above calculation focuses solely on feed grain. In Table 2 we have suggested that an extra 13,000 tonnes of grain for human consumption will be required in 2007, relative to 2006. If imports are not to increase, additional land will clearly be required to produce this extra grain. Assuming that none of the grain grown for human consumption is retained on-farm, the additional area required to produce this extra 13000 tonnes is approximately 3250 ha of cereals i.e. **10,800 ha of ploughable land**.

Concluding remark

The UK does not produce sufficient organic grain (cereals and pulses) to supply the organic livestock sector industry with feed grains and has to rely on imports to make up the shortfall. This situation is likely to continue, unless substantial arable areas are converted to organic farming.

However, these data must be treated with caution since they contain many crude assumptions. The lack of reliable, up-to-date statistics on crop area, livestock numbers, production levels and demand creates difficulties for policy makers, traders/processors and producers, particularly where the supply/demand balance is changing rapidly. A system of automatic or at least rapidly updated recording and publishing of crop area statistics and livestock numbers would help greatly. As far as we know, the SEERAD-funded SAC Organic Market Link producer survey, carried out annually amongst Scottish organic producers, is the only formal estimate of actual production levels of organic grain and red meat undertaken in the UK. This type of approach, or an alternative system based on the annual farm reports required of producers by certification bodies, should be expanded to cover the whole of the UK.

Additional Information

Anecdotal information

- ◆ Many UK compounders have supplies for the remainder of the 2006-07 trading season
- ◆ Increased optimism regarding the lifting of the Ukrainian trade embargo and a new source of wheat supplies from Kazakhstan
- ◆ Compounders are very keen to establish relationships with producers
- ◆ Some compounders are unable to take on any new customers
- ◆ The growing market for organic fish food could impact negatively on UK organic grain supplies

Possible trade responses to the UK organic feed shortages

- ◆ Consider offering 3 year min – max price contracts
- ◆ Build up relationships along the supply chain
- ◆ Work to gain more trust and commitment with and between producers
- ◆ Make demand and pricing information more readily available

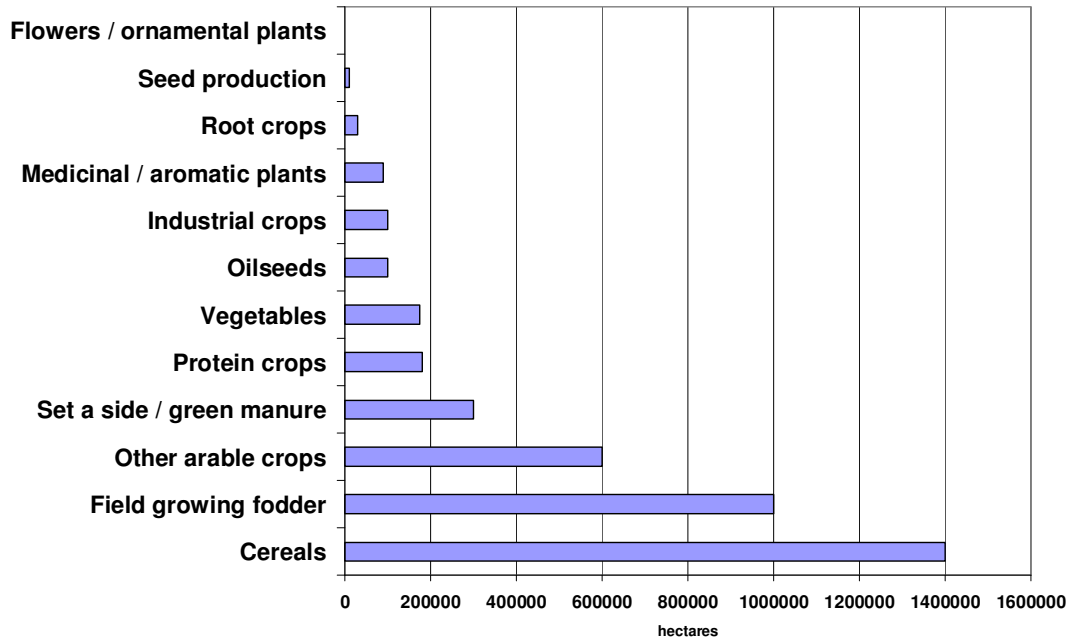
UK cereal imports 2006 – 2007

The UK has traditionally been an importer of organic grain although information from the trade suggests that there have been substantial difficulties with grain imports during the last twelve months for a variety of reasons (Table 6).

Table 6: Cereal imports and problems encountered

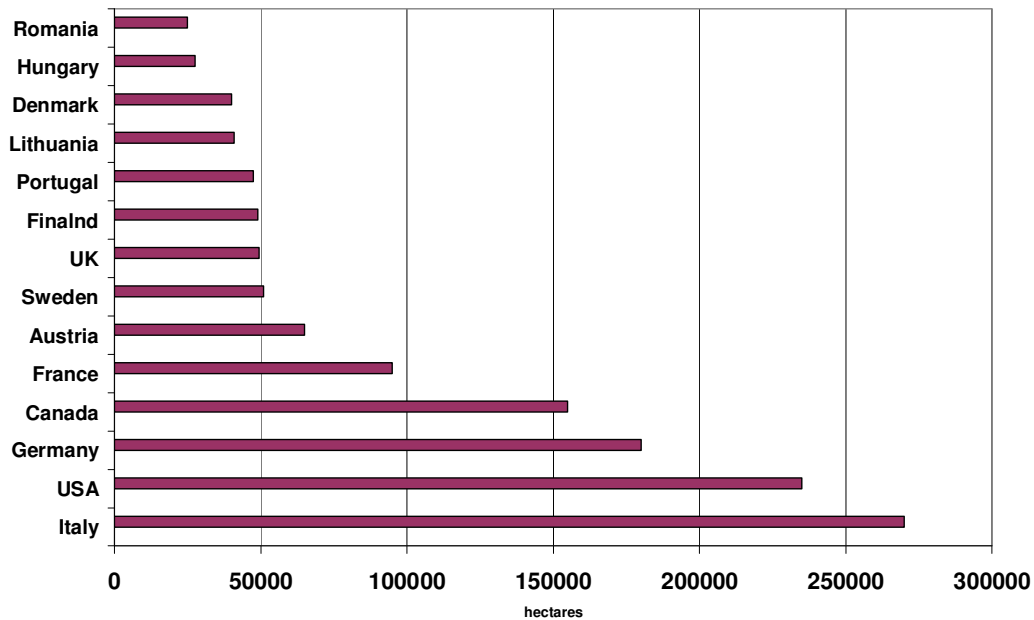
Country	Problem encountered
Australia	Drought
Eastern Europe	Trade embargo
Argentina	Crop from harvest 2006 oversold
Canada	Supplies dried up early in season
Scandinavia	None available
Italy	Production limited in response to poor prices
Germany	Own import requirements have increased coupled with a bad harvest
Spain	Drought
France	Their usual surplus has been much reduced

Figure 1: Global arable land use in organic farming



Source: SOEL-FIBL Survey 2007 (NB info not available for all countries)

Figure 2: Cereal cropping area in individual countries



Source: SOEL-FIBL Survey 2007

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