



# Market Review of the Welsh Organic Arable Sector, 2007

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## Executive summary

### The supply situation for Welsh organic arable production

**Organic production in Wales** has been developing steadily in the last five years, with particular emphasis on organic cattle and sheep production. This was despite over-supply conditions in some sectors, notably dairy, following the very rapid growth in 1999/2000. The area of organic arable production has tracked this increase albeit at a lower level. It is also a more complex situation than might be thought because of the different ways in which a cereal crop or mixture might be harvested. This sector is one of the least surveyed in the UK with the exception of the annual Scottish Organic Market Link Producer Survey carried out by SAC with SEERAD funding.

Between the end of 2002 and end of 2005, the **number of holdings** increased by 12% to 688, and the **certified land area** increased by 29% to 71 thousand hectares, of which more than 90% is grassland. Growth in Wales has exceeded other parts of the UK, reaching 5% of agricultural land by end 2005. More rapid growth is projected for 2006 and possibly 2007. The arable area reported to Defra shows an increase over the period 2003 to 2005 (reported as end of January 2004 to end of January 2006) from 1958 ha to 2358 ha. This represents a 20% increase over the period at a time when organic grassland of all types increased by 34%.

The UK position for the **supply and demand** of organic cereals is giving considerable cause for concern at the present particularly in the area of organic livestock feed. This has been brought about by marked increases in organic milk, pork, egg and poultry sales along with continuing expansion of the red meat sectors. This has led to a considerable imbalance that is likely to get worse over the coming years, something that will be amplified by changes in the standards with respect to non organic feed allowances. It is estimated that the UK is around 60% self sufficient in home produced feed grain – the shortfall is made up of imports from around the world and a number of factors are threatening the security of supply from many of the exporting countries. The calculations involved are subject to a number of crude assumptions and there is universal agreement that there is an urgent need for information and regularly updated statistics.

Actual **output of Welsh arable producers** is extremely difficult to quantify precisely because it is not monitored with the regularity and at the level of detail of other sectors. Two sets of figures are available but they are difficult to compare because one relates to areas planted while the other is concerned with outputs.

A **producer survey** was undertaken using a detailed telephone questionnaire. This was not a simple exercise as it proved difficult to obtain information from certification bodies. This meant that it was difficult to identify advance those producers that were growing arable crops. 209 producers out of a total of 502 livestock producers were contacted, responses received from 102 (a response rate of just under 50%) and 40 of these were arable producers. This cohort represented 913 ha of arable production or 29.5% of the total organic arable area in Wales.

39% of the arable crops grown by respondents were planted as mixtures (usually a cereal/protein mix), a notable difference from earlier surveys. Of the pure stands wheat comprised the largest area followed by barley, oats, triticale and beans in descending order. 50% of the crops surveyed were harvested as whole crop and 47% as grain with a total yield of 1,458 tonnes. In the year under survey the highest proportion of a single crop harvested as whole crop was wheat while oats constituted the largest harvested grain crop, results that were somewhat at odds with other work but are almost certainly a result of what was a hot, dry season with low silage yields.

Only 455t of grain was actually marketed with barley accounting for the highest proportion and wheat the lowest.

Yields as reported by the farmers contacted tended to be on the low side with respect to standard figures in the Organic Farm Management Handbook although oats were slightly better. Triticale was particularly poor at around 50% of standard yields. The same cohort of respondents reported reduced areas for the 2007 season, an overall reduction of 21% on 2006 figures, and an anticipated reduction in grain to be marketed (16%). Producers reported that poor producer prices are a disincentive to growing grain for the market, a somewhat surprising conclusion given the recent strong movements in organic cereal prices. Transport costs are a significant factor as the crop has to be moved out of Wales to grain merchants and/or feed mills.

Extrapolation of the above figures is recognised as a risky and imperfect process but it does raise a number of questions of concern not least the existence of a decline when overall conversion and livestock numbers are increasing

This was followed by a **trade survey** that contacted both the grain trade and compound feed producers. The responses were not all encompassing but covered 75% of the active traders in numerical terms. The responses indicated that very small quantities of grain are supplied into Wales for processing – most grain traded moved to other producers within Wales. The vast majority of feed is imported in the form of compound feed and on the basis of the responses received totalled some 13,600 tonnes for the 2006 season. Allowing for non responses it is estimated that the actual figure was around 16,000 tonnes – 11,000 t for ruminants and 5,000 t as poultry rations. Feed compounders are working on the basis of demand increasing by around 20% year on year, partly as a result of changes to the standards.

It is estimated that the demand for poultry feed will increase to 9,000 t in 2009 while ruminant feed is predicted to increase to 19,000 t in 2009, a total of 28,000t. It is suggested that the cereal and protein crop requirements will be in the order of 50% of the total i.e. 14,000 t each. There is a very low level of protein production in Wales and this demand will almost certainly be fulfilled through the use of imported sources of soya.

A **SWOT analysis** was undertaken that concluded that there are more weaknesses than strengths but that there are a number of opportunities for increases arable production not least the strengthening of prices across the board. The area of most concern and seen as a serious threat is the reported 21% decrease in plantings for the current season.

## **Recommendations**

Despite the generally positive outlook from a demand perspective, there is a need to address some of the factors that might discourage producers from converting, including disruption to the Organic Farming Scheme, price levels that do not always reflect the costs of production, access to markets and a distinct lack of support for the sector.

To address this, there is a need for:

- better **statistical data** on current and future production levels and market shares and a wider appreciation of the need for improved levels of **self sufficiency**;
- **greater publicity** should be given to events and trends in the wider organic cereal market to ensure that Welsh organic livestock producers have all the facts when planning for the future;

- a series of **events, articles and other media coverage** and special attention should be given to these issues in the **Organic Market Wales** e-bulletin;
- enhanced payments through the **OFS** through a mechanism that replaces the previous AAPS rate;
- the new **Farming Connect** service to focus on the potential for home grown feed when working with organic livestock producers;
- an increasing focus on **education** in order to signpost opportunities for young people;
- an **evaluation** of the potential for the establishment of an organic feed compounding operation in Wales – this could reduce costs and also provide market opportunities for arable producers;
- improved **production systems**, supported by effective research and development and knowledge transfer;
- parallel improvements in **variety and mixture** choices – this may involve new introductions, a re-evaluation of varieties deemed to have been out-classed and the development of landraces;
- a clear identification of **suitable areas** for organic arable production along with guidance on what crops to grow in the particular soil types and prevailing climate
- improved **integration of effort** between organic sector businesses and the agencies that support the development of the Welsh horticultural and organic sectors;
- improved **linkages** with the dairy, arable and red meat sectors to benefit from complementarity relationships between the sectors at production, market development and promotional levels.

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# 1 Introduction

This review intends to present as comprehensive a picture as time and funding will allow of the present situation with respect to the supply and demand of organic arable crops in Wales. The other organic market reviews were able to draw on a set of market intelligence reports commissioned by OCW in 2003-04. This gave the accompanying reviews starting points that also provided baselines for reasonable comparisons. The issue of organic arable crops in Wales has received less attention in the past so this review will attempt to provide a reference point for future work in this area. Some prior survey work has been undertaken and the results will be used where appropriate.

The review tracks developments over recent years based on land area data and attempts to project these developments into the future. Much of the work has focused on telephone interviews with arable producers in Wales and interviews with key players in the grain trade and feed compounding sectors. The present and future assessments are supported by a SWOT analysis. A number of recommendations are made that focus on the provision of market information, conversion support and the need for Wales to increase its level of self sufficiency in the light of the pressures in the UK, European and global organic grain markets.

The original title of this review included pigs and poultry as like arable production they have not been reviewed in the past and also because of the dependence of these sectors on an adequate supply of organic arable crops for their feed requirements. References to these areas are included but it has been accepted that it will not be possible within the constraints of both time and budget to address the marketing issues relating to monogastrics. More detail on organic poultry and pig production can be found in the red meat market review (ref).

## **The organic arable market**

The organic arable market can be difficult to understand because of the diversity that exists within organic systems both in terms of the crops grown, but also the uses to which the arable crops may be put. With the majority of organic farming businesses being mixed enterprises, the farmer has a number of potential uses for arable crops: to harvest as wholecrop silage; to harvest as crimped grain; or to harvest as dried grain.

This diversity makes the simple translation of arable area into tonnes produced too simplistic an approach if trying to ascertain the output of an organic arable area. This can be seen in the work undertaken by Caroline Bayliss at Scottish Agricultural College (Bayliss, 2007). Her Organic Market Link Producer Survey 2006-07 indicated that within Scotland, approximately 56% of all arable production was retained for on-farm use rather than sold. It also showed differences between crops with the proportion of wheat being marketed at 75% whilst for feed barley this drops to just 30%. Since the project was targeted at assisting the marketing of grain, it did not account for areas harvested as crimped grain or wholecrop silage. This work also indicated an overall increase in arable cropping in Scotland in 2006 of 22% from 17,100 to 21,059 tonnes (t) of grain and pulses.

Despite the greater volumes of grain produced and marketed in England and Wales compared to Scotland there has been no commercial survey of the organic cereal area as is seen in the conventional sector. This is perhaps because the cost of such work and the scale of the sector are insufficient to justify a commercial organisation undertaking the work.

Therefore, the aim of this project was to better understand the size and development of the organic arable market within Wales. This was done using a range of information sources, but concentrated on surveys of producers and industry representatives. A current overview of these markets is given, along with future projections based on evidence collected.

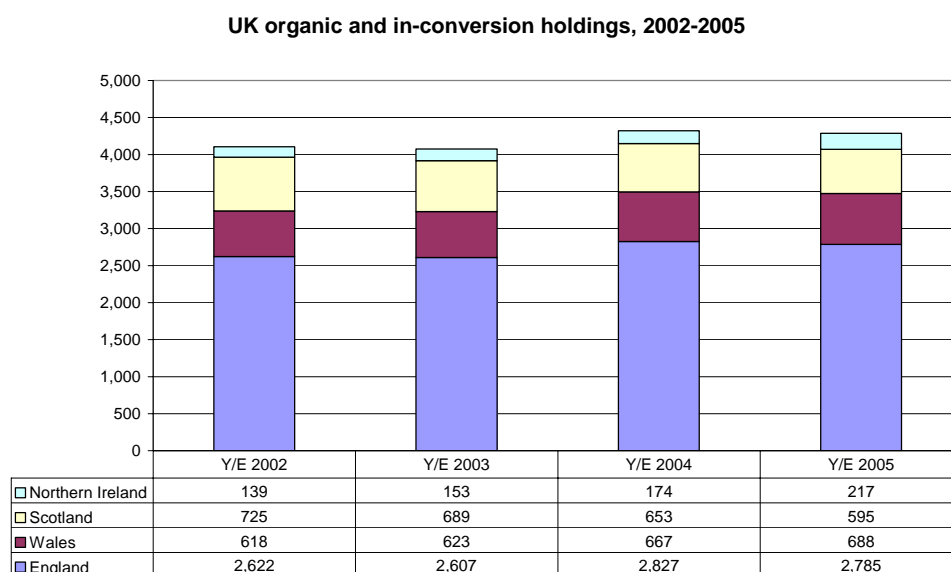


## 2 The production situation for Welsh organic arable production

### 2.1 Number and type of organic holdings in Wales and the UK

The period since 2002 has been one of slow growth and consolidation for the organic sector, following the very rapid expansion phase in 1999/2000. In Wales, the number of organic holdings has increased steadily, in contrast to Scotland and to some extent England where the number of holdings declined in 2005. Although 2006 data are not yet available, a significant increase to 750+ holdings in Wales is anticipated, on the basis of information available from Organic Conversion Information Service and Organic Farming Scheme returns.

**Figure 2.1 UK organic and in-conversion holdings, 2002-2005**



Y/E=year ending - values published typically as January following year

Source: Defra (2006)

The classification of the Welsh organic and in-conversion holdings in 2005 shows the dominance of hill/upland (LFA) livestock types:

**Table 2.1 Distribution of Welsh organic holdings by farm type/share of all holdings, 2005**

<i>Farm type</i>	<i>Organic holdings</i>	<i>All Welsh holdings</i>	<i>Organic share</i>
Cereals	0	232	0.0%
General cropping	11	132	8.3%
Horticulture	28	497	5.6%
Specialist pigs	0	48	0.0%
Specialist poultry	7	336	2.1%
LFA dairy	64	2871	3.8%
Lowland dairy	44		
LFA cattle and sheep	317	11203	2.8%
Lowland cattle and sheep	66	2730	2.4%
Mixed (cropping, cattle and sheep)	26	646	4.0%
Other	85	2484	4.7%
Unclassified	32	-	-
<b>Total</b>	<b>688</b>	<b>24330</b>	<b>2.8%</b>

LFA=less favoured area; SDA = LFA severely disadvantaged area; DA = LFA disadvantaged area

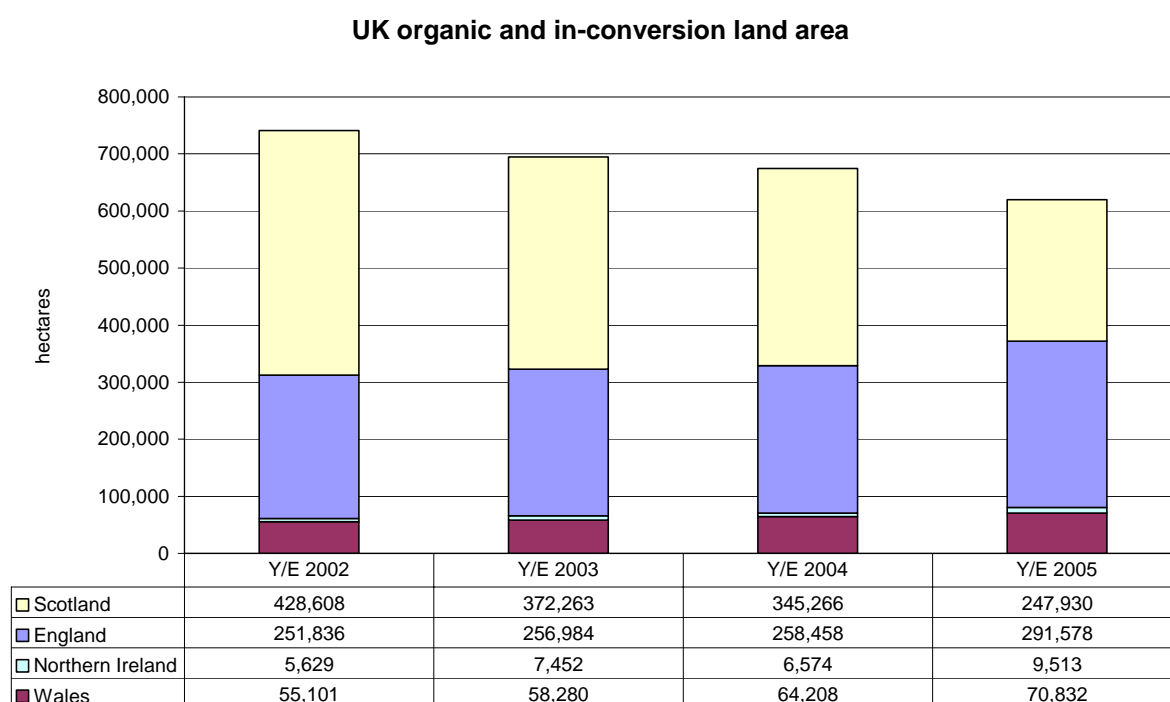
Source: WAG/Defra (2006)

It will be noted that there are no organic specialist cereal units in Wales. The arable production is found primarily on general cropping (mainly arable with some livestock) and mixed holdings (cropping with livestock). However, it is also worth noting that general, horticulture and mixed cropping as well as dairy holdings are over-represented compared with the overall Welsh situation.

## 2.2 Organic land area and land use in Wales and the UK

Following the very large expansion of UK organic production in 1999/2000, with subsequent over supply problems in some sectors, growth in the land area under organic management slowed. In Scotland, where large areas of moorland had been converted prior to the introduction of a requirement for organic livestock management, much of this extensive land was subsequently withdrawn, leading to a substantial decline in the Scottish organic land area and consequently the UK total. All other parts of the UK experienced continued, if slow, growth, with growth in Wales faster than elsewhere.

**Figure 2.2 UK organic and in-conversion land area, 2002-2005**



Y/E=year ending - values published typically as January following year

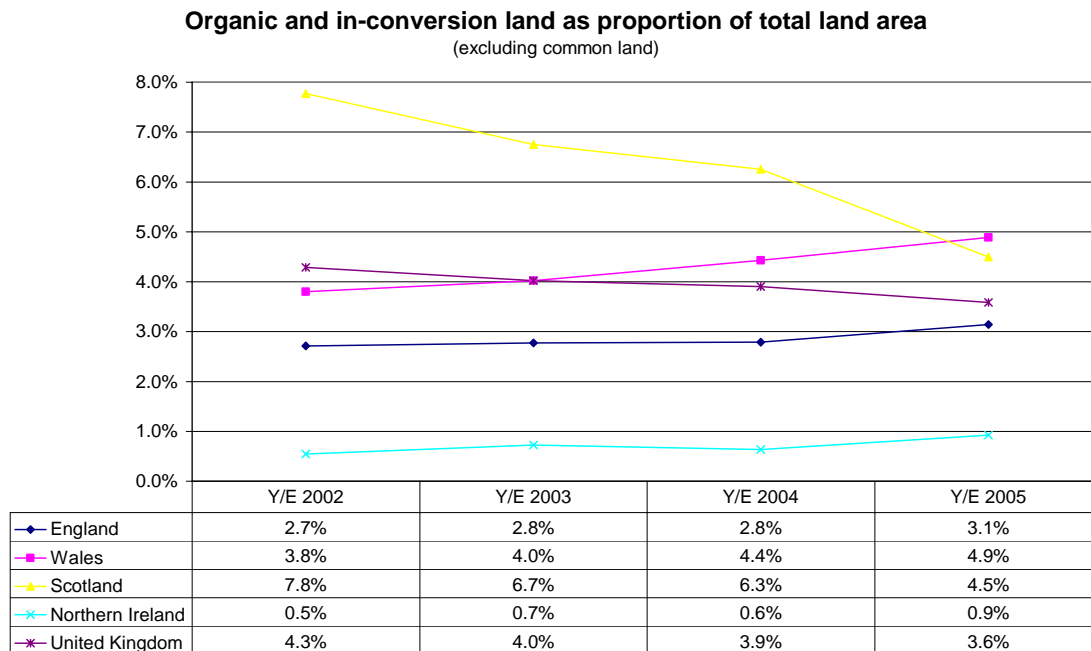
Source: Defra (2006)

In terms of proportion of the total agricultural area, Wales has overtaken the other parts of the UK, reaching 5% by the end of 2005. While falling short of the original action plan target of 10% by 2005, this is a significant increase on the 0.3% in 1998 (120 holdings, 5331 ha) and well ahead of the English average of 3.1%.

The slow down in conversion rates in Wales can be seen with respect to the years ending 2003 and 2004. There were signs of renewed interest in conversion in 2005, as a result of improving market conditions and the final implementation of the single farm payment. Although statistical data is not yet available for the year ending 2006, evidence from the Organic Conversion Information Service and reports from the organic certification bodies indicate a significant expansion in 2006, due to strong market demand, though this may have slowed in 2007 due to the temporary suspension of the organic farming scheme in Wales.

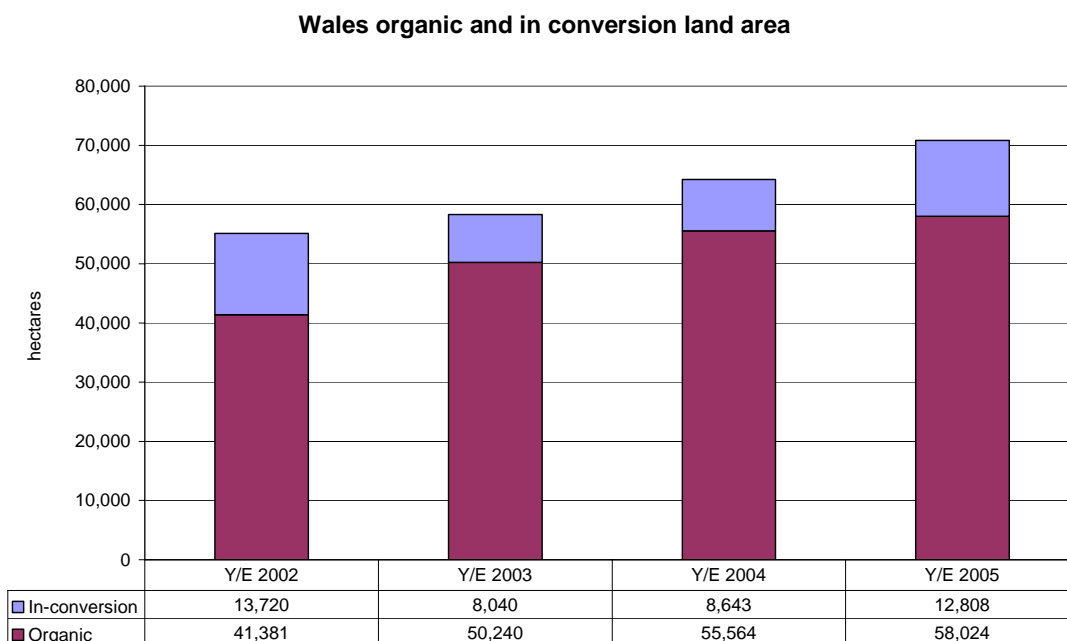
The Welsh organic and in-conversion land area is dominated (more than 90%) by temporary and permanent grassland, with arable and horticultural cropping accounting for around 5%. The main types of land use have shown continued growth, although there has been a slight decline in horticulture, woodland and other crops.

**Figure 2.3 Organic and in-conversion land area as proportion of total land area, 2002-2005**



Y/E=year ending - values published typically as January following year  
Source: Defra (2006)

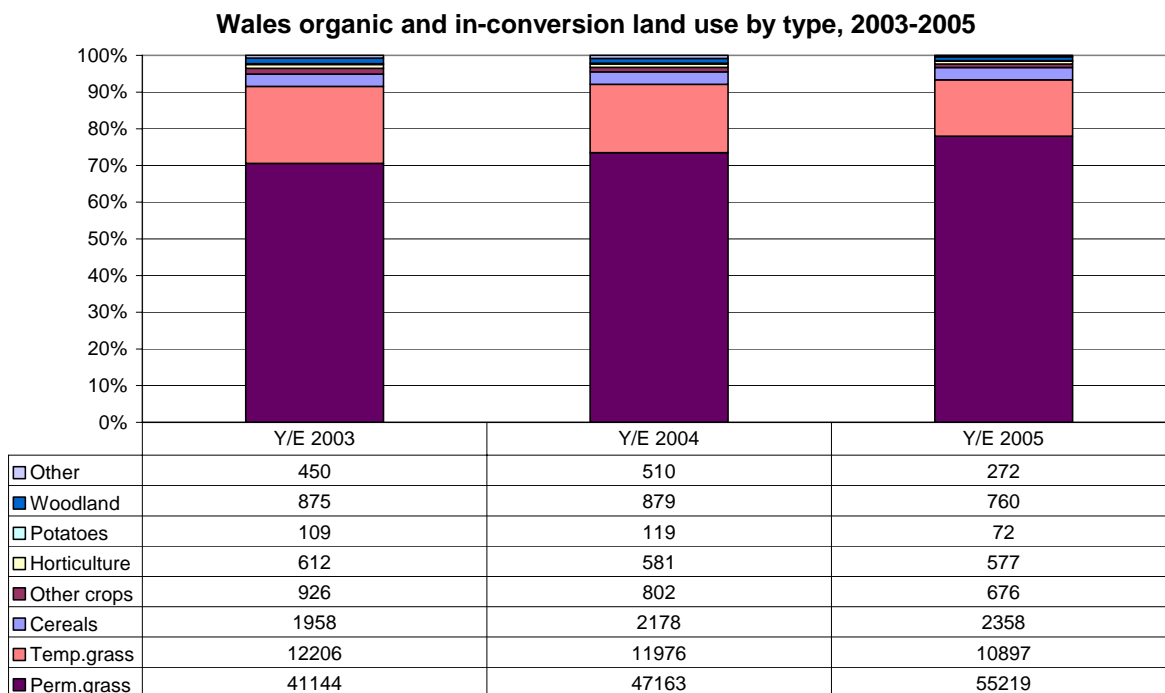
**Figure 2.4 Wales organic and in-conversion land area, 2002-2005**



Y/E=year ending - values published typically as January following year  
Source: Defra (2006)

Figure 2.5 shows organic and in conversion arable area increasing over the three year period shown. The rate of increase from Y/E 2003 to Y/E 2005 is around 20% and it is positive unlike some of the other land use types. It almost keeps pace with the increase in total grassland over the same period (24%). Interestingly the equivalent figures for Scotland and Northern Ireland for the same period are 3.2% and 3.7% respectively. The proportion in England for the same year is around 13% which is to be expected given the relative topographies and nature of land use.

**Figure 2.5 Wales organic and in-conversion land use, 2002-2005**



Y/E=year ending - values published typically as January following year

Source: Defra (2006)

Compared with overall Welsh agricultural land use, cereals, temporary grass and especially horticulture are over-represented on organic holdings, although the horticulture data should be treated with caution due to the possible inclusion of crops not intended for human consumption (see Hitchings et al., 2007). The Welsh organic share is significantly higher than the UK organic share of total agriculture in most cases.

**Table 2.1 Organic share of total agricultural areas by main crop, Wales and UK, 2005**

	Welsh organic (ha)	All Wales (thousand ha)	Organic share	UK organic (ha)	All UK (million ha)	Organic share
Cereals	2358	41.5	5.7%	47694	2.9	1.6%
Other arable	676	20.9	3.2%	14531	1.2	1.2%
Potatoes	72	2.2	3.3%	2025	0.1	1.5%
Horticulture	577	1.2	48.7%	14196	0.2	8.4%
Total tillage	3683	65.7	5.6%	78446	4.6	1.7%
Temp grass	10897	115.1	9.5%	97907	1.2	8.2%
Arable land	14580	180.8	8.1%	158414	5.8	3.1%
Perm. grass	55219	1203.1	4.6%	428330	10.1	4.3%
Wood/other	1032	64.7	1.6%	15169	1.4	1.1%
Total	70832	1448.7	4.9%	619852	17.3	3.6%

Excluding common land

Source: Defra (2007); Welsh and UK agricultural statistics

Table 2.2 provides a breakdown by individual arable crops and shows the development between 2003 and 2005. While cereal production has increased slightly, the overall organic arable area has remained static over this period, with a decline in other arable crops produced. Oats and other cereals (excluding wheat and barley) are over-represented on organic farms compared with Welsh agriculture in total.

**Table 2.2 Organic and in-conversion arable production in Wales, 2003-2005**

<i>Year ending</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>Wales total 2005</i>	<i>Organic share 2005</i>
Barley	789	916	788	21766	3.6%
Wheat	468	460	468	14812	3.2%
Oats	474	624	538	2930	18.4%
Triticale	63	73	225		
Rye	4	30	26	2007	28.0%
Other cereals	160	75	314		
<i>Total cereals</i>	<i>1958</i>	<i>2178</i>	<i>2358</i>	<i>41515</i>	<i>5.7%</i>
<i>of which in conversion</i>	<i>190</i>	<i>212</i>	<i>154</i>	<i>n/a</i>	<i>n/a</i>
Peas and beans	191	142	108		
Maize	25	18	39		
Oil crops	17				
Soya	9	9	10		
Set-aside	123	72	63		
Fodder/other arable	561	561	456		
<i>Total other arable</i>	<i>926</i>	<i>802</i>	<i>676</i>	<i>20847</i>	<i>3.2%</i>
<i>of which in conversion</i>	<i>58</i>	<i>76</i>	<i>39</i>	<i>n/a</i>	<i>n/a</i>
<b>Grand total</b>	<b>2884</b>	<b>2980</b>	<b>3034</b>	<b>62362</b>	<b>4.9%</b>

*Source: Defra (2007); Welsh and UK agricultural statistics*

Whilst the arable area has remained relatively static showing just a slight decline in area, the overall organic area has increased substantially. The majority of this increase was due to the greater permanent pasture area. Livestock enterprises based upon permanent pasture (particularly if this is Severely Disadvantaged Area land) will be more reliant upon feeds brought onto the farm to rear livestock, which has implications for the development of the arable sector in Wales. Section 2.3 therefore presents data on total organic livestock numbers, although most will not be produced on arable holdings.

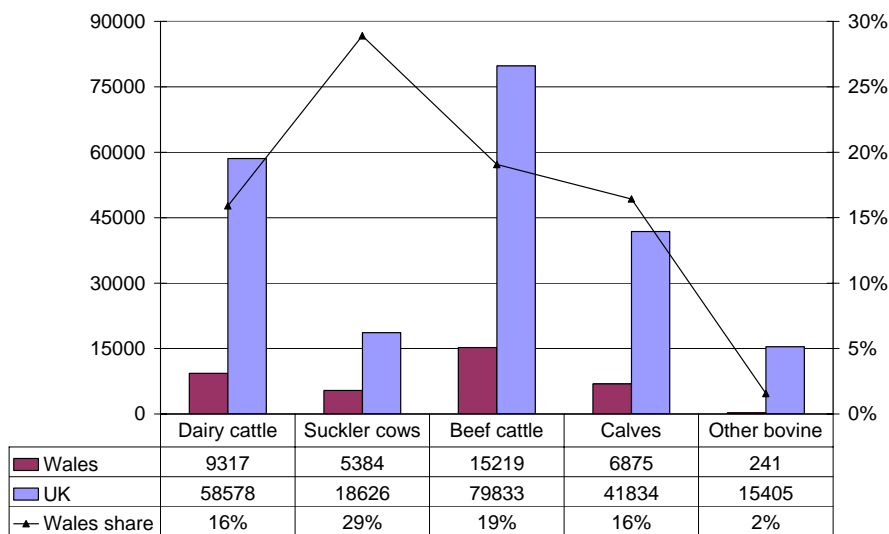
### **2.3 Number of organic livestock in Wales and UK**

Organic cattle and sheep numbers have increased steadily in most parts of the UK between 2003 and 2005 (see next page), indicating relatively stable market conditions over the period. However, despite growth in England, pig numbers in Scotland have declined sharply, and are low and static in other parts of the UK. Poultry numbers have increased steadily in England and Northern Ireland, but remain low and static in Wales and Scotland, although most of the increase in England is due to an increase in laying hens.

Within Wales, cattle and sheep are by far the most important livestock types. The Defra (2007) data show marked unexplained variations between years that may be a reflection of classification errors in the early stages of establishing the data collection system, so only year ending 2005 data are shown here. Wales accounts for a relatively high proportion of suckler cows, and a very high proportion of the UK organic sheep population, when compared with a 12% share of UK organic land and a 16% share of UK organic holdings.

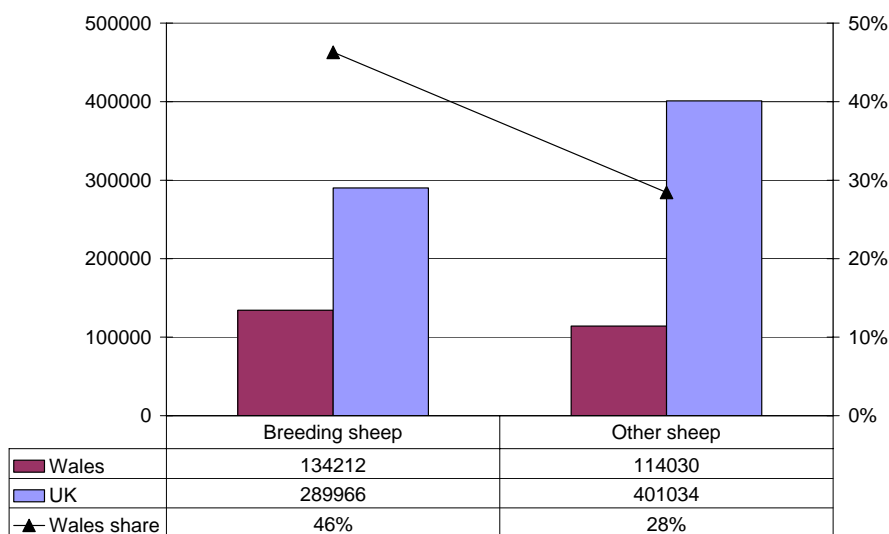
As with land area, Wales has a higher organic share of total livestock numbers than the UK, with 3.5% of all dairy cows and ca. 2.5% of other cattle and sheep. The average size of Welsh organic dairy herds is also higher than the overall average.

**Figure 2.6 Organic and in-conversion cattle numbers by type, Wales/UK, 2005**



Source: Defra (2007)

**Figure 2.7 Organic/in-conversion sheep numbers by type, Wales/UK, 2005**



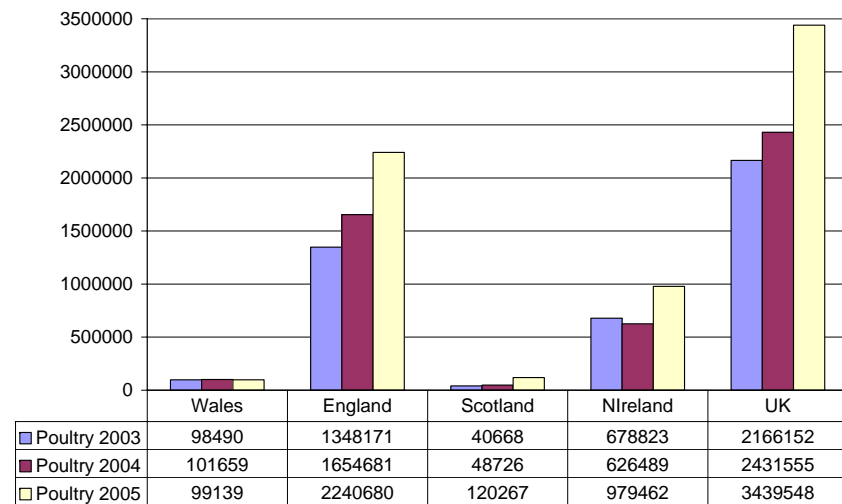
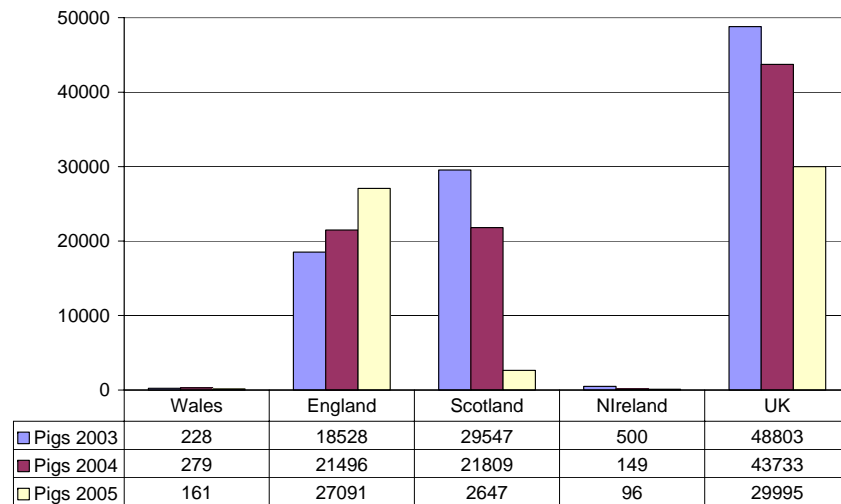
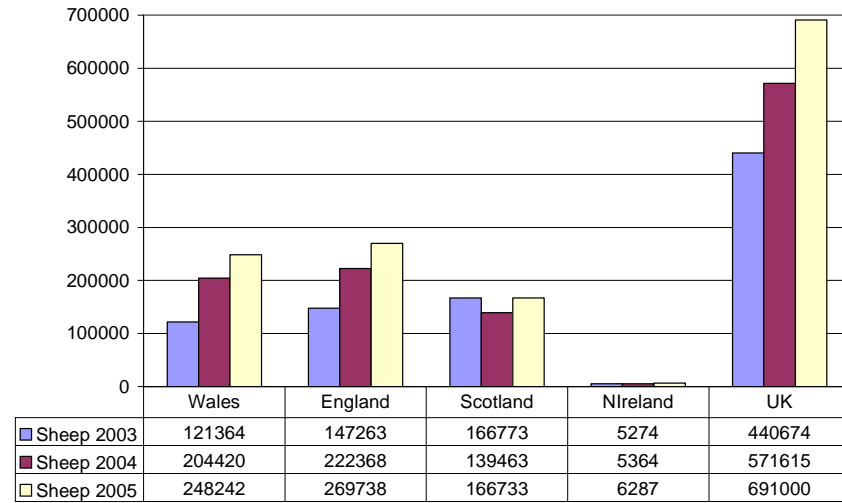
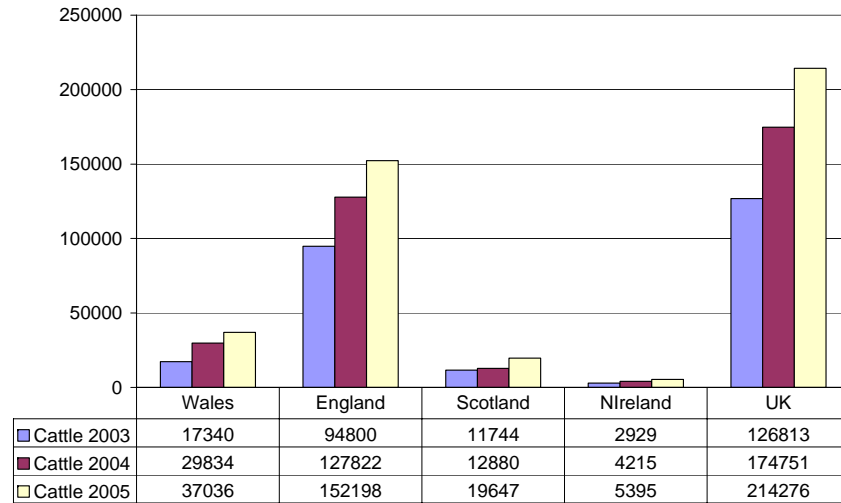
Source: Defra (2007)

**Table 2.3 Organic share of total livestock numbers by type, Wales/UK, 2005**

	Welsh organic	All Wales (thousand)	Organic share	UK organic	All UK (million)	Organic share
Dairy cows	9317	264.4	3.5%	58578	2.1	2.8%
Herd size	86	75	115.0%			
Beef cows	5384	220.7	2.4%	18626	1.8	1.1%
All cattle	37036	1240.8	3.0%	214276	10.4	2.1%
Sheep/lambs	248242	9510.4	2.6%	691000	35.4	2.0%
Pigs	161	3.9	4.1%	29995	4.9	0.6%
Poultry	99139	7191.8	1.4%	3439548	173.9	2.0%

Source: Defra (2007); Welsh and UK agricultural statistics

**Figure 2.8 Organic and in-conversion livestock numbers, UK, 2003-2005**



Y/E=year ending - values published typically as January following year  
 Source: Defra (2007)

## **3 The current market position**

### **3.1 *The UK position***

The various statistics used section 2 essentially date from 2005, but the information from the market place is often more current as is the data from both the producer and trader surveys discussed later in the report. Concern about the cost and supply of feed has been raised in earlier surveys but the situation has become particularly acute in 2007.

The SAC prepared a paper on the production and supply situation for organic feed grain in the UK for 2007. In this paper the author notes that there is a lack of reliable data on the level of production and demand for most organic products. This has been recently 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 & significant price rises following the 2006 harvest.

The marked increase in organic milk, pork, egg and poultry sales since 2005 is cited as a key factor in this imbalance because of the high cereal requirements of these sectors. The organic red meat sector is also contributing to the situation as the various sub sectors are themselves expanding rapidly (for details of livestock numbers in Wales and the UK see the Organic Red Meat Market Review).

The expansion of all these sectors has been driven by the continuing expansion of the UK organic retail market from £1.2 billion in 2004/05 to £1.6 billion in 2005/06. It has also been amplified by the reduction, in August 2005, in the proportion of non-organic feed permitted in organic livestock diets. Further pressure will be brought to bear at the end of 2007 when the non-organic allowance will be reduced again – in the case of ruminants this will be 0% from January 2008. The EU Commission has responded to the alarm in several quarters by increasing the permitted levels of conversion feed for a limited period in an attempt to mitigate what is predicted by some to be a very serious position.

The potential for a rapid increase in production is limited as historically grassland makes up most of the organic land in the UK (and Europe), and there was a low rate of conversion during 2003 and 2004. The requirement for a two year conversion process leads to a built in delay in addressing supply shortages although opportunities can exist for second year conversion sales. The various factors have combined to produce a severe shortage of organic cereals both in the UK and the rest of Europe.

Supply and demand factors have led to a considerable strengthening of organic cereal and pulse prices, a process that would usually attract the attention of conventional arable producers and increase the numbers interested in conversion. The strengthening of conventional prices over the same time period has however muted the level of interest.

#### **Estimated demand and supply of organic grain in the UK**

The author of the SAC paper then uses a series of calculations and assumptions to generate estimates of the trading requirements for 2006 and 2007 along with estimates of what grain might be available from the equivalent UK harvests. It should be noted that these figures are based on trading figures and do not include grain and cereal crops grown and consumed on-farm. They do include an estimate of the grain required for human consumption. The estimated total requirement is 246,000t for 2006 and the predicted requirement for 2007 is 295,000t. These figures are based



on discussion with representatives of the trade and in some respects are relatively easy to derive.

It is quite a different story when considering the availability of grain for trading. There are a number of assumptions that must be made and the first of these is an assumption of how much grain is retained on farm for home-feeding. SAC has been funded by the Scottish Executive Environment and Rural Affairs Department (SEERAD) to carry out annual Organic Market Link producer surveys in 2004, 2005, and 2006. These surveys have indicated that in Scotland the proportion of grain available for trading was 68% in 2004, 50% in 2005 and 45% in 2006. It is then assumed that these percentages apply across the UK – this is a fairly crude assumption but necessary to generate an outline picture of what is happening.

Further assumptions are made when deriving figures for the areas of cereals grown in the years under consideration. Figures for the amount of ploughable land are available for the earlier years from Defra and the OML surveys have provided a measure of the rate of increase in Scotland. In this particular paper the ploughable or rotational land is assumed to provide an upper limit on the potential arable area and once again in transposing known Scottish data to the UK certain assumptions were made. The other key assumptions made by the authors are that 30% of the ploughable land is in cereals at any one time (allowing for rotational requirements) and that average yield across the UK is 4t/ha.

Taking all the above into account the area UK area of organic and in conversion cereals is calculated to be 60,000 ha for the 2007 season giving rise to a total yield of 240,000 t. The retention figure for Scotland in the 2006 season was 55% and if this is applied to the predicted total yield we get a figure of 108,000 t available for trade. As has been already shown the predicted requirement for 2007 (including human consumption) is in the order of 295,000 t. This leads to an estimated shortfall for the 2007-08 feed trading season of 47,000 t. It was also predicted as part of the same paper that an extra 13,000 t of grain would be needed for human consumption over the same period.

If these figures are converted into land areas then using the same assumptions it is suggested that 87,000 ha of 'new' ploughable land will be needed to address the feed shortfall while 10,800 ha will be needed to provide the additional grain to the human consumption market (assuming that none is retained on farm). The author quite rightly emphasises that the figures have been produced using many crude assumptions. This has much to do with the lack of reliable, up-to-date statistics on crop areas, livestock numbers, production levels and demand in a situation where the supply/demand balance is changing rapidly. It is suggested that the approach used in the SEERAD-funded SAC Organic Market Link annual producer survey is expanded to cover the whole of the UK.

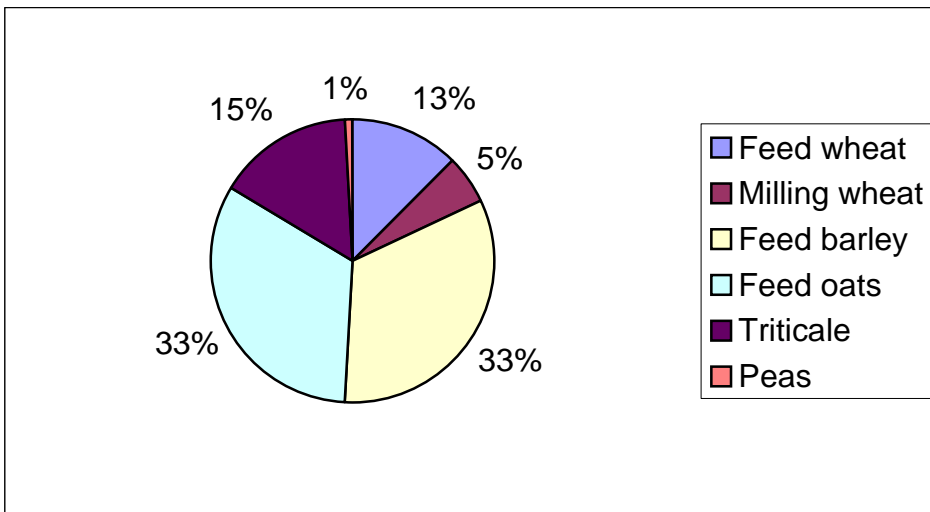
The figures are sufficiently stark even allowing for the assumptions that it is clear that the UK does not produce enough organic grain to supply the organic livestock sector and has to rely on substantial levels of imports to make up the shortfall. It is no longer necessarily the case that there will be organic grain available for import – many of the countries that export to the UK have experienced problems ranging from drought, poor harvests, trade embargoes and limited production in response to poor prices. The situation became very serious earlier this year as a result of an embargo on Ukrainian organic wheat and it was only the arrival of a shipment from Kazakstan that saved a number of producers from de-certifying livestock in the poultry sector.

### 3.2 The Welsh position

The current discussions and concerns about the availability of arable crops and in particular the situation in the organic feed market are constantly interwoven with comments on the lack of statistics and hard data. As we have the Scottish Executive has an excellent scheme in place that is not duplicated elsewhere as a regular exercise. That said some surveys of producers have taken place in Wales and the results are reproduced here to provide a basis for comparison with the results of the producer survey carried out for this review.

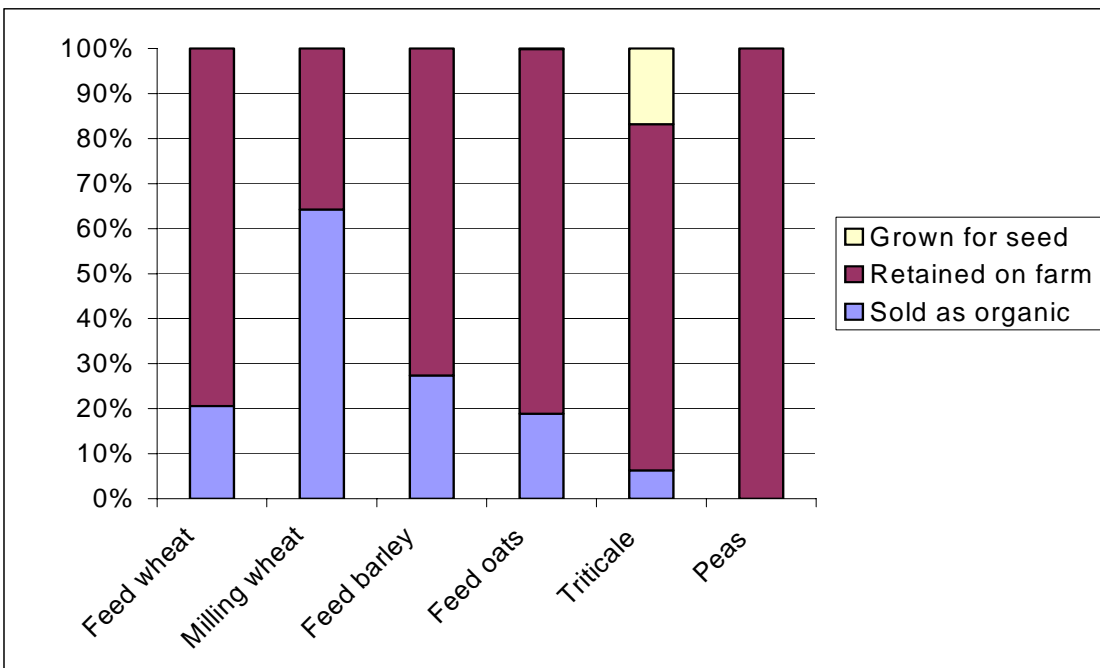
A recent survey for OCW as part of a project that investigated inward investment opportunities came up with the following production estimates (OCW, 2007 forthcoming):

**Figure 3.1 Organic grains and pulses produced in Wales, 2005**



Source: OCW (2007, forthcoming)

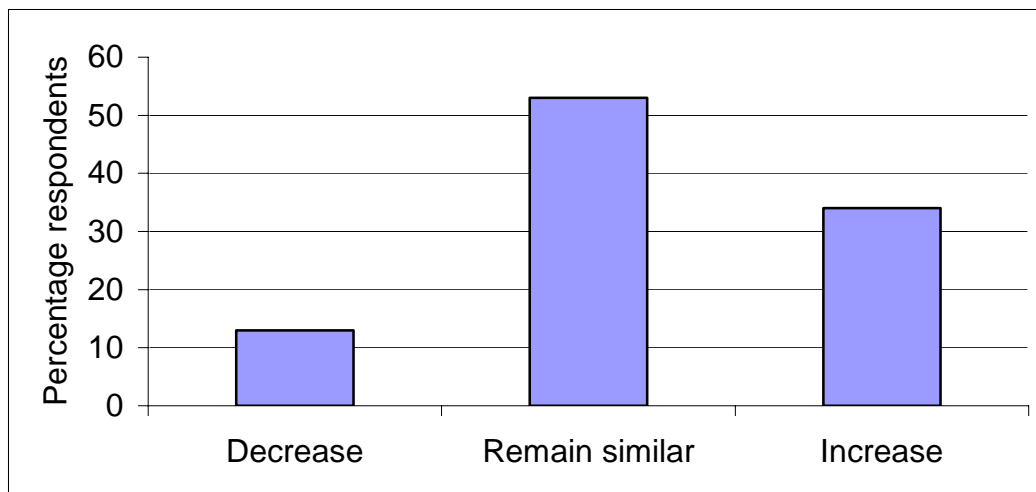
**Figure 3.2 Percentage of organic grains and pulses sold and retained on farms in Wales, 2005**



Source: OCW (2007, forthcoming)

It was estimated that 5,203 tonnes of organic grains and pulses were produced in 2005 on 115 farms. Of the total, approximately 13% was feed wheat, 5% was milling wheat, 33% was feed barley, 33% was feed oats, 15% was triticale and 1% was peas. In total 55% of the grains and pulses produced were retained on farm as livestock feed, 16% was sold as organic, and 2% was grown for seed, most notably triticale.

**Figure 3.3 Production of organic grains and pulses, 2007-2009**



Source: OCW (2007, forthcoming)

13% of respondents expect to decrease production of organic grains and pulses between 2007 and 2009, 53% expect to maintain current production levels and 34% expect to increase production.

Unsurprisingly the prime emphasis is on feed cereals with relatively low levels of grain legumes grown. There is no reference within these earlier surveys to whole crop or crimped grain harvesting – it is likely that it took place but we cannot be sure as to the extent. It is also notable that there is no reference to the growing of mixtures in contrast to the data received from the current survey.

### **3.3 Producer survey**

The data presented in Section 2 concerning the area of Welsh organic arable production was supplied by Defra. The data was collected by Defra from certification records and so is not a snapshot of land use taken at a single point in time but is an aggregation of records collected throughout a calendar year. This can cause difficulties as the data can span two cereal harvest years which can lead to inaccuracies. To address this, two questionnaires were developed to survey Welsh producers and the grain trade and compound feed producers. The surveys were carried out in March 2007.

This study undertook to survey both producers for information about their organic arable cropping and their attitude towards their arable cropping. Information on pigs and poultry was collected only where producers included them alongside their arable and other enterprises. The contact details for producers were derived from the Organic Centre Wales database and the Organic Farmers and Growers certification lists. The Soil Association Certification Ltd list was not made available for this work. Welsh Quality Food Certification Ltd was unable to supply contact information but did offer to mail the survey to their licensees. However, since they did not know of any of their licensees growing arable crops, and because of the short timescale available for the project this was not undertaken.

The Defra Organic Statistics Dataset indicated that there were 688 registered organic producers in Wales in January 2006, of which 502 were recorded as livestock producers. In total, 209 farmers were asked to take part in the survey and responses were received from 102, of whom 40 were arable producers.

In addition to the telephone survey of producers, both the grain trade and compound feed producers were contacted to supply information about the tonnage of grain and compound feed supplied into Wales. This comprised four grain trading companies and eight feed compounding companies understood to be supplying Welsh producers. Of these, responses were received from three of the grain traders and six of the feed compounders.

In addition, the Graig Farm Producer group were contacted to enquire about their arrangements for buying feed for their members. The company they buy from were contacted but did not supply any information. The figures for the Graig Farm part of their business are known but not the volumes sold direct onto farm or the volumes supplied to other feed companies on contract.

Results were analysed and interpreted, and a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis was produced.

From the 102 producer surveys completed, it could be seen that 40 farmers produced arable crops, 8 ran a pig enterprise and 24 had poultry enterprises. The survey data is presented according to enterprise.

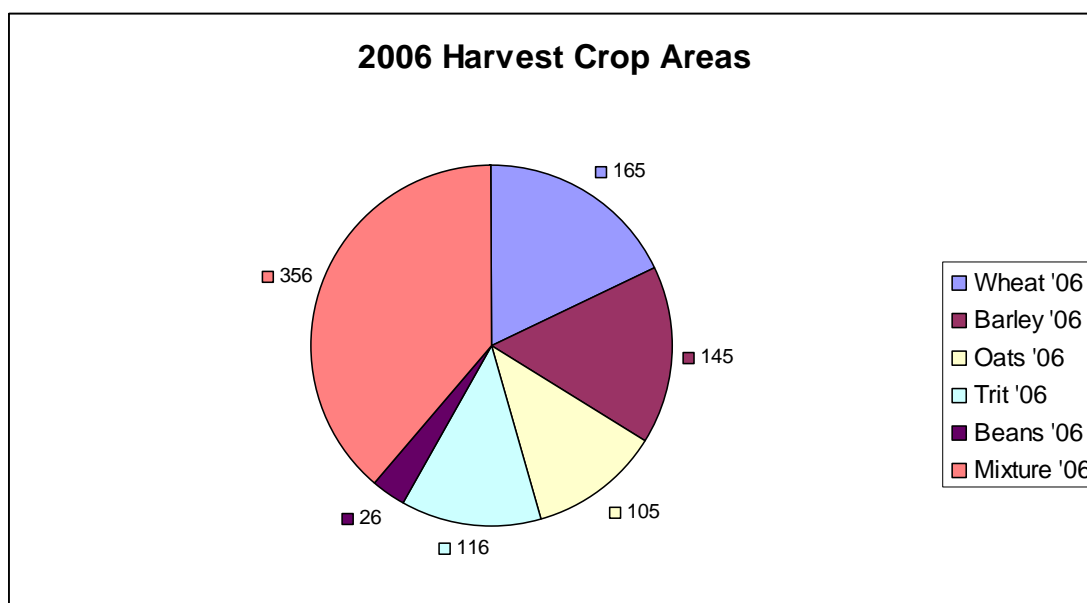
### 3.3.1 Arable producer results

The 40 returns from arable producers indicated considerable differences in the scale of the arable enterprises undertaken. The largest arable enterprise comprised 177 hectares (ha) and the smallest just 5 ha with the average being 22.8 ha.

The arable area grown by the survey group was 913 ha. This is 29.5% of the 3000 ha total organic arable area in Wales (Table 2.2).

#### 3.3.1.1 Production

**Figure 3.4 Organic crop areas (ha), Wales, 2006 harvest**



Source: Producer survey returns

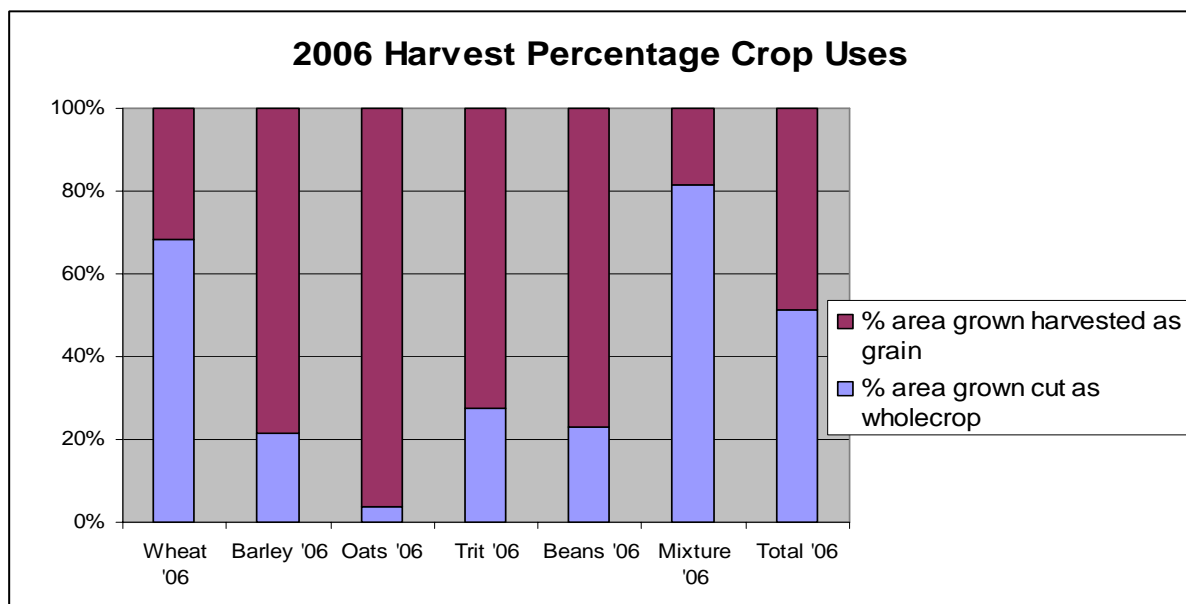
Figure 3.4 shows that the majority of the arable area was used for growing cereal mixtures; most often a cereal / protein mixture containing peas. All of these mixtures were consumed on-farm, with the majority (269 ha) being harvested as wholecrop silage. A proportion (61 ha) was harvested as grain and approximately 27 ha was grazed due to poor grass growth.

Of the cereals grown as pure stands, wheat (165 ha) was grown on the largest area, and oats on the smallest (105 ha). Only a small area (26 ha) of beans was grown, indicating a significant protein deficit compared to the cereal area. This is likely to be because most farms are using a predominantly grassland system with the arable part of the rotation providing a “break” from grass. In a more arable focused system, beans are likely to be used as a break between cereals to extend the rotation.

### 3.3.1.2 Usage

Of the 913 ha of crops grown, 50% was harvested as wholecrop and 47% as grain. However, there was significant variation among species as to whether the crop was harvested as grain or as wholecrop (Figure 3.5). The grain harvest of 431 ha produced approximately 1,458t of grain, of which 69% was consumed on the farm of production.

**Figure 3.5 Percentage crop harvested as whole crop silage and grain, 2006.**



Source: Producer survey returns

Wholecrop is a useful tool for an organic producer because of the flexibility it offers to control weeds. It is harvested approximately 2 months earlier than a grain crop which means that the weed species are not mature and so the potential contamination of the ground is significantly reduced. The ensiling, feeding and subsequent composting of manure will also help reduce weed seed viability within the system. The early harvesting allows for a summer fallow to be undertaken giving an opportunity for difficult perennial weeds to be controlled.

Interestingly, despite the popularity of oats as a whole crop in combination with peas, oats were grown alone as a whole crop silage on only 4 ha.

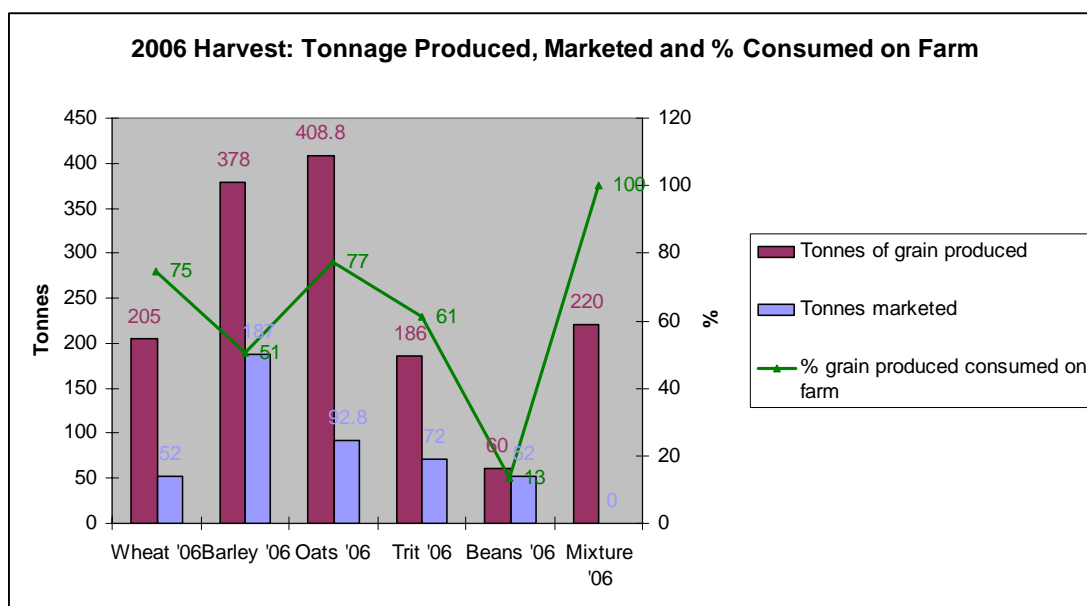
Wheat, which is generally considered to be the most marketable crop, saw the greatest proportion of the area (of a single crop) harvested as whole crop (Figure 3.5). This may be a result of the poor silage yields seen in 2006, particularly in areas

of west Wales, which lead to the need for more wheat area to be cropped as whole crop silage than would be the case in other years.

The tonnages of grain harvested, the tonnages marketed and the percentages consumed on farm are shown in Figure 3.6. Of the grain harvested (1,458 t), oats was the single biggest crop (408 t), with barley the second largest at 378 t (Figure 3). However, only 455 t of grain (31%) was actually marketed, with barley accounting for 187 t of this and just 52 t of wheat being sold.

This contrasts to the Scottish Agricultural College Organic Market Link Producer Survey 2006-07 results which indicated wheat being the least likely crop to be retained on farm. Again, poor silage yields may have resulted in greater quantities of grain being fed on farm than anticipated.

**Figure 3.6 Harvest tonnages, on-farm consumption (% of grain produced) and grain marketed (t), 2006**



Source: Producer survey returns

### 3.3.1.3 Yields

Yields indicated by Welsh producers were lower per ha than would be anticipated in other areas of the UK (Table 3.1).

**Table 3.1 Reported yields (t/ha) compared to standard data, 2006**

Crop	Yields indicated by survey (t/ha)	Organic Farm Management Handbook Yields (t/ha)
Winter Wheat	3.9	4.5
Spring Wheat	3.9	3.5
Barley	3.3	4.0
Oats	4.1	4.0
Triticale	2.2	4.5
Beans	3.0	3.0

Sources: Producer survey results; Lampkin et al. (2006)

This could be as a result of any number of factors, including climate, rotation, or even a lack of enthusiasm for arable production. Costs are likely to be similar, if not higher, than other areas of the UK due to smaller field sizes and potentially greater distance to market resulting in lower producer returns.

### 3.3.1.4 Future and attitude

The results for the 2007 harvest year (i.e. crops currently in the ground) show a 21% fall in arable area to 720 ha with an anticipated reduction in grain to be marketed. This figure indicates a reduction of 16% to 381 t. Again the vast majority of grain will be consumed on farm.

Of the 40 arable producers, 5 indicated plans to expand their arable enterprise to provide an additional 111 ha of arable cropping. Some of this was in tandem with the expansion their livestock enterprise with production largely being retained for use on farm.

The reasons given for those not indicating plans to expand included a lack of available land and poor producer prices for arable crops. Producer price expectations were lower because of perceived higher transport costs to move grain out of Wales to the feed compound market. This is despite the strong price movements that have occurred since the feed situation became acute. Transport costs clearly provide a strong disincentive with the situation being aggravated by the fact that there are no Wales based traders and compounders.

### 3.3.1.5 Extrapolating survey results to the whole of Wales

It is possible to extrapolate from the survey results across the whole Welsh organic arable area by taking the results for the 40 surveyed farms and projecting these results across the whole arable area in Wales. Such a technique is likely to result in some inaccuracies but with the survey representing 29.5% of the Welsh arable area it should be a reasonably robust approach. This method would indicate that for the whole of Wales organic arable production is as follows, although the differences in area compared with the Defra statistics for 2005 (Table 2.2) indicate that the results need to be interpreted with caution.

**Table 3.2 Extrapolated Welsh organic arable crop areas/output, harvest 2006**

	<i>Wheat</i>	<i>Barley</i>	<i>Oats</i>	<i>Triticale</i>	<i>Beans</i>	<i>Mixture</i>	<i>Total</i>
Area (ha)	560	492	354	393	88	1206	3093
Defra 2005 areas (Table 2.2)	468	788	538	225	108	--	3034
Area harvested as grain (ha)	177	386	341	285	68	205	1462
Tonnes of grain produced	695	1281	1386	631	203	746	4942
Tonnes consumed on farm	519	647	1071	386	27	746	3397
Area of wholecrop cut (ha)	383	105	14	108	20	911	1541
Tonnes marketed	176	634	315	244	176	0	1545

Source: *Producer survey results; Defra (2007)*

The producer survey indicated a significant decrease in area from 2006 to 2007 of 21.2%. If this severe decrease as indicated by the survey is seen across the whole organic arable area, organic arable production in Wales in 2007 would be as follows:

**Table 3.3 Projected Welsh organic arable crop areas/output, harvest 2007**

	<i>Wheat</i>	<i>Barley</i>	<i>Oats</i>	<i>Triticale</i>	<i>Beans</i>	<i>Mixture</i>	<i>Total</i>
Area (ha)	546	175	330	367	163	862	2441
Area harvested as grain (ha)	173	137	317	266	125	147	1154
Tonnes of grain produced	677	455	1289	588	376	533	3900
Tonnes consumed on farm	505	230	997	361	50	533	2681
Area of wholecrop cut (ha)	373	37	13	101	38	651	1216
Tonnes marketed	172	225	293	228	325	0	1219

Source: *Producer survey results; Defra (2007)*

This indicates a dramatic decline in the area of arable cropping at a time when overall conversion and livestock numbers are increasing and so demand for feed is likely to be increasing.

The likely explanation for this is the adoption cycle of organic consumers combined with the lack of focus on the arable market due to the historic reliance on imported arable cropping. Dairy and meat products are earlier adopted products by new and developing organic consumers. When changes in supermarket positioning of the organic offering led to significant increases in demand, demand on farm rose and so prices responded rapidly. This resulted in expansion in livestock enterprises and new conversion to fill this demand.

The reliance on imported crops has meant that focus on the arable sector has been poor as feed supplies have always been available. This meant that, although demand was increasing for cereals and pulses, farmgate prices for arable crops did not respond until late into 2006. Once imported supplies became severely short prices moved rapidly, but this was too late to impact on winter plantings of arable crops and plans already in place to expand livestock enterprises.

The reduction in arable cropping indicated by the survey would suggest livestock producers were seeking expansion of their enterprises without suitable planning for supplying their own feed requirements but rather relying on importing feedstuffs onto the holding.

With these supplies now not so readily available it might be that some plans are reviewed and the reduction in arable area will not be as dramatic as indicated.

### **3.3.2 Poultry and pig producer results**

Of the 24 poultry producers that responded to the survey, 6 had table bird operations. The greatest diversity in scale was seen in this sector with the largest producer producing 500,000 birds in 2006 with the smallest producing 38 birds. The remaining businesses fell into a range between 600 and 1200 birds.

In the layer bird sector (18 producers), the largest producer had 9000 birds and the smallest less than 20. However, the majority of the producers (14) had less than 200 birds and were selling eggs on a local scale.

Plans for significant expansion of table bird production were indicated in the survey. One producer indicated a proposed increase of 375,000 birds within the next few years. Of the producers not planning to expand their poultry production, a lack of available land was cited as the main reason.

The survey indicated that of the 102 respondents, only 8 were pig producers. Their systems were also on a small scale with the largest herd being 7 sows. The majority of farms had fewer than 4 sows. However, one producer who was a recent entrant to the pig sector saw some possible expansion depending on the experiences with 3 sows.

### **3.4 Trade survey**

The results of the surveys completed by the grain trade and feed compounders indicated that a small tonnage of grain, just 120 t, was sold as grain into Wales for the 2006 harvest year. A further 500 t supplied to be processed and then sold onto farm. There were no reports of any grain being purchased on farm to be moved to compound feed manufacturers. Any grain moved through the trade was supplied to other producers within Wales.



The vast majority of feed is imported into Wales as compound feed. It should be noted that for this survey, volumes of organic feed were requested without information about percentage inclusion of organic ingredients due to the complexity this would have added. The responses received show a total tonnage sold into Wales of approximately 13,600 t, with a single company supplying approximately 45% of this volume.

However, whilst the majority of compounders contacted completed the forms as requested this figure does not include responses from one feed compounder based in Somerset and one based in Cheshire both of whom are known to supply into Wales. Some of this tonnage has been ascertained from a customer as a further 750 t but there would be significant sales beyond this.

In conclusion it is suggested that the total compound feed requirement for Welsh organic producers is approximately 16,000 t. Of this, the majority is ruminant feeds with approximately 5,000 t being poultry rations.

The feed compounders indicated their businesses are assuming that growth in demand for feeds in Wales will be approximately 20% for 2007 compared to 2006, with similar growth going forward. This is the growth generated in terms of tonnages supplied onto farm but is not the growth in their ingredient requirements that will increase through the feed derogation changes happening at the end of 2007.

With a single producer providing the majority of the demand for poultry rations the expansion plans of this business largely determine the demand for the whole sector within Wales. It is therefore suggested that demand for poultry ration will increase from 5,000 t in 2006 to approximately 9,000 t in 2009.

The ruminant sector is a more complicated picture as it is more likely that new entrants will be seen. Based upon the anticipated increases in demand projected by the feed compounding companies the demand for feed will grow from 11,000 t (16,000t total for 2006 minus the 5000t poultry ration for 2006) in 2006 to approximately 19,000t in 2009.

Therefore, assuming that cereals account for 50% of a compound ration, total cereal and protein crop requirements for Wales will each be 14,000 t by 2009.. Given the lack of supply of proteins produced in Wales as indicated above and a significant demand coming from the poultry sector it is likely this protein demand will be fulfilled through the use of imported sources of soya.

### **3.5 SWOT Analysis**

The Strengths, Weaknesses, Opportunities and Threats of the Welsh organic arable, poultry and pig market are listed below.

#### **Strengths**

- Cereals are often harvested as whole crops allowing good control of weeds

#### **Weaknesses**

- A very small area of beans was grown in 2006 which meant a deficit of protein crops
- Only a small proportion (31%) of grain produced was marketed
- Winter wheat and barley yields were generally lower than what would be expected from the Organic Farm Management Handbook
- Most animal feed is imported into Wales as compound feed.

### **Opportunities**

- There is an increase in organic land under permanent pasture, and hence livestock numbers. This may lead to an opportunity for arable producers as these livestock enterprises based upon permanent pasture will be more reliant upon feeds brought onto the farm.
- Oats and beans yielded well compared to what would be expected from the Organic Farm Management Handbook (Lampkin *et al.*, 2006) so may be good crops for producers to consider growing.
- Producers in the arable sector saw opportunities for expansion.
- Producers in the poultry and pig sectors also saw opportunities for expansion. This would lead to an increased requirement for cereals.

### **Threats**

- There has been a 21% drop in the organic arable area plantings for harvest 2007.
- Producer price expectations were low because of perceived higher transport costs to move grain out of Wales to the feed compound market.

## 4 Conclusions

With arable responses for this survey comprising 29.5% of the arable cropping in Wales the total area which was harvested as grain is estimated to be 1462 ha for Wales providing 4942 tonnes of which just 1545 tonnes is available to be marketed. It must be stressed again that this is an extrapolated final figure.

Wales is highly reliant upon the import of compound feed for the livestock sector because where arable crops are produced the majority of them are retained on farm either as wholecrop silage or grain.

Assuming that the compound feed imported is 50% cereals, the tonnage of cereals imported is estimated at 8,000 t with a perceived growth in this figure to 14,000 t by 2009.

On this basis Wales is approximately 19% self sufficient in organic cereals.

Based on assumptions discussed earlier full self sufficiency would require an additional 6666 ha of ploughable land rising to 11666 ha in 2009. This may not seem realistic and it is unlikely that it will ever be achieved but such factors need to be viewed with a sharper focus given both the present and future pressures on supply and price.

Welsh grain yields are lower than those achieved elsewhere in the UK.

The Welsh organic arable area has been static from 2003 to 2006 with indications that this will decline sharply for 2007 harvest.

The projected reduction in arable area in 2007 compared to 2006 perhaps reflects the relative strength seen in livestock production in early 2006 and a lack of flexibility to take advantage of the recent upturn in arable prices seen in late autumn 2006.

There is no organic compound feed producer in Wales. The two companies producing conventional feeds within Wales are sourcing a proportion of their requirement from outside Wales. For arable producers there it is an expensive route to get produce into the volume feed compounder market due to higher haulage costs than English producers located closer to organic feed mills.

The Welsh organic arable producer has not responded to the market demands for greater volumes of wheat to be produced preferring to produce barley and triticale to be sold. This perhaps shows the strength of the local market for produce and so a lower need to engage with the feed compound trade.

The vast majority of organic arable land in Wales is producing wholecrop silage or grain to be consumed on the farm. The remaining grain is largely finding local markets "over the hedge" as the more structured marketing channels into organic feed mills in England are expensive to access due to high haulage costs resulting in lower producer returns. Added to this the volumes of production are of little interest to the grain trade.

## 5 Recommendations

These are based on the conclusions set out in the previous section and are based on the assumption that it is essential that there should be as robust an organic arable sector in Wales as possible. The prime function of this sector should be, as it is now, focused on the provision of feed for the Welsh organic livestock sector. There is scope for trading grain out of Wales and this might be seen as attractive if prices strengthen further but producers are always going to be at a competitive disadvantage in this market compared to producers in England.

There needs to be two strands to any future strategy – the first is to encourage new producers with suitable land to enter conversion and the second is to work with existing livestock producers in aiming for greater levels of self sufficiency where soils and topography allow.

To address this, there is a need for:

- better **statistical data** on current and future production levels and market shares and a wider appreciation of the need for improved levels of **self sufficiency**;
- **greater publicity** should be given to events and trends in the wider organic cereal market to ensure that Welsh organic livestock producers have all the facts when planning for the future;
- a series of **events, articles and other media coverage** and special attention should be given to these issues in the **Organic Market Wales** e-bulletin;
- enhanced payments through the **OFS** through a mechanism that replaces the previous AAPS rate;
- the new **Farming Connect** service to focus on the potential for home grown feed when working with organic livestock producers;
- an increasing focus on **education** in order to signpost opportunities for young people;
- an **evaluation** of the potential for the establishment of an organic feed compounding operation in Wales – this could reduce costs and also provide market opportunities for arable producers;
- improved **production systems**, supported by effective research and development and knowledge transfer;
- parallel improvements in **variety and mixture** choices – this may involve both new introductions, a re-evaluation of varieties deemed to have been out-classed and the development of landraces;
- a clear identification of **suitable areas** for organic arable production along with guidance on what crops to grow in the particular soil types and prevailing climate
- improved **integration of effort** between organic sector businesses and the agencies that support the development of the Welsh horticultural and organic sectors;
- better **linkage** with the dairy, arable and red meat sectors to benefit from complementarity relationships between the sectors at production, market development and promotional levels.

## 6 References

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- OCW (2007, forthcoming) *Welsh organic sector development and investment opportunities*. Organic Centre Wales, Aberystwyth.
- Soil Association, *Organic Market Report 2006*, Soil Association, Bristol

## Annex: Organic arable trade directory

NB: this does not include businesses trading in grain for non-human consumption

### **Bacheldre Watermill**

Churchstoke, Montgomery

Powys, SY15 6TE

Tel: 01588 620489

[info@bacheldremill.co.uk](mailto:info@bacheldremill.co.uk)

[www.bachledremill.co.uk](http://www.bachledremill.co.uk)

Artisan millers of stone ground organic flour

### **Essential Trading Co-operative Ltd**

Unit 3, Lodge Causeway Trading Estate

Fishponds

Bristol - BS16 3JB

<http://www.essential-trading.coop/>

Main supply market: Independent delis, Local shops, Farm gate/ Factory outlet, Mail order, Wholesale and Multiple retailers

Organic and Wholefood Wholesaler, produce includes Wholefood such as flour and cereal bars

### **Face of Flowers**

Llanbed Business Park,

Tregaron Road, Lampeter,

SA48 8LT

[enquiries@face-of-flowers-organic.co.uk](mailto:enquiries@face-of-flowers-organic.co.uk)

[http://www.face-of-flowers-organic.co.uk/about-](http://www.face-of-flowers-organic.co.uk/about-organic-shop.html)

[organic-shop.html](http://www.face-of-flowers-organic.co.uk/about-organic-shop.html)

Main supply market: Retailers

Trader of wide range of organic produce, including cereals and baked goods

### **Graig Farm**

Dolau, Llandrindod Wells

Powys, LD1 5TL

Tel : 01597 851655

[sales@grraigfarm.co.uk](mailto:sales@grraigfarm.co.uk)

[www.grraigfarm.co.uk](http://www.grraigfarm.co.uk)

Main supply market: mail order, retailshop

Producer group, retailer and one stop shop for organic produce, including bread.

### **Good Food Distributors**

Unit 35 Dole Road Industrial Estate

Llandrindod Wells

Powys, LD1 6DF

Tel: 01597 824720 / 0800 833068

[sales@goodfooddistributors.co.uk](mailto:sales@goodfooddistributors.co.uk)

[www.goodfooddistributors.co.uk](http://www.goodfooddistributors.co.uk)

Main supply market: Mail order, Farm shop, Retailers, Caterers, Processors, Wholesalers, Supermarkets

Wholefood packer and distributor of organic branded goods supplying to the trade industry. Produce includes cereals and wholefoods.

### **Penrhos**

Penrhos Court, Kington, Herefordshire,

HR5 3LH –

01544 230 720 –

[sales@penrhos.com](mailto:sales@penrhos.com)

[www.penrhos.com](http://www.penrhos.com)

Producer and trader of organic bread

Main supply market: Direct sales, wholesale, retail, producer groups

### **Wholebake**

Tyn Y Lidiart Industrial Estate

Corwen

Denbighshire, LL21 9RR

Tel: 01490 412297

[wholebake@aol.com](mailto:wholebake@aol.com)

[www.wholebake.co.uk](http://www.wholebake.co.uk)

Contract manufacturers of handmade, organic flapjacks and cereal bars.

Main supply market: Wholesalers, Supermarkets