

THE UK ORGANIC VEGETABLE MARKET (2003-04 SEASON)

DEFRA project no. OF 0342

April 2005

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ACKNOWLEDGEMENTS

We are extremely grateful to the packers and wholesalers of organic vegetables who supplied data for this study. Without their co-operation the study would not have been possible. The following is a list of organisations and individuals who have provided information.

Abel and Cole	Huntapac Produce	RB Organic
Barfoots of Botley	Langmead	R & K Drysdale Ltd
JJ Barker Ltd	MBM	Red Earth
Castle Aromatics	Moulton Bulb Company	Roy Lyttle
Choice Organics	Original Organics	Riverford
DGM	Organic Connections Int	Solanum
English Village Salads	Ltd	Tangmere Airfield
Farm Around	Organic Options	Nurseries Ltd
Flavour Fresh Salads	Organics To Go	TIO
G's Marketing	Organic 2000	Univeg
Geest	Pauls	Vitacress Salads Ltd
Greenvale AP	Phoenix Organics	Wight Salads
Goodend	Poskitts	

The Soil Association, Elm Farm Research Centre (EFRC) and the Institute of Rural Science, Aberystwyth collaborated on this project.

Thanks to Roger Hitchings of EFRC for writing section 2.4. We are also very grateful to Susanne Padel and Robert Duxbury for peer reviewing this report and to James Cleeton and Michael Green for their involvement in the study.

Funding from the UK Department for the Environment, Food and Rural Affairs (DEFRA) for the work reported here, under project OF 0342, is gratefully acknowledged.

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EXECUTIVE SUMMARY

Background

During the late 1990s and early 2000s the organic vegetable market in the UK was reported to be growing at an average of 30 per cent per annum. However by 2002-03 growth had begun to slow to about 20 per cent per year. The market had also started to stabilise with less peaks and troughs in supply, better relationships in the supply chain, much less speculative growing and UK self-sufficiency rose to 59 per cent. Yet competition increased and downward pressure on prices, particularly in the pre-pack sector, began. This competition encouraged continuation of rationalisation in the supply chain with both supermarkets and packers dealing with fewer growers/suppliers.

Aims and Objectives

The overall aim of this three year DEFRA funded study is to provide specific market information on the demand and supply of individual UK vegetable crops on an annual basis, and to identify trends and evolution over the seasons. This report supplies information on the UK 2003-04 season and trends between 2001-02 and 2003-04 seasons. This information can be used to identify opportunities for UK growers, to facilitate sustained development of the market, to gauge progress towards Organic Action Plan targets and to examine obstacles for further development and how they can be overcome.

Methods

This project was led and conducted by HDRA, in collaboration with the Soil Association, Elm Farm Research Centre and the Institute of Rural Sciences, University of Wales, Aberystwyth. Data were collected from UK packers and wholesalers of organic vegetables on the amounts, value and source of organic vegetables traded during the 2003-04 season. This was supplemented with crop area data from the organic certification bodies and interviews with key players in the market. All data were cross-referenced with other published sources of information for the same season.

Results

This study estimated the total retail value of the UK organic vegetable market in the 2003-04 season to be £197M (Table 1). This was comprised of 123,500 tonnes of produce, of which 73,500 tonnes were sourced from the UK. When compared to the 2002-03 season this represents a 2.9 per cent increase in volume (from 120,000 tonnes) and a 16.5 per cent increase in retail value (from £169M). This contrasts with a 10.2 per cent rise in retail value in the total organic food market (Soil Association, 2004). On the other hand the farm gate value of organic vegetables had only increased 2.5 per cent from £40M in 2002-03 to £41M in 2003-04.

The area of land used for the production of organic vegetables in the UK increased 16 per cent, from 5,133 ha in 2002-03 to 5,956 in 2003-04. UK produced organic vegetables accounted for 60 per cent of traded organic vegetables. However the situation varied for specific crops for example from 34 per cent of onions to 97 per cent of swedes produced in the UK.

The relative share of the organic vegetable market held by various outlets remained broadly similar when compared with the previous year, with pre-packers dominating the market with 67 per cent of volumes traded. Direct sales had increased their share to 14 per cent. The wholesale share had fallen slightly to 12 per cent and processing accounted for six per cent of volumes traded.

Table 1: Summary of volume and value of the UK organic vegetable market

Year	Total market (tonnes)	UK produce (tonnes)	% UK produced (volume)	UK Farm gate Value (£M)	Total Market Wholesale Value (£M)	Total Market Retail Value (£M)
2001-02 (revised data)	98,500	57,500	58	37	117	143
2002-03 (revised data)	120,000	72,500	59	40	128	169
% Increase (between 2001 & 2002)	21.8%	26.0%	1.7%	8.1%	9.4%	18.1%
2003-04	123,500	73,500	60	41	159	197
% Increase (between 2001 & 2002)	2.9%	1.4%	1.7%	2.5%	24.2%	16.5%

Discussion and conclusions

The rate of growth of the UK organic vegetable market slowed slightly compared to previous years suggesting the market had matured further through a second stage of development that began in the 2002-03 season. The lower increase in volumes than value traded was to some extent due to a shift in the types of crops that were grown this season towards higher-value but lower-volume crops. There were several key themes to this phase of development: the continuation of downward price pressures, development of new marketing channels and increased self-sufficiency.

Prices pressure continued downward in the 2003-04 season. This had largely originated from competition between multiples, which tended to set a precedent for the rest of the sector. Low returns led to some businesses ceasing to trade, others limited their development and innovation, and some turned to new market outlets where price pressures were less severe.

Self-sufficiency continued to increase and, because of policy targets, this is used as a measure of the level of development of the sector. Yet if the English Organic Action Plan (DEFRA, 2002) target of 70 per cent is to be reached by 2010 then more rapid progression for some market routes and crops will be necessary. However, several external constraints limit UK growers' ability to increase their share of the market and run a viable business, such as declining prices, weather (both in the UK and on the continent), technical issues and issues surrounding the use of organic seeds. Growers have to manage these constraints while operating a viable business.

New markets such as public procurement and catering were explored, as businesses looked for new methods of expansion and responded to downward price pressures in the pre-packing sector. However continued policy support, infrastructure and information transfer developments are necessary for such new markets to reach their potential and realise social and economic benefits.

Recommendations

Downward price pressure is threatening the viability of organic vegetable production in the UK, which could have a negative effect on levels of self-sufficiency. If this is to be avoided, all parts of the supply chain and policy makers must develop methods to address the problem and find other ways of competing, such as on quality. New market outlets should be explored and supply chain actors should co-operate and communicate in order to develop supply and infrastructure to meet the demand of new outlets in the long term. Researchers should explore sustainable food chains and determine how 'good practice' can be applied to other situations. Research should also examine the variations in cost of production between organic and conventional, and UK and overseas, production and whether there are other opportunities for cost savings other than prices to suppliers. It is necessary for all actors in the supply chain to educate consumers and market players about how food is produced and handled along the supply chain.

1. INTRODUCTION

1.1. Aims

The overall aims of this study are to:

- ▶ Provide information on the supply of individual UK organic vegetable crops, on an annual basis, throughout the UK growing season for growers, producer organisations, packers and policy makers;
- ▶ Identify trends and potential opportunities for UK growers;
- ▶ Facilitate the sustained growth of the market through the provision of market information;
- ▶ Gauge progress towards Organic Action Plan targets;
- ▶ Examine obstacles to further development and how they could be overcome.

1.2. Background

During the late 1990s and early 2000s the organic vegetable market was reported to be growing at an average rate of 30 per cent per annum. However by 2002-03 growth had begun to slow to about 20 per cent per year. The market had also begun to stabilise with less peaks and troughs in supply, better relationships in the supply chain and much less speculative growing. During 2002-03, UK self-sufficiency rose to 59 per cent, through improved expertise and continuity in production, however competition also increased and downward pressure on prices, particularly in the pre-pack sector, began. Rationalisation and specialisation in the supply chain was another feature of the 2002-03 season with both supermarkets and packers dealing with fewer growers/suppliers. Consequently the market gradually became dominated by a relatively small number of packers for each crop. This suited some growers and their production systems but others turned to markets away from the multiples as they saw their supermarket sales being cut.

Studies of consumption report that 84 per cent of organic products were bought by 23 per cent of consumers and that 42 per cent of consumers bought organic products because they believed they were healthier (Lockwood Press, 2004). In *The UK Organic Vegetable Market (2002-03)*, Firth *et al*, examined consumer drivers in more detail. According to Taylor Nelson Sofres (TNS), fruit and vegetables were the most popular organic category with 54.3 per cent of households buying some organic vegetables. TNS also found that 55 per cent of consumers try fruit and vegetables before any other organic category, making it a key entry point for consumers (TNS, 2003).

Organic Farmers and Growers (2004) performed a survey of organic farmers in November 2003, which gave some indication as to the future production of organic vegetables. The key points for organic vegetable farmers were:

- ▶ About 70 per cent of vegetable and salad farmers rated their profitability as low or borderline;
- ▶ About 75 per cent of vegetable and salad farmers intended to still be farming organically in 2009;
- ▶ About 25 per cent of vegetable and salad farmers would definitely consider investing in a co-operative if approached.

This suggests that although profitability is low at current prices organic vegetable growers generally intend to continue farming. The report also predicted that there would be no great marketing shifts and little innovation in the short term in order to minimise risk.

1.3. Methodology

HDRA, the Soil Association, Elm Farm Research Centre (EFRC) and the Institute of Rural Sciences from the University of Wales, Aberystwyth have collaborated on this project. HDRA led, co-ordinated and undertook the market data collection and evaluation. The Soil Association collected the crop area data from its own and other certification bodies and assisted following up questionnaire responses. EFRC provided Section 2.4. All partners assisted in the design, methodology and techniques as well as reviewing data and disseminating results.

Data on specific quantities of organic vegetables marketed in the UK were collected from packers and wholesalers, differentiating between UK products and imports and identifying UK sourcing seasons. This information was collected via the data input forms in Appendix 3 and 4, which were sent to 50 organic registered vegetable packers and wholesalers during April 2004. This was followed up with telephone interviews with a range of players in the market. Estimates were made for companies who did not supply data, based on published figures and market intelligence. Estimates were also made for crops that were directly marketed, based on the number of box schemes in the UK and other published data.

The Soil Association collected organic vegetable crop area data based on broad crop categories from SA Cert. and other certification bodies. This information was analysed to indicate supply levels for each crop and compared to previous seasons' data to identify alterations.

All data were cross-referenced to other published sources of information, such as Organic Monitor, Taylor Nelson Sofres (TNS), Organic TS, DEFRA and the Soil Association. Final data were peer reviewed by a number of key players in the organic vegetable industry.

2. RESULTS

2.1. Overview of the UK organic vegetable market

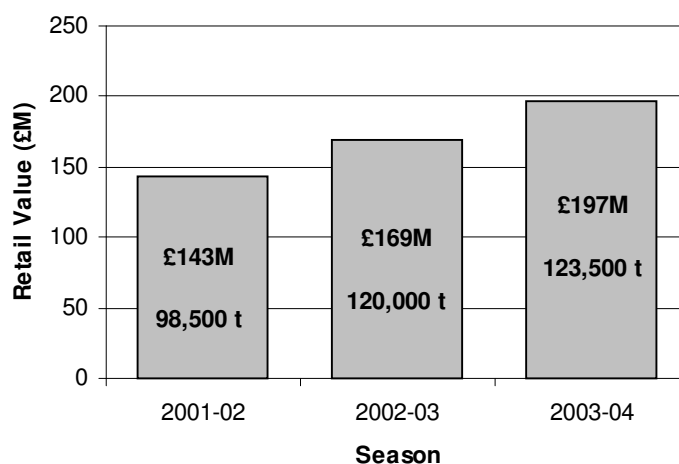
This section highlights the broad structure and dynamics of the UK organic vegetable market in the 2003-04 season.

This study estimated the total retail value of the UK organic vegetable market in the 2003-04 season at £197M. This was comprised of 123,500 tonnes of fresh produce, of which 73,500 were from the UK making the UK 60 per cent self-sufficient in organic vegetables (Table 2), a rise from 59 per cent in 2002-03. When compared to the 2002-03 season there had been a 2.9 per cent increase in total volume (from 120,000 tonnes) and a 16.5 per cent increase in retail value (Figure 1). This contrasted with a 10.2 per cent increase in sales in the total organic food market from £1.015bn (in 2002-03) to £1.119bn (in 2003-04) (Soil Association, 2004). On the other hand the farm gate value had increased only 2.5 per cent from £40M in 2002-03 to £41M in 2003-04. TNS had estimated growth in the organic fruit and vegetable market at 1.3 per cent, however they focused on the supermarket supply chain.

Table 2: Key figures in the UK organic vegetable market 2003-04

Total market (tonnes)	UK produce (tonnes)	% UK produced (volume)	UK Farm gate Value (£M)	Total Market Wholesale Value (£M)	Total Market Retail Value (£M)
123,500	73,500	60	41	159	197

Figure 1: Size of the organic vegetable market in the UK (retail value and tonnes)



Organic food and drink accounted for 1.20 per cent of the total retail market (Soil Association, 2004). This had increased from 1.05 per cent in 2003 (a 14 per cent increase). When vegetables were taken on their own, the organic market represents 1.09 per cent of the total (organic and conventional vegetable) market volume of 11,323,000 tonnes (DEFRA, 2004). Yet, by value, organic vegetables accounted for 2.7 per cent of the farm gate value of all home produced vegetables (£1.492bn) DEFRA, 2004).

The area of land used for the production of organic vegetables in the UK had increased 16 per cent, from 5,133 ha in 2002-03 to 5,956 in 2003-04. However, this masked variations between crop categories as shown in Table 3.

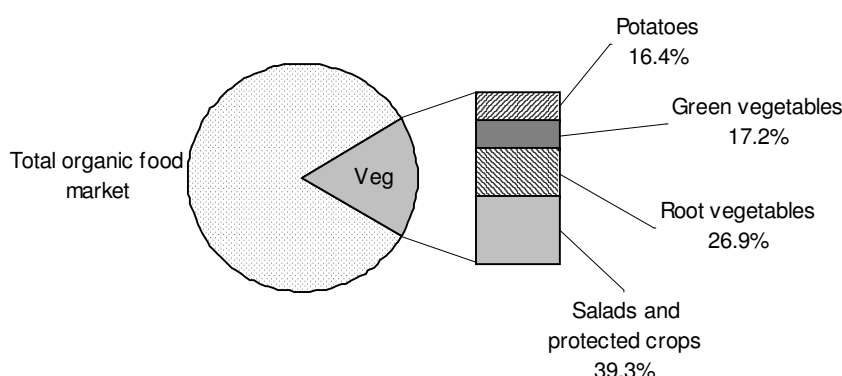
Table 3: Hectares of organic land used to produce horticultural crop categories (2002-04)

	April 2002	April 2003	April 2004	Annual change %
Potatoes	3000	1860	1689	-9
Root vegetables	1150	1588	2131	34
Green vegetables, salads and protected crops	1049	1598	2050	28
Herbs	60	86	86	0
All Vegetables	5259	5132	5956	16

(Soil Association, 2004)

The structure of the UK organic vegetable market and the share it held within the wider organic market is illustrated in Figure 2. Vegetables accounted for around 18 per cent (by value) of the total UK organic market. The biggest category was salads and protected crops, followed by root vegetables, green vegetables and potatoes.

Figure 2: Structure of the organic market in 2003-04 (by value)



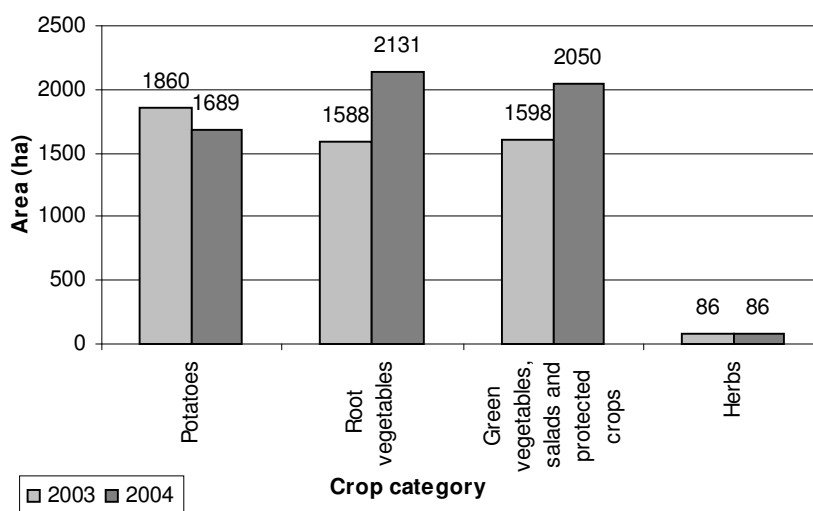
Packers, wholesalers and growers interviewed stated that during 2003-04 demand for organic vegetables increased although at a much lower rate than in previous years with a better matching of demand and supply. Competition also increased between supermarkets and pre-packers, which intensified price pressures in the sector and increased competition between growers. The UK season had continued to extend, especially for tomatoes (Appendix 2).

Developments in the organic vegetable market have occurred within the wider agricultural and food retailing environment. Particular events in the 2003-04 season included CAP reform announcements, the Morrison-Safeway takeover, a stronger euro relative to the pound and a particularly dry summer. The effects of these factors will be discussed in later sections.

2.2 Area and productivity

The following section explores alterations in the area and productivity of organic vegetables grown in the 2003-04 season.

Figure 3: Areas grown of broad organic vegetable categories (ha)



(Soil Association, 2004)

The total area of UK organic vegetables grown in the 2003-04 season was 5,956 ha which was a 16 per cent increase from the 2002-03 season. However, within this overall increase, the area for potatoes fell. The potato area decline can largely be attributed to high levels of speculative growing in 2001 and 2002 and the tendency for growers converting in the early 2000s to grow potatoes as a first crop. Additionally as specifications for potatoes can be very high some growers decided not to continue growing potatoes.

Levels of productivity can be calculated by dividing total farm gate value (or tonnage) by the area grown to get productivity per unit area by value (or weight), in any specific year. Table 4 shows these values for the past three seasons. The averages were calculated from total values, areas and volumes.

Table 4: Comparison of calculated productivity between 2001-02 and 2003-04

Season	Average productivity (£/ha)	Average prices £/t	Average yields (t/ha)
2001-02	7036	643.5	10.9
2002-03	7794	551.7	13.8
2003-04	6884	557.8	12.3
AVERAGE	7218	579.8	12.4

Clearly productivity in 2002-03 was higher than either 2001-02 or 2003-04. During 2003-04, despite average yields falling by 11 per cent, average productivity fell 12 per cent; this could be a reflection of low average prices and the dry season.

The Soil Association supplied area data illustrated in this section, but area figures shown in Appendix 1 and Appendix 2 have been calculated as part of this study, from volumes marketed and average marketable yields achieved in this season.

2.3 Sourcing

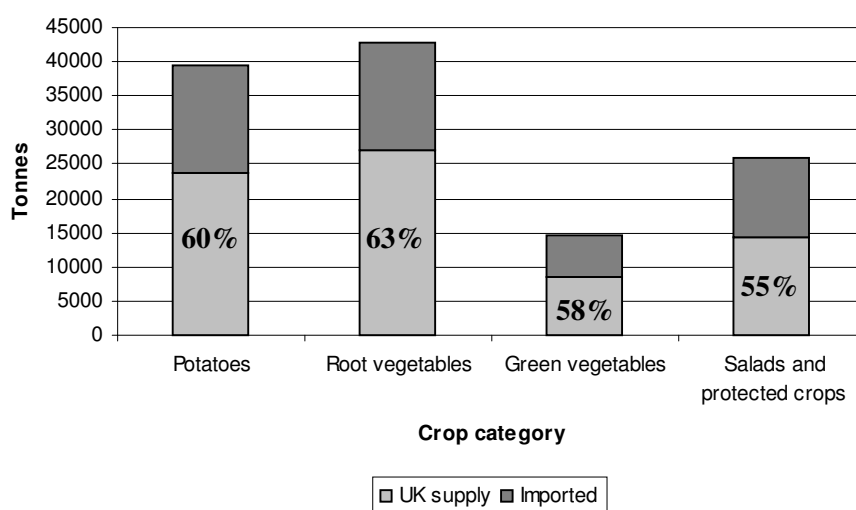
There are many factors that affect the sourcing of organic vegetables. This section explores the factors of EU enlargement, exchange rates, import substitution, policy and weather and the impacts they may have.

Background

In 2003-04, the average UK self-sufficiency for all organic vegetables was 60 per cent or 73,500 tonnes sourced from the UK. This had increased marginally from 59 per cent in 2002-03. The UK had historically been a net importer of organic vegetables; it was reported that only about 30 per cent of organic vegetables were home produced in 1997. Organic vegetables from the UK had an estimated farm gate value of £41M this is 21 per cent of the total retail value of all organic vegetables and had increased 2.5 per cent when compared to the previous season.

The percentage of total supply (by volume) that was UK sourced for broad crop categories is illustrated in Figure 4. Clearly the proportion of sales that were UK sourced was high for potatoes and root crops. However, there were large variations between different crops, ranging from only 34 per cent of onions marketed being home produced to 98 per cent of swedes being UK grown.

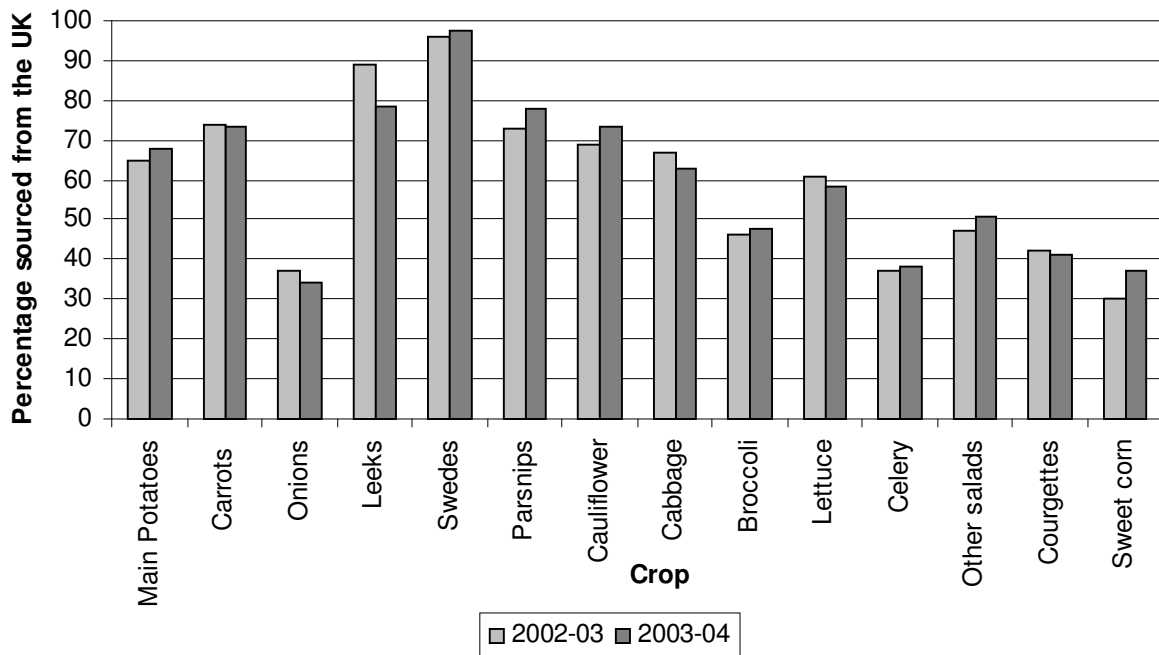
Figure 4: UK supply and imports for different crop categories by volume (2003-04)



The average per cent sourced from the UK in 2002-03 and 2003-04 for selected individual vegetables is shown in Figure 5. Full crop-by-crop details of sourcing are shown in Appendix 2.

TNS (2003) data indicated that 76 per cent of consumers prefer vegetables sourced within the UK and 23 per cent either don't know or don't care where vegetables are sourced. This suggests there is potential for average UK sourcing to increase further, although buying intentions do not always translate into actual buying behaviours and there are technical supply limitations, for some crops, as discussed in section 2.4.

Figure 5: Percentages sourced from the UK for selected crops in 2002-03 & 2003-04 (by volume)



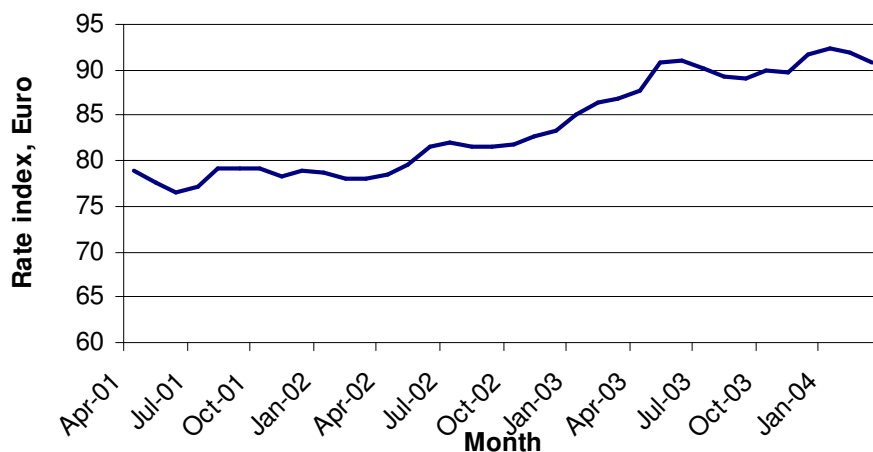
EU enlargement

EU enlargement, subsequent to the period of this study (in May 2004), could affect the supply of imports available to the market. However the true impacts of this are yet to become clear.

Exchange rates

The exchange rate affects the relative cost of buying vegetables abroad and so also impacts upon UK market share. Figure 6 shows fluctuations in the index rate of the euro since April 2001. As the euro has strengthened over the period, relative to the pound, imports became relatively more expensive.

Figure 6: The euro index rate against sterling (April 2001 to January 2004)



(Source: Bank of England, Feb 2004)

Organic import substitution compared to conventional sourcing

It is interesting to investigate how the trend of import substitution observed in the organic sector compared with the UK food industry as a whole. The UK share of the conventional market has generally been rising, in volume terms, possibly assisted by the strengthening euro. For all food products (conventional and organic) DEFRA statistics showed that UK self-sufficiency had increased from 62.5 per cent (in 2002) to 64.1 per cent (2003). For indigenous food the figures were 75.5 per cent (in 2002) to 77.4 per cent (in 2003) (DEFRA, 2004b). However the situation was slightly different when vegetables were separated from the total food calculations. Selected data on supply and demand from DEFRA statistics on fresh vegetables and potatoes from *Agriculture in the United Kingdom* (2004) is shown in Table 5. The organic figures were obtained from this study. Clearly conventional fresh produce was experiencing a different trend to all conventional food and organic vegetables, as self-sufficiency fell between 2002 and 2003. Conversely, self-sufficiency in organic vegetables rose slightly, despite a fall in organic potato self-sufficiency. Clearly organic potato self-sufficiency is low relative to conventional potatoes.

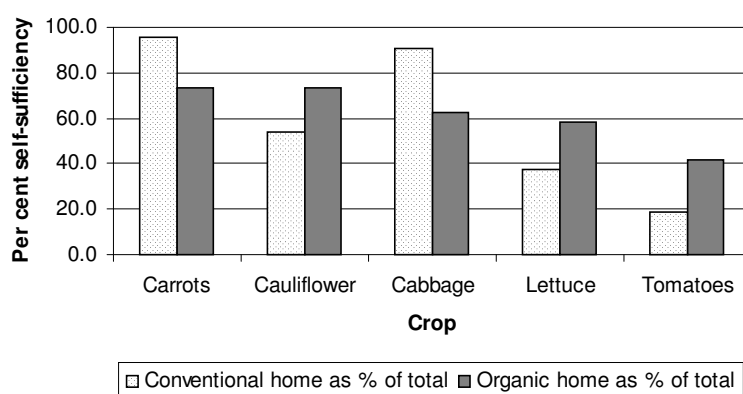
Table 5: Conventional and organic statistics of vegetable supply & production
(Thousand tonnes unless otherwise specified)

Organic	2002	2003	Conventional (by calendar year)	2002	2003
Total supply	120.5	123.5	Total use	12,551	11,323
<i>Of which: vegetables</i>	78.3	84.5	<i>Of which: vegetables</i>	4,217	4,110
potatoes	42.4	39.3	potatoes	8,334	7,213
Total UK supply	72.5	73.5	Total UK supply	9,548	8,465
<i>Of which: vegetables</i>	46.1	49.9	<i>Of which: vegetables</i>	2,582	2,547
potatoes	26.4	23.7	potatoes	6,966	5,918
Total % self-sufficiency	59%	60%	Total % self-sufficiency	76.1%	74.7%
<i>Of which: vegetables</i>	58.9%	59.8%	<i>Of which: vegetables</i>	61.2%	62.0%
potatoes	62.3%	60.2%	potatoes	83.6%	82.0%

(Source: DEFRA, 2004)

However the level of self-sufficiency difference between conventional and organic vegetables varied on a crop-by-crop basis as shown in Figure 7. For example, for carrots and cabbage UK organic sourcing had not reached conventional levels. In contrast, organic lettuce, cauliflower and tomatoes already exceeded the level of UK sourcing of their conventional counterparts.

Figure 7: Organic & conventional self-sufficiency for selected crops (2003-04)



Policy through the UK

Policy can also impact upon the level of UK sourcing. Each country of the UK has an Organic Action Plan (OAP) that outlines targets for self-sufficiency for all organic food.

England

The English OAP (DEFRA, 2002) identified requirements for stable and strategic growth of the organic sector. Within this remit they set out a series of practical measures that the Government and the food and farming industry would take to encourage sustainable organic food and farming in the region. One objective was to “*ensure that consumer demand for organic produce resulted in tangible benefits for the English countryside and English wildlife, by increasing British farmers’ share of the organic food market*”. When the English OAP was written (July 2002), it was stated that organic producers should supply the organic market at least to similar levels to the conventional market, which, at that time of writing was 74.7 per cent (indigenous produce). And so a target of at least 70 per cent of indigenous organic produce being UK sourced by 2010 was set. On a more specific crop basis the plan stated that, “*the British organic sector should be able to achieve at least comparable levels of market share to the equivalent conventional product sector*”.

Two years after the first OAP, DEFRA published a report on the priorities for further action (DEFRA, 2004a). These highlighted areas for further development and that although the level of organic vegetables sourced from UK producers had increased it was identified that more was necessary to reach the target. It is also stated that the progress made by retailers should be taken forward and extended to the food service and manufacturing sectors, including identifying obstacles to increasing UK sourcing.

Wales

The second Welsh OAP (Agri-Food Partnership Organic Strategy Group, 2004) aimed to increase the share of UK and local Welsh markets that could be supplied from Wales. This represented a challenge, as there is proportionately less suitable land than in other parts of the UK, although there is sufficient for local production to make a significant contribution to local consumption.

Scotland

The Scottish OAP (Scottish Executive, 2003) stated, “*for products where Scotland’s climate supports organic production, Scottish organic products should secure a market share at least the same as that attained by Scottish non-organic produce. Only an estimated 35 per cent of organic produce sold is currently provided from domestic sources (as opposed to around 70 per cent for non-organic products)*”. The plan goes on to say that market penetration of Scottish organic products should grow so that they can meet at least 70 per cent, by value, of overall Scottish consumer demand for organic products that could be sourced in Scotland, as well as succeeding in the broader UK and international markets.

Northern Ireland (NI)

NI published an Organic Strategic Action Plan (2001-2006) in April 2001. Despite not specifying a figure for home sourcing it promoted greater awareness of organic produce among NI consumers and the domestic market. The ‘10 Point Action Plan’,

within the Organic Strategic Action Plan, focused on policy, market development, infrastructure and capacity building.

European Union

The main proposals in the EU Organic Action Plan concentrated on providing information to consumers, improving the availability of production, supply and demand statistics as policy and marketing tools, making public support for organic farming more effective, improving and reinforcing the Community's organic farming standards and increasing transparency and consumer confidence.

Further details concerning background analysis and the different actions can be found in the Commission staff working document 'European Action Plan for Organic Food and Farming' (June 2004).

Weather – UK and Continental

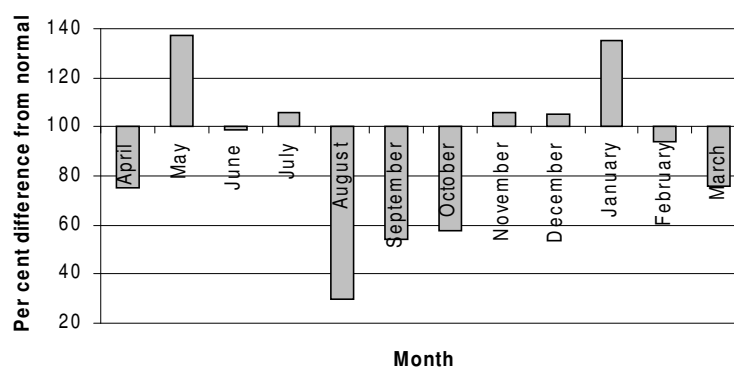
Weather had a considerable effect on supply levels of organic vegetables both from the UK and from the continent.

Some key characteristics of the weather during the 2003-04 season were:

- ▶ A very warm and dry season, particularly in southern England
- ▶ The warm dry spring provided favourable conditions for early cultivations and bed preparation but unfavourable conditions for stale seedbeds
- ▶ Transplanting in May was difficult where irrigation was unavailable
- ▶ Some vegetable crops suffered from reduced yields caused by the dry conditions, while others matured earlier than usual resulting in gluts followed by shortages.
- ▶ Low rainfalls hampered potato harvest as the dry weather conditions made lifting difficult and increased the incidence of bruising
- ▶ Lack of rain continued into November
- ▶ Hard soil made the lifting of carrots difficult
- ▶ Record hot and dry weather in Europe hit production on the continent

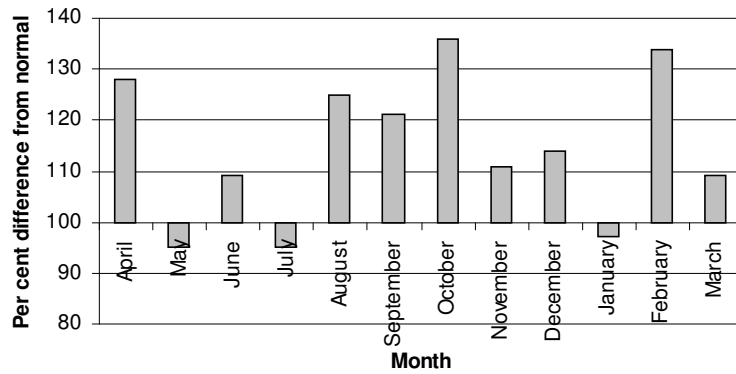
Figures 8 - 10 show variations in weather characteristics from the 1961-1990 average.

Figure 8: Per cent of average UK rainfall (April 2003 to March 2004)



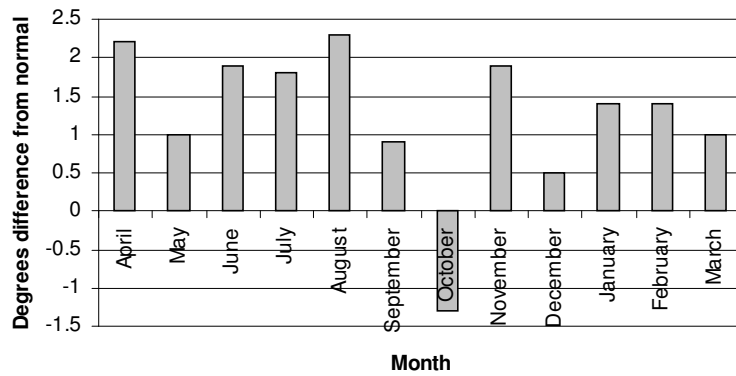
(Source: The Met Office, 2005)

Figure 9: Per cent of average UK sunshine (April 2003 to March 2004)



(Source: The Met Office, 2005)

Figure 10: Degrees of UK temperature different from normal (April 2003 to March 2004)



(Source: The Met Office, 2005)

2.4 The availability of UK organic produce through the season

This section focuses on analysing the results of this study against crop specific trends in the 2003-04 season.

A review of the availability of home produced vegetables was carried out for the original Organic Vegetable Market study in 2001-02 (Firth *et al*, 2003). The actual supply to the market of a range of vegetables was compared to the potential for supply of home grown crops (see Appendix 1). The focus of the review was to examine the potential for extending both the season of production using improved techniques in the fields and the season of supply by making greater use of established storage systems.

In the two years since the original study little has changed in terms of the potential for extending the season in the UK (see Appendix 2). In broad terms we are looking at a similar range of technologies and techniques that are available to organic growers. There have been improvements in efficiencies and performance but the main difference has been in the actual extension of the season for a number of economically important organic vegetable crops. As noted in the original report growers have to juggle improved prices for early crops against lower yields and sometimes higher pest and disease damage. Soil fertility, especially nitrogen availability, is another difficult factor in trying to produce economic early crops in organic systems.

The reasons for the improvements in extending the season are various. There is no doubt that growers are seeking 'to push the envelope' by establishing crops earlier and by continuing them later. In many cases they have had the active approval of their market outlets that have come to realise that the security of imported crops in spring and late autumn is not as good as it once was. It is also absolutely clear that growers have improved technically in recent years and that a much greater understanding of crop behaviour in organic systems has been achieved.

The improvements in preparing ground in good time and taking early weed strikes were aided by the warm dry spring of 2003 in the UK (see Figure 8 and Figure 10). This in turn allowed early establishment of key crops such as lettuce, onions and various brassicas. However some land without irrigation became too dry for successful planting. Reduced rainfall at the back end of the season also caused considerable problems on holdings without irrigation – August levels were 30 per cent of the 1961-1990 average while September and October levels were around 55 per cent (see Figure 8). This can clearly affect the yields and quality of late season crops but can also have a significant knock on through the difficulty of establishing winter green manure cover crops.

All organic growers are acutely aware of the need to use organic seeds where the desired varieties are listed on the national database (www.organicxseeds.co.uk). The effects of this requirement have so far disproportionately fallen on smaller growers but it is possible that the regulations will tighten on larger growers in the coming years. So far the granting of derogations to use conventional seeds has been relatively straightforward – these are usually granted on the grounds that the variety concerned is considered essential by the market. 'Market' in this context is usually the pre-pack and supermarket sector.

The other major change that occurred with the introduction of the Seed Directive (EU Regulation (EC) No. 1452/2003) was the final prohibition of the use of chemical seed treatments in organic systems. Whatever view might be taken of the former use of chemical treated seed in what was a very small number of crops (e.g. celery and sweet corn) there is no doubt that it has given growers of those crops greater flexibility in variety choice and planting time. The use of non-organic seed has also conferred considerable flexibility in that organic growers still have a degree of access to the widest choice of varieties albeit under an increasingly strict regime of derogations.

Comparison with the conventional position

It is often difficult and sometimes unwise to draw exact comparisons with the conventional market. The market achievements of conventional crops were used as pointers for the potential of organic crops to penetrate the market in the first report. In the past much has been made of the disparities between the two sectors and one of the signal achievements of the first market study was to demonstrate that the differences were not as great as had been imagined.

It is clear from an examination of DEFRA statistics (DEFRA, 2004b) that performance of some organic crops is as good as if not better than the conventional equivalent. Home production of organic lettuce accounts for some 58 per cent of the annual market by volume while home grown conventional lettuce only provided 38 per cent of total supply in 2003 (see Figure 7). Equivalent figures for tomatoes are 42 per cent organic and 19 per cent conventional. UK organic cauliflower supplied 73 per cent of the market by volume for the 2003-04 season compared with 54 per cent of conventional in 2003.

Conventional production has been falling steadily over the past ten years for many crops, though not all. On balance organic production has increased, as has its market share though this is based on figures for only three seasons. For example, there appears to be potential for increase in market share for organic carrots (73 per cent organic compared with 96 per cent conventional) and cabbage (63 per cent organic, 90 per cent conventional) though the position of the latter is being affected by the changing tastes of consumers.

Reviewing the changes between 2002-03 and 2002-04 cropping seasons for each crop

The data collected by the project team has been organised to track the changes that have occurred since the first study was carried out (see Appendix 1). Thus it is now possible to follow the changes in the total organic market for a wide range of vegetables and salads, and compare this to the figures for UK production, market share and the area grown, in each of the three seasons reviewed so far. The broad trends for each of the crops are discussed in the following section and possible reasons cited for the changes.

Early/Salad Potatoes

There has been a significant reduction in area of the crop grown with the effect that the home produced percentage by volume has fallen from 55 per cent to 45 per cent. The length of time that UK production dominated the market has actually reduced but

this is arguably consistent with the nature of the crop. Producers only make a decent price when they get the crop to market early; this in turn will depend on geographical position and the suitability of land. Storage is not a major factor with this crop although some salad types can be successfully stored.

There has been a distinct move to earlier supply into the market for early potatoes with UK supplies dominating the market from July as opposed to August in the past. Some early potatoes are reaching the marketplace in May, again one month earlier than previously. Growers have been helped by better conditions but the key factor here, as elsewhere, is improved management of the crop – much of this relates to the timing of operations and the efficient clearing of the crop from the field.

Maincrop Potatoes

The total organic market for maincrop potatoes fell fairly sharply for the period under review, and in fact came in lower than the total for the 2001-02 season, at 25,809 tonnes. Growers clearly anticipated this and production area was also reduced though UK production gained two per cent of the market share compared with the previous year. Product specifications have tightened considerably over recent years with the result that growers with less than ideal potato land are choosing to drop the crop. The economics of the crop can be marginal in some years and a high rate of rejection because of poor skin finish can destroy any profitability.

As noted in the earlier report, storage of organic potatoes is well developed following the lead of the conventional sector with the obvious exception of sprout suppressants. There is however a potential development in the pipeline relating to the use of ethylene as a natural sprout suppressant though this has yet to be agreed at EU level. Even without this development UK production dominated the market for nine months of the year compared to five in the year before.

Carrots

Carrots continue to go from strength to strength – the total organic market for the year showed an increase of 30 per cent while the UK market share increased from 70 per cent to 73 per cent. Using the latest storage techniques it is theoretically possible to supply the market for twelve months of the year but it is always going to be difficult to compete with imported new carrots in the spring months. There is inevitably some loss of skin finish when carrots are stored even if the roots themselves are still in good condition. The months of April to June continue to be dominated by imports while homegrown production is in the ascendant for the rest of the year.

Onions

The data suggest that the UK crop is essentially sold as fresh or is only stored for relatively short periods of time – UK supply dominates for only the four months from September to December. This may be partly due to an increased use of sets – these can give a more reliable and weed competitive crop but the physiology of the onion grown from a set means that it does not store for the same length of time as a seed sown onion. There was only a modest increase in the UK marketable harvest (258 tonnes) despite an increase in area grown of 30 hectares. It was a fairly favourable season but it is possible that weed control was a problem for some growers. Onions are seriously non-competitive and any delay in tackling weeds can knock the yields back significantly. Downy mildew may also have been a problem especially in weedy

crops where air movement can be restricted. Imports continue to be extremely price competitive.

Leeks

Growth in the total organic market for leeks has been very strong over the duration of this project so far. The total organic market volume has grown by 79 per cent since the first study in the 2001-02 season. UK production grew sharply from the 2001-02 season to the 2002-03 season but slipped back slightly in this latest study. In the same period the area reduced and slightly less quantity was produced. Leeks have had a reputation for maintaining a strong price profile but prices have come under pressure over the last two seasons. This has caused the crop to become marginal for some growers and it has been dropped – weed control costs can be very high for this non-competitive crop.

Swedes

Market share (by volume) for swedes has increased from 96 per cent in 2001-02 to 97 per cent in 2003-04. Clearly there is little room for improvement for what is virtually self-sufficiency in this crop. The total area and market dipped slightly from the previous season, a possible reflection of a move away from ‘traditional’ vegetables.

Beetroot

Beetroot has shown significant increases in total organic market, UK production by volume and the area grown in the UK. Despite this the market share slipped back to 61 per cent almost certainly because the increased demand was to some extent unanticipated rather than overwhelming technical problems. However the period of the year in which UK product dominates has not changed significantly over the period of the study. The use of standard storage techniques keeps the crop in good enough condition through to March but the old crop is bound by its internal biology to start sprouting as we move into spring. If there is an extension of the season in the future it is more likely with the early crop – it should be possible to achieve a degree of import substitution in July for example.

Parsnips

Parsnips are usually field-stored, and is traditionally supplied and consumed during the winter months. Parsnips can be found on the shelves on an all year round basis but volumes are low during the summer season. UK product now dominates the market for nine months of the year. It is technically possible to extend this further but the economics of early root production are probably the main barrier. UK market penetration has increased significantly from 57 per cent in 2001-02 to 78 per cent in 2003-04.

Turnips and celeriac

Turnips are roots that do not store well and there is an increasing trend towards the baby crop. As a class UK production dominates for only three months though it is also significant for the four mixed months. There are no over-riding technical reasons why the turnip production season cannot be extended (baby turnips can be produced in poly-tunnels on a successional basis) but quality and economic factors tend to mitigate against it. Yet the overall share of the market has increased to 53 per cent. Other roots, such as celeriac, store well and the figures disguise the fact that UK

celeriac production is more dominant than that for turnips though it is a more minor crop in volume terms.

Cauliflower

UK share of total market volumes has increased from 64 per cent in 2001-02 to 73 per cent in 2003-04. UK production now dominates 10 months of the year compared to four in 2001-02. Production has increased despite a reduction in the area grown, indicating the greater technical expertise of growers, though weather patterns will also have played a part. Imports are still significant and will continue to be so because of the inherent difficulties of producing Class 1 heads on a successional basis for 12 months. It is technically feasible to achieve all year round production and in some years this happens in some areas of the country. Pest and diseases can cause problems but the greatest variable is the weather – temperature patterns are the most influential but rainfall (or the lack of it) can also be very significant. A further factor for the future could be the lack of varieties available as organic seed –this situation is likely to persist for the foreseeable future. Much will depend on whether certifying bodies continue to issue derogations for conventional untreated seed.

Cabbage

There has been a significant decrease in the total organic market for cabbage in all its forms – the crop is produced all the year round and there is no doubt that seasonal variation will be different at different times of the year. Traditionally the conventional crop has accounted for 95 per cent of the market but the proportion of UK organic cabbage has fallen year on year since this study started – it now stands at 63 per cent. This is not because it has become more difficult to grow cabbage in the UK though it may be more difficult to achieve the desired characteristics at certain times of the year. It is also possible that consumers are as likely to buy a summer type cabbage that has been imported in winter as a traditional winter cabbage.

Broccoli

This is yet another crop in which technical expertise is clearly making a difference. The area grown increased by 11 per cent from 2002-03 to 2003-04 while production increased by a substantial 24 per cent. The UK crop is dominating the market for more than six months in the year compared to only three months in the previous season, a further demonstration that a significant number of UK growers are managing to extend the season. Weather conditions have almost certainly helped but it should be remembered that favourable conditions for late season broccoli production also mean favourable conditions for late aphid and fungal diseases.

Fresh peas and Fresh beans

The production of organic peas has hit the economic buffers with UK market share slumping to 36 per cent from a high of 67 per cent in 2002-03. The area sown to the crop has almost halved over the same period. Problems with the crop include early bird damage and economically effective weed control. Imports of sugarsnap and mangetout peas continue to be very competitive.

The market share for beans by contrast has continued to increase despite only a small increase in overall area. It is difficult to un-pick individual factors as the category includes broad beans, runner beans and French beans (climbing and dwarf). Increase in yield of over 22 per cent on an area increased by only 6 per cent is testament to an

improvement in efficiency. The other interpretation is of course that a greater proportion of the crop was sold compared to previous years.

Lettuce and other salads

The total organic market for lettuce dipped during the 2002-03 season but has recovered to the level seen in 2001-02 of about 3,100 tonnes. Unsurprisingly lettuce dominates the market during the summer months while imports are dominant from October to March. This represents an improvement for the UK crop over previous seasons though overall market share had fallen slightly. This is definitely an area where some major growers have worked to extend the season often in conjunction with their overseas operations in order to provide the all year round continuity that is so essential when dealing with the major retailers. Early pest problems such as slugs and leatherjackets have been reduced through better ground preparation. Overall great reliance is still placed on the ability of the breeders to develop resistances to downy mildew, *Nasnovia*, etc. - this is particularly important for the late crops. This could be an area of concern in the future if the most resistant varieties are not made available as organic seed.

The total sales of other salads by contrast have shown a steep rise over the seasons studied so far to 885 tonnes. This can be attributed in part to the increasing popularity of the salad bag in which lettuce is sometimes a minority component. Non-lettuce salads are grown all year round and can be very popular in winter – despite this imports dominate for much of the year including winter. Many of the hardier salads such as oriental brassicas, corn salad, winter perslane, etc. can be grown perfectly well in the UK using poly-tunnels but the prevailing temperatures will always limit productivity compared to warmer countries.

Courgettes

Production of organic courgettes in the UK has increased by a fairly modest amount (8.5 per cent) but the crop has extended its domination of the market from two months to four months. There is still some potential at the back end of the season but this can be completely wiped out by autumn frosts. Earlier crops have been achieved by direct sowing and the use of covers. This has brought about a good response from the market particularly where problems have been encountered with poor weather overseas.

Celery

This is a significant crop in the ready-to-eat salad sector though the total organic market has shown only modest growth over the duration of the project to 1,297 tonnes. Increases in UK yields and area have mirrored this to a great extent while market share has slipped slightly when compared to 2001-02. There are inherent risks in growing this crop particularly into the autumn months when celery leaf spot (*Septoria apiicola*) can be devastating in a bad year. Issues relating to variety choice and hot water treatment of seeds are still being worked through. Yet, it is always going to be a summer and early autumn crop and the best hope for the future will probably lie in working to grow the crop earlier in the season and in increasing consumption generally.

Sweetcorn

Sweetcorn is a crop that is very seasonal as far as UK production is concerned though growers have extended the season from two months in 2002-03 to five months in 2003-04. The rest of the year is dominated by imports and market penetration is unlikely to go much beyond the high of 51 per cent seen in the 2001-02 season. Growers are presently dealing with implications of the seed regulations, which prohibited use of seed treatments from 1st January 2004. Overall demand for sweet corn has been relatively static over the last two seasons.

Protected crops

Aubergines are a very minor crop in quantity terms and the total organic market declined in the season under review. Production and market share have increased significantly over the period of the project as UK growers have added the crop to their portfolio. There is potential for continued import substitution though the volumes will clearly be small.

The total market for organic cucumbers has remained fairly constant over the three years of the study so far, but UK production has increased from 46 per cent in 2001-02 to 76 per cent in 2003-04. Growers have clearly made excellent progress in tackling the issues of fertility. The organic season is slightly truncated compared to conventional production because of the slightly slower start and an earlier finish. The UK crop dominates the market from July through to October.

The picture is very different for tomatoes in terms of market share and area grown. The total organic market has shown a slight decrease over the duration of the project to 7,935 tonnes while the area of production has fallen significantly. UK area grown and market share have fallen by approximately a third from 2002-03 to 2003-04. This is not because of technical difficulties *per se* but more because the economics of the crop have become more marginal both in heated glasshouse crops and short season poly-tunnel production. This is a crop where it is becoming very difficult to compete with imports on price. On the evidence of the monthly figures UK tomatoes would appear to be competitive in August and September only.

The total organic market for peppers has increased from a relatively low base in 2001-02 (471 tonnes) to a substantial 1,712 tonnes in 2003-04. UK production has followed this trend though market share has slipped back from a high of 46 per cent in 2002-03 to 42 per cent in the season under review. The most remarkable aspect of this is that the area of production has only increased slightly while marketed yields have increased nearly threefold in the same period. Once again technical efficiencies have been achieved to great effect.

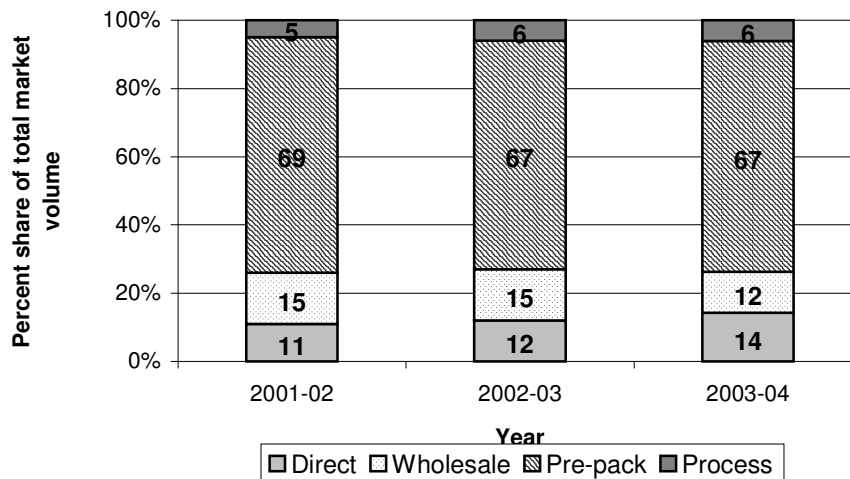
Herbs

Market share for UK organic herbs moved up sharply from 40 per cent in 2001-02 to 68 per cent in 2002-03 and it has remained unchanged into the 2003-04 season. Despite this, imports continue to dominate most months in the year. This is partly a reflection of the fact that UK production is very seasonal and partly an issue of matching supply to demand – these are often crops with relatively short harvesting periods. There are no compelling technical reasons why the UK crop of parsley, coriander, dill, fennel, chervil, basil and others should not take a more prominent role through the summer months.

2.5 Market channels

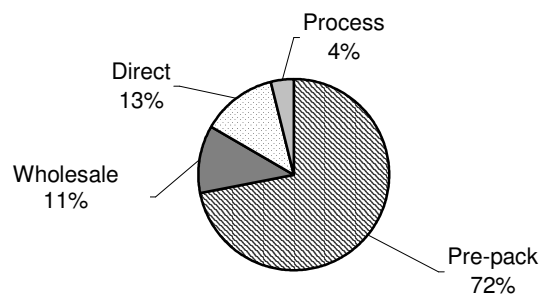
Supermarkets continued to dominate UK organic vegetable sales and so pre-packers were the major route to market, accounting for 67 per cent of the volume of organic vegetables sold (Figure 11). However, direct sales showed a small increase in relative share. This section examines the changes in each of the main market outlets for organic vegetables.

Figure 11: Percentage of total volume to different market outlets (2003-04)



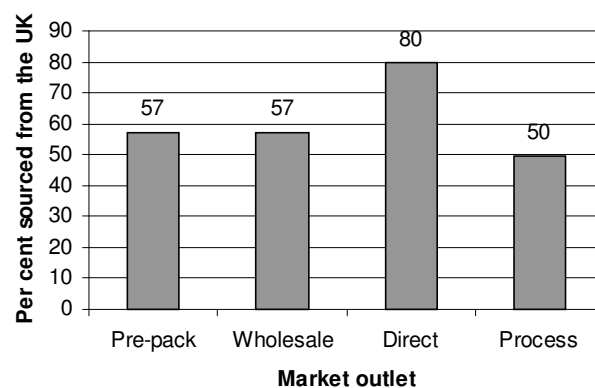
When calculated by value the picture was slightly different with pre-packers accounting for 72 per cent of the total market value and direct sales accounting for 13 per cent (Figure 12).

Figure 12: Market outlet share by value (2003-04)



Each route to market has a different sourcing strategy in order to meet the requirements of their customer base. Direct marketing achieves the highest proportion of UK sourcing of all market outlets as Figure 13 illustrates.

Figure 13: Per cent (by volume) of sourcing from the UK by market outlet (2003-04)



Pre-pack

Pre-packers mainly supply supermarkets, which remained the major market outlet for organic vegetables. The wholesale value of organic vegetables through this channel was £114M; this was comprised of 82,800 tonnes; of this 57 per cent was sourced from the UK. Due to its large market share, the supermarket and pre-packing outlet has the ability to drive the market and set some standards. Tesco, Sainsbury and Waitrose were the three dominant retailers in the organic market accounting for 70 per cent of all organic food sales (TNS, 2003). In the 2002-03 season the pre-packers share of market volumes fell slightly, although this season their share of the market stabilised at 67 per cent.

Within this sector increased interest in prepared and convenience vegetables had been reported. This could be a response to the squeeze on margins at all levels, resulting from competition between supermarkets, and to meeting the demands of consumers. There had also been continued rationalisation and specialisation.

The Morrison-Safeway takeover at the end of the period (8 March 2004) of this study and growth from Tesco led to fierce competition and some reorganisation among pre-packers and supermarkets, which placed downward pressure on prices along the supply chain. Since pre-packers accounted for a high proportion of the market, any alterations had repercussions in other markets outlets. Hence prices in wholesale and direct outlets experienced downward pressure and specifications were reported to be getting higher although, in wholesale and direct outlets, this was not occurring to the extent that it had in the pre-pack market. This reorganisation in the market also contributed to uncertainty in the market concerning the outcome and its wider effects.

Wholesale

Wholesalers generally supply independent retailers, box schemes, food service and public procurement, but some also operate their own outlets, such as box schemes. The wholesaler share of the organic vegetable market fell slightly so they accounted for 12 per cent of the market with a wholesale value of £18.2M and a volume of 14,600 tonnes. 57 per cent of this volume was sourced from UK growers.

Some wholesalers reported that they had problems finding sufficient quantities that met quality, grading, presentation and transport requirements consistently. Wholesalers supplying independent stores reported a general increase but stabilisation of demand. Relationships in the wholesale supply chain were also stated to be very good.

Direct sales

Direct outlets, usually farmers' markets, box schemes or farm shops, enable farmers to market crops straight to the consumer. Direct sales are the outlet that had grown most rapidly, and increased their market share for the past three years to reach a share of 14 per cent of the UK organic vegetable market. This reflected an increase in the total number of box schemes and delivery services (vegetable and other) from 471 to nearly 500 and an increase in the size of many schemes. Likewise the number of farmers' markets had increased 11 per cent (Soil Association, 2004). In the 2003-04

season, about 17,500 tonnes of organic vegetables were sold through direct outlets, compared with 14,300 tonnes in the year before. Produce through this outlet had an estimated wholesale value of £20.1M and 80 per cent was sourced from UK producers.

This market could benefit from the English OAP recommendation that an Action Plan Group should advise on “*capitalizing on the strengths of local organic supply and identifying how obstacles to further development can be overcome*”. Also as TNS data indicated, 70 per cent of people claimed they were prepared to pay more for local food. This suggests that growth in the sector could continue.

Processing

Although the share of organic vegetables for processing is small in the UK, at six per cent of total market volumes, it remained stable. Processing accounted for about 7,500 tonnes of organic vegetables with a wholesale value of £6.6M. During the period of this study there was only a one per cent increase in the number of licensed processors from 1,825 in 2003 to 1,845 in 2004 (Soil Association, 2004). Some pre-packers had developed processing facilities for convenience products, such as carrot batons.

Catering

The total food service market was worth about £30bn a year (Sherer, 2005). There was increased interest in the potential of organic food to access this market although there are some certification issues for catering outlets dealing with organic food. During 2003-04 the number of licensed organic catering businesses doubled to 34 (Soil Association, 2004). A TNS super panel revealed that a high per cent of consumers would like an organic option on the menu when they eat out, yet this does not indicate how many people would actually select the organic option, if it were available. MBM Produce Ltd identified scope in this channel and developed an ‘Organic Cuisine’ brand, in June 2004, to meet the needs of caterers, the hospitality industry and hoteliers.

Public Procurement

This marketing channel had been encouraged through the English Organic Action Plan recommendation that an Action Plan Group should advise on how organic produce can contribute to the Government's public health agenda.

The Soil Association (2004) estimated that organic food in public procurement could result in £25M growth in total organic sales in the UK. If vegetables captured 18 per cent of this market (as they have in the wider organic market) it could lead to an estimated £4.25M market for organic vegetables. However the true potential of this market is unclear especially due to cost, preparation, distribution and consistency of supply limitations. Yet, there are good examples, in several areas, where supplying schools with local and organic food is working well.

Associated to this market, TNS estimated the lunchbox market in the UK to be worth £4bn. Organic vegetables could also potentially capture a proportion of this market.

3. DISCUSSION

This study determined the size and value of the UK market for a range of organic vegetables and identified trends and opportunities. In the following section, this information is combined into a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis of supply and food chain issues in the UK organic vegetable market (Table 6).

During the 2003-04 season the retail value of the UK organic vegetable market grew by about 16.5 per cent, yet there were only small increases in overall volumes traded and in farm gate value (2.9 and 2.5 per cent respectively). However UK producers captured a larger share of the market with UK volumes traded increasing 1.4 per cent. Price pressures, originating from competition between multiples, had threatened the viability of the organic vegetable sector. However UK self-sufficiency had increased slightly and the area under organic vegetables increased 16 per cent. Yet, productivity declined with average yields down 11 per cent and average value per hectare down 12 per cent. This resulted from a combination of the shift in types of crops grown towards high-value but low-volume crops, and lower prices and yields this season. This season was also very warm and dry, which impacted upon pest, weed and disease pressure as well as crop development, which in turn affected yields. Additionally, new markets have increasingly been explored to offset the price pressures and to expand the market place for organic food.

Key themes within this season of price, self-sufficiency and new market development are further discussed below.

3.1 Price

Organic farming systems are particularly sensitive to price pressures due to lower yields than conventional systems and the need to balance the whole rotation; including less financially profitable fertility-building phases. Recent models have indicated that 80 per cent price premiums for organic vegetables relative to conventional are necessary in order for organic production to have similar profitability levels to conventional production (HDRA, 2005). Consequently, downward pressure on prices has continued to threaten the viability of organic vegetable production and packing. Price pressures largely originated from competition between multiples and were fed along the supply chain with spin off impacts on other market chains. As the pre-pack route accounts for 67 per cent of volumes traded, and 72 per cent of the value, their pricing and increasingly restrictive quality parameters tended to set a precedent for the rest of the sector. The high cosmetic requirements for pre-pack market channels can lead to high levels of wastage and a reduction in the marketable yield, hence further intensifying price pressures.

There were a variety of responses to the downward price pressures. A few packers found price pressures so severe that, for them, organic packing was not profitable enough to continue. This led to ongoing rationalisation in the supply chain. Additionally some businesses reported insufficient profit to invest in innovation or future business development and a desire to minimise risk. Conversely, several marketers responded proactively by finding alternative market outlets with less price pressures. On the other hand, although 70 per cent of organic vegetable and salad

growers stated their profitability to be low or borderline three quarters of them intended to still be farming organically in 2009 (Organic Farmers and Growers, 2003).

Conversely, high retail prices were reported to be a barrier to consumption. TNS data showed that 72 per cent of consumers were prepared to pay only 10 per cent more for fruit and vegetables, if they were organic (TNS, 2003). Many press sources have contained upbeat coverage about organic food and vegetables but this does not appear to have stimulated higher prices for producers.

In order for the situation of low price being a constraint to supply and high price a constraint to consumption, education is necessary at all levels, from consumers to corporate buyers, about the additional costs and benefits of organic production. Growers may also have to attempt to become 'price makers' as opposed to 'price takers' although this is not possible in all market channels partially due to the 'take it or leave it' attitude of corporate buyers, although co-operation, to gain market power, may help.

3.2 Self-sufficiently

The percentage of all organic food consumed which is UK produced, has been used as a measure of development of the market as well as gauging progress towards the targets in national OAPs. This self-sufficiency in organic vegetables had gradually increased to 60 per cent over the three years of this study, through lengthening the UK season and constant improvements in growers' skill and expertise although favourable exchange rates and extreme weather conditions in the rest of Europe may have assisted during this season. Yet, if the English OAP target of 70 per cent self-sufficiency, by 2010, is to be reached then more rapid progress will be necessary. However there are variations between market outlets and individual crops. For example, direct outlets sourced an average of 80 per cent from the UK while wholesalers and supermarkets sourced an average 57 per cent, but direct sales only accounted for 13 per cent of the market by value. On a crop basis, there is still potential for an increase in market share for carrots (73 per cent organic compared with 96 per cent conventional) and cabbage (63 per cent organic, 90 per cent conventional). On the other hand organic self-sufficiency exceeds conventional for lettuce, cauliflower and tomatoes. It may not be realistic for all crops to reach conventional self-sufficiency levels, as it can be difficult to achieve acceptable skin finish for crops such as potatoes and carrots.

Self-sufficiency of the UK organic vegetable market, in any year, is influenced by weather, exchange rate fluctuations, competition levels, technical issues and storage ability. Weather is a particularly important criterion as it can cause significant fluctuations in supply from year to year. The strengthening of the euro relative to Sterling during the period of this study meant imports became relatively more expensive. Conventional and organic vegetables were subject to some of the same external influences such as weather and exchange rates, although conventional self-sufficiency declined and organic increased slightly. Additionally, if the declining productivity were to continue, it could adversely affect self-sufficiency, as could lower prices making production of some crops uneconomical.

However, it appears that UK organic growers have potential to further increase their share of the market. For example, in recent years, improved growing techniques and expertise has helped overcome problems of pests, diseases and soil fertility at the beginning and end of the season to increase self-sufficiency. The extension of the season enables crops to be marketed when there is low security for imports. There are also opportunities for UK producers to differentiate their produce from imports by labelling food miles and freshness details, especially for direct sales outlets. Additionally as direct sales have the highest level of UK sourcing and are an expanding market outlet they could potentially increase the overall per cent self-sufficiency and act as a good practice model for some other chains. Yet, availability of untreated seed could act as a constraint for increasing UK self-sufficiency.

3.3 New market development

As the organic vegetable market matured and growth steadied, food supply chains have consolidated and reorganised, enabling novel markets to be explored, notably public procurement and catering. Although these have the capability to expand the market place for organic vegetables they are currently in their infancy and will require continued policy and infrastructure developments to enable them to reach their potential. Wholesalers are well placed to play an important part in facilitating infrastructure, and supply, developments to meet the demands of these novel markets. Working as a co-operative may also enable growers to achieve this through sharing knowledge, resources and expertise. As consumer demands are constantly changing it is important for new markets to ensure they meet demand.

There are policy indications, for example in the Organic Action Plans, that organic and local food should be included in public procurement. However this should be backed with financial assistance to enable schools etc to spend more on sourcing and preparing local/organic food. Lack of information transfer is also acting as a constraint for both transferring information from best players to new players and, for linking supply and demand actors. This study indicated that public procurement markets have the potential, if realised, to boost the organic vegetable market by an estimated £4.25M. The potential benefits of public procurement of local/organic food offers are many, including raising health status of people in public institutions and boosting the local economy where local products are sourced.

Although not a new outlet, direct sales are a market area that has gained popularity with both growers and consumers. This is partially because growers have more control over price and specification levels and consumers can buy produce that meets criteria, which supermarkets may not guarantee, such as local, freshness, and interacting with the producer. However as market boundaries blur as conventional producers adopt practices closer to organic standards new points of differentiation may be necessary.

3.4 SWOT Analysis

Table 6 summarises the strengths, weaknesses, opportunities and threats of UK organic vegetable supply chains and supply, as identified in this study. There are distinct opportunities for the UK organic vegetable market as it stabilises. However

they require parts of the food supply chain to work together, with policy support, and to aim for sustainable and ethical production and consumption.

Table 6: SWOT analysis of the UK organic vegetable market (2003-04)

	Strengths	Weaknesses
Food Supply Chain	<ul style="list-style-type: none"> Total volumes traded increased 2.9 per cent (by volume) during 2003-04 season to 123,500 t Retail value increased 16.5 per cent during the 2003-04 season to £197M Demand and supply more evenly matched and stabilising market situations Growth in direct sales Euro strengthening relative to the pound Organic vegetables are a key entry point into organic consumption 	<ul style="list-style-type: none"> Concentration of power and sales in the pre-packing market chain Lack of the infrastructure necessary to supply novel outlets Externalities of production and consumption not internalised in the price of produce Knowledge and attitude of some corporate buyers High waste levels due to cosmetic requirements of specifications
Supply	<ul style="list-style-type: none"> 60 per cent marketed is sourced from the UK (73,500 t) a 1.4 per cent increase from the previous season which illustrates the opposite trend to conventional vegetables A 16 per cent increase in organic land are to 5,956 ha to meet demand Skill and expertise of organic growers constantly increasing Lengthening of the UK season and so increasing continuity of supply Upbeat press about the benefits of organic food and fresh produce 	<ul style="list-style-type: none"> Larger increase in land area than in production leading to declined productivity through lower average yields and lower prices Low prices and lack of profitability impacting on willingness to invest in future Lack of tendency to co-operate to overcome problems/challenges Uncertainty about the impacts of CAP reform
	Opportunities	Threats
Food Supply Chain	<ul style="list-style-type: none"> Exploration and development of new market outlets such as public procurement (particularly for schools) and catering Rationalisation of pre-pack supply base making opportunities for some pre-packers whereas others lose out Policy support for sustainable production and consumption To develop ethical, long term and stable trading relationships Further education of all ages, backgrounds and market players about food culture and value 	<ul style="list-style-type: none"> Intense competition between supermarkets on price basis (feeding into outlet outlets) Increasingly restrictive specifications (feeding into all outlets) Constantly changing consumer demands Blurring of market boundaries as conventional producers adopt practices closer to organic standards
Supply	<ul style="list-style-type: none"> Development of co-operatives to help producers innovate, share knowledge and gain power and value in the supply chain For producers to market on freshness and food miles strengths For growers to explore price making opportunities and outlets 	<ul style="list-style-type: none"> Downward price pressures and declining returns threatening sustainability of organic vegetable production Intense competition from growers within the UK and abroad Unpredictable weather New seed regulations

4. CONCLUSIONS

The main conclusions of this study are:

- ▶ The market was still increasing (retail value up 16.5 per cent from 2002-03) although growth was slowing a little.
- ▶ In the 2003-04 season the total market for organic vegetables was estimated at 123,500 tonnes, with a retail value of £197M.
- ▶ Of the total volume traded 60 per cent (73,500 tonnes) were grown in the UK, compared with 74.7 per cent in the conventional fresh produce market. When considered on a crop-by-crop basis, there were large variations of UK market share, ranging from 98 per cent for swedes to 34 per cent of onions.
- ▶ The area of organic vegetables grown has increased by 16 per cent to 5,956 ha. However volume sourced from the UK increased by only 1.4 per cent. This illustrates a declining productivity as average yields and value per hectare have declined by about 11 per cent. This may be partially due to the warm dry summer influencing supply.
- ▶ Organic vegetables accounted for 1.09 per cent of the total volume of vegetables traded.
- ▶ The amount of vegetables sold through direct channels was 17,500 tonnes and the volume sold through pre-packers was 82,800 tonnes. 14,600 tonnes were sold through wholesales and about 7,500 through processors. Thus 67 per cent of organic vegetables were sold through pre-packers, 12 per cent sold through wholesalers, 14 per cent marketed directly to consumers and seven per cent sold to processing outlets.
- ▶ Growth in the organic vegetable market was beginning to slow. This phase of market development was characterised by downward price pressures, especially in supermarket sales. Downward price pressures were partially a result of intense competition between supermarkets and were threatening the viability of production and supply.
- ▶ The market was more stable with demand and supply better matched and the season for several crops was extended.
- ▶ Future growth in the sector will depend in part on further development of the infrastructure for progressive outlets such as catering and public procurement and organic and local sales. Policy support may be necessary to assist this.
- ▶ There is still scope to increase sales of organic vegetables particularly at direct and local levels.
- ▶ A more rapid increase in self-sufficiency will be necessary if vegetables are to reach the English Organic Action Plan target by 2010.
- ▶ Technical challenges, such as new regulations regarding use of organic seeds, exist with some crops and provide a constraint that should not be underestimated.
- ▶ Future opportunities for producers still exist from expanding overall market and scope to further replace imports.

5. RECOMMENDATIONS

5.1 Policy makers

There is a need for a more rapid increase in UK self-sufficiency than has been seen in recent years if the English Organic Action Plan target of 70 per cent self-sufficiency is to be met by 2010.

In order to achieve this it is recommended that policy makers:

- ▶ Further encourage retailers to source UK produce and support UK producers in overcoming constraints and producing sustainably.
- ▶ Facilitate development, and emphasise the importance, of ethical, trusting and long-term relationships throughout the supply chain through enforcing the Supermarket Code of Practice.
- ▶ Facilitate market intelligence and information transfer activities to address downward price pressures such as organic vegetable price exchange forums.
- ▶ Facilitate education, at all levels, of food value and culture and the reasons for the higher cost of organic food.

5.2 Research and Development

There is a need for research policy to be strategic and focused to make the most of available funds.

- ▶ Identify sustainable organic food chains, and ‘good practices’ within the chain, and to see if this can be applied to other chains.
- ▶ Further research/knowledge transfer into the costs of production. This would enable:
 - Growers to take a more active role in setting prices;
 - Comparisons between conventional and organic production costs;
 - Comparisons between UK and competitors production costs.
- ▶ Further information to improve knowledge on the costs of externalities of production, distribution and consumption of food.
- ▶ Research determining health or nutritional benefits derived from organic systems.
- ▶ Identify and address, through research and development, the technical issues that are currently restraining UK production, such as seed issues.
- ▶ Identify and develop opportunities for new partnerships, activities and funders to further develop sustainable organic vegetable production and consumption.

5.3 UK growers, advisors, packers, wholesalers and retailers

It is necessary for growers, advisors, packers, wholesalers and retailers to:

- ▶ Compete on bases other than price, such as quality, and find alternative methods of gaining market share and differentiation.

- ▶ Facilitate supply and infrastructure development to meet the demands of new markets, specifically wholesalers.
- ▶ Co-operate, especially growers, to re-balance market power and to build infrastructure especially for new market outlets. Also to benefit from pooled knowledge and expertise.
- ▶ Assert more control over 'price making', where possible, by using market intelligence information and costs of production where available, particularly growers.
- ▶ Publicise how food is produced and handled throughout the various supply chains. Develop methods for marketing produce on the benefits of fewer food miles and freshness.
- ▶ Improve understanding of how changing specifications, especially those based on cosmetics, influence wastage levels throughout the supply chain.
- ▶ Observe and respond to future directions of consumer demand and market opportunities.

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7. APPENDICES

Appendix 1: Key annual comparisons for 2001-02, 2002-03 & 2003-04 seasons for 24 crops

Produce Category	Total organic market (t) ¹					UK (t)					UK % by Volume					UK (ha) ³				
	2001-02	2002-03	%Change	2003-04	%Change	2001-02	2002-03	%Change	2003-04	%Change	2001-02	2002-03	%Change	2003-04	%Change	2001-02	2002-03	%Change	2003-04	%Change
Early Potatoes	11317	13567	19.9	13539	-0.2	6214	7495	20.6	6136	-18.1	55	55	0.0	45	-17.6	852	833	-2.2	722	-13
Main Potatoes	27218	28192	3.6	25809	-8.5	17638	18947	7.4	17570	-7.3	65	67	3.1	68	1.6	1038	947	-8.8	878	-7
Carrots	13383	16578	23.9	21479	29.6	8724	12237	40.3	15711	28.4	65	74	13.8	73	-1.2	349	489	40	655	34
Onions	7339	8718	18.8	10283	17.9	2447	3210	31.2	3502	9.1	33	37	12.1	34	-7.9	175	229	31	259	13
Leeks	1149	1841	60.2	2057	11.7	976	1630	67.0	1614	-1.0	85	89	4.7	78	-11.8	122	204	67	202	-1
Swedes	1333	2107	58.1	1952	-7.4	1276	2020	58.3	1901	-5.9	96	96	0.0	97	1.4	75	119	59	109	-9
Beetroot	2248	2973	32.3	4259	43.2	1387	1900	37.0	2592	36.4	62	64	3.2	61	-4.9	99	136	37	173	27
Parsnips	1283	1299	1.2	1468	13.0	731	946	29.4	1141	20.6	57	73	28.1	78	6.5	66	86	30	99	15
Other roots	1173	1354	15.4	1303	-3.7	453	563	24.3	686	21.8	39	42	7.7	53	25.2	45	56	24	76	36
Cauliflower	2905	3015	3.8	3117	3.4	1864	2075	11.3	2290	10.3	64	69	7.8	73	6.5	155	173	12	191	10
Cabbage	5579	5699	2.2	4704	-17.5	3825	3798	-0.7	2947	-22.4	69	67	-2.9	63	-6.5	255	253	-1	211	-17
Broccoli	2613	3491	33.6	4137	18.5	1230	1597	29.8	1984	24.2	47	46	-2.1	48	4.3	351	399	14	441	11
Other green veg	1282	1200	-6.4	1279	6.6	682	709	4.0	683	-3.7	53	59	11.3	53	-9.5	195	203	4	195	-4
Fresh Peas	615	657	6.8	814	23.9	322	438	36.0	293	-33.0	52	67	28.8	36	-46.2	107	146	36	84	-43
Beans	465	494	6.2	559	13.2	144	247	71.5	303	22.8	31	50	61.3	54	8.5	48	82	71	87	6
Lettuce	3046	2781	-8.7	3095	11.3	1846	1699	-8.0	1798	5.9	61	61	0.0	58	-4.8	154	113	-27	150	33
Celery	1097	1278	16.5	1297	1.5	461	468	1.5	493	5.2	42	37	-11.9	38	2.6	33	33	0	38	15
Other salads	292	643	120.2	885	37.6	166	303	82.5	448	48.0	57	47	-17.5	51	7.8	33	61	85	90	47
Courgettes	1337	1693	43.1	1853	9.5	465	704	51.4	763	8.5	35	42	20.0	41	-1.9	93	155	67	170	9
Sweet corn	374	445	19	442	-0.7	192	134	-30.2	165	23.2	51	30	-41.2	37	24.6	38	27	-29	37	36
Cucumbers	8031	7779	-3.1	8105	4.2	3035	3857	27.1	6171	60.0	46	50	8.7	76	52.3	9	10	11	19	87
Tomatoes	8180	8415	2.9	7935	-5.7	4147	5185	25.0	3309	-36.2	58	62	6.9	42	-32.7	20	23	15	16	-31
Peppers	471	1358	188.3	1712	26.1	252	624	147.6	723	15.9	37	46	24.3	42	-8.2	3	3	0	5	61
Herbs	302	367	21.5	444	20.9	120	250	108.3	300	20.1	40	68	70.0	68	-0.4	60	81	35	100	24

¹ UK produce plus imports

² Monthly breakdown relates to main crops carrots

³ Estimated by dividing UK tonnes by typical packed yields/ha

Packers/wholesalers supplying data or estimates made for: see appendix 2.

Appendix 2: Key statistics for 22 crops (2003-04)

Crop	Total Organic Market (t) ¹	Total Organic Market % change from 2002-3	UK % (volume)	UK ha ²	Typical monthly breakdown of UK and imported produce												
					Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	
Early/Salad Potatoes	13,539	0	45	722													
Main Potatoes	25,809	-8	68	878													
Carrots	21,479	30	73	655													
Onions	10,283	18	34	259													
Leeks	2,057	12	78	202													
Swedes	1,952	-7	97	109													
Beetroot	4,259	43	61	173													
Parsnips	1,468	13	78	99													
Other roots	1,303	-4	53	76													
Cauliflower	3,117	3	73	191													
Cabbage	4,704	-17	63	211													
Broccoli	4,137	18	48	441													
Other green veg	1,279	7	53	195													
Lettuce	3,095	11	58	150													
Celery	1,297	2	38	38													
Other salads	885	38	51	90													
Courgettes	1,853	9	41	170													
Sweetcorn	442	-1	37	37													
Cucumbers	8,105	4	76	19													
Tomatoes	7,935	-6	42	16													
Peppers	1,712	26	42	5													
Herbs	444	21	68	100													

¹ UK produce plus imports ² Estimated by dividing UK tonnes by typical packed yields/ha

Packers/wholesalers supplying data/estimates made for: Able & Cole, Barfoots, Bioselect, Biosphere, Castle Aromatics, Choice, Clements, RB Organics, DGM Growers, Drysdale, English Country Herbs, English Village Salads, John Dorse, Emmetts, Farm Around, Flavour Fresh Salads, Delmonte, Flights Orchard, Kettle Produce, Glens of Antrim, Greens of Soham, Greenvale, Goosemore Organics, Geest, G's, Humber, Huntapac, JJ Barker, Langmead, Mack Multiples, Marshalls, MBM, MH Poskitts, Moulton Bulb, Organic 2000, Organic Connections, Organics To Go, Organic Farm Foods, Pauls, Phoenix, Riverford, Roy Little, Stubbins, Solanum, Suncrop, Somerleigh Farms Ltd, Tangmere, Tio Ltd, Univeg, Vitacress, Wight Salads.

	Mainly UK
	Mainly imports
	Both UK & imports

Appendix 3: HDRA/Soil Association questionnaire to organic vegetable pre-packers

NAME

COMPANY NAME

Contact no

BREAKDOWN OF SALES (Organic Vegetables traded) 1 April 2003 to 31 March 2004

Produce category***	Total sales		Source of produce by volume (t) and value (£)						Monthly breakdown - please indicate which months you buy UK produce and which months you import for each crop and when this is done concurrently.										Projected trade for 2004/05 (%)**			
	Tonnes	Value (£)	UK		EU		Other		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	+	-
			(t)	(£)	(t)	(£)	(t)	(£)														
<i>Example</i>	<i>100</i>	<i>1500</i>	<i>60</i>	<i>800</i>	<i>40</i>	<i>700</i>			<i>UK</i>	<i><-----Import-----></i>					<i><-----UK-----></i>					<i>10 %</i>		
Early /salad potatoes																						
Main crop Potatoes																						
Carrots																						
Onions																						
Leeks																						
Swedes																						
Beetroot																						
Parsnips																						
Other root crops *																						
Cauliflower																						
Cabbage																						
Broccoli																						
Other green vegetables																						
Fresh Peas																						
Fresh Beans																						
Lettuce																						
Celery																						
Other salads																						
Courgettes																						
Tomatoes																						
Peppers																						
Herbs																						
TOTAL																						

* Other root crops includes turnips and celeriac

***Add or alter categories if required but please state alterations

** Indicate increase or decrease in % for each crop

ALL INFORMATION WILL BE TREATED AS CONFIDENTIAL AND RESPECTED AS SUCH

Appendix 4: HDRA Questionnaire to organic vegetable wholesalers.

Simplified Questionnaire for Organic Vegetable Wholesalers 2003/04

Name Company Contact no:

Turnover (sales) £ from organic vegetables (1 April 03-March 31 2004)

Produce category	A		B		C		D		E	
	Breakdown by value		% sourced from UK		Projected trade for					
	Typical	Yours if different	Typical	Yours	2004/05 (+ or -)					
Early/salad potatoes	4.3%		44%							
Main Potatoes	10.0%		100%							
Carrots	10.0%		79%							
Onions	8.5%		59%							
Leeks	6.0%		95%							
Swedes	1.5%		100%							
Beetroot	1.0%		42%							
Parsnips	3.0%		100%							
Other roots	1.5%		30%							
Cauliflower	4.0%		65%							
Cabbage	5.0%		72%							
Broccoli	7.0%		29%							
Other green veg	4.0%		59%							
Sweet corn	1.0%		50%							
Peas	0.5%		0%							
Beans	3.0%		50%							
Lettuce	5.0%		41%							
Celery	2.0%		33%							
Other salads	5.0%		14%							
Courgettes	5.0%		27%							
Tomatoes	10.0%		57%							
Peppers	4.0%		18%							
Herbs	0.5%		42%							
Others ?										

Instructions:

1. Please fill in your total turnover or sales (£) of organic vegetables from the past season at the top of the form.
2. Then you have an option to fill in column B if the breakdown of your sales are very different from then typical wholesaler profile in column A.
3. Then also complete column D on % sourced from the UK if different from the typical wholesaler profile in column C.
4. Finally complete column E on your projections for this present/coming season. (for ease this could be a projection for all vegetables rather than for each one seperately).

ADDITIONAL COMMENTS ON THE ORGANIC VEGETABLE MARKET

(please add any observations/ trends on or in the organic vegetable market).

Please return to HDRA in the SAE enclosed by 14 June 2004.