

**The UK Organic Vegetable Market**  
**(2001/02 season)**

**DEFRA Project no. OF0307**

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### Packers and wholesalers

Barfoots (P)	G's (P)	Pheonix (W)
Barker (P)	Humber Growers (P)	Poskitts (P)
Biosphere (W)	Huntapac (P)	RB Organics (P)
Burgess(P)	John Dorse (P)	Riverford (W)
Cantello (P)	Knights of Norfolk (P)	Solanum (P)
Choice(W)	Langmead (P)	Stubbins (P)
Clements (P)	Mack Multiples (P)	Sunmark (W)
DGM (P)	Marshalls (P)	Tio Ltd (P)
Emmett (P)	MBM (P)	Univeg (P)
Fisher Foods (P)	Mouton Bulb Co. (P)	Vitacress(P)
Geest (P)	Organic Farm Foods (P)	Wattons (P)
Greenvale (P)	Organic Connections (W)	Wight Salads (P)

P indicates that the company is a packer and W indicates wholesaler

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## EXECUTIVE SUMMARY

### Background

Over the past five years the market for organic vegetables has grown by an average of 30% per annum. It has been reported that much of this growing market was made up by imports, which were as high as 70%. Contact with organic growers in the 2001/02 season indicated that there was a more even balance of supply and demand since they were having difficulty selling their produce. This lack of clarity of the market was causing uncertainty amongst growers who were considering conversion or expanding their production.

### Aims and Objectives

The overall aim of this DEFRA funded study was to provide detailed market information on the demand and supply of individual UK vegetable crops throughout the UK growing season. This information would be used to identify opportunities for UK growers to expand production and facilitate the sustained growth of the market.

### Methods

This project was led and conducted by HDRA, in collaboration with the Soil Association, Elm Farm Research Centre and The Institute of Rural Studies, Aberystwyth. Data was collected from UK packers and wholesalers of organic vegetables on the amounts, value and source of organic vegetables traded during the 2001/02 season. This was supplemented with crop area data from the organic certification bodies on the area of organic vegetable crops grown in the season. All data was cross-referenced with other published sources of information for the same season.

### Results and conclusions

During the late 1990s and the early 2000s the growth of the organic vegetable market was very rapid. In the past five years the growth rate has averaged 30% per annum, although this is now beginning to slow down to rates of between 10-15% per annum. UK growers responded to the growing market, and to higher conversion grants introduced in 1999, by nearly doubling the area of organic vegetables from 2400 ha in 1997 to 5437 ha in 2001. Due to the time lag of the conversion period, much of this increase in supply reached the market in the 2001/02 season, at the same time as the rate of growth in the market was beginning to slow down, which has resulted in oversupply for some vegetables at certain times of the year, notably potatoes, cabbage and lettuce in the 2001/02 season. The supply problems were compounded by an increasing supply of imports, lack of communication in the supply chain and by over programming of production.

In 2002/02 season the total market for UK organic vegetables was estimated at 103,000 tonnes, with a retail value of £143M. Of this 60,000 tonnes, 57%, are grown in the UK. When measured by value (£) the level of UK self-sufficiency is 52%, with a UK retail value of £74M. The organic vegetable market represents 3% of the total market for vegetables, including conventional ones. Nearly 70% of the vegetables are sold through multiple retailers, with 15% sold through wholesalers, 11% sold directly by the growers and only 5% sold to processing outlets.

For a range of twenty-five organic vegetables, which can be grown commercially in the UK, levels of self-sufficiency, or market share, have risen from previous reported levels of 30-40% to an average of 57% for all vegetables. When considered on a crop by crop basis, however, there are large variations of UK market share, ranging from 96% for swedes to 33% for onions. For staple crops such as potatoes, carrots and cabbage the UK share is 65%. Within the main marketing season, for most staple crops, it is estimated that the UK is self sufficient for two-thirds of organic produce with the remainder being imported. Levels of imports rise during the time when UK produce is not in season. Packers and wholesalers estimate that on average there is potential to increase UK market share by 10-15%, although again there are variations on a crop by crop basis. If this were achieved this would put organic production at similar UK market share levels to that achieved in conventional production, namely 70%, which is the target set by the

English government's organic action plan. In order to increase supplies UK growers will have to compete with imports on quality, continuity of supply and in some cases on price. Much of the challenge for UK growers is to increase production at the beginning and end of the season, a time when there is greatest risk from pest, diseases, poor nutrient supply and variable economic returns. The need for organic growers to use organic seed, for which supplies are not always available, could in the short-term act as a constraint to UK growers expanding their production levels.

In the EU, the largest markets for organic vegetables are in Germany, France and the UK, these three are major importers of organic vegetables. On the other hand Spain, Italy and the Netherlands are major exporters of organic vegetables. The UK has the lowest level of self-sufficiency in both vegetables and potatoes compared to other EU countries. Many EU countries have increased their levels of production to meet the growing UK market, and for some crops there is oversupply at the EU level.

In the future the UK market is predicted to grow at a slower rate, 10-15% per annum. Future growth will be related to a wide range of factors such as the growth of the economy, and education of the consumer to the benefits of organic food. According to retail analysts 8% of the 'committed' organic shoppers buy 60% of the organic food. It is a challenge, firstly to encourage the committed consumers to buy more organic food and secondly to entice the other 71% of so called 'dabblers', who only currently buy organic food occasionally, to buy more regularly. Commitment to buying organic grows as consumers become more aware of the benefits of organic farming.

There are many positive drivers for the future growth of the market, including consumer's preference for UK produce, opportunities to supply catering and institutional food outlets. Policy initiatives such as the Curry report and the government's organic action plan are also all favourable to the development of the organic vegetable market. These include; initiatives to reconnect consumers with farmers which build on organic direct marketing strengths; ones to boost co-operation and communication within the food chain and others to boost UK market share to levels in the conventional sector. The market, however, is still small and vulnerable to fluctuations in supply. There has been downward pressure on prices in the past few years, in what is becoming a very competitive market, leading to a lowering of grower returns.

### **Recommendations**

Farmers, policy-makers and other market actors must react swiftly to the changing conditions of the new environment that will evolve in coming years. But in order to do this, government must continue to give clear policy support to the sector. Growers and marketers need a clear picture of the market and knowledge about the supply levels of crops at different times of the year and precisely where there are opportunities for innovation, processing and expanding production. Hence there is an imperative for market information to be collected annually, so future projections could be more easily and accurately mapped. However conversion period time lags will inevitably act to slow the response of farmers to changes in market conditions or consumer behaviour. Growers should also be encouraged to innovate and differentiate their produce, to invest in suitable facilities for storage and processing of crops, such as washing carrots, and to increase their marketing awareness and marketing skills.

Co-operation and communication must be fostered within the supply chain. Ideally the food chain should be short, fast, transparent, seamless and collaborative, with all partners in the chain taking equal responsibilities and sharing risks, too often the food chain is complex, price driven, confrontational, disjointed and opaque. An increased UK supply can only be successful if organic market actors join forces to realise the potential of the advantages arising from the economies of scale associated with growing supply. The easiest way to secure long-term growth in UK production is through long-term contracts between partners in the supply chain.

# 1 INTRODUCTION

## 1.2 Background

The UK has the second largest market for organic vegetables in Europe. This market grew rapidly in the 1990s and has experienced growth rates in excess of 30% per annum since 1998 (Organic Monitor, 2001). The increase in sales was reported to have largely been made up by imports, which were as high as 85% for all vegetables when combined with fruit (Soil Association, 2001). HDRA's contact with organic vegetable growers during the 2001/02 marketing season indicated however, that at certain times of the year and for certain vegetables the balance between demand and supply was more evenly balanced, and in some cases oversupply was occurring. Nobody had a clear picture of the market and this was causing uncertainty amongst growers who wished to increase their production and for those who were considering conversion.

## 2 Aims and Objectives

### 2.1 Aims

The overall aim of the study was to provide detailed market information on the demand and supply of individual UK vegetable crops throughout the UK growing season. It was hoped this would indicate what crops were in short supply and thus potential opportunities for UK growers to expand their production. In this way the provision of this market information would facilitate the sustained growth of the market.

#### 2.1.1 Specific objectives

The study involved:

- Collection of data on specific quantities of organic vegetables marketed in the UK from vegetable pack houses, wholesalers and retailers differentiating between UK production and imports and dividing into the months of the year.
- Collection of organic vegetable crop area data from organic certification bodies.
- Data on quantities of organic vegetables traded and the UK areas grown would be used to draw up schedules to indicate the balance of supply and demand for the main UK organically grown vegetables throughout the year.
- To interpret and evaluate the data and report to vegetable growers, producer organisations and policy makers.

## 3 METHODOLOGY

### 3.1 Management of the project

This was a collaborative project between HDRA, the Soil Association, Elm Farm Research Centre (EFRC) and the Institute of Rural Studies (IRS), Aberystwyth. HDRA has lead, co-ordinated and undertaken much of the fieldwork and evaluation of data during the project. All of the partners assisted in the design, methodology and techniques used in the study. The Soil

Association collected the crop area data from its own and other certification bodies. EFRC has helped to identify specific opportunities and possible constraints to expanding UK production. All collaborators have been involved in reviewing data and disseminating the results.

### **3.2 Data collection**

#### **3.2.1 Data on vegetables marketed**

Data on vegetable types marketed, quantities, values, source (UK or imported) and time of the year for the 2001/02 marketing season, was collected via a data input form (Appendix 10.2) sent out to all (45) organic registered vegetable packers and wholesalers during April 2001. This was followed up by visits and telephone calls to all the major players in the organic vegetable market. By July 2002, information had been obtained from 30 of the registered packers and wholesalers. This represented 70% of the volumes of traded organic vegetables. Estimates were made for the remaining data based published data and further market intelligence. Additions were made for produce, which was directly marketed (farmers shops, markets, box schemes), based on the number of box schemes in the UK and published data.

#### **3.2.2 Collection of vegetable crop area data**

The Soil Association collected crop area data from the 2001/02 cropping year, based on broad categories of crops: potatoes, roots crops, green vegetables, and salad and protected crops, from its own certification body SA Cert, Organic Farmers and Growers, and the Scottish Organic Producers (SOPA) during June 2001.

#### **3.2.3 Cross referencing with published material and peer review**

All data collected was cross-referenced to other published sources of information. Such as information available from Organic Monitor, Taylor Nelson Sofres (TNS), the Soil Association and EU Organic Market Statistics collected by the Institute of Rural Studies, Aberystwyth. Final crop data was peer reviewed by a number of key players in the organic vegetable industry.

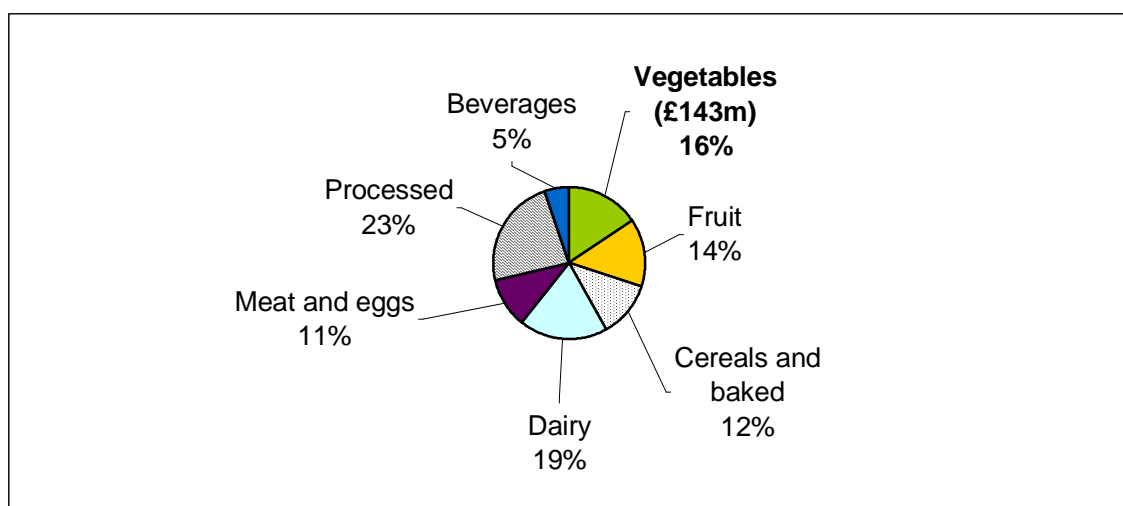
## 4 RESULTS

### 4.1 The UK Organic Vegetable Market

#### 4.1.1 Market size

This study estimates the total retail value of the organic vegetable market in the 2001/02 season to be £143M. Other market research estimates the size to be between £105 (TNS, 2001) and £165M (Soil Association, 2002). This represents 102,000 tonnes of produce. The organic vegetable market in the past has been the largest sector in the UK organic food market. This is thought to be because of consumers concern over pesticide applications on conventional vegetables, and consumer's perceptions of organic as fresh produce and not processed. The share was estimated to be as high as 48% in 1990 (Mintel, 1991), but its relative share has declined ever since due to the wider range of availability of other organic food types and by the organic consumer expanding their range of organic purchases. Presently at £143M, this would put the share of organic vegetable market at sixteen percent (16%) in the context of the total retail value of the organic food market at £920M (Soil Association, 2002). There has often been some uncertainty as to the size of the UK organic vegetable market since in the collection of statistics vegetables are commonly combined with fruit.

**Figure 1: The size of vegetables within the overall organic market**



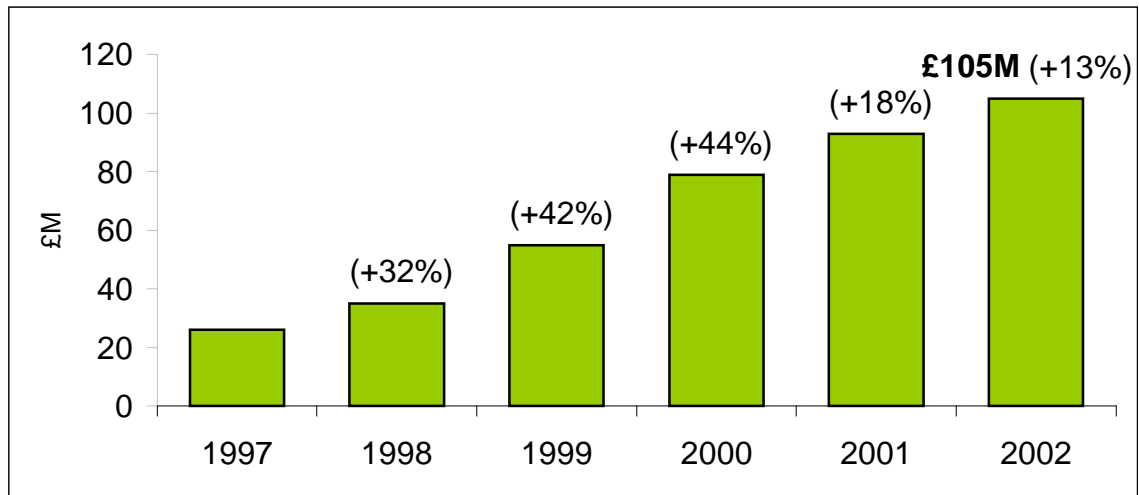
Source: HDRA, Soil Association, 2001

#### 4.1.2 Growth of the organic vegetable market

During the late 1990s and the early 2000s the growth of the organic market was very rapid (Figure 2). In the past five years the growth rate has averaged 30% per annum, although this is now beginning to slow down to rates of between 10-15% per annum. The rapid growth in the organic vegetable market has been in common with the growth of the whole organic food market in the UK. This has been caused by a number of factors relating to increasing consumer awareness of food safety, health and environmental issues, food scares, fears over the use of pesticides and the use of Genetically Modified Organisms (GMOs) in conventional production. The stronger supermarket presence in the market towards the end of the 1990s assisted market development by removing some of the impediments to growth of the market, which included inconsistent supplies and quality issues (Organic Monitor, 2001).

Market research of the organic market is currently showing that a committed core of 8% of consumers account for 60% of sales, whereas 79% of all households, ‘the dabblers’, make at least one organic purchase in the last year. So the challenge for the future is to convert the dabblers to become committed organic buyers (Soil Association, 2001).

**Figure 2: Growth of the organic vegetable market in the UK (£M)<sup>1</sup>**



<sup>1</sup> Percentage rates relate to value in previous year. Source: TNS and Organic Monitor

The future of the market is further dealt with on page 26.

**Table 1: Summary of key drivers and constraints in the growth of demand for organic vegetables in the UK**

Drivers	Constraints
<ul style="list-style-type: none"> <li>• Promotions and marketing by major retailers</li> <li>• Improved quality and availability</li> <li>• Consumer awareness, behaviour and trust</li> <li>• Consumer concern for health, environment and animal welfare</li> <li>• Food scares and Genetic Modification</li> <li>• Increasing household incomes</li> </ul>	<ul style="list-style-type: none"> <li>• Availability and poor quality of supplies</li> <li>• Labelling</li> <li>• Processing capacity</li> <li>• High levels of imports</li> <li>• Price conscious consumer behaviour</li> <li>• Concentrated consumer base, mainly in the south east</li> <li>• Fragmentation of organic standards</li> </ul>

#### 4.1.3 Market outlets

Much of the organic vegetable growing in the UK was pioneered from 1970-1990 by small-scale growers, often farming in the south west of England and in Wales, marketing through wholesale outlets to specialist health food shops and by direct marketing methods such as box schemes. However, the general shift in consumer shopping behaviour towards greater use of supermarkets, which has been evident throughout the food market, has in recent years affected the development of retailing in the organic vegetable market. This has now resulted in 70% of organic vegetables being sold through these outlets.

Figure 3: Market channels for organic vegetables

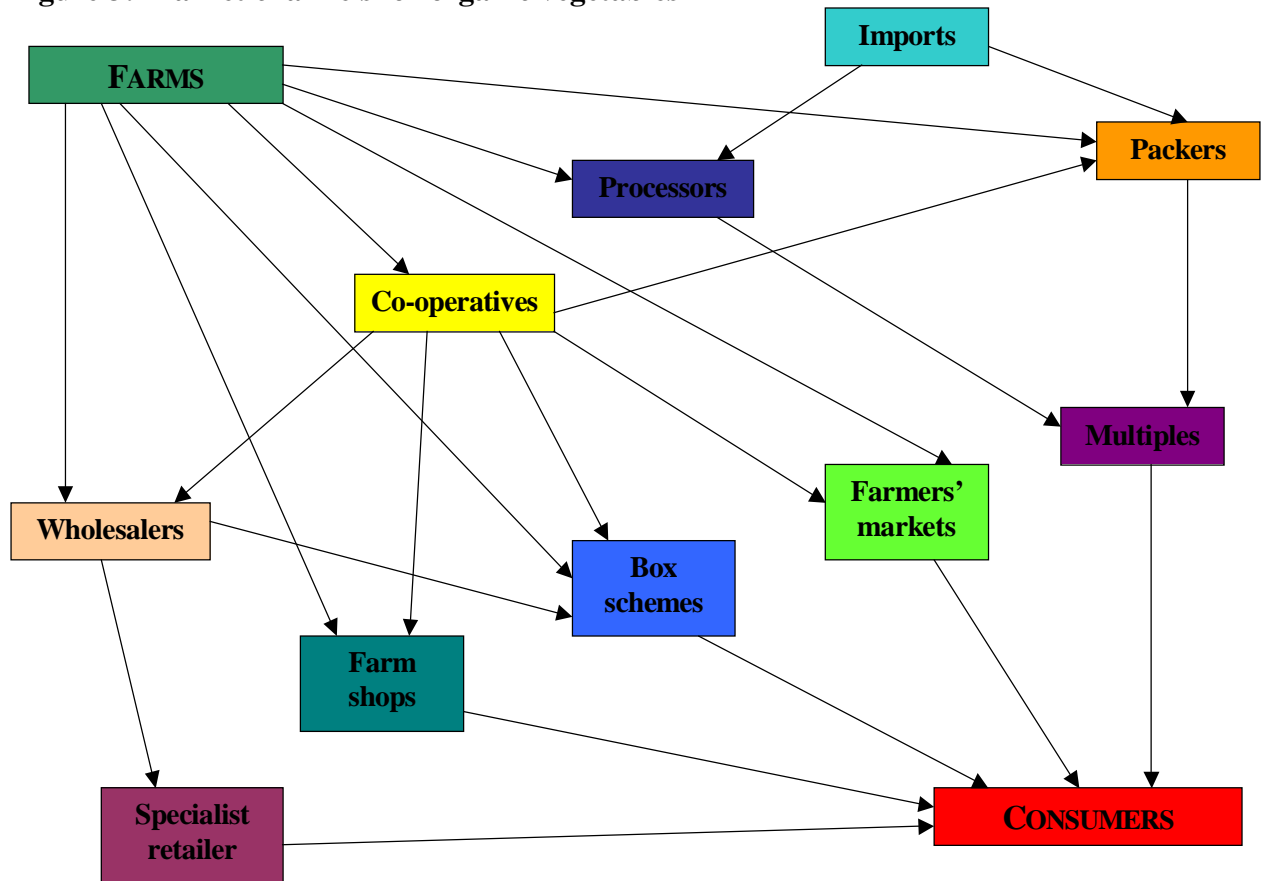
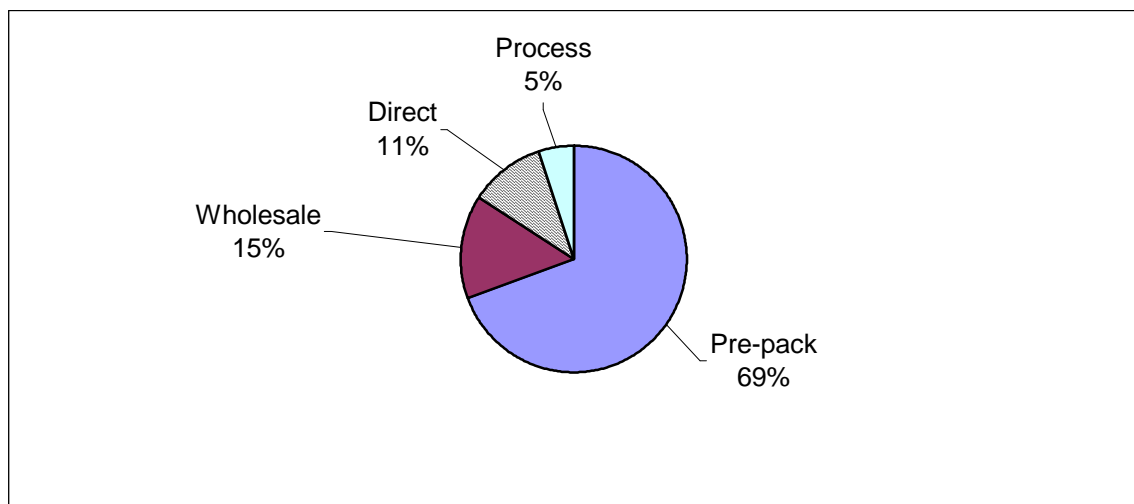


Figure 4: Market outlets for organic vegetables



- **Multiples**

The market for organic vegetables is increasingly being dominated by the multiples/supermarkets, whom are commonly supplied by growers via vegetable pre-packers or pack houses. According to this study 70% of organic vegetables, with a retail value of £99M, are currently sold via these outlets. Prior to 1998, the supply chain had an intermediary between the packers and farmers, which used to gather produce from a number of farmers. Supermarket

pressure to shorten the supply chain in order to lower the price premium, and raise production, has caused the intermediaries to be removed from the supply chain (Organic Monitor, 2000). Until the mid 1990s the market was dominated by a small number of suppliers; Organic Farm Foods, Organic Farmers and Growers, Geest and Congelow (Organic Monitor, 2001). In the late 1990s the entry of conventional distribution channels, namely the pre-packers, into the organic vegetable market, has resulted in them dominating the market in a short space of time. These packers now supply the majority of volumes into the supermarkets, and they deal with both conventional and organic vegetables. In line with the supermarkets desire to rationalise the supply chain and thus reduce the number of their suppliers, the pre-packed market for many organic crops is now dominated by 3-6 major packers per crop.

At the supermarket level, organic vegetables are sold by all the major multiples; Sainsbury's, Tesco, Waitrose, Safeway, Asda, Marks and Spencers, Somerfield and also by the Co-op (Organic Monitor, 2001). The dominant supermarkets in the organic vegetable sector are: Sainsbury's, Tesco and Waitrose (TNS, 2002). The supermarkets have been very instrumental in the development of the organic vegetable market. According to data gathered for this study, the multiples sourced 54% (by volume) of their organic vegetables from the UK. In a recent survey of major supermarkets own label products by the British Retail Consortium, supermarkets sourced 38% of their organic vegetables from the UK as against 62% for conventional vegetables. They are being pressed to source more produce from the UK. The rate of use of UK produce varies between the different products and retail outlets (Table 2).

**Table 2: Comparison of supermarket British sourced organic and conventional vegetables 2001**

Category	Product	% Organic sales	% Conventional sales
Salads	Leafy Salads	28	59
	Cucumbers	16	59
	Peppers	8	27
	Tomatoes	39	49
Vegetables	Beans and Peas	4	28
	Broccoli	23	38
	Cabbage	60	81
	Carrots	56	92
	Cauliflower	36	92
	Mushrooms	85	59
	Onions	39	72
	Potatoes	58	92

*Source: British Retail Consortium, survey of major supermarket's own label products October 2002*

- **Wholesale**

Fifteen percent of total organic vegetable sales are estimated to go through these outlets with a retail value of £21M. Very little organic produce is marketed through the traditional UK wholesale markets such as Covent Garden or Spitalfields in London, as they do not require the facilities that the traditional markets offer. Thus within this category organic produce is mainly marketed by secondary wholesalers. Vegetable growers deliver the produce ready packed to the wholesalers who distribute it mainly to shops and box scheme operators. Some wholesalers are located close to growers such as Organic Connections in Cambridgeshire, or Phoenix Organics in Herefordshire and others are located closer to consumers such as Choice Organics in London. These wholesalers will also import produce when UK produce is out of season. Others such as

Biosphere are linked with growers of the continent of Europe and thus act as only importers. Overall 50% of organic vegetables by volume used by wholesalers are sourced from the UK.

There are several organic wholesalers operating out of New Covent Garden and New Smithfield Market. These traders rely mainly on imports and thus have remained in traditional market sites due to the convenience and ease of distribution. Other wholesalers have been able to relocate to sites like industrial estates which are either closer to growers, or customers. Wholesalers who have remained in traditional market locations have had to adapt their businesses to find a market niche such as Langridge Organic Produce, which has widened its remit to trade a range of commodities beyond just fruit and vegetables. Wholesalers traditionally supply the catering trade, however presently the number of organic restaurants and catering establishments are limited. This is thought to be because going to a restaurant is essentially a 'decadent' or luxury, where the food is often perceived as already of higher quality.

- **Direct**

Direct sales are estimated to account for 11% of the overall organic vegetable market, with a retail value of £16M. This comprises sales made through farm shops, box schemes and farmers markets. In recent years the percentage share of direct sales has fallen as more produce has become available in the supermarkets. Farm shops and box schemes appear to have suffered from supermarket competition and the residual effects of Foot and Mouth in 2001 (Soil Association 2002). However, direct sales through farmers markets have experienced rapid growth in recent years with the number of farmers' markets doubling in number over the past year. Direct marketing is expected to increase as farmers continue to explore ways of securing a higher proportion of the retail value and as they differentiate their products from supermarket products. Local marketing is also now being promoted at a national and local policy level following the Food and Farming Commission's report on the future of farming in the UK (Crown, 2002)

- **Processing.**

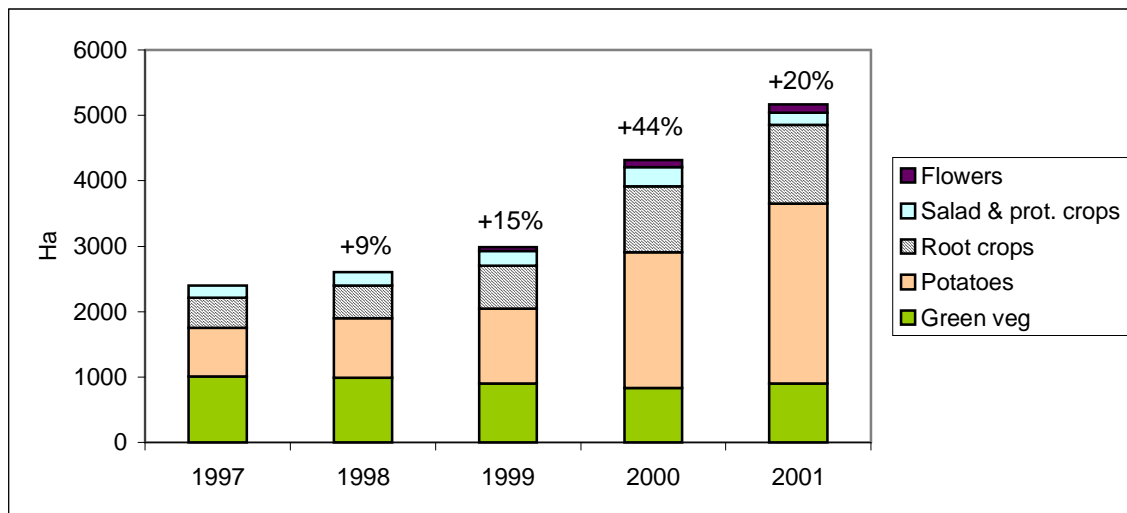
An increasing amount of organic food is being processed and the estimated value of the market at this level has increase by 18% in the last year to £721M (Soil Association, 2002). The processing market for organic vegetables, however, remains relatively small at 5% of the overall market, with a retail value of £7M. The slow growth of the processing market has been put down to lack of availability of organic registered processing facilities. It is related to demand as it is argued that consumers associate organic with fresh vegetables and therefore do not go onto buy processed ones. The organic vegetable processing market in the UK is largely made up of pre-packed salads and frozen peas with smaller amounts of potatoes and beetroot and other roots crops. As the market has grown so has competition, resulting in falling prices, which in many cases do not cover cost of production for UK growers. In the conventional market processed vegetables are largely imported and the organic market has followed this pattern.

## **4.2 Growth in the UK area of organic vegetable production**

### **4.2.1 Introduction**

Despite the rapid growth in the demand for organic vegetables, there has been time lag delay in the increase in UK supply. Therefore initially a large proportion of the increased demand was met by imports, reported as meeting 60% of the UK market for vegetables in 2000 (Hamm et al, 2002) or as high as 85% when combined with fruit (Soil Association, 2001).

Figure 5: UK area of organic vegetables and flowers 1997-2001



Source: Soil Association (full table in appendices-Table 9)

#### 4.2.2 Drivers and constraints to increases in UK production

The high demand for organic vegetables in late 1990s resulted in relatively high ‘price premiums’ of 20-200%, over those paid for conventional produce, available for organic produce, enabling good financial returns to be obtained by organic vegetable growers (HDRA, 2000). This encouraged existing organic growers to expand production and for conventional growers to convert. In addition the supermarkets were pressing the growers, which supplied them conventionally, to convert and supply them with organic produce. The more rapid increase in the area of organic vegetables experienced in 2000 and 2001 is also probably also linked to the fact that in April 1999, the UK government increased the payments available for organic conversion from £250/ha to £450/ha, which acted as an incentive to further conversions. These are some of the drivers, which led to an increase in the number of conversions.

The initial slow response (9-15% per annum) in the increase in UK supply during the late 1990s mainly be explained by the two-year conversion period, which is required before organic production can begin, thus delaying grower’s ability to respond rapidly to meet changes in demand. Some other constraints to growers converting to organic vegetable production included the uncertainty of how they would control weeds, pests and diseases in organic production systems and also the higher ‘costs of conversion’ that vegetable growers have to incur, in comparison with conversions to other organic farming systems. These costs are mainly related to taking land out of production during the conversion phase and the subsequent loss in income during this period, the more intensive the production system is, the higher the conversion costs are likely to be. (HDRA, 2000)

**Table 3: Summary of drivers and constraints to increases in UK organic vegetable production**

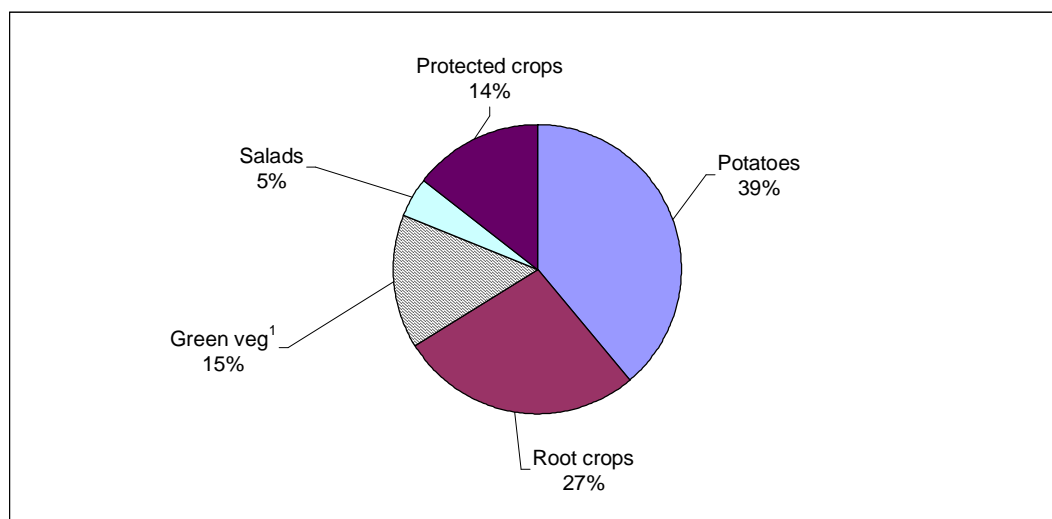
Drivers	Constraints
<ul style="list-style-type: none"> <li>• Price premiums</li> <li>• Supermarkets pressure</li> <li>• Poor returns in the conventional sector</li> <li>• Higher organic aid payments in 1999</li> </ul>	<ul style="list-style-type: none"> <li>• High costs of conversion</li> <li>• Lack of information on the impact of conversion on the farm finances</li> <li>• Uncertainty of technical aspects of organic systems</li> </ul>

### 4.3 Crop data

#### 4.3.1 Overall

From data collected for this study, the total market for UK organic vegetables is estimated at 102,000 tonnes, with a retail value of £143M, of this 60,000 tonnes, 57% (by volume), are grown in the UK. When measured by value (£) the level of UK self-sufficiency is 52%, with a retail value of £74M. The value level is lower than the volume measure due to the fact that overall imports are of a higher value. The market (Figure 6) is dominated by potatoes at 40,000 tonnes (retail value £30M), roots crops are 28,000t (retail value £35M), green vegetables 15,000t (retail value £34M), salads 4736t (retail value £13M), and protected crops 14,643t (retail value £32M). For full details on 25 crops see section 0. The organic vegetable market represents 3% of the total market for vegetables (4m tonnes). (Fresh Produce Consortium, 2002). The estimate of the retail value of the organic vegetable market arrived at from this study compares with a value of £105M made by TNS. The difference can be explained by TNS's much lower estimate of the wholesale and direct sales, at a total of 7% of the market.

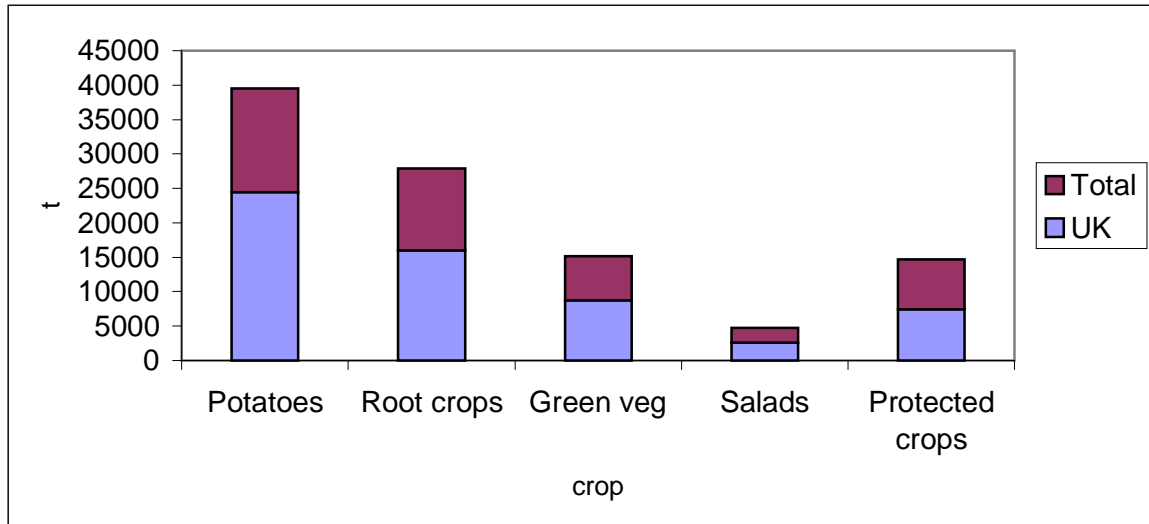
**Figure 6: Breakdown of total UK organic vegetable market into main crop groups by volume (t)**



<sup>1</sup> Green vegetables contain brassicas, peas, beans, courgettes and sweetcorn

Overall 57% of the total vegetables are grown in the UK. Within the group 62% of potatoes are UK grown, 57% of root crops, 58% of green vegetables, 55% of salads and 50% of protected crops.

Figure 7: Total<sup>1</sup> organic vegetables market by crop group and UK share by volume (t)

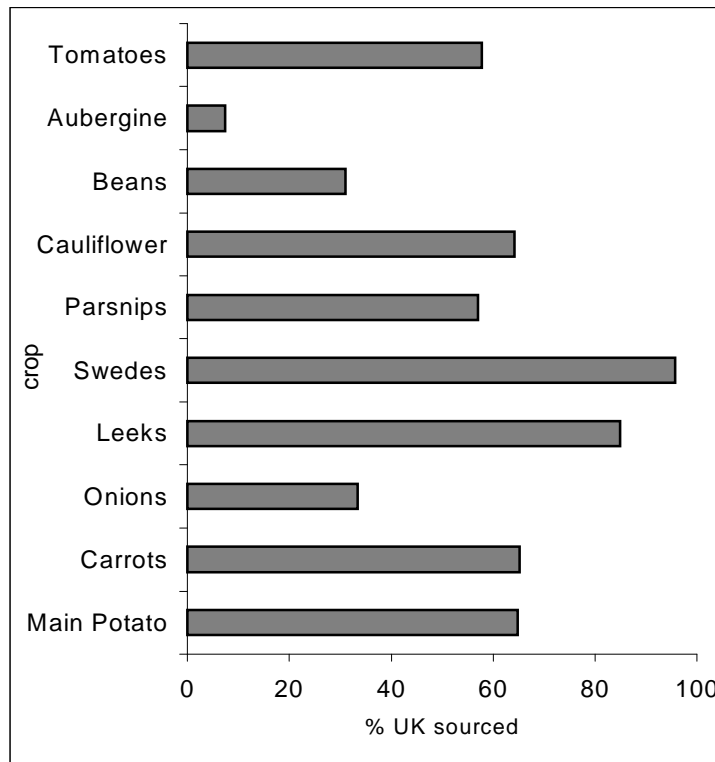


<sup>1</sup> Volumes relate to amounts packed and sold. Additional amounts were grown and sold on conventional markets or remained unsold.

### 4.3.2 Individual crops

Although 57% of organic by volume is grown in the UK, a detailed crop by crop investigation reveals the wide range of self sufficiency levels, this ranges from 96% for swedes to 7% for aubergines. For details of all crops see appendices section 10.

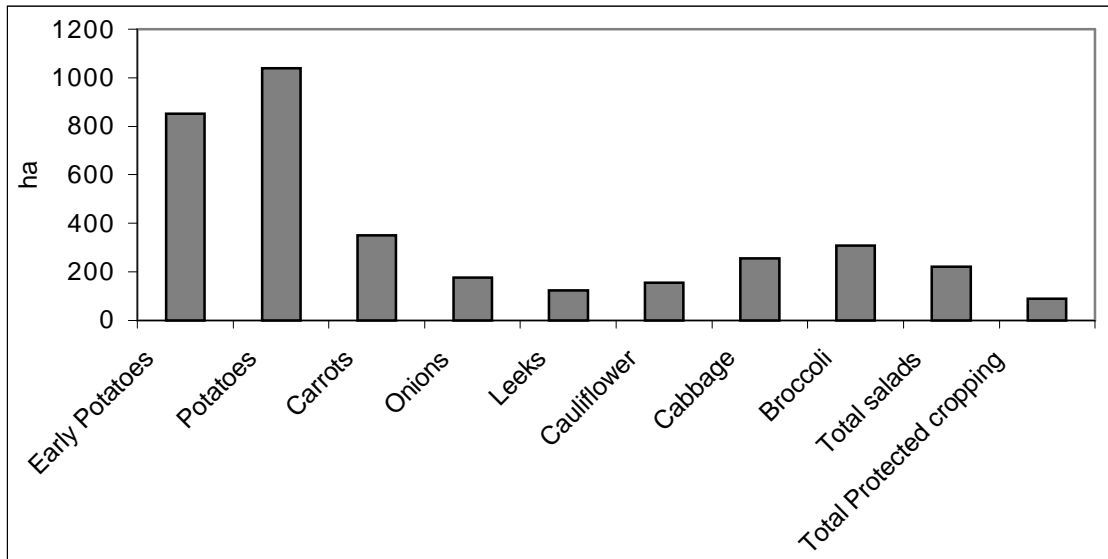
Figure 8: Percentage UK sourced for selected vegetables (by volume)



### 4.3.3 Areas for individual crops

Tonnages packed and sold have been translated into crop areas (hectares) using typical packed yields per hectare. This data has been cross referenced to the organic certification bodies area data which is collected by crop group, e.g. potatoes, roots crops, green vegetables, salads and protected crops.

**Figure 9: UK area (hectares) for selected crops**



*For full details of crops see appendix 10 this data refers to packed and marketed volumes.*

### 4.3.4 UK crop areas and farm gate values of organic vegetables

These figures are estimated amounts produced on the farm and have been derived by adding amounts of estimated pack house and farm gradeouts, produce unsold and amounts saved for seed to packed volumes shown in appendix 10.3 An example for Potatoes is shown in the table below.

**Table 4: UK crop areas, tonnages and farmgate values of organic vegetables**

Crop	Area (Ha)	Tonnes	£/t	Farmgate value (£)
Potatoes	2520	35,000	270	9,450,000
Carrot	375	9,000	275	2,475,000
Onions	200	3,000	300	900,000
Swedes	100	1700	250	425,000
Beetroot	120	1800	250	450,000
Parsnip	75	1125	540	607,000
Other roots	50	500	350	175,000
Leeks	200	1,200	960	1,152,000
Cauliflower	175	2,000	600	1,200,100
Cabbages	275	4,000	500	2,000,000
Broccoli	325	1,500	1020	1,530,000
Other green veg.	200	750	1000	450,000
Fresh peas	120	400	600	240,000
Fresh beans	50	200	1200	240,000
Protected crops	33	7000	1500	10,500,000
Salads	220	2600	1000	2,600,000
Others	50	500	750	375,000
<b>Total</b>	<b>5088</b>	<b>72,275</b>		<b>34,769,575</b>

*UK marketed organic potatoes: 24,463 t. Volume unmarketed on organic market: 5,000 tonnes, saved for seed 5,000 t. Total tonnes grown =35,000t*

#### 4.3.5 The 2001/02 marketing season

The 2001/02 marketing season has been described as ‘difficult’, ‘challenging’ and ‘disastrous’ by the various packers, wholesalers and growers contacted as part of this study. This is probably the first time oversupply of organic vegetables has been reported, and this resulted in some produce being ploughed in (lettuce, and cabbage), others not being marketed (potatoes), or sold on conventional markets at lower prices (other brassicas). Many crops were oversupplied at some point of the season. The main cause was the rapid increase in supply of organic vegetables. The area of organic vegetables increased by 44% from 1999 to 2000 and by 26% from 2000 to 2001. This was combined with an increasing supply of imports, due to long term commitment with overseas suppliers, and with a slowing down in the rate of increase in demand for organic vegetables, from 44% in 2000 to 18% in the 2001.

As the market had been growing rapidly the supermarkets were unable to provide clear programmes of volumes to grow for their suppliers, the packers. This often left the packers having to estimate quantities to be grown for the season and this led to over programming. During the season many new packers began supplying the organic market, further adding to the availability of produce. Newly converted growers also grew speculatively without a planned market, and then were surprised that a market for their produce did not exist. The supermarket trade soon became oversupplied and growers off loaded produce on to the wholesale markets, causing rapid decreases in prices and saturating this already small market. A lot of trust and confidence was lost between growers, packers, wholesalers and supermarkets during the season, which will take some time to restore. There is clearly a need to improve co-operation and communication along the supply chain.

Many growers and suppliers in the EU have been increasing their levels of production in the past few years, some specifically to supply the UK market. Some produce, especially the staple products, have also been in oversupply in the EU. One packer spoke of ‘the EU being awash with organic carrots’.

## 4.4 Comparisons with the EU organic vegetable market

### 4.4.1 Introduction

Some statistical and economic data on organic vegetable production and markets has been collected from other EU countries. What is presented here is a summary and only contains data from 2000; data for 2001 was not available for comparison with the new data from this study. Statistical data collected from European countries shows that production of organic vegetables in the UK. (

**Table 5** is slightly higher than average (approximately 8.3% of the EU total). In the UK the growth in sales of organic vegetables rose by an average of 18% per annum between 1993 and 1997 (Michelsen, 1999) as opposed to the EU average of 33%. This study shows that between 1997 and 2002 the growth rate in sales in the UK expanded to an average of 30% per annum, showing that the UK market initially grew slower, then caught up with other EU countries.

**Table 5: Organic production of potatoes and vegetables in European countries, 2000 (t)**

Country	Potatoes	Vegetables
Austria (AT)	30 000	32 000
Belgium (BE)	10 400	9 500
Germany (DE)	120 000	130 000
Denmark (DK)	30 000	33 850
Spain (ES)	nd <sup>1</sup>	59 493
Finland (FI)	8 100	9 000
France (FR)	40 000	100 000
Greece (GR)	220	10 000
Ireland (IE)	4 600	1 700
Italy (IT)	nd <sup>1</sup>	52 375
Luxembourg (LU)	200	20
Netherlands (NL)	21 000	83 000
Portugal (PT)	nd <sup>1</sup>	7 825
Sweden (SE)	27 306	17 529
<i>United Kingdom (UK)</i>	<i>34 500</i>	<i>40 500</i>
<i>Average</i>	<i>26,360</i>	<i>39,119</i>

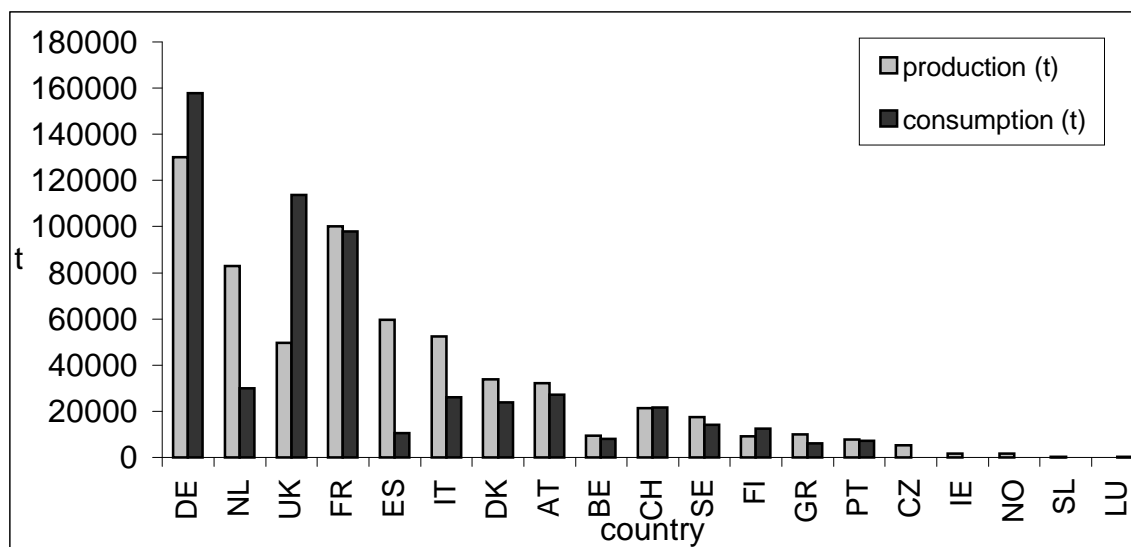
Source: Hamm et al, 2002

This breakdown illustrates that Germany produces the most vegetables followed by France, the Netherlands, Spain and the UK, in descending order. The situation is similar for potatoes with Germany producing the most, ahead of France, the UK, Austria and Denmark. However the quantity of production comparative to consumption reveals a different picture.

Figure 10 shows that relative to other European countries, the UK has the fifth highest production but the second highest consumption levels. Moreover the UK is the only country where production volume is less than half the level of consumption as, other countries show more co-ordinated levels of consumption and production.

<sup>1</sup> The figure for potatoes is included in that of vegetables.

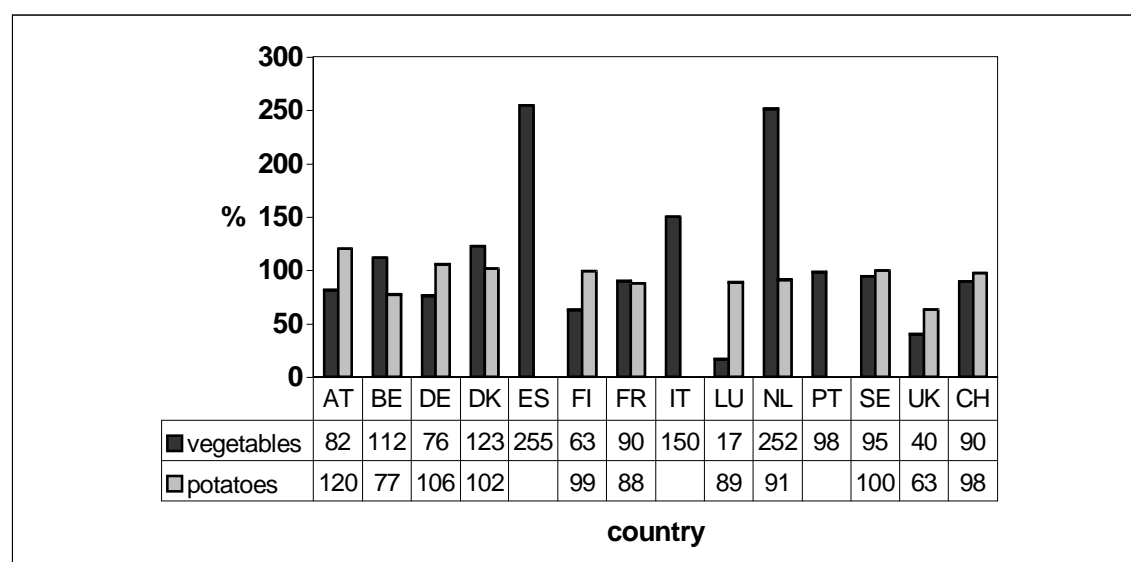
Figure 10: Production and consumption of organic vegetables in Europe, 2000 (t)



Source: Hamm et al, 2002

These corresponding levels of production and consumption are reflected in self-sufficiency figures (Figure 11). The UK has the lowest level of self-sufficiency in both vegetables and potatoes compared to other EU countries where as Sweden is nearest 100% in both vegetables and potatoes and the Netherlands are over 250% self-sufficient in vegetables so clearly has export potential. Europe wide, in 2000, production exceeded consumption in both potatoes and vegetables, by 56,491 and 60,885 tonnes respectively (Hamm et al, 2002). Thus the EU had potential to export, it is likely that a proportion of these volumes were sold on the conventional markets. There are also likely to be seasonal surpluses and deficits.

Figure 11: Degree of self-sufficiency in organic vegetables and potatoes in 2000 (%).



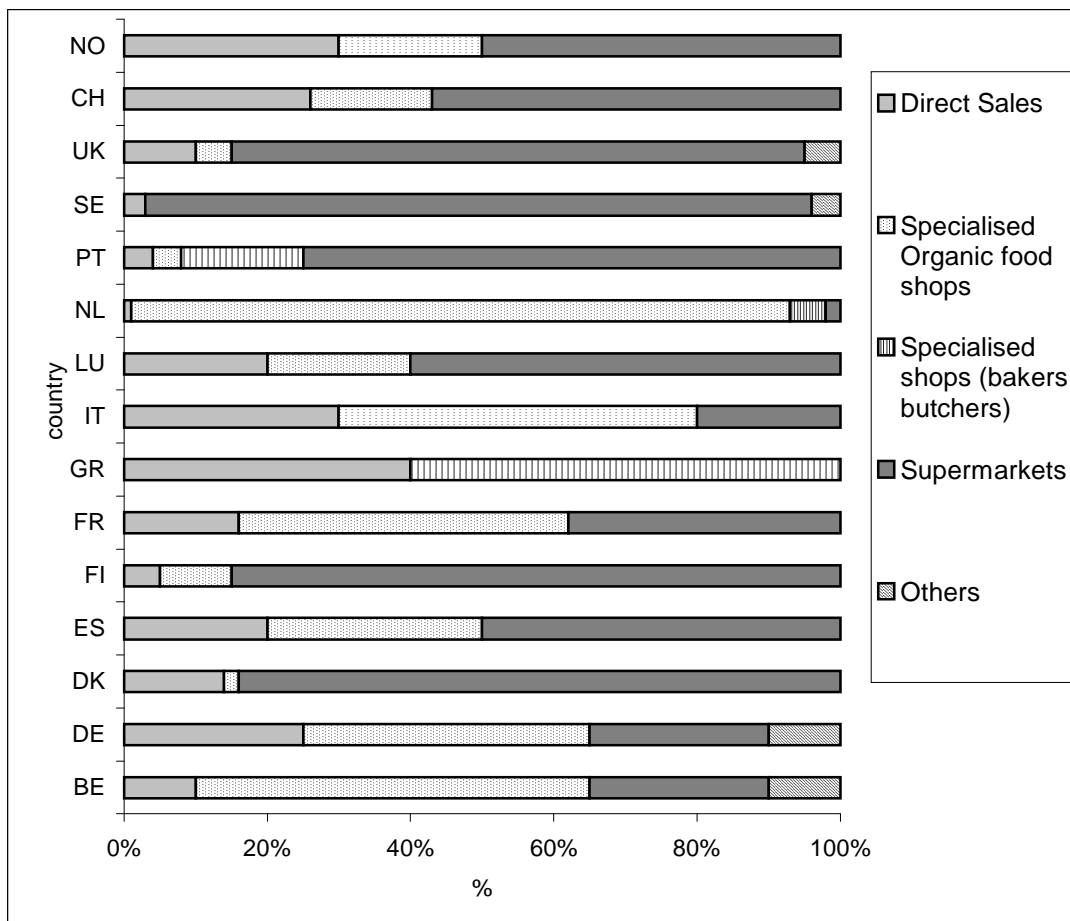
Data Source: Hamm U, 2002

It has been suggested that the level of domestic market development depends to a large extent on the marketing outlets for organic produce. Figure 13 illustrates these sales channels for EU countries. The UK clearly has a high proportion of sales through supermarkets, as do Sweden, Portugal, Finland, Austria and Denmark. Yet, the Netherlands export organic vegetables but their main retail outlet is specialised organic food shops. Germany is an exception as it has the

biggest organic market but sales are mainly direct or via specialist organic food shops rather than supermarkets.

Overall the information obtained from other countries (Table 6) confirms some of the findings of this study that in some EU countries, like the UK and Germany, supply in certain sectors, does not fulfil demand. Consequently, these countries are major importers and have a high share of organic consumption with a large share of organic sales through supermarkets, relatively low consumer premiums and prices and the organic label is clearly identifiable and well known. Conversely, other countries, for example the Netherlands, Italy and Spain, have weak domestic markets and therefore rely on the export of organic vegetables. These countries have a low share of organic consumption and so their small-scale organic market cannot benefit from economies of scale. Consumer studies show that price remains the most important barrier to purchase, additionally there is often a lack of consumer, processor and retailer awareness about organic farming. Most organic markets in the EU are still very small despite vegetable markets having a relatively high share of organic products being sold as organic. Due to the particularly low levels of self-sufficiency in the UK and the strength of the pound it is easy to understand why other EU countries are keen to export their organic produce to the UK. This also allows exotic and unseasonable supply of organic commodities, however it may not encourage the UK to increase domestic supply and to compete with cheap imports.

Figure 12: Sales channels for vegetables, 1997-99 (%)



Data Source: Michelsen et al, 1999

**Table 6: Drivers and constraints to the development of European country organic markets (not just vegetables).**

<b>Country</b>	<b>DRIVERS</b>	<b>CONSTRAINTS</b>
AT	Intensive promotional activities by food retailers. Farmers negotiate prices with buyer not packers. Low distribution costs.	Climate restrictions. Lack of consumer trust in certification methods.
BE	Joint promotional project with campaigning on TV, books and posters. Food scares.	Low domestic supply so most processing in conventional units. 55% of people do not recognise organic products.
DE	Union of the organic food industry developed in 2002 to help form quality assurance systems, improve the communication structure and influence policy in areas such as CAP.	2% consumer recognition of organic label. Supermarkets only recently entered market. Limited availability. Costs of conversion not covered by subsidies.
DK	Unique in having official set of regulations, single symbol & state undertakes inspections. 100% consumer recognition of organic label.	Over supply in certain sectors. Bulk of purchases by small % of population. 25% of consumers never buy organic food.
FI	Climate conducive for less pests and weeds. Advice is partially subsidised.	Adverse growing conditions (frost, drainage).
FR	State label launched in 1985. High demand	Domestic demand not met by production. Financial support only when converting. Limited range and availability of organic goods.
GR	Majority (60%) of sales through specialist shops. Main organic products are olives, olive oil and wine, which are demanded for export.	Water is a major limiting factor. Recent introduction of organic farming. Negative attitude to organic agriculture. Very high price premium in supermarkets.
IT	Market growth has been very strong thus multiple retailers developed the market.	Small-scale processing & inefficient distribution cause large premiums on processed goods.
LU	Organic veg accounts for half veg production. The state covers inspection costs for producers. Highest EU per capita consumption.	Bias to mixed arable-grassland farms with dairy cows. No national standards for organic production.
NL	Umbrella organisation protects organic interests. Interests and dividends for private investors in green investments are not taxed. Organic farms eligible for tax-free allowance.	Proposals to stop conversion schemes in 2002. Lack of coordination of market players. Expectations that farm gate prices will fall.
PT	Traditional farming similar to organic so eases conversion. Health and environment conscious population.	Unfavourable soils and climate. Disorganised marketing sector. Rivalry among representatives of organic movement.
UK	Increasing consumer awareness of food safety and environmental issues. 43% of consumers buy organic food for the taste	Bulk of purchases by small % of population Over supply in some sectors Different certification standards cause competition and less integrity.
SE	Cold winters inhibit pests. Well organised sector (1 certification & label)	Lack of support for market development. Weak consumer knowledge about organics.

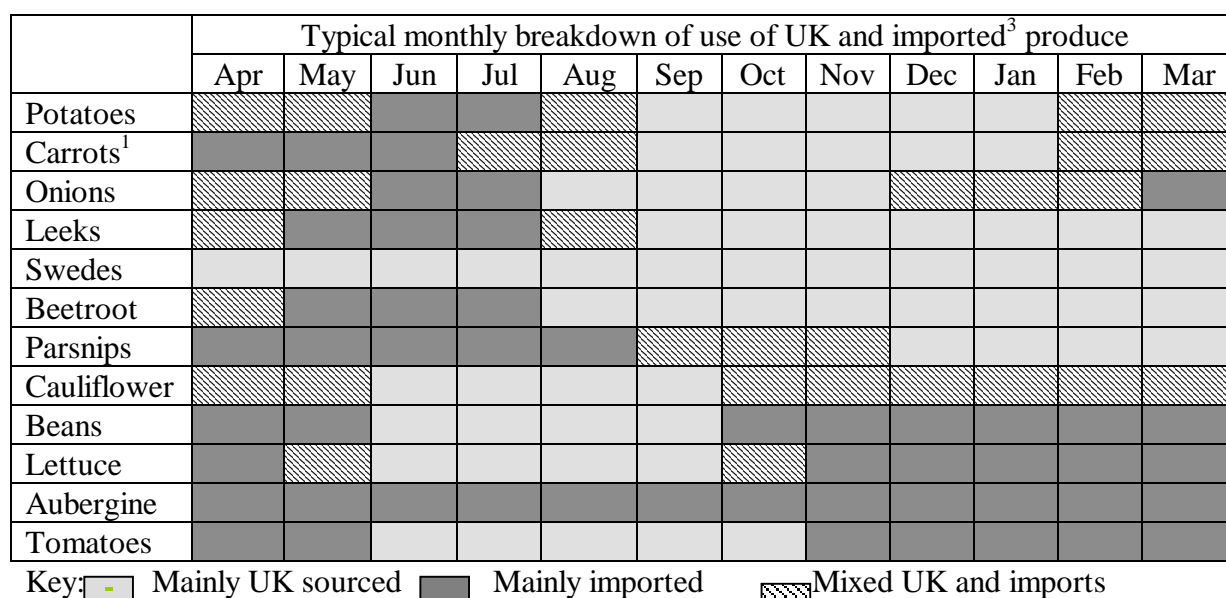
CH	Common standards, certification and label. Consumer confidence. Domestic demand increasing 20-30%/yr.	Falling producer prices compensated for by higher subsidies. Low availability in retail chains.
NO	Long cold period inhibits diseases and pests. Trend towards marketing via supermarkets.	Very cheap N fertiliser. Imports from southern EU comparatively cheap.

## 5 The Availability of UK Organic Produce through the Seasons

The average UK self-sufficiency level for all the vegetables is 57% by volume. One of the objectives of the Government’s Organic Action Plan for England (DEFRA, 2002) is to encourage English producers to supply a greater proportion of the primary produce consumed domestically. The action plan intends to help British producers to supply the organic market at least at similar levels to the conventional market. For vegetables this is currently 71% by volume (Fresh Produce Consortium, 2002). Packers and wholesalers contacted in this study indicated that there is potential to increase UK supply by 10-15%, this would enable the target to be reached.

The general conclusions from this study are that for many crops UK produce is sourced for two-thirds of the total market during the main season and that imports are used when UK produce is ‘out of season’ (Figure 13). For the staple crops such as potatoes and carrots UK produce’s main season is September to December and for green vegetables such as cauliflower, calabrese and salads the main season is June to September. The challenges are firstly, to increase the UK share in the main season, and this can be achieved by greater attention by growers to quality, continuity of supply, and in some cases, at a price which can compete with imports. In turn the UK retailers, packers and wholesalers must be encouraged to be committed to sourcing UK produce. The second challenge is to increase UK production at the margins, or ‘shoulders’ of current production periods.

**Figure 13: Monthly breakdown of use of selected<sup>2</sup> UK and imported organic produce**



<sup>1</sup> Monthly breakdown relates to main crops carrots. <sup>2</sup> All 25 crops are shown in appendix 3

<sup>3</sup> Crops are imported from Germany, The Netherlands, France, Denmark, Spain, Israel, Portugal, Italy, South Africa, Tunisia, Belgium, Zimbabwe, Kenya, USA

This section sets out to assess the availability of UK organic produce so that this can be set against the level of imports. It is clearly understandable that produce is imported where it cannot be grown in the UK or where it is unavailable because it is ‘out of season’. It is relatively

straightforward to assess when a range of vegetable crops is available for harvest but the position vis-à-vis the market is not that simple.

A range of sources has been used to compile the data for this section. DEFRA Horticultural Statistics have been used to develop a picture of availability of conventional home produced vegetables on the wholesale markets. This has been cross-checked against data from grower guides, seed catalogues and NIAB lists. DEFRA data on vegetable prices and monthly quantities have been used to assess the degree to which the market is supplied. As a general rule early and late crops have a significantly lower degree of market penetration than mid season.

Many crops are grown as earlies and maincrop, and very often the early crops need assistance such as fleece covers as in the case of carrots and potatoes. The yields are often lower as growers juggle the yield/return balance – the earliest crops often achieve good prices but at the expense of lower yields. The prices of early and late season crops can compromise their acceptability in the marketplace especially where imports are available at lower prices.

Many crops can now be stored for considerable periods without unduly compromising quality. Storage can take several forms ranging from field storage under straw for carrots to cold storage for potatoes (HDRA, 1997). The net effect of storage in its various forms is to extend the season of availability as opposed to the season of fresh harvest. While the technology is well established there can be some barriers to storing organic crops. One of these relates to quantities – many existing stores are quite large and it will clearly not make economic sense to put 10 tonnes of organic crop into a 100 tonne store. As a rule bulk stores cannot be shared between organic and conventional crops so there would be space equivalent to 90 tonnes that would have to be paid for. It is possible to share box stores providing very strict protocols are in place for product separation and traceability. Stores that are routinely subjected to chemical treatments may not be suitable.

The other complicating factor is that of organic seed. The present derogation, which allows growers to use non-organic seed, comes to an end at the end of 2003. There are presently good availability of organic seed for lettuce and beetroot, but limited stocks and range of varieties for other crops, particularly of commercial standard varieties. The continued transition to the use of organic seed may in the short-term limit the expansion of UK production.

A fundamental underlying assumption used is that we are dealing with experienced conventional growers who have entered the organic marketplace and established organic growers who are supplying the supermarkets. The techniques used to extend the season need a degree of additional investment and expertise. Smaller scale intensive growers supplying local and wholesale markets, use a variety of different techniques to extend the season, which often can not be replicated on a larger scale.

### 5.1 A crop by crop review

All packers and wholesalers were asked to indicate on the data input sheets (appendix 10.2) when during the year they sourced produce from the UK, when they used imported produce and when they used both. Figure 13 shows a general outline of the seasons for a selection of vegetable crops.

This section takes a brief look at each of the crops to evaluate the available techniques and assess the potential of each crop to reach the market penetration of its conventional counterpart. These comments apply to fresh sales, there is potential for supplying the processing trade but this is less time sensitive.

#### 5.1.1 Potatoes

For main crop potatoes, 65% are sourced from the UK and for early and salad types 55%. The market especially for main crop potatoes is well supplied. There was an oversupply of organic potatoes in the 2001/02 season as an estimated 5,000 tonnes of organic potatoes were grown, but either not marketed organically or used as animal feed. Oversupply has occurred in previous years during September to December. As the overall supply has increased over the past few years so has the quality of potatoes required by the market, with special attention to good skin finish. The inability to market organic potatoes often stems from poor quality potatoes coming from growers with insufficient experience and poor quality on-farm storage. On the other hand good quality potatoes required good soil types, preferably silty loams. There is still a lack of varieties suitable for long-term storage (Greenvale; personal communication, 2001). There is a shortage of good early potatoes, although the preference is for set skinned varieties, however the early potato market is remarkably volatile with keen competition from imports.

On the conventional market the UK is 93% self-sufficient. Approximately 4 million tonnes of the conventional crop are stored annually. Some 40% of these are treated with sprout suppressants, a proportion that is falling as companies rely more and more on cold storage to control sprouting and reduce residues. The technology is established and organic potato traders are taking advantage – the market for maincrop potatoes is mainly UK sourced for nine months of the year. The difficult months are April and May where sprouting is much more difficult to control through temperature control alone – there are usually good supplies of imports of new potatoes at this time of the year.

### 5.1.2 Carrots

For organic carrots, 65% are sourced from the UK, whilst approximately 87% of the conventional crop is sourced from the UK. There would therefore seem to be opportunities to increase UK supply, especially for early and stored crops. Carrots are a crop for which storage techniques are well developed. Much of the crop is stored in the field sometimes with a insulating of straw to prevent frost damage. The larger growers have applied this expertise to the organic crop to the extent that the market is mainly UK supplied through to March. A major problem is maintaining skin finish from long term stored carrots, which have difficulty keeping a bright finish that consumers prefer and which imports of new carrots will have. There are also some diseases to be aware of such as cavity spot. For this reason it may be unrealistic to expect UK self-sufficiency of organic carrots to reach conventional levels. It is possible to produce early carrots under crop covers or in polytunnels but the problem in supplying the late spring and early summer market is more economic than technical. As with many crops the relatively low yields and pest/disease issues push up the costs to the point where the crops cannot compete with imports.

### 5.1.3 Onions

For organic onions, 33% were sourced from the UK in 2002. Conventional levels of self-sufficiency are 61%. It is technically possible to supply more onions to the market but import prices are very competitive for most of the year. The use of over-wintered onions enable an earlier crop to be grown. Onions can be stored in ambient air stores until March and in cold stores until May, though long-term storage of the conventional crop often relies on chemical assistance. The evidence of the survey shows that UK organic onions hold the majority share of the market in March but that imports dominate from December to February. This suggests that crop is retained in store in the hope of getting a better price – this is important because the price pressures are higher for onions than for most of the other vegetable crops.

#### **5.1.4 Leeks**

UK grown organic leeks hold 85% of the total market. Conventional levels are at 95%, with the UK now supplying all months except May and June. This crop still has a strong seasonal element in terms of market supply though they can be found on supermarket shelves for much of the year. Use of appropriate varieties, combined with glasshouse-raised transplants can be used to extend the season. Leeks are not normally put into storage in the UK though this is possible at the end of winter. This is a major factor in the high penetration of the market by UK organic leeks.

#### **5.1.5 Swedes**

UK organic swedes hold 96% of the total market. This is another crop that is generally harvested fresh from the field with any storage focused on the short term. There appears to be little scope for increasing supply through import substitution, as there are few imports to substitute.

#### **5.1.6 Beetroot**

UK organic beetroot hold 62% of the total market. It is thought that much of this goes for the processing market. Beetroot are often field stored or clamped to ensure continuity of supply. The UK organic crop dominates the market from August through to March. It is theoretically possible to extend this into April using cold storage but the economics would have to be carefully examined.

#### **5.1.7 Parsnips**

For organic parsnips, 57% are sourced from the UK. This is another field stored crop that is dominant during the winter months – there could be some potential for supplying the market in September, though the market itself is not large at that time of year.

#### **5.1.8 Turnips and other roots**

UK Organic turnips and other roots hold 39% of the total market. These are again crops that are seasonal in terms of the UK though there tends to be product on the shelves all year round. They are not normally stored and do not hold well in the ground. There should be some potential for producing crop earlier in the season i.e. before August and later from January to March.

#### **5.1.9 Cauliflower**

For organic cauliflowers 64% are sourced from the UK. The UK climate and variety availability allows all year round production though this has not prevented the conventional crop slipping from 91% in 1991 to 64% in 2000. This is actually the figure for organic cauliflower that has been determined by this survey and would suggest that further import substitution may not be possible. Some oversupply of summer cauliflower was reported in the 2001/02 season, and this appears to have been sold on the conventional market. That said there is potential especially for the winter crop though the normal factors such as quality and especially continuity apply. Crop losses due to pest and disease problems are more likely at the difficult times of year though organic production is successful in the favoured areas of the country such as Cornwall. The production of winter cauliflower is threatened by the organic seed restrictions, since there are very few organic varieties available.

#### **5.1.10 Cabbage**

For organic cabbage 69% are sourced from the UK. This crop is also produced all year round thanks to a wide range of varieties and conventional production is stable at around 94% of the

market. Organic production has some way to go before it reaches this figure though there are no insurmountable reasons why the UK supply should continue to increase. Pest and disease problems will play a part though it is also a question of matching supply to demand – some organic cabbage crops were ploughed in during 2001 because of oversupply mainly during the summer.

### **5.1.11 Broccoli**

UK Organic broccoli holds 47% of the total market. UK production of broccoli or calabrese tends to dominate the market during the period July to September while imported supplies are the main source from December to May. It is a difficult crop to grow during this latter period, as it is frost sensitive, and imports will continue to hold sway. There is some potential for increasing UK production in June, October and November – this will depend on good management, reasonable weather conditions and continuing development of appropriate varieties. Long-term storage is not considered to be a viable option.

### **5.1.12 Peas and beans**

UK Organic peas hold 52% and beans of 31% the total market. Much of the market for peas is satisfied by the frozen product though interest in fresh peas has stayed fairly stable over the last 10 years. UK organic peas dominate the market during their season and there does seem to be much potential for expansion. Much the same applies to fresh beans though it is more a question of type – we are good at the traditional varieties but rely on imports for the more exotic types.

### **5.1.13 Lettuce and other salads**

For organic lettuce 61% and other salads 57% are sourced from the UK. These are in good supply between June and September. Conventional UK market share is 69% (Outsider's Guide, 1995), with availability from May through to October. There is potential to extend the open field season as happens in the conventional crop but pest and disease problems become more acute at the beginning and end of the season. The early crop can suffer badly from pest problems (slugs, leatherjackets, etc.) while mildew is the main problem in the late crops.

### **5.1.14 Courgettes**

For organic courgettes 35% are sourced from the UK. Surprisingly UK organic production of courgettes is in the ascendant for only two months (August and September). Greater use of crop covers should help to increase July production and later plantings to address the supply in October should be considered. Significant increases outside the summer period are not possible because it is not frost hardy and is not viable as a protected crop.

### **5.1.15 Protected crops**

For organic aubergine 7%, cucumbers 43% (conventional 64% -supply from February to October), tomatoes 54% (conventional 27% - supply from March to November) and peppers 10% are sourced from the UK. In general terms the summer market is well supplied between the months of June and October with the exception of peppers. Glasshouse production of these crops is similar in many respects to the conventional crop though the major difference lies in the nutrient supply to the plants. Conventional crops are generally grown in systems where nutrients are supplied as a solution in water – this means that growth and fruit set can be controlled throughout the growing season. Organic systems by contrast have to rely on biological processes in the soil and as a general rule crops tend to get going more slowly than the conventional equivalents. The crop is often finished sooner because there is more to do in cleaning out and adding organic material to the soil – a period of time is needed before nutrients are mineralised

from the inputs. There must be some potential for increasing the organic pepper crop though imports are very competitive in price terms.

### 5.1.16 Herbs

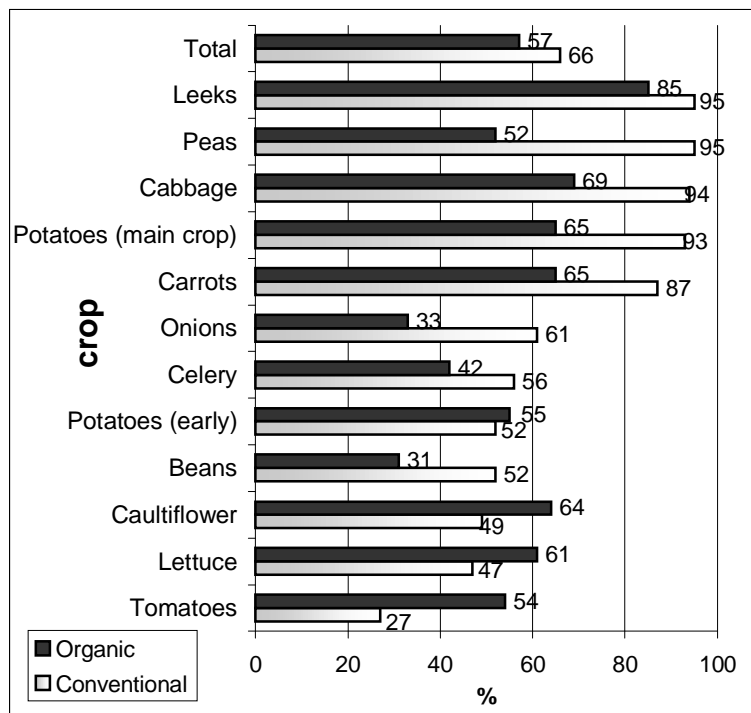
UK Organic herbs hold 40% the total market. This is clearly a very general area in which UK organic crops are available from July to October but not dominant. It should be possible to increase market share of the more common herbs during this period though some of the problem could relate to marketing. There have been instances of organic herbs remaining in the field during this time.

### 5.1.17 Conclusions on increasing the levels of UK production

The results of this study show that for many organic vegetables domestic production is below the conventional level of self-sufficiency, this indicates that there is potential to increase UK production to substitute imports. There is potential to increase production in the main season, which, can be achieved by better attention to quality of production and storage, better continuity of production and at prices, which can compete with imports. It is possible to extend the season by both more early and late production, although this is a more risky time for growers to produce the vegetables, and when nutrients may be less easily available and pest and disease pressure more severe. It is also a time when the competition with imports is most acute. In practice it may not be possible to achieve conventional levels of self-sufficiency especially when long term stored crops may not achieve acceptable skin finish levels. In the end it has to be economic for farmers and growers to produce organic vegetables and decreasing levels of returns, which declined by 20-25% in the 2001/02 season (HDRA, 2002), will not help this. Growers will only continue to expand UK production if there are economic returns to be made.

The level of self-sufficiency in conventional vegetables has been used as a benchmark for the level of organic self-sufficiency. Yet, it has been identified that the level of conventional self-sufficiency is decreasing thus it may be questioned whether such a level should be used as a target for organic markets. The table below illustrates the varying levels of UK self-sufficiency for selected organic and conventional vegetables.

**Figure 14: Total UK organic and conventional self-sufficiency in selected vegetables (% volume in 2001)**



Data source: organic figures from this study; conventional figures calculated from DEFRA 2002)

## 6 Future

### 6.1 Overall market future

The organic vegetable market operates within the backdrop of changing domestic and worldwide market conditions hence there are a variety of factors that interact to shape future situations including changing consumer trends, potential of food scares, EU enlargement, climate change, war in Iraq, policy alterations and economic depression.

Within the EU the overall political and economic climate has broadly favoured the development of organic farming, and this may continue as the Common Agricultural Programme (CAP) moves more away from production to environmental support programmes. It is interesting to reflect on the possible future of the organic market within the EU. Zanilo et al (Table 7) envisage 5 potential scenarios, which range from what they term ‘Gloomy liberalisation’ whereby trade barriers are further reduced in World Trade Organisation (WTO) negotiations and then market support programmes dismantled. Also the ‘World Trade Boom’ scenario shares a common hypothesis of deregulated economic policy, showing the worst performance for both organic demand and supply. ‘Organic Paradise’ and ‘Fortress Europe’ are the two scenarios showing the best results in terms of organic farming, and they share a similar approach to economic policy and international trade policy, where the EU institutions maintain an active role concerning agricultural policy.

None of this considers EU enlargement, which is currently one of the biggest concerns for farmers within the existing EU countries. Enlargement comes with many threats, not least the prospect of a barrage of cheap imports from the east. The threats are real, but so are the positives too. The first is that embracing the region will add 100m consumers in the EU. They may not be the wealthiest, but so far the west has been much more successful in increasing food exports in an easterly direction. Previous enlargements have also shown how over time production costs equalise in the EU. However, in the short-term enlargement will come with a price tag.

Table 7: Zanoli's five scenarios for the future of the EU organic market by 2010.

Scenario	Trade policy	Agricultural Policy	Development of organic market
<b>Gloomy liberalisation</b>	'Unrestrained' globalisation hence reduction of trade barriers (EU experiences deep economic crisis).	Slackening of EU & state intervention & substantial deregulation. Removal of income support and cancellation of agro-environmental programmes	Depressive. Product deterioration & lower standards so organic products not perceived as qualitatively better than conventional. Deleterious to both supply and demand.
<b>World Trade Boom</b>	a) Regulated increases in trade liberalisation so there is an increase in international trade.	CAP cut back so that farm-gate prices are aligned with world market prices.	Consumers accept the increase in international trade without showing alarm about imports of GMOs and derived products
	b) Regulated increases in trade liberalisation so there is an increase in international trade.	CAP cut back so that farm-gate prices are aligned with world market prices.	Use of controversial technologies in agriculture generates concerns about food safety.
<b>Business-as-usual</b>	No major changes	No major changes but climate slightly in favour of organic farming although EU support is reduced slightly.	Medium-low demand, medium-high prices, low supply and inadequate processing and marketing. Increase in supply of intermediate substitute products. No innovation in organics
<b>Fortress Europe</b>	a) Agreement reached between EU and other WTO members. Some globalisation and the spread of new farming technologies.	Increased spending on agri-environment and Rural Development Programmes	Profitability of organic farms increases so production stimulates and increased consumer confidence in organic quality thus demand increases and processors and distributors are utilised more
	b) EU policies not accepted by WTO hence greater globalisation and a slow down in market liberalisation	Some measure maintained by EU for supporting farmers and specific aids for organic farmers	Farm gate prices fall as supply increases, the market continues to be niche as closer control of innovations in agriculture cause less concern about their possible harmful effects.
<b>Organic Paradise</b>	a) Low degree of market liberalisation and high prices	Favourable to organic farming. High and general support for organic farmers.	Higher price levels for agricultural commodities. Issue of quality become critical and consumers' economic expectations grow with increased interest in quality of life and environmental issues. Profit maximisation is not the only goal for farmers but also to protect the environment etc.
	b) Less market liberalisation than a) and lower prices	Favourable to organic farming. High and general support for organic farmers.	Lower price levels for agricultural products. Intermediate products maintain their competitiveness.

Source: Zanoli et al, 2000

## 6.2 The UK market and potential for UK growers

The organic vegetable market is currently growing by 10-15%. This slow down in growth is comparable to what is happening in other EU states. The market for organic food appears to be in a new stage of its development and is dominated by a core of 'committed' consumers. These consumers have a high level of awareness of the benefits of organic food and farming. This 'committed' 8% of organic buyers accounts for 60% of the market value, the remaining 92% of organic consumers 'the dabblers' purchase 40%. (Soil Association, 2002) Thus it may be assumed that the most potential for UK market growth lies in identifying how to convert the 92% of consumers who dabble in organics and encourage them to buy more frequently. In addition, on average, organic food accounts for only 1.1% of organic buyers grocery purchasing. If this average organics consumer spend on organic food could be increased to 1.5% of their total grocery purchasing the total organics market would increase by 34%. This could be achieved by encouraging the average organic consumer to spend an additional £10 of their annual grocery budget on organic food.

Furthermore, although the total vegetable market (including conventional) is relatively static as the consumption of vegetables per person reduces, the chilled and prepared sector is increasing at about 40% per annum and so, organics could further penetrate this to expand the market, this may also capture buyers from groups who do not usually purchase organic commodities. There is increasing concern about healthy lifestyles and chemical residues in foodstuffs, this may be further influenced by developments in the National Health Service as people believe they have to take care of their own health and the state will no longer provide. Organic vegetables are in an excellent position to address these concerns, nonetheless they are expected to taste and look good. Conversely, this may cause a discrepancy between organics being perceived as fresh and not processed; despite this consumers have been expanding their range of organic purchases.

As 70% consumers prefer to purchase UK produce (Hughes, 2002) it appears that there is also potential for UK farmers to increase the supply of more organic produce. In addition comfort and trust can be sought in regional and local heritage and tradition so there could be scope to develop regional organic supply such as through expanding box schemes and farm shops. Moreover the high level of imports suggests there is scope to increase domestic production especially at certain times of the season. There also appears to be scope to increase institutional demand for fresh organic produce for example in schools and hospitals.

The increasing domination of UK food retailing by the low price operators such as Wal-Mart / Asda is perceived as a threat to organic growers, but their success in the UK has not been such a threat as previously expected. In the future it is likely that the large food retailers will reduce their dominance of the food market as more people increasingly eat out of home and shop by a wide variety of means (Hughes, 2002).

It appears that there will be fewer opportunities for new suppliers to supermarkets, and foreign suppliers have, to a large extent, cornered the processing market with frozen produce. However the rapid expansion in eating out suggests there may be opportunities in supplying catering outlets, however this is dependent on discovering feasible outlets and forming relations with chefs. Box schemes offer low but steady margins and direct communication with customers however a range of crops are required and it can be difficult to focus on both production and marketing, especially with the high consumer expectation of quality and service. The organic wholesale market has broader specifications than the pre-pack market but requires a wider range of crops. However prices are often agreed before dispatch and not subject to arbitrary promotions. Producer satisfaction with the wholesale market is said to be high thus it may attract more producers especially if the organic market grows, since wholesalers link producers and other outlets. This suggests that more specialists are required and that there is scope for further innovation, processing and expansion of UK production.

Hence producers wishing to expand their market could target the 93% of consumers who occasionally buy organic produce and encourage them to buy more frequently, explore the new markets of hospitals and schools, expand into the chilled and prepared sector, and/or focus marketing on regional as well as organic strengths.

The Farming and Food and Report of the Policy Commission on the Future of Food and Farming in the UK (Crown, 2002), the so called 'Curry Report', is favourable to the development of organic food farming. It recommends the development of a strategy for organic food production, covering such issues as research, development, standards and marketing. The theme of reconnecting farmers and consumers is one which organic farming can perform very effectively through its box schemes, use of farmer's markets and access to its farms through its demonstration farm network. Organic farming should benefit from another key recommendation of the report, which is to encourage greater co-operation in the food chain through the new Food Chain Centre. Ideally the food chain should be short, fast, transparent, seamless and collaborative, too often it is complex, price driven, confrontational, disjointed and opaque (Hughes, 2002). The government's Action Plan (DEFRA, 2002) to develop organic food and farming in England has already begun to take some of these issues forward and develop a strategy for the organic farming industry. For example it will attempt to standardise 'organic standards', to develop effective partnerships and improve performance throughout the food chain. It will also seek encourage the development of the UK domestic supply to match levels which are achieved in the conventional sector. It should be noted that conventional levels of self-sufficiency in vegetables have fallen from 77% in 1989 to 71% in 2000. For this reason it could be considered that levels of self-sufficiency for organic production should rise above current conventional levels.

Farmers, policy-makers and other market actors must react swiftly to the changing conditions of the new environment that will evolve in coming years. But in order to do this, growers need a clear picture of the market and knowledge about the supply levels of crops at different times of the year and precisely where there are opportunities for innovation, processing and expanding production. Hence there is a case for market information to be collected annually, so future projections could be more easily and accurately mapped. However a conversion time lag will inevitably act to slow the response of farmers to changes in market conditions or consumer behaviour.

In the future it is certain that all actors in the supply chain from growers, packers, wholesalers and supermarkets will have to be increasingly consumer focused. It is important for all to research the market, to develop relationships with and understand your customers and what produce they need. To enable the market to grow all should be involved in educating and communicating to consumers the benefits of organic food and farming. Finally no crops should be planted without first having a market, growing speculatively is damaging to the stability of the market.

## 7 Conclusions

The main conclusions from this study are:

- In the past five years the market for organic vegetables has grown at an average rate of 30% per annum.
- UK growers have responded to the growing market, and to higher conversion grants introduced in 1999, by nearly doubling the area of organic vegetables from 2400 ha in 1997 to 5437 ha in 2001

- Due to the time lag of the conversion period, much of this increase in supply reached the market in the 2001/02 season, at the same time as the rate of growth in the market was beginning to slow down, which has resulted in oversupply for some vegetables at certain times of the year, notably potatoes, cabbage and lettuce in the 2001/02 season.
- The supply problems were compounded by an increasing supply of imports, lack of communication in the supply chain and by over programming of production.
- In 2002/02 season the total market for UK organic vegetables was estimated at 103,000 tonnes, with a retail value of £143M. Of this 60,000 tonnes, 57%, are grown in the UK
- When considered on a crop by crop basis, however, there are large variations of UK market share, ranging from 96% for swedes to 33% for onions.
- For the first time data has been obtained which shows the number of hectares of 25 different crops organic crops grown in the UK.
- Packers and wholesalers estimate that on average there is potential to increase UK market share by 10-15%, although there are again variations on a crop by crop basis.
- If this were achieved this would put organic production at similar UK market share levels to that currently achieved in conventional production in 2000, namely 70%, which is the target set by the English government's organic action plan. It should be noted that conventional production market share fell to 66% in 2001.
- Nearly 70% of the vegetables are sold through multiple retailers, with 15% sold through wholesalers, 11% sold directly by the growers and only 5% sold to processing outlets.
- In order to increase supplies UK growers will have to compete with imports on quality, continuity of supply and in some cases on price. Much of the challenge for UK growers is to increase production at the beginning and end of the season, a time when there is greatest risk from pest, diseases, poor nutrient supply and uncertain economic returns.
- Many EU countries have increased their levels of production to meet the growing UK market, and for some crops there is oversupply at the EU level.
- There are many positive drivers for the future growth of the market which is expected to grow at 10-15% per year, including consumer's preference for UK produce, opportunities to supply catering and institutional food outlets. Policy initiatives such as the Curry report and the government's organic action plan are also all favourable to the development of the organic vegetable market.
- There will be fewer opportunities for new suppliers to supermarkets, and foreign suppliers have, to a large extent, cornered the processing market with frozen produce.
- The market is still small and vulnerable to fluctuations in supply. There has been downward pressure on prices in the past few years, in what is becoming a very competitive market, leading to a lowering of grower returns.

**Table 8: SWOT analysis of the UK organic vegetable market**

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> <li>• Market growing by 10-15% per annum</li> <li>• Rising disposable incomes</li> <li>• Scientific evidence of the health benefits of eating vegetables</li> <li>• Consumer concern about health, chemical residues and the environment</li> <li>• Trust in organics</li> <li>• More mature market</li> <li>• Direct routes to consumers expected to increase</li> <li>• Food miles issue prominence</li> <li>• 50% of babies are given organic baby food</li> <li>• Growers with skills and commitment</li> <li>• Government commitment</li> <li>• Strength of lobby groups such as the Soil Association and Sustain</li> <li>• Supermarkets desire to sell organic food</li> </ul>	<ul style="list-style-type: none"> <li>• Small market size, relatively static vegetable market, and slowing of organic growth</li> <li>• Small supermarket shelf space for organics</li> <li>• Low organic processing capacity</li> <li>• Complex, price-driven, disjointed and opaque supply chain</li> <li>• Lack of market data</li> <li>• Small number of organic pre-packers</li> <li>• Domestic continuity of supply and availability</li> <li>• High prices</li> <li>• Unclear labelling</li> <li>• Few opportunities for new suppliers to supply supermarkets</li> <li>• Competition from foreign suppliers</li> <li>• Lack of national food culture</li> <li>• Lack of marketing skills amongst some growers</li> </ul>
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> <li>• Convert ‘dabblers’ and encourage ‘committed’ consumers to spend more</li> <li>• Expand into chilled and prepared sector</li> <li>• Explore and increase institutional demand</li> <li>• Substitute imports</li> <li>• Develop regional marketing</li> <li>• Rapid expansion in eating outside the home</li> <li>• Novel crops</li> <li>• Innovation</li> <li>• Co-operation amongst farmers</li> <li>• Increase public awareness</li> <li>• Tell story of organics/farm in market place with product</li> <li>• Food scares</li> <li>• Ageing population</li> <li>• The ‘Curry report’ and the Organic Action plan</li> <li>• ‘Five-a-day’ initiative</li> </ul>	<ul style="list-style-type: none"> <li>• Global and European economic, environmental and political circumstances</li> <li>• Changing consumer demand</li> <li>• Intermediate standard products and GMOs</li> <li>• Domination of the market by multiples, especially low price operators.</li> <li>• Disconnection of consumers with agriculture</li> <li>• Policy alterations not considering effect on market</li> <li>• Fragmentation of organic standards and certification</li> <li>• Over supply</li> <li>• Excessive imports</li> <li>• Continued reduction of suppliers (packers) within food chain</li> <li>• Continued reduction in prices for growers</li> <li>• Lack of organic seed</li> </ul>

## **8 Recommendations**

### **8.1 Policy makers**

There is a potential to increase UK market share, and to supply the growing organic vegetable market, by increasing UK supply of organic vegetables in the main season and also at the beginning and end of the normal marketing season. In order to achieve this it is recommended that policy makers:

- Continue to set an effective framework for the effective functioning of markets. As part of this there is a need to communicate organic standards to consumers as well as to partners in the supply chain and to be aware of the effects of increasing concentration of power in the supply chain.
- Facilitate the collection of market data (total market quantities for each crop, quantities sourced from the UK etc) on an annual basis. This will enable all players in the market to quickly know what the market situation is and will enable government to measure trends in UK market share. Ideally predictive data should be collected on likely volumes that will be available during the season. Presently the organic vegetable sector is too small to pay to collect its own data, it is likely to require funding to do this.
- Facilitate improved channels of communication and co-operation along the food chain, combined with data from above to ensure an even balance of demand and supply and prices.
- Continue to ensure that grants are available to facilitate co-operation in the food chain and improvements in marketing infrastructure such as processing and storage facilities
- To identify technical and logistical constraints which may hinder the growth of UK organic vegetable production such as, lack of availability of organic seed, the technical difficulties of early and late season production and declining economic grower's returns. Research should continue to focus on these issues.
- Recognise and reward growers for the considerable social and environmental benefits of organic vegetable growing.

### **8.2 UK growers, advisors, packers, wholesalers and retailers**

There is potential to increase UK market share and to supply the growing organic vegetable market, by firstly increasing supply in the main season and especially by increasing supply at the beginning and end of the normal marketing season. In order to achieve this it is recommended that organic growers, packers, wholesalers and retailers:

- Gain more knowledge of their market, through good market research. Thus understanding better the behaviour and needs of existing buyers and meeting those needs and persuading them to spend more on organic food. Maintaining market growth is now crucially dependent on this.

- Educate and communicate with consumers thus, enticing the 71% of consumers who are occasional organic buyers, by raising their awareness of organic food and its benefits. This is also essential to expanding the market. Commitment to buying organic grows as consumers become more aware of the benefits of organic farming.
- Seek to communicate and co-operate with others in the supply chain more effectively, to equally share responsibility and risk, and to honour commitments. An increased UK supply can only be successful if organic market actors join forces to realise the potential of the advantages arising from the economies of scale associated with growing supply. Much can be learnt from well organised conventional producers marketing through co-operatives and other producer organisations. This may have to be done through regional grouping or organisations based on each crop. The easiest way to secure long-term growth in UK production is through long-term contracts between partners in the supply chain.
- Invest where possible, and when financially viable, in suitable facilities for storage and processing of crops such as washing carrots.
- Growers must innovate and differentiate their produce. Increase their marketing awareness and marketing skills, develop new initiatives and be prepared to continually adopt new marketing strategies. (Marketing skills include being market led with good market research, knowledge of the needs, good relationships and communication with the consumers and producing quality products to meet these needs)
- Growers must have a planned market before they plant a crop.

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## 10 Appendices

### 10.1 UK Organic Production

Table 9: UK Organic Production areas 1997-2001

	Potatoes	Green vegetables <sup>2</sup>	Root crops <sup>3</sup>	Salads and protected crops	Total	% Increase
<b>1997/8</b>	744	1008	456	192	2400	
<b>1998/99</b>	911	911	495	208	2605	9
<b>1999/00</b>	1150	900	650	230	2990	15
<b>2000/01</b>	2081	830	1000	294	4317	44
<b>2001/02<sup>1</sup></b>	2750 (1180)	900 (2520)	1200 (1120)	188 (253)	5437 (5098)	26

Source: Soil Association

<sup>1</sup> Figures in brackets refer to HDRA area data arrived at by dividing total produced by typical yields (Lampkin, 2002)

<sup>2</sup> Includes cauliflowers, cabbage, broccoli, other green vegetables, peas, beans, courgettes and sweet corn.

<sup>3</sup> Includes carrots, onions, beetroot, Swedes, parsnip, other roots and leeks

**10.2 HDRA / SOIL ASSOCIATION QUESTIONNAIRE TO ORGANIC VEGETABLE WHOLESALERS AND PREPACKERS**

NAME  COMPANY NAME  Contact no:

**BREAKDOWN OF SALES (Organic Vegetables traded) 1 April 2001 to 31 March 2002**

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 2002/3 (%)**			
	Tonnes	Value (£)	UK		EU		Other		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	+	-
			(t)	(£)	(t)	(£)	(t)	(£)														
Example	100	1500	60	800	40	700			UK	<-----Import----->				<-----UK----->						10 %		
Early Potatoes																						
Maincrop 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																						
<b>TOTAL</b>																						

\* Other root crops includes turnips and celeriac




\*\* Indicate increase or decrease in % for each crop

ALL INFORMATION WILL BE TREATED AS CONFIDENTIAL AND RESPECTED AS SUCH

10.3 UK Organic Vegetable Market: Results from DEFRA funded study -Key statistics for 25 crops

	Total organic market <sup>1</sup> (t)	UK (t)	UK (%) by volume	UK (ha) <sup>3</sup>	Typical monthly breakdown of use of UK and imported produce											
					Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Early/salad Potatoes	12317	6814	55	852												
Main Potatoes	27218	17638	65	1038												
Carrots <sup>2</sup>	13383	8724	65	349												
Onions	7339	2447	33	175												
Leeks	1149	976	85	122												
Swedes	1333	1276	96	75												
Beetroot	2248	1387	62	99												
Parsnips	1283	731	57	66												
Other roots	1173	453	39	45												
Cauliflower	2905	1864	64	155												
Cabbage	5579	3825	69	255												
Broccoli	2613	1230	47	351												
Other green veg	1282	682	53	195												
Peas	614	322	52	107												
Beans	465	144	31	48												
Lettuce	3046	1846	61	154												
Celery	1097	461	42	33												
Other Salads	292	166	57	33												
Courgettes	1337	465	35	93												
Sweetcorn	374	192	51	38												

	Total organic market <sup>1</sup> (t)	UK (t)	UK (%) by volume	UK (ha)	Typical monthly breakdown of use of UK and imported produce											
					Apr	May	June	July	Aug	Sep	Oct	Nov	Dec			
Aubergine	135	10	7	1												
Cucumbers	8031	3465	43	9												
Tomatoes	8180	4447	54	20												
Peppers	471	47	10	3												
Herbs	302	120	40	60												

Key:  Mainly UK sourced  Mainly imported  Mixed UK and imports

<sup>1</sup> UK produce plus imports

<sup>2</sup> Monthly breakdown relates to main crops carrots

<sup>3</sup> Estimated by dividing UK tonnes by typical packed yields/ha