INTRODUCTION AND BACKGROUND

The protected crop industry in England is an incredibly diverse and innovative component of the horticultural sector. It is though relatively under researched. This study contributes to the available information on the sector through analysis of a survey of around 140 protected crop producers conducted over a two year period between 2000 and 2002. The survey considers not only the economics of protected crop production in England but also provides information on the structure of the industry and energy use. The survey was not crop specific and therefore covers a variety of crops ranging from spring bedding through to strawberries.

DEVELOPMENT OF THE INDUSTRY

Horticultural crops (fruit, vegetables and later flower and ornamental production) were very much latecomers to the UK agricultural sector. Joan Thirsk details the growth of horticultural production under glass in the nineteenth century.[1]

> "Glasshouse cultivation constituted a new dimension of horticulture in this period, making great strides forward beyond the boundaries which it had reached in its previous phase of expansion, 1650-1750… A great leap forward was made possible in the late nineteenth century by the removal of duty on window glass and the invention (1835 and 1839) of boilers allowing hot-water pipes to be used to heat glasshouses. The cheaper glass was used first to cover outside walls and make orchard houses for early or exotic fruit. In this way, grapes, strawberries, peaches, nectarines, melons, figs, tomatoes, and cucumbers, and also flowers, were forced. Experiments were also tried with mushrooms, seakale and asparagus but not with conspicuous success…But it was not long before glasshouses were used for seeds and bringing on early plants before planting outdoors. Although statistics are patchy, in the Lea valley the expansion was dramatic: Edmonton has 10 acres of glass in 1870 and 100 acres in 1890. In 1897 J. Assbee thought that 32 million square feet of glass was being used for growing fruit and flowers in the United Kingdom, and if the houses had been placed end to end they would have covered 735 acres. In the Lea valley, where much glass was concentrated, 200 growers with 900 acres of glass were found in Tottenham and Broxbourne, Hertfordshire."

Allen (1999)[2], in his history of Covent Garden also describes the growth of horticulture at about this time.

> "In the last quarter of the century a number of factors led to what was probably the a faster expansion of market business than at any previous time. These included the widespread use of rail transport to bring produce to London, so extending enormously the areas of production that could make use of the market; the expansion of horticultural production in Britain, including substantial areas of glasshouses; and much greater volume of imports from overseas following the introduction of steamer ships"

[1] Joan Thirsk (2000) *Alternative Agriculture: A history*
[2] Colin Allen (1998) *Transplanting the Garden.* Covent Garden Marketing Authority

Thirsk notes that by the beginning of the twentieth century many of the contemporary problems with horticulture were becoming apparent, such as increased competition from abroad, and high transport charges. In addition she noted that

> "Horticulture was a successful and optimistic branch of alternative agriculture, but it was not without its current problems and fears for the future. Much room for improvement was seen in the sorting, and packing of fruit and vegetables, and at least one combination of growers at Hereford set itself this objective, although it was considerably later, in the inter-war years, that most progress was made on this score. In periods of depressed prices, evasive action became more urgent, but co-operation did not elicit great enthusiasm. Instead, growers set their sights on more efficient routes to market; both small and larger growers resented the comparatively large profits of the middleman. So some small growers in the north (Cumberland was cited) chose the solutions of individualists, carrying their produce to market themselves twice a week, while others became their own retailers. Those who had once sent their produce to London for onward dispatch to the north sent direct to northern markets. Growers large and small also sought more retail outlets locally."

Clearly although many of the issues affecting the sector appear to be the same now as then, the industry is very different to the beginning of the 20th century. The following section considers the current situation with regards to protected crop production.

CURRENT SITUATION

According to DEFRA (2002), there are just over 2000 hectares of protected crops grown in the United Kingdom. Table 1 compares the area of crops grown in the field or in the open with areas grown under protection between 1995 and 2001. It is clear, that in terms of area, protected crops are dwarfed by the production of field crops.

The table does highlight a marked decrease in the area of protected vegetables. Although, fruit production under protection has increased from 35 hectares to 84 hectares over the seven years and protected ornamentals also increased these have not offset the large decline in protected vegetable production.

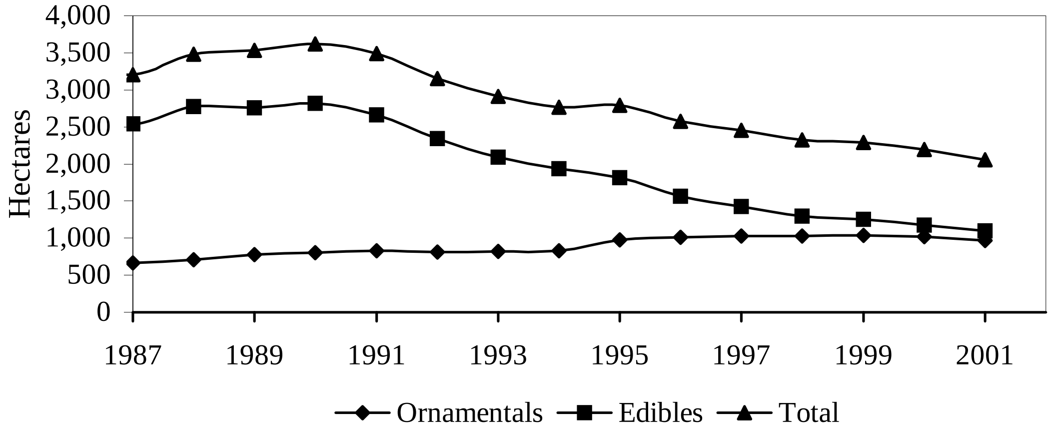
The figures for protected crops are placed in longer term perspective in the first figure below. Although areas increased during the late 1980s, since this time there has been a relentless decline in protected crop area. However, this decline has been entirely due to a fall in the production of edibles and in particular lettuce (in the second figure below) as production of ornamentals has increased. The dramatic decline in protected vegetable area has meant that ornamentals now account for 45 per cent of protected crop area compared to just 18 per cent in 1986.

Planted Horticultural Area in the United Kingdom (hectares)

	1995	1996	1997	1998	1999	2000	2001
Vegetables:							
Field	161,788	161,150	151,254	154,628	147,854	135,811	134,605
Protected	1,815	1,563	1,426	1,294	1,250	1,176	1,093
Total	163,602	162,714	152,680	155,922	149,103	136,987	135,698
Fruit:							
Open	33,716	32,963	31,898	29,875	28,441	30,421	30,853
Glasshouse	35	52	45	53	75	79	84
Total	33,751	33,014	31,943	29,928	28,515	30,500	30,936
Ornamentals:							
Open	14,513	13,619	14,362	14,033	14,628	15,430	14,863
Protected	977	1,011	1,028	1,029	1,041	1,016	964
Total	15,490	14,630	15,389	15,061	15,668	16,446	15,827
Grand Total	212,844	210,358	200,013	200,911	193,287	183,933	182,462

Source: DEFRA (2002) Basic Horticultural Statistics

UK Protected Crop Area 1987-2001



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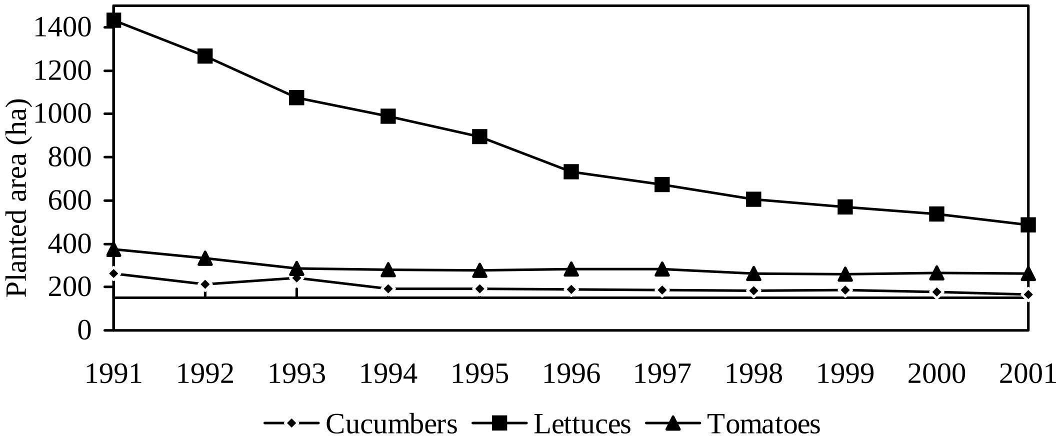
e: Basic Horticultural Statistics

Cucumbers, Lettuce and Tomatoes Planted Areas



Source: Basic Horticultural Statistics

The fall in protected cropping basically reflects the economic reality facing the sector in the UK. Strong competition from abroad, encouraged by favourable exchange rates, has made it hard for producers to achieve an adequate return.

According to more recent estimates from DEFRA (2003) there are 5,100 registered holdings identified as having glasshouse crops in England and Wales. From returns from approximately 2,100 holdings selected randomly, they estimate that the total protected area of glasshouses at 10th January was 1,778 hectares, a similar figure to 2001. The findings of this glasshouse survey indicated a decreased total tomato area (16 per cent) and lettuce (22 per cent), but does highlight growth in some other crops, most notably strawberries (up 26 per cent). In the main, the areas of flowers and foliage for cutting remained the same. However, the survey found a large increase in the area of pinks and carnations (62 per cent) and a decrease in the area of all year round (ayr) chrysanthemums (32 per cent).

The size distribution of glasshouses highlights the concentrated nature of production. The 36 per cent of holdings with over two ha of glass accounted for over 86 per cent of the total glasshouse area. The fact that some businesses operate over a number of sites means that production is likely to be even more concentrated.

Value of Output

DEFRA (2002) estimates that the value of output from protected crop production was £579 million in 2001 (Table below). Of this, £320 million came from the production of edibles and £259 million from ornamentals. Though the value of output has fallen since 1999, the returns have been more variable and the decline does not appear to be as marked as that in area planted. This is largely due to improved yields for many protected crops.

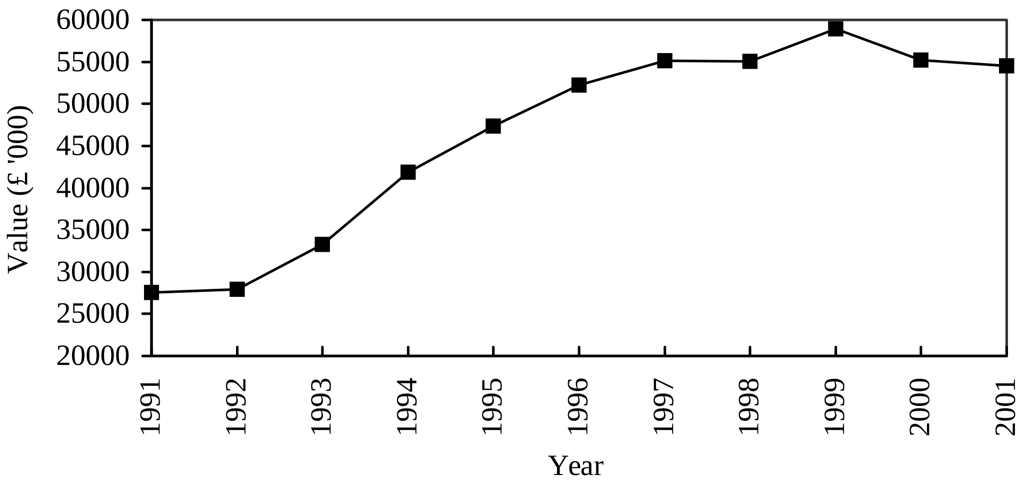
Value of Home Production Marketed

	1995	1996	1997	1998	1999	2000	2001
	£'000						
Vegetables	341,413	369,318	324,297	324,333	317,809	315,607	306,909
Fruit	3,722	7,585	7,729	7,584	11,690	12,546	13,347
Ornamentals	256,985	276,385	275,427	263,824	282,492	270,028	259,080
Total	602,120	653,288	607,453	595,741	611,991	598,181	579,336

Source: Basic Horticultural Statistics

Although some sectors appear to be in decline it should be emphasised that this is not the case for all crops. The increase in strawberry production has already been mentioned and the dramatic increase in bedding plant production can be seen in Figure below, although growth in this sector does seem to have peaked.

Value of Bedding Plant Production



Imports

Trade plays a major part in the protected crop sector and this has always been the case. However, the strength of the UK currency during the last few years has put particular pressure on the domestic sector. In 2001, DEFRA estimate that for horticultural produce in total, imports were over £3 billion up from just over £2 billion in 1993. This can be compared to domestic production of just under £2 billion.

For some crops, even where there has been a significant growth in the market it can be seen that this growth has largely been taken up by imports. A classic example of this is cut flowers. Figure below highlights the rapid growth in flower imports, rising from around £60m in 1991 to nearly £350 million in 2001. Imports now account for around 80 per cent of the overall flower market in the UK.

Value of cut flower imports