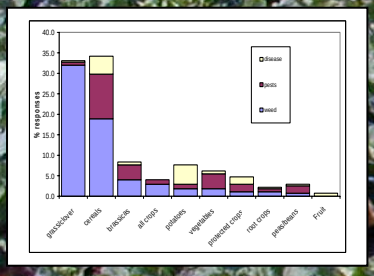
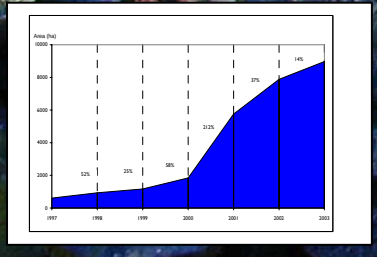
ORGANIC STUDIES CENTRE

Organic Farming in Cornwall: Results of the 2002 Farmer Survey





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Organic Farming in Cornwall

Results of the 2002 Farmer Survey

February 2004

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The Farms, Land-use and Enterprises

- In total, 8,778 ha (21,618 acres) of land in Cornwall were certified either fully organic or in-conversion. Of this, 7,659 ha (18,918 acres) or 87%, were fully converted. Approximately 76% of producers were registered with SACert. These accounted for just under 60% of organic and in-conversion land area. The remaining farms were certified with OF&G. There were differences between the two certification bodies in terms of the distribution of enterprises.
- The average period that respondents had been farming at the surveyed holdings was 16.1 years, ranging from 1 to 50 years. 46 respondents had not started their career on the farm that they were currently residing at. Eleven respondents (9%) were new entrants to farming (farming less than 4 years) and six of these started conversion at the same time as they started farming.
- Only seven (6%) of organic farms in Cornwall were fully converted to organic production before 1998. Most of the organic farms in the county completed conversion during 2001. Twenty-seven farms (24%) had changed in size since conversion. Approximately 10% of the organic and in-conversion area in Cornwall had been acquired since, or as a consequence of, conversion.
- Approximately 40% of the organic and approximately 60% of in-conversion land was, at least in part, tenanted. Eight of the organic farms in the county were National Trust properties. Sixteen percent of the farms were at least in-part in less-favoured areas and 8% were at least in part classed as Environmentally Sensitive Areas (ESAs). Thirteen of the registered farms/holdings were stockless and a further five farms kept either pigs or poultry as the only livestock enterprises.

Livestock Production

Milk production

- There were 3,148 cows dairy cows on 31 organic dairy farms (average herd of 101 cows). Thirteen of these herds had decreased in size since conversion, and six had increased in size. The average milk yield was 5,937 litres per cow per lactation. Seven herds had increased in yield since conversion, whilst eleven had decreased average yield. The average replacement rate was approximately 22.2% (12% to 35%). All year round calving season was common, although the majority of herds were spring calving. Although the herds were predominantly Holstein, comments tended to focus on the suitability of the Holstein and high genetic merit animals to organic production.
- Mastitis was the most important health problem identified. Average somatic cell count (scc) was 206,000 cells/ml compared with an average of 169,000 cells/ml pre-conversion. Seventeen herds had an increased average scc since conversion. In four herds this had decreased. All but one herd had a health plan and 65% of these had been drawn up with the aid of a veterinarian.
- Concentrate feeds given to 47% of the herds were wholly purchased and 20% were predominantly purchased. Triticale was the most common home produced feed. Comments on feeding focused on problems associated with organic feeding standards, particularly the forthcoming changes, as well as the price and availability of purchased sources of protein. Twenty-five of the 31 organic dairy farms (81%) had a current organic milk contract. Of those that were fully converted, 60% (15 farms) were selling all their milk as organic whilst 36% were selling less than half of their milk as organic. Most producers were concerned with the market for organic milk.

Sheep production

- There were 41 organic sheep producers in Cornwall at the end of 2002, of which four were in-conversion. The total number of fully organic breeding ewes was 6,206, with a further 197 in-conversion. The average lambing percentage was 149% (ranging from 90% to 190%). The total number of lambs born in 2002 was estimated to be 8,620. There was one autumn lambing flock, five November-December lambing flocks, ten flocks lambing in Jan-Feb and 17 spring lambing flocks. There was a wide range of breeds used. Twenty two percent of flocks had either

pure Suffolk or Suffolk cross ewes, 17% with Dorset/Dorset cross and there were three flocks of Devon and Cornwall Longwool.

- All but ten respondents operated closed flocks. The majority of flocks received at least some home-grown concentrate feed although 39% of flocks relied on entirely purchased concentrates. Oats appeared to be the most commonly used home-grown feed.
- Worm infestation (39% of responses), flystrike (37%) and footrot (37%) were the most frequently identified health problems. Seventy four percent of flock owners said they had a flock health plan, 62% being developed through veterinary consultation. Eighty three percent of farms were finishing all lambs born on the farm and a further four farms (10%) were finishing more than 75% on the farm. Details of carcass and fat quality were collected. Approximately 33% did not know the carcass conformation and fat class of their lambs. Sixty seven percent had an organic market for all lambs. Although a number of farmers were able to demonstrate successful marketing of organic lamb, many were also disappointed with the price premium available.

Beef production

- There were 79 beef producers, nine of which did not provide enterprise details (these were very small-scale). Fifty-seven herds were predominantly suckler herds, 10 reared predominantly dairy-bred calves. There were a total of 1,463 suckler cows, with a herd average of 24 cows (ranging from 1 to 79 cows). There were 1,500 beef calves of less than 9 months, 1,567 between 9 and 22 months and 590 over 22 months. Forty-six beef farmers were selling finished cattle with approximately 1,100 animals finished in the year of the survey. Approximately 60% were from suckler herds. It was predicted that a large increase in organic beef animals from the dairy sector would occur during 2003/04.
- The majority of beef suckler herds were spring calving. More than 30 suckler cow breeds or crosses were recorded, the most common being Aberdeen Angus (10 herds), South Devon (10), North Devon (8), Hereford cross (7) and Angus cross (5). Superior eating quality and suitability to organic systems of traditional British breeds were emphasised in comments from respondents. Of 36 farms feeding concentrate diets, 20 were using 100% home-grown feeds, three used more than half of feeds as home-grown and 15 farms relied entirely on purchased concentrates. There were a wide range of comments on the provision of fodder, mineral deficiency and beef feeding systems. Twenty-one farms were selling store cattle between 9 and 22 months and eight farmers were selling stores at more than 22 months. Eighty three percent (38 farms) were finishing animals at 22-30 months. There was some concern over the potential for finishing beef cattle in less than 30 months. Approximately half of finished beef producers did not know detail of carcass quality. There was considerable concern regarding the marketing of organic beef.

Pig production

- There were 13 organic pig producers, nine of which had kept pigs before conversion and three were in conversion at the time of the survey. There was a total population of 72 organic sows in the county, with herd sizes ranging from 1 to 20 sows and an average herd size of 6.5 sows. Gloucester Old Spot (4 farms) and Saddle-back or Saddle-back cross sows (3 farms) and Landrace/Large White crosses (2 farms) were the most prevalent breeds. At least ten of the herds were using mobile arks and fenced paddocks and at least eight of the herds were farrowing outdoors. Eleven herds were finishing pigs, with five finishing outdoors. Six herds were, in-part, integrated within a crop rotation. Six farms were using home-grown feeds. Predators, muddy conditions, fencing difficulties and difficulties in finishing were cited as the main problem areas. An estimated 1,120 live pigs were born in 2002, of which approximately 750 pigs were finished. Nine farms were direct marketing.

Egg production

- There were 20 organic egg producers, half of whom had kept laying flocks before conversion. Flock size ranged from 7 to 6,800 birds. There were only nine flocks of 100 birds or more, and two of 1000 birds or more. Most producers purchased birds at approximately 16 weeks, with only two buying day old chicks, and one rearing home-bred pullets. The two largest flocks were of the Columbian Black Tail breed. The Black Rock breed was the most prevalent across the farms. Breed comments referred to disease resistance, feather pecking, foraging and production and egg colour.
- Eleven flocks were in mobile housing and nine had unrestricted range access. Eight farms (from 18 responses) were feeding entirely purchased feed and three small flocks received entirely home-grown feeds. Four flocks were purchasing less than half of feed and three were buying more than half. The high cost of purchased feed was a typical comment. There were also concerns over restrictions on the use of synthetic amino acids in feed, and the non-availability of GM-free soya as a feed ingredient. Low stocking rate was highlighted as an important factor in reducing health problems, particularly feather pecking. Peak egg production per day ranged from 6 to 5,800 eggs. Average production was 261 eggs per bird per year (ranging from 180 to 300). An estimated 2.5 million organic eggs were produced in the county in 2002. Most were selling eggs through local outlets with all but one producer selling some as farm gate sales. Three of the larger farms were selling on a contractual basis.

Table-bird production

- There were eight table bird producers. Average flock size ranged from 20 to 1000 and the number of batches reared per year ranged from one to twelve. An estimated 22,000 birds were reared in the county during 2002 (range 35-12,000 birds/annum/farm). The most popular breeds were Ross/Cobb (4 flocks) and Hubbard ISA257 (2 flocks). Five farms used mobile housing and three used static housing. Most birds were reared on permanent pasture or grass leys, with one flock being reared in an orchard. The control of predation by foxes and crows was expressed as an issue of concern. Three producers used exclusively home-grown feed. Health problems included birds "going off their legs" and occasional batches with stunted growth. The larger flocks were producing on a contractual basis, whilst smaller flocks tended to be sold at farm-gate or as local direct sales.

Veterinary support

- Sixty four percent of livestock producers felt that their vet was supportive and only 15% felt unsupported. Twenty one percent did not know their vet's view. Sixty two percent used homeopathy, with half of these being regular users. Homeopathic advice was generally not available in Cornwall. Twenty three livestock farmers said they also used other "non-conventional" health treatments, and half of these used them on a regular basis. Many of these were dairy farmers who used Uddermint to treat mastitis.

Forage production

- Average first cut silage was 25 ha per farm (total of 1,973 ha on 79 farms). Forty-one farms took second cut silage (total of 923 ha) and 20 took a third cut (454 ha). At least 67 farms made at least 397 ha of hay. Twenty-two farms made whole crop silage. Twelve percent of responding livestock farmers said they had, or would be, crimping grain. The most popular crop for crimping was triticale, followed by barley.

Crop Production and Management

Cereals and protein crops

- Fifty-eight organic farmers grew approximately 1,100 ha of cereals, 90% of which was fully organic. This consisted of triticale (37%), spring barley (24%), winter wheat (11%), spring wheat (10%), winter oats (10%) and spring oats (9%). 375 ha of leguminous crops were grown for livestock feed, consisting of winter beans (12 ha), spring beans (12 ha), forage peas (280 ha), lupins (86 ha) plus pea/cereal mixtures.

Vegetables and fruit

- Nineteen farmers grew field scale vegetables, of which potatoes and cauliflower were the most common. Whilst some were able to provide detail of production area, the majority were small scale, growing mixed vegetables often for direct sale. There were thirteen commercial organic potato growers, nine of which were growing an acre or more. Fifty six percent of the potato area was grown as second earlies. Ten farmers responded that they grew organic cauliflower. Six provided data and the total area was15.0 ha, with only four growers growing more than 1 acre.
- Nineteen farmers grew horticultural crops other than field-scale vegetables. The full report contains information on a range of crops, although it was not possible to obtain precise details of the actual area grown. This is a part of Cornish organic production that requires more data in order to develop the market and understand the scale and intensity of production. There were four growers of commercial organic apples, with a total of less than 2 ha, two strawberry enterprises, two blackcurrant, one each of pear, raspberry and rhubarb. As with horticultural vegetables, there were no further details available on those growing very small areas.

Crop rotations

- Seventy-one farmers gave details of their cropping rotations and 13 had two different rotations operating on the same farm. Thirty-four rotations were specifically using red clover as an element of their crop rotations and 32 farmers (45%) specifically referred to white clover in the rotations. There were 15 rotations where both red and white clover were being used within a crop rotation. A further 26 rotations referred more generally to "leys" or "grass leys", a significant proportion of which were likely to have contained clovers. Full details of rotations are presented in the full report.

Pests, weeds and diseases

- Weeds in grass/clover (32% of all responses) and weeds in cereals (19% of all responses) were the most commonly identified problems, particularly docks and thistles. Pests of cereals and disease in potatoes (especially blight) were also commonly cited areas of concern. Although these data reflect specific problems in organic farming, they are also a reflection of the popularity of some crops over others.

Crop inputs and manure management

- Regarding crop inputs, there was a general concern over potash and phosphate levels. Farm-yard manure was regularly used by 67 farms, occasionally used by 24 farmers and never used by eight farmers. Seaweed/sea-sand and lime were either occasionally or regularly-used by 61 and 53 farms respectively. Fourteen percent of farms were importing farmyard manure from other farms, with 8% of farms totally dependent on off-farm supply. Commonly, manure was stored as a pile in a field (47%) or heaped on a concrete yard (23%). Specifically designed

areas and windrows were used on 16% and 11% of farms respectively. Nineteen percent never "turned" farmyard manure during storage and 16% "turned" manure three or more times. Although 98% recognised the importance of farmyard manure to the fertility on their farms, only seven farmers had manure nutrient analyses conducted. Sixty even percent knew approximately how much was applied to fields, although only 18% knew more precisely the rates of application. Twenty one percent said that they covered stored manure. Many of the comments on manure management were concerned with the need to have more manure than the farm can produce, the cost and importance of storage and the importance of timing of manure applications.

Organic seeds

- Seventy seven percent of respondents had tried to buy organic seeds, and of these 62% had had difficulty in obtaining them. The most frequently mentioned crops, regarding problems with organic seed availability, were cereals (half of all comments). More specifically, there were problems obtaining specific varieties. The lack of availability of organic fodder crop seed, for crops such as kale, stubble turnips and fodder beet, were also frequently highlighted. There were similar problems with organic brassica seed. A number of producers said that they were starting to use more home-saved seed. As well as availability, seed quality was a highlighted as an issue for some in terms of vigour and cleanliness. A number of producers referred to problems in obtaining seeds for varieties that were suited to Cornish conditions.

Organic Standards and Certification

- By far the most widespread problem area, regarding organic standards was viewed as the sheer quantity of paperwork, including record-keeping, that farmers have to complete in order to comply with regulations (23% of responses). Comments on standards covering animal health and welfare (20%), livestock feeding (13%) and availability and cost of seeds (9%) were also common. The main animal health issue raised concerned parasite control. Regarding certification, the cost of registration, particularly in a situation of decline in farm-gate prices for organic products, was a frequent complaint. Other responses referred to the complexity of standards.

Conservation and the Environment

- Many respondents felt that conversion to organic farming had resulted in an increase in wild plants (59% of those completing the question), birds (54%), and soil insects (53%). Fewer had noted changes to wild mammal population (40%) and soil structure (36%). One farmer felt that wild plant populations had declined. A wide range of comment was received regarding environmental management and the bio-diversity benefits of organic farming. Fifty nine percent said that they had a whole farm conservation plan. Only 24% had been drawn up through a DEFRA-funded scheme. Seventy two percent of farmers indicated that they were involved in the Organic Farming Scheme. Details of uptake of other Government agri-environmental schemes were also recorded.

Labour, Income and Marketing

- Organic farming was the main farming activity for 87% of respondents. Sixty percent had other on-farm income outside of farming, with the most important being on-farm accommodation (39% of all farms). Farm shops (6%), horses (6%), food processing (5%), agricultural contracting (4%), craft/skills (4%) and leisure/tourism (4%) were also mentioned. Thirty percent of organic farmers said that they were diversifying outside farming more since conversion than before.
- The results indicated that there may have been an overall decrease in full-time staff but an increase in part-time and seasonal labour after conversion, although most farms were family farms with no employed labour. Thirty farmers said they had difficulty in employing staff but only seven related this to being organic.
- Twenty nine percent of farmers had increased the amount of direct sales since conversion, whilst 3% said that this had declined. Eleven organic farmers indicated that they operate a box scheme. There were a considerable number of comments from farmers that focused specifically on the poor prices for organic products and the poor market infrastructure. There were more farmers who felt that their income had increased (41%) since conversion compared to those that felt income had decreased (30%). However, 12% of those who answered this question felt that they had suffered a significant decrease in income since conversion. Some farmers stated that their income increased in the years immediately after conversion, but since then it had declined. Seventy percent said that they would continue to farm organically even if there were no price premiums on organic produce. Sixty one percent of respondents said that they enjoyed farming more since conversion, whereas only 5% enjoyed farming less.

Concluding Comments

- This survey has provided the first detailed description of organic production in Cornwall. These data will be used by the Organic Studies Centre at Duchy College to form the basis of a strategy for organic farming research and development relevant to Cornwall. The information gathered will also be used to inform other parties concerned with development of the organic sector in the UK generally, and the south west of England specifically. A second follow-up survey will be conducted during 2005. This survey would not have been possible without the considerable efforts of the data collectors and the goodwill, time and expertise of the participating farmers. These contributions are gratefully acknowledged.

Introduction

A detailed survey of organic farming in Cornwall was completed during the period August 2002 to February 2003. One of the main objectives of the survey was to describe current practices and constraints to organic production so as to aid the Organic Studies Centre in developing a research and training strategy that meets the needs of Cornish organic farmers. A summary of the results was first published in the Organic Studies Centre Technical Bulletin, November 2003.

Survey methods

All registered producer members of the Soil Association Certification Ltd (SACert) and Organic Farmers and Growers Ltd (OF&G) were contacted to take part in the study. Of the 130 persons registered with these organisations, 120 were actively producing organic or in-conversion food and managing organic or in-conversion land at the time of the survey. One hundred and nineteen (99.1%) of these were interviewed. The one unit not included was a small-scale horticultural unit, as it was not possible to make contact with the farmer.

The interviews were conducted using a pre-tested questionnaire that included closed and open-ended questions on a wide range of farming-related questions, including land-use and enterprise details, management and husbandry, economics, marketing, income, labour-use, the environment, organic standards and certification and research and training requirements (Appendix 1). One hundred and twelve questionnaires were completed as one-to-one interviews conducted by a team of seven trained enumerators with the remainder completed by means of telephone interviews. On average, the interviews took 1 hour 24 minutes to complete.

Comments received by farmers, in response to open-ended questions, have been expressed in the text within the relevant sections of the report. In some cases these have been para-phrased in order to aid clarity and to satisfy a commitment to confidentiality.

The Farms, Enterprises and Land-use

Organic enterprises

In total, 8,778 ha (21,618 acres) of land in Cornwall were either fully certified organic or in-conversion. Of this, 7,659 ha (18,918 acres) or 87%, were fully converted. Table 1 gives a breakdown of the organic enterprises, showing the wide diversity within the county. Many farms had more than one enterprise type.

Table 1 Enterprises on organic farms in Cornwall (2002)

Enterprise	*No. farms*	Enterprise	*No. farms*
Dairy	31	Arable	54
Beef	79	Field vegetables	19
Sheep	43	Hort. vegetables (outdoor)	19
Pigs	13	Protected crops	13
Layers	20	Soft fruit	11
Table birds	8	Orchard	16
Other poultry	6	Herbs	10

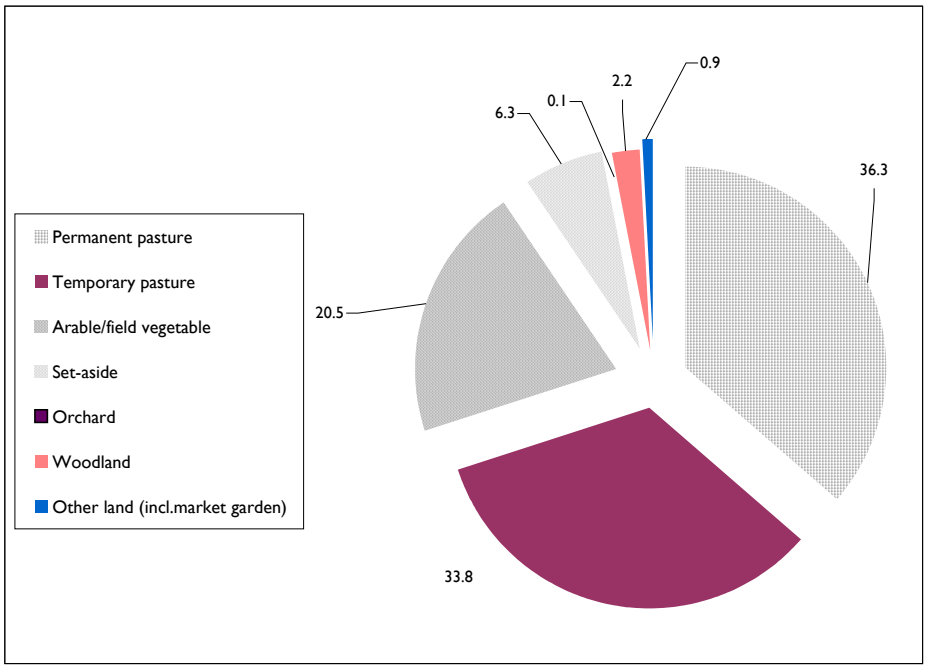
Land use

Despite the large number of arable and horticultural enterprises, much of the organic land was in grass production (Table 2 and Figure 1), with approximately half of this in the form of temporary leys.

Table 2 Area of fully certified and in-conversion land use

	Organic (ha)	In-conversion (ha)		Organic (ha)	In-conversion (ha)
Permanent pasture	2821	323	Orchard	5	1
Temporary pasture	2614	320	Woodland	173	16
Arable	1492	290	Other land	75	1
Set-aside	457	84	Not classified	22	84

Figure 1 Organic land use in Cornwall (% of all organic area)



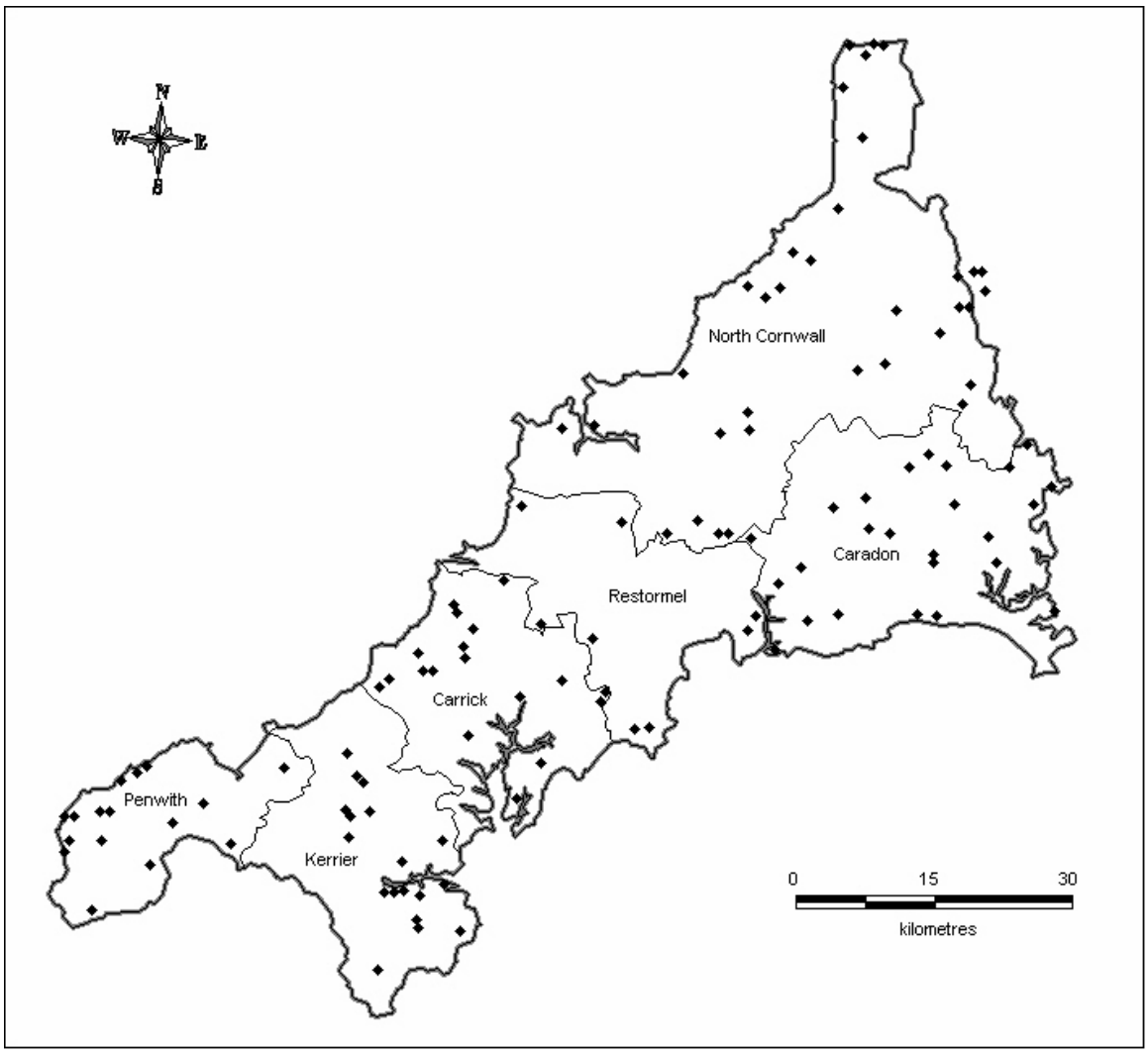
In Figure 2 the distribution of organic farms (2002) in Cornwall are shown. The map shows that the farms are evenly distributed throughout the county, although clusters are evident in some areas. Closer examination of these data reveals that there are wide variations in numbers of farms between district council regions (Table 3). However, it should be noted that these do not reflect the relative proportion of organic farms in each council region. Further to this, the location of the farm used in this analysis is based on the home address of the survey respondents, and does assume that all of the organic land pertaining to that address falls within the same district council boundary.

*Table 3 Organic farming by District Council**

District Council	No. farms surveyed	% holdings	Area fully organic (hectares)	Area in-conversion (hectares)	% of total Cornish organic and in-conversion land
Restormel	11	9.2	709	153	9.8
Penwith	16	13.4	850	6	9.8
North Cornwall	36	30.3	2552	185	31.2
Kerrier	18	15.1	1031	141	13.4
Carrick	18	15.1	1343	386	19.7
Caradon	20	16.8	1171	247	16.2
Cornwall	119		7659	1119	

* the data in this table are estimates, based on data collected during the OSC 2002 survey, the main holding address of respondents and information obtained from the district councils.

*Figure 2 A map of the location of organic farms in Cornwall**



* farms apparently appearing in Devon are a consequence of an anomaly between the methods of mapping and locating postal addresses

Organic certification

More than 76% of producers were registered with SACert although these accounted for less than 60% of the organic and in-conversion land area (Figure 3). The remainder were certified with OF&G (Table 4).

Figure 3 The distribution of holdings and land area between the certification bodies

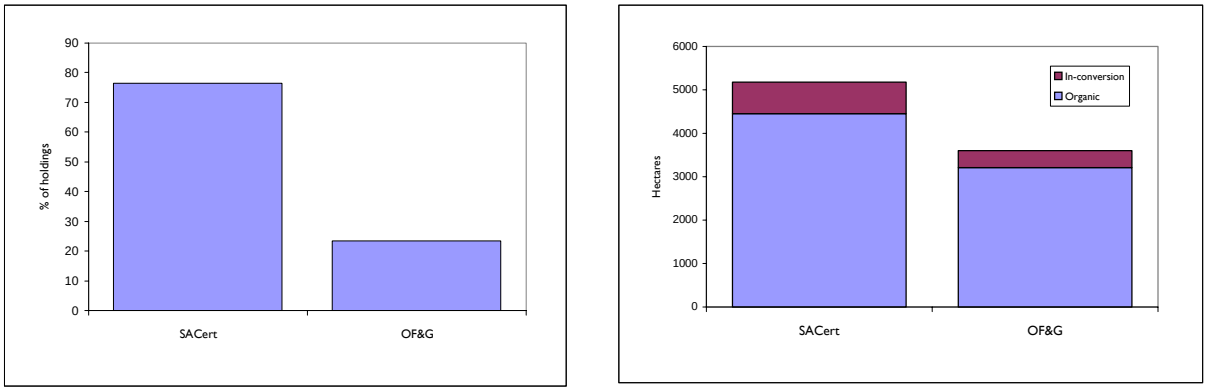
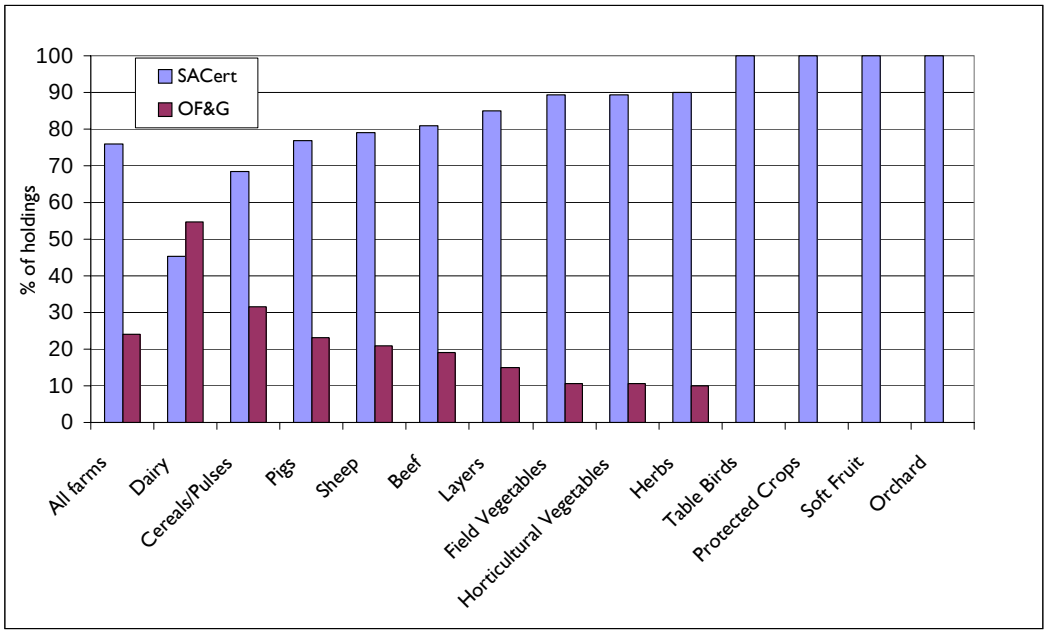


Table 4 Certification Bodies: Distribution of Cornish organic farms (number and area)

Certification body	No. farms	Area of organic land (ha)	Area of in-conversion land (ha)	Total area (ha)	% of farms	% of land
SACert	91	4451	727	5178	76.5	59.0
OF&G	28	3208	392	3600	23.5	41.0
Total	119	7659	1119	8778		

There were differences between the two certification bodies in terms of the distribution of enterprises. For example, 61% of all OF&G farms had dairy herds, whilst only 15% of SACert farms were involved in milking. All of those farms indicating that they had protected cropping were registered with SACert (Figure 4). There were a large number of comments regarding organic standards and the role of the certification bodies. Many of the comments are included within the section of this report on organic standards, certification and principles.

Figure 4 The distribution of enterprises between certification bodies (% of holdings)



Years in farming

The average period that respondents had been farming was 23.2 years, ranging from 1 to 58 years (111 responses). The average period that respondents had been farming at the holding covered by the questionnaire was 16.1 years, ranging from 1 to 50 years (115 responses). There were forty six respondents that had not started their career on the farm that they were currently residing at. Eleven respondents (9%) were new entrants to farming, in that they had been farming less than 4 years. Six of these had started conversion at the same time as they started farming.

Conversion

Year of conversion

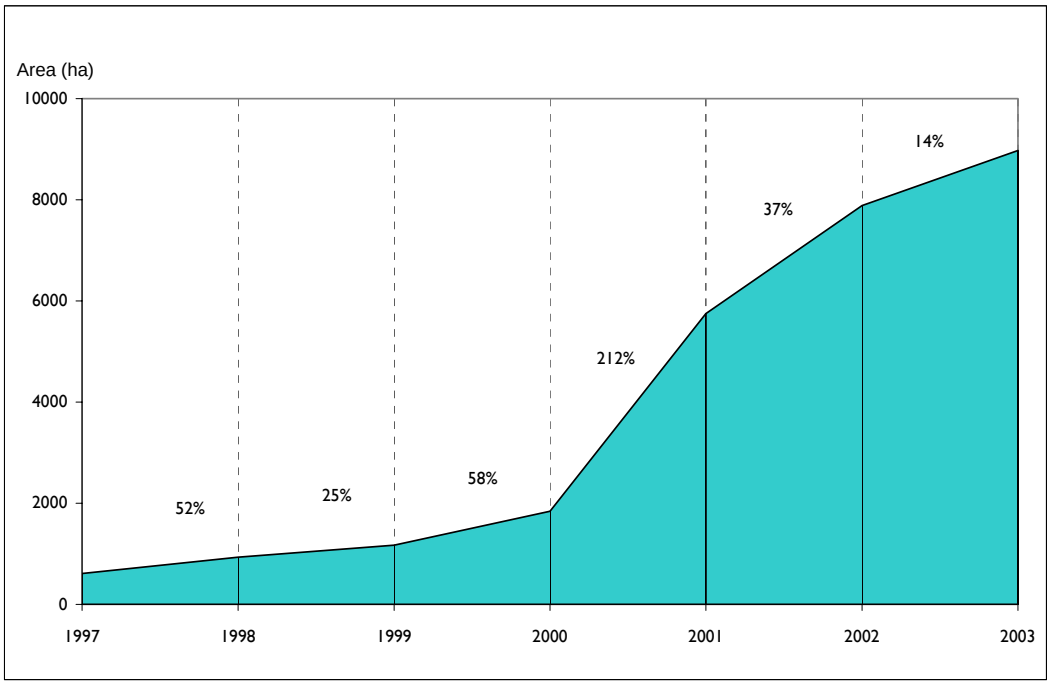
Data reflecting the dates of conversion to organic production were available from 118 farms. The data in Figure 5 show the growth in the number of organic farms over the period 1998-2003 and include all farms that were in-conversion during the survey (up to the end of 2002). Any farms that started conversion after July 2002 are not included. Any farms that started conversion between July 2002 and December 2002 are likely to complete conversion during 2004. Of those farms in-conversion, only one farm will have fully organic land for the first time during 2004. A further three farms will be extending the area of fully certified organic land during 2004.

Only seven (6%) of organic farms in Cornwall were fully converted to organic production before 1998. It was only after this period that there were new farms converting each year. Most of the organic farms in the county completed conversion during 2001, with many of these occurring during March and April 2001. A second series of surveys are planned during 2005 to include all farms that have entered conversion since this survey.

Twenty-seven farms (24%) had changed in size since conversion. Twenty-two of these supplied data on acreage before and after conversion, and in all but one case (which involved a reduction in farm size of 41ha), the area of the farm had increased. The total area of this increase was 945 ha, and of this, 497 ha was in-conversion during the survey (53%). So, it appears that approximately 10% of the organic and in-conversion area in Cornwall had been acquired since, or as a consequence of, conversion.

Thirty nine (32.8%) of farms completed conversion in at least two stages, and 11 farms converted over at least three stages. It was not clear from the survey whether or not this was the result of new acquisition of land.

Figure 5 Annual growth in the area of Cornish organic land 1997 – 2003 (% annual growth)



Unconverted land

Ninety-seven farmers answered questions on whether they still had unconverted land. There were 13 farms that had conventional land as well as organic. This was equivalent to 5.2% of the total area (organic, conversion and conventional) covered by the surveyed farms. (N.B. three farms indicated that they had conventional land but when asked whether they had unconverted land indicated that they did not. This area was only equivalent to 10 ha of unconverted land).

Only two farmers said they were going to convert land during 2002. This amounted to 53 hectares. Whilst no farmer indicated that they would be converting land during 2003, one farmer said that he would convert a further 20 ha in the next five years. Of the farmers with unconverted land, seven said they were unlikely to convert any of this to organic production in the next five years. The remainder did not commit a response to this question.

Land tenure

Table 5 shows that just over 40% of the organic and approximately 60% of in-conversion land was tenanted. Twenty farms (17%) were entirely tenanted (i.e. only had rented land). The total area of entirely tenanted organic/in-conversion farms was 2,012 ha (23%) and the average area was 100 ha. Eight of the organic farms in the county were National Trust properties.

Table 5 Area of organic farms in Cornwall (2002)

	Organic land	In-conversion land
Area of land (ha)	7,659	1,119
% tenanted	42.3	59.2

Environmental status

Sixteen percent of farms were at least in-part in less-favoured areas and 8% were at least in part classed as Environmentally Sensitive Areas (ESAs) (Table 6).

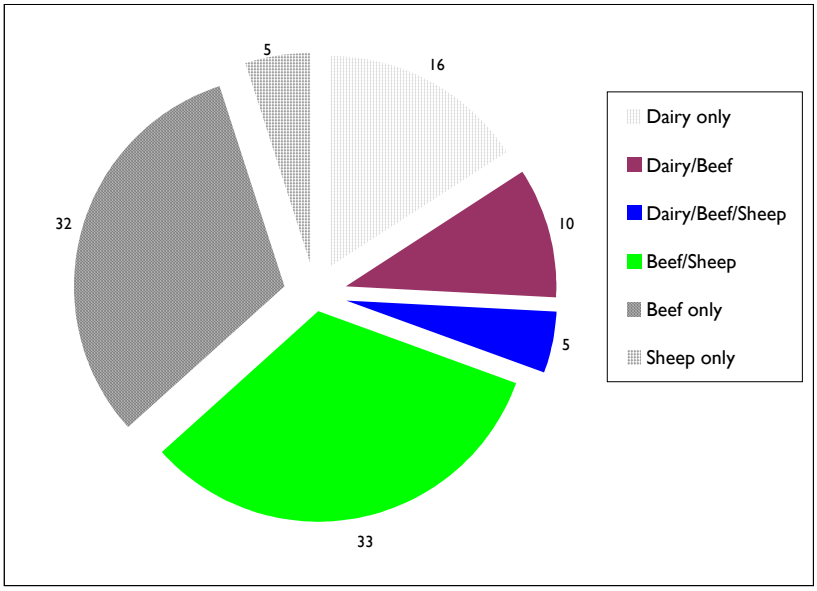
Table 6 Environmental status of Cornish organic farms (number of farms)

	Less-favoured area	Site of Special Scientific Interest	Environmentally Sensitive Area
All of farm	13	-	6
Part of farm	6	15	4

Livestock Production

Thirteen of the registered farms/holdings were stockless and a further five farms kept either pigs or poultry as the only livestock enterprises. A breakdown of the enterprise mix on the grazing livestock farms is shown in Figure 6.

Figure 6 Enterprise mix on organic livestock farms (no. of farms)



Milk production

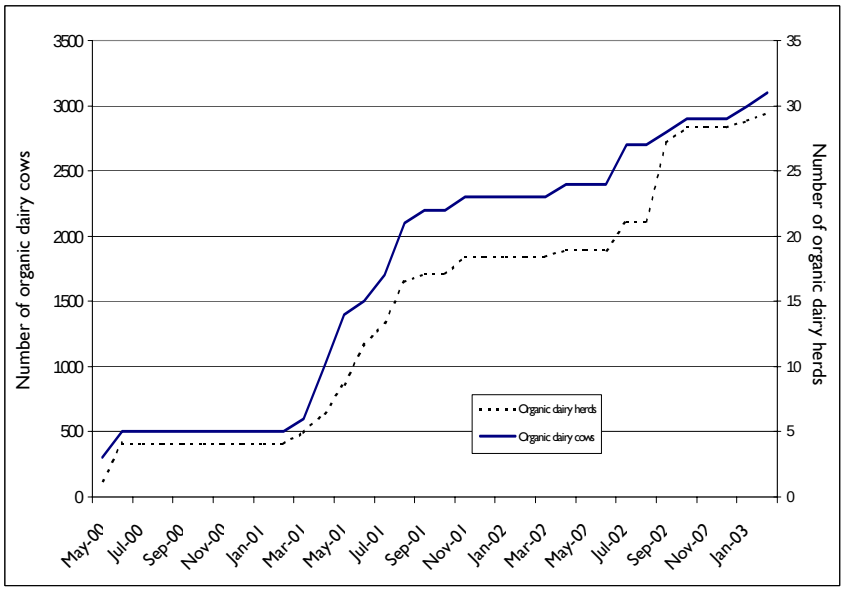
There were 31 organic dairy farms in Cornwall, of which 29 were fully converted to organic production. By early 2003 all had reached full organic certification status. The rate of growth of this sector was rapid during the April to October 2001 period (Figure 7).

The total size of the organic breeding herd was 3,148 cows, with an average of 101 cows per farm. This figure may be distorted by the presence of a large herd milked as three separate herds. Figure 7 demonstrates that there were differences in the size of herds converting during the period 2001-2002. Data were available from 28 herds reflecting pre-conversion herd size. Thirteen of these herds had decreased in size since conversion, and six had increased in size.

The average milk yield reported was 5,937 litres per cow per lactation. This compares with an average lactation yield of 6,148 litres on the same farms before conversion. The average yield of organic herds containing more than 10%

Holstein cows was 6,775 litres. Pre-conversion yield data were available from 29 herds, and of these seven had increased yield since conversion, whilst eleven had decreased average yield.

Figure 7 Growth of organic dairy production (May 2000 - Feb 2003)



The average replacement rate, based on the respondents' estimates, was 22.2% and ranged between 12% and 35%. These estimates do not consider whether or not some of the surveyed herds were in expansion or contraction.

Only three farms sold heifer calves at less than 2 months. Only six farms took female calves to finishing for beef, amounting to a total of 227 heifers per annum, ranging from 10 to 130 heifers. Forty-eight percent of farms kept all dairy bull calves beyond 2 months of age, whilst 24% sold all their male calves. The other herds sold a proportion of male calves. Thirty percent of farms had arrangements for all male dairy calves to be humanely slaughtered as calves. Thirteen percent of farms humanely slaughtered more than half of male calves, 17% of farms slaughtered less than half whilst 40% did not dispose of any calves in this manner. Twenty (65%) of herds did not finish for beef any of the male calves. Those that did, finished from 2 to 45 animals per annum, with a total of 190 dairy born male calves being finished for beef per annum.

Calving season

Figure 8 and Table 7 gives detail of the calving pattern in the organic herds. All year round, or a broad calving season, were relatively common, although the majority of herds were spring calving. Some farmers claimed to have a fertility problem associated with using the Holstein breed (more detail is given in the breed section below).

Figure 8 Monthly calving pattern

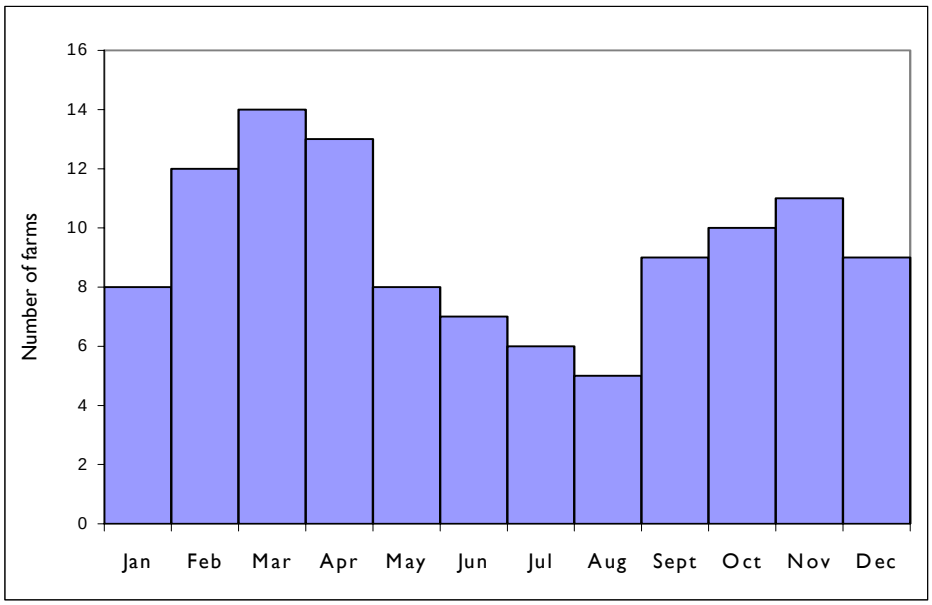


Table 7 Calving pattern in Cornish organic dairy herds

No.farms	Month of calving											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
11	■	■	■	■	■	■	■	■	■	■	■	■
1	■	■	■	■	■	■	■	■	■	■	■	
1	■	■	■	■	■	■	■				■	■
1	■	■	■	■			■	■	■	■	■	■
2	■	■	■	■						■	■	■
1	■	■	■							■	■	■
1	■	■					■	■	■	■	■	■
1	■	■	■						■	■	■	■
1		■	■	■	■	■			■	■	■	■
1		■	■	■					■			
1		■	■	■								
1		■	■									
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1				■	■	■	■					
1				■	■	■						
1								■	■	■	■	■
1									■	■	■	
No.farms	8	12	14	13	8	7	6	5	9	10	11	9

■ Calving occurs

One respondent commented that *"we …have a deliberate policy to serve cows later than normal i.e. 12-16 weeks post calving. This keep fertility high and makes drying off easier as it is more natural in later stage of lactation. There are very few returns to service…"*

Dairy breeds

Detail of the breeds of dairy cattle used on the surveyed farms is shown in Table 8.

Table 8 Breeds of cattle on Cornish organic dairy farms

Breed	More than 10% of herd	Less than 10% of herd	Breed	More than 10% of herd	Less than 10% of herd
Holstein	16	2	Guernsey	3	2
Friesian	9	7	Ayrshire	2	0
Jersey	4	2	MRI		1

A recurring theme in the comments on breeds and breeding was that of the suitability of the Holstein breed and high genetic merit animals to organic systems of production (Box 1).

Box 1 Examples of comments received on the suitability of high genetic merit cows:

"Holsteins produce a lot of milk efficiently. However, energy and protein are difficult to get into the cows. When the 10% non-organic ration is dropped it will be impossible to buy in enough protein and energy feed."

"Holsteins need more feeding to maintain body condition than Friesians. … would prefer to use Friesian stock but because replacements are bought-in, and they are difficult to source, there has to be a Holstein influence."

"…the policy of breeding high genetic merit cows has continued through conversion. The herd is encountering fertility problems – getting cows back in calf."

"…planning to breed from pure British Friesian sires in future avoiding any Holstein influence"

"Crossing back to British Friesian and moving away from Holstein breed."

"…standard modern Holsteins are not ideal organic dairy cows. Using New Zealand semen this year as New Zealand are more resilient and make better use of grazing."

"The herd is now being bred away from Holstein bloodlines to New Zealand Friesian. This is to make the cows more suitable for a forage/grass based diet. …. Holsteins are unsuitable for organic system particularly with such a low milk price."

One farmer remarked:

"I would be keen to learn more about genetics for breeding "the organic dairy cow"."

The use of breeds other than Friesian were also popular options, both in terms of crossbreeding and as pure-breds (Box 2).

Box 2 Examples of comments received on suitability of breeds for organic dairy production:
"…have high genetic merit animals and do not yet intend to decrease yield. May in future cross breed (Swedish Red)."
"…trying two other breeds to get away from black and white genetic lines - normally Brown Swiss, Montbeliard - for hybrid vigour - fertility and longevity."
"Guernseys are ideal as tough enough to survive in this area without dropping milk production"
"Guernseys have good feet. They thrive well under organic system"

Whilst some producers were adapting existing herds to organic production through breeding programmes, others had started conversion with new animals/herd. For example:
"…have just started a new herd using all heifers which were bought as 6 month old calves"
"Sold original herd when started conversion and bought calves to rear up to start new organic herd"
"…carefully selected Ayrshire breed specifically for organic production. ……happy with his decision."

Some respondents felt that existing breeds were well suited to organic production For example:
"…happy with breed performance on organic system" and *"...adapted to organic well"*

Herd health
A series of questions were asked regarding specific health problems on organic dairy farms, the use of herd health plans and general comments related to health and welfare. Mastitis was the most important health condition identified, with half of all farmers claiming that this was a particular problem in their herds (see Box 3). The average somatic cell count (scc) for all organic herds was 206,000 cells/ml compared with an average of 169,000 cells/ml pre-conversion. Seventeen herds had an increased average scc since conversion. In four herds average scc had improved after conversion.

Box 3 Comments on the incidence of mastitis in organic dairy herds:
"…cell counts rising but not mastitis cases"
"…mastitis at, or just after calving, seems to be a problem caused by lack of dry cow therapy."
"Mastitis is a constant concern but very particular about control"
"…environmental mastitis - soon after calving, possibly picked up during dry period. Need for better more effective teat sealants (there is a new teat sealant on market which we will investigate)"
"…concerned that scc may be too low!"
"Advice on mastitis control would be helpful".
"…cell count high as there are many old animals in herd but there has not been increase in clinical mastitis"
"high cell count cows are generally put to suckling calves"
"Found that moving to spring calving has helped as cows are easier to dry off in winter"

The other most frequently mentioned health issue was lameness, with six farmers specifically mentioning this (Box 4).

Box 4 Specific comments on lameness:
"…lameness - sole ulcers, foul of the foot".
"…lameness, particularly digital dermatitis is a herd problem".
"…there do not seem to be any efficient foot baths that are approved"
"…digital dermatitis is a big problem.

Worms were mentioned by five farmers, with a further three specifically referred to controlling lungworm as a problem and two highlighting fluke (Box 5).

Box 5 Comments on internal parasites in dairy cattle:
"…hard to maintain worm free conditions for young stock e.g. lungworm"
"…cattle coughing a little - suspect lungworm - possibly vaccinate in future"
"have had a problem with lungworm, will vaccinate in future"
"…vaccinating against lungworm"
"…had a problem with lung worm in bought in heifers so wormed them".
"…worms present but not a big problem"

Three farmers referred to mineral deficiency, including these comments:
"…minerals are a grey area with Soil Association - and you have to seek approval" and *"mineral and vitamin deficiency in young stock has also been a major problem"*

Infertility (2 farms), bloat (3 farms) and milk fever (1 farm) were also mentioned and one farmer specifically stated that *"Johne's disease in the young stock is the main health problem"*

A number of farmers remarked that there were no specific health problems (Box 6).

Box 6 General comments on herd health:
"No specific health problems. Extensive policy has reduced the risk from worms, etc "
…really pleased with herd health. … the vet rarely comes on the farm and generally cattle are healthier than when conventional farming. No problems with worms due to change in grazing policy for young stock. Uses homeopathic treatment."
"…have had slight problem with fertility - but in general cows are healthier. Although cell counts are higher there are far fewer cows with mastitis, very little lameness".
"…no disease problem. There are very few veterinary visits. The farm is under stocked."

In addition to these, there were other comments referring specifically to homeopathy use (Box 7).

Box 7 Comments on the use of homeopathy
"…knowing when to stop treating with alternative medication and revert to conventional drugs - without causing a welfare issue"
"would like to learn more about homeopathy"
"…homeopathy found to be very successful in minimising retained placenta, after calving stress, and milk let down process. Not much success with homeopathy as mastitis control yet."

Twenty four farmers answered questions about herd health plans, and of these only one did not have a plan. Of the remainder, 15 had drawn up their health plans with the assistance of a vet.

Feeding
Table 9 shows that concentrate feeding amongst the surveyed herds was either based on wholly purchased concentrates (47%) or on predominantly purchased feeds (20%). Most of those purchasing concentrates bought them already compounded although six farmers (20%) home-mixed at least some purchased straights.

Table 9 Source of dairy concentrates

Concentrate Source	No. of responses	% of responses
All home grown	2	6.7
>50% home grown	8	26.7
<50% home grown	6	20.0
Purchased 100%	14	46.7

Fourteen farms specified the type of home-grown feeds used. Eleven of these farms (79%) used triticale as part of the home-produced ration, with five of these using triticale as the only home-grown feed (Table 10). Purchased protein sources used in home-grown rations included combinations of prairie meal (4 farms), full-fat soya (4 farms), rape expeller (3 farms), beans (2 farms), peas (2 farms) and lupins.

Table 10 Home-grown concentrate sources

	No. of responses
triticale	5
barley and oats	2
oats, triticale, beans, peas	1
triticale, oats	1
crimped wheat, triticale	1
wheat, beet, lupins, triticale	1
oats, barley, triticale	1
barley, wheat, triticale, oats	1

Regarding the use of forages, unsurprisingly grass silage was widely used and whole crop cereal silage was used on 40% of farms (Table 11). Hay was the main forage on just two farms. Fodder beet was used on one farm and stubble turnips on two farms – in one case in combination with kale.

Table 11 Sources of forage for dairy herds

	No. of responses					
	Grass silage	Whole crop silage	Hay	Straw	Maize silage	Whole crop other silage
Use only	14	1	2	0	0	0
Use some	13	11	8	8	1	2

A range of comments were received on issues associated with feeding organic dairy cows (Box 8).

Box 8 Comments on feeding organic dairy cows:
"We have to buy in all concentrates as we can't grow it here. We would like to feed more concentrates as cows are producing a lot of milk, but losing condition, but we are restricted in the amount of concentrates that we are allowed to feed".
"Purchased feed is expensive".
"….a policy of non purchase of feed for animals. …..we believe that all feed should come from the farm - self sufficiency. All cows are out wintered and extensively grazed whenever possible. Cows are milked once a day only."
"…sourcing organic protein crops. Information required on these crops and their availability"
"…unavailability of affordable protein can be a problem"
"… concerned about the 10% feed allowance going. …. wonder about growing protein crops for milling and would like more information on growing crops. Interested in bi-cropping relevant to organic farming e.g. peas and wheat"
"concerned about the removal of the 10% non organic allowance in 2005"
"…the high yielding herd demands a high level of nutrition in early lactation to maintain yields and body condition. ……there is a possible welfare issue here as …. cannot meet nutritional demands and follow organic guidelines"
"…found it difficult to calculate dry matter intake to satisfy organic rules. Would like to see results from trials on break crops (stubble turnips/kale) for feeding"
"…current low milk price making concentrate feeding difficult to justify. Hence cows which are better grazers are more suitable. Worried about removal of 10% allowance. Have moved herd from all year round calving to spring calving to suit organic system"
"…farm an extensive system and only feed 400kg of concentrate per cow ….may well increase this up to 750kg/cow in future to maintain body condition on Holsteins"
"I make high protein silage"
"if there is a drop in milk quality, you can't alter the rations - choices are restricted - this is not a problem as long as dairies will accept milk with less fat or protein"

Marketing of milk

The total annual milk quota (from 29 herds) was 25,931,508 litres. At the time of the survey 25 of the 31 organic dairy farms (81%) had a current organic milk contract. Also at the time of the survey, three of the farms were in the late stages of conversion, and hence were not selling organic milk. Of those that were fully converted, 60% (15 farms) were selling all their milk as organic whilst 36% were selling less than half of their milk as organic. Only one farmer was selling more than half, but not all milk as organic.

One farmer was processing all of the milk produced on the farm and another was processing more than half of milk produced. There were a further four farmers processing less than half of all milk produced.

Of the twenty comments received regarding problems encountered during conversion, 15 of these were associated with marketing of milk, especially the poor milk prices, milk contracts and supply issues. Two examples were: *"The low milk price is making things very difficult for this small dairy farm and at this price it is not sustainable for long"* and *"…considering setting up a pasteurisation plant to sell milk through the existing contacts and for customers in the craft enterprise on the farm. Would like help looking at this project."*

Further comments on the marketing of organic produce are given in other enterprise sections and within the Marketing section of the report.

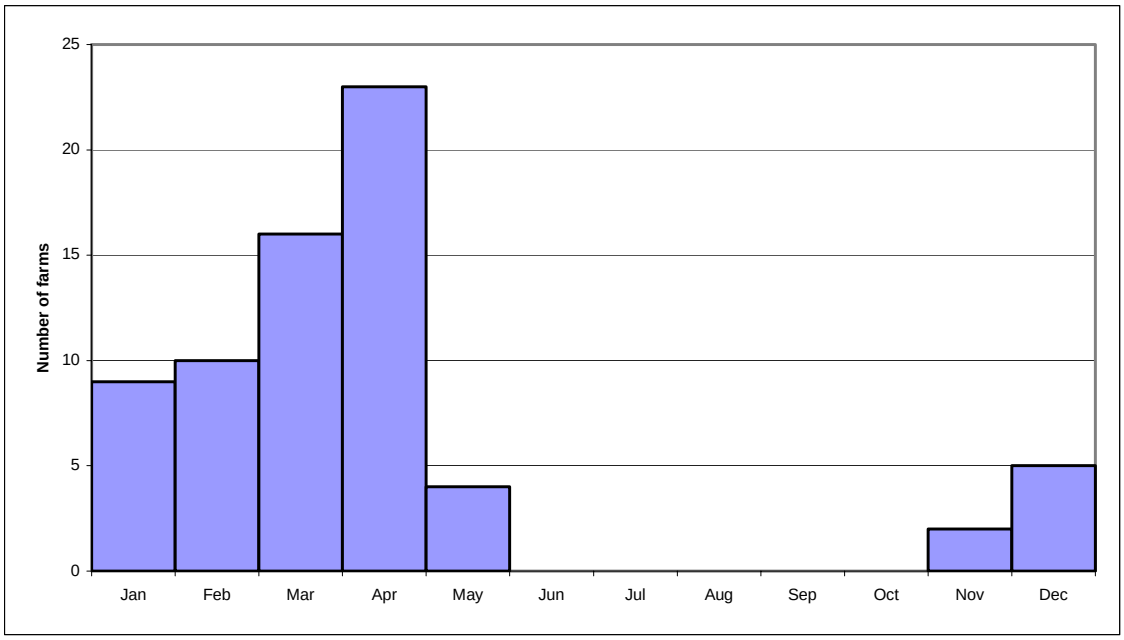
Sheep production

There were 41 organic sheep producers in the county at the end of 2002, of which four were still in conversion. The total number of fully organic breeding ewes was 6,206, with a further 197 in-conversion. The average lambing percentage was recorded as 149%, and ranged from 90% to 190%. Although data on lambs born were not collected, the total number of lambs born from organic ewes in 2002 was estimated from lambing percentages to be 8,620, with a further 286 lambs born from in-conversion ewes. Eighty-three percent of flock owners said that they were finishing all lambs at home.

There was one autumn lambing flock, five November-December lambing flocks, ten flocks lambing in January and February and 17 spring lambing flocks (Figure 9).

Data from 39 flocks revealed that 16 flocks (41%) were housed over part of the winter. Of these, six had only part of the flock housed. A further four flocks were only housed for a very short period during lambing. In total, all, or part of, five flocks were housed for between one and two months. No farmer indicated that they housed ewes over-winter for more than two months.

Figure 9 Lambing seasons in organic flocks



One farmer with a late lambing flock commented:
"May lambing is very appropriate for organic system because sheep will milk well off grass only" Another remarked that an *"early crop of lambs is not appropriate for organic systems."*

Breeds and breeding

There was a wide range of breeds in use (Table 12). Twenty-two percent of flocks had either pure Suffolk or Suffolk cross ewes, 17% with Dorset or Dorset cross and there were three flocks of Devon and Cornwall Longwool.

A summary of comments received on sheep breeds are listed below:

- Lleyn are well suited, do well off natural forage, prolific, and produced good lamb without cross breeding;
- Lleyn are foot rot and worm resistant;
- Roussin are good in organic systems;
- continental breeds have better conformation;
- Dorset fatten quicker;
- Suffolk give flavour to meat;
- Charolais cross lambs are more hardy and have fewer worm problems;
- Manx Longhorn are difficult to fence in;
- Longwools are slow to finish;
- Primitive breed fail to thrive on rich pasture;
- difficult to get Roussin replacements; and

– Suffolk ram too large – many large singles.

Table 12 Summary of the breeds of ewe used in Cornish organic sheep flocks

Ewe breeds and crossbreeds	No. flocks	Ewe breeds and crossbreeds	No. flocks
Suffolk X; Suffolk X Mule	5	Hampshire Down	1
Dorset	4	Manx Longhton	1
Devon and Cornwall Longwool	3	Masham	1
Dorset X; Dorset X Suffolk	3	Primitive	1
Suffolk	3	Roussin	1
Charolais X Poll Dorset; Texel	2	Scotch Halfbred	1
Lleyn	2	Scottish Blackface	1
Mules	2	South Down	1
Beulah	1	Suffolk Mule	1
Cheviot	1	Texel cross	1
Exmoor mule	1	Vendeen X Charolais	1

With regard to ewe replacements, all but ten respondents operated closed flocks. The ten that indicated that they bought ewes, only bought-in a proportion of the replacement flock. The majority (72%) said that they purchased all of their replacement rams and a further 18% bought-in at least some rams. Ten farms bought-in at least some of both ewe and ram replacements.

Feeding

Data reflecting the source of concentrates fed to organic sheep are given in the Table 13. Although the majority of flocks received at least some home-grown concentrate feed, there were 39% of flocks that relied on entirely purchased concentrates. Oats appeared to be the most commonly used home-grown feed, either as the only cereal fed, or in combination with others e.g. barley or triticale. Of the home-grown fodder crops, nine flocks were fed on turnips, five on rape and three were fed on swedes.

Table 13 Source of sheep concentrate feeds

Concentrate source	No. flocks	% of flocks
All home grown	16	48.5
>50% home grown	1	3.0
<50% home grown	3	9.1
All purchased	13	39.4
Total respondents	33	

One farmer commented:

"…would like to grow swede for sheep but concerned that there appears to be no organic control for flea beetle (which used to be sprayed conventionally)"

Many of the comments focused on feeding at lambing and the fact that so many flocks relied solely on forage-based feeds. The price of purchased organic feed was a concern for a number of producers (Box 9).

One farmer commented that he was using *"advice from a nutritionist to stay within the standards, but would welcome any other free impartial advice*". Another commented that he *"would like to feed molasses pre-lambing but organic regulations do not allow this.*" Organic conversion and the resulting decrease in stocking rate had also had an impact on feeding practice for some e.g. "*…having lower numbers has meant that no supplementary feed has been bought and there doesn't seem to be any major problems*."

Box 9 A selection of producer comments on feeding organic sheep:
"Should not flush too much or you will end up with too many quads/quins interested in nutrition of pregnant ewe"
"…feed very few concentrates. Some before lambing and at tupping. They have Rumagen blocks to counteract mineral deficiency"
"6 weeks before lambing- concentrate fed and nothing else"
"…the system is designed around unsupplemented grazing all year round. The only concentrates fed are given when they are housed during lambing"
"…feed hay at lambing"
"…forage crops grown for December to January lambing"
"No concentrates used, only forage and grass. There is sufficient grass throughout the winter."
"…the sheep eat whatever is grown for the cows"
"Price of concentrates. Small purchases are expensive"
"…one of the reasons Dorsets are being phased out is that pre conversion ewes lambed in November and March. This has been changed to just March as feeding costs are too high for autumn lambs under organic system"
"…buying in organic feed is too expensive so trying to breed sheep that do not need bought in feed"

Flock health

Regarding flock health, worm infestation was the most frequently identified problem area, with 39% producers indicating that this was particular problem. Flystrike (37%) and footrot (37%) were also commonly cited problems and on a small number of farms orf, contagious abortion and mineral deficiencies were problematic.

Some of the comments regarding health issues are summarised below:

- worming is an issue;
- very difficult to run clean grazing system;
- thinking of using faecal egg counts to select for resistance;
- not to worm is an animal welfare issue;
- trying to breed selectively for worm resistance;
- had derogation to worm ewes at lambing;
- need more scientific approach to worming;
- lambs lost, ewes with mastitis due to clostridia;
- fly strike would be a problem without Vetrazine;
- had derogation to dock tails because of fly problem;
- close fleece of Dorset increases risk of fly strike;
- Vetrazine is essential to prevent animal welfare problem;
- antibiotic for foot rot – considering control by culling;
- Barrier effective against foot rot;
- mineral deficiency – unthrifty lambs, fertility problems;
- had to vaccinate against pulpy kidney;
- concern about spread of sheep scab – mobile dip too expensive;
- strict rotation where fields graded for worm risk;
- worms less of a problem since divided fields to give longer rotation;
- stopped pulpy kidney vaccine with no problem;
- orf treated successfully with homeopathy;
- no real problems due to low stocking rate; and
- no problems as no sheep before conversion.

Thirty-five sheep farmers responded to the question on whether or not they had a sheep health plan. Seventy-four percent indicated that they had a plan in place. Of these, 62% (equivalent to 46% of those that responded to this question) had consulted a veterinarian.

Marketing of lambs

Eighty-three percent of farms were finishing all lambs born, and a further four farms (10%) were finishing more than 75% on the farm. Details of the average carcass conformation and fat class are given in Tables 14 and 15. It is an interesting observation that a large proportion of flock owners did not know details of carcass quality.

Table 14 Carcass conformation of organic lambs

Carcass conformation	No. flocks
U	6
R	17
O	1
Unknown	12

Table 15 Fat class of organic lambs

Fat class	No. flocks
2	1
3L	19
4L	3
Unknown	13

Thirty nine farmers answered a question regarding whether or not they had a ready organic market for the current lamb crop. Sixty-seven percent confirmed that they had an organic market for all lambs. Although data on actual lambs sold were not available, those farms that claimed that they had an organic market for all their organic lambs had approximately 5,282 breeding ewes that produced approximately 7,467 live lambs in 2002 (calculated from estimates of lambing percentages). The four farms that said that they only had an organic market for some of their lambs accounted for a total of 655 ewes producing approximately 825 live lambs. Those farms that had no organic market had 422 ewes that produced approximately 601 lambs. Care should be taken in utilising these data to evaluate the organic lamb market, as a proportion of the estimated lamb production will be used for breeding replacement, plus some losses between birth and sale would have been inevitable.

Although a number of farmers were able to demonstrate successful marketing of organic lamb, many were also disappointed with the price premium available (Box 10).

Box 10 Comments regarding the poor market and prices for organic sheep meat, included:
"60% of lambs are sold to an abattoir, the rest as private direct sales"
"Ewes are sometimes sold with lambs at foot, and fetch a good price e.g. £115"
"…lambs are sold to a co-operative venture with other organic producers."
"Sell on contract to a large abattoir at the moment and pleased with the service received."
"A lamb sold to a restaurant locally was very well received by its customers for its flavour. … will probably sell to this high class restaurant again"
"No organic market for lambs yet. Local abattoir only offering organic price on older lambs which was less than conventional price for young lambs"
"No market for organic lamb in the early months"
"…can't sell small batches of lambs organically"
"Unable to sell for organic premium"
"…marketing organic lambs is the biggest problem. Local butcher has purchased his organic lambs this year. Demand for organic lamb limited in small rural town. Hope this will change."
"…fearful of lack of organic premium on lambs"
"No market for organic lamb in the early months"
"…can't sell lambs as organic"
"…have sold organic lambs through local abattoir but unhappy that organic premium is only 30p/kg over conventional lamb. Would like to find better market for beef and lamb"
"…cancelled order as it was expected that finished stock would be held until it suits the abattoir - then they are too fat!"
"…may look at direct sales or co-operative marketing in the future."

One producer felt that the abattoir was too far away and that this makes *a "nonsense of food miles and animal welfare*".

Regarding wool production, one respondent combined sheep keeping with a handicraft business, using some of the wool/fleeces/hides from her own flock for this and another commented that *"there is no market for organic wool and would like to see an outlet for it".*

Beef production

There were 79 producers who indicated that they had an organic beef enterprise. However, nine of these did not give details of their enterprise, as these were very small-scale. Of the commercial herds, 57 consisted predominantly of suckler cow herds, 10 were rearing predominantly dairy-bred calves, three purchased mainly weaned or store cattle and one was purchasing and rearing dairy bred calves. Some farms had a mix of these systems. There were a total of 1,463 suckler cows recorded, with an average herd size of 24 cows (ranging from 1 to 79 cows). There were 1,500 beef calves of less than 9 months, 1,567 between 9 and 22 months and 590 over 22 months. Not all of these animals were from suckler herds, with a significant proportion coming from dairy enterprises. Only two farms indicated that they bought animals of less than 2 months, with five farms buying animals between 9 and 22 months and three farms buying beef animals older than this.

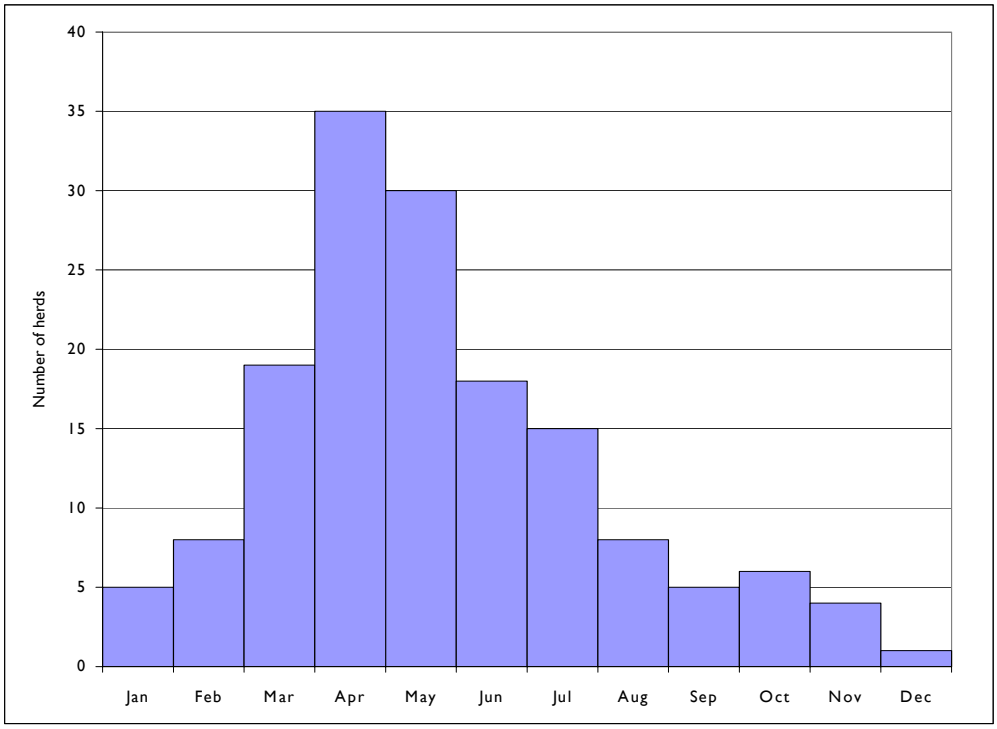
Although the herds were predominantly suckler herds, these only accounted for just over half of the expected output of finished animals. The estimated number of finished animals produced over one year (including in-conversion animals) was approximately 1,100, of which it was expected that only 60% would be produced from suckler herds. Excluding in-conversion herds, the total output of fully organic animals was expected to be approximately 750, of which approximately 75% were from suckler herds. These data suggest a large increase in organic beef animals from the dairy sector during 2003/04.

Of the 19 surveyed farms in Less Favoured Areas, 16 had beef cattle. Seventy four percent of those that give details of their beef enterprise said that they were claiming beef extensification payments.

Beef breeds and breeding

The majority of herds were spring calving (Figure 10).

Figure 10 Calving pattern in suckler herds



More than 30 suckler cow breeds or crosses were recorded, of which the most popular were Aberdeen Angus (10 herds), South Devon (10), North Devon (8), Hereford cross (7) and Angus cross (5) (Table 16). There were three herds each of Limousin, Charolais, Limousin cross, Welsh Black, Galloway and Charolais. Comments received regarding the most suitable breeds emphasised the superior eating quality and suitability to organic systems of traditional British breeds.

Some of the comments received regarding the breeds used have been summarised and listed below:

- Hereford make good use of forage;
- Hereford cross cattle have to be over-wintered;
- Aberdeen Angus fit the system well;
- Angus are healthy, hardy and finish well;
- Traditional, local breeds are best;

- Traditional breeds finish off forage easier;
- North Devon hardy and good for low input system, cows almost too fat;
- South Devon well suited to organic system, heifers finish in 20-22 months;
- South Devon difficult to finish off grass under 30 months;
- 30 month rule is constraint to production;
- Need breed that finishes in under 30 months;
- Galloways do not fatten under 30 months;
- Wonder if it is possible to finish Friesian Holstein cattle in under 30 months;
- Cannot fatten Jersey steers under 30 months;
- Traditional breeds for top product and local sales;
- Angus/Welsh Black are best for processing;
- Traditional beef for flavour;
- Pure bred cows are expensive;
- Had problem finding organic Angus stock;
- Concern about sourcing organic stock;
- Longhorn finishes off grass, quiet, easy to handle; and
- British White selected for easy calving.

Table 16 Suckler cow breeds and crossbreeds

Suckler cow breeds and crossbreeds	No. herds	Suckler cow breeds and crossbreeds	No. herds
Aberdeen Angus	10	Jersey X Angus, South Devon	2
South Devon	10	Dexter	2
North Devon	8	Longhorn	2
Hereford X, Hereford X Charolais, Friesian	7	British White	1
Angus X Welsh Black, Hereford, Galloway	5	Blonde D'Aquitaine	1
Charolais X, Charolais X North Devon	4	Blonde X	1
Simmental X, Simmental X Friesian,	4	Blue Grey	1
Limousin	3	Shorthorn	1
Limousin X, Limousin X Friesian, Hereford	3	Shorthorn X South Devon	1
Charolais	3	Gloucester X Sussex	1
Simmental	3	Maine D'Anjou	1
Belted and Plain Galloway	3	Piemontese	1
Welsh Black	3	Piemontese X South Devon	1
South Devon X, South Devon X Charolais	2	mixed	1
Hereford	2	no breed data	8

Other comments referred more specifically to the suitability of beef breeds in relation to organic feeding practices.

Feeding

Seventy-five percent of organic beef farms used grass silage, 52% used at least some hay and 19% used whole crop silage. Of the thirty six farms that were feeding concentrate diets, twenty were using 100% home-grown feeds, three were using more than half of feeds as home-grown and there were fifteen farms that relied on entirely purchased concentrates.

There were some comments received regarding the quantity of fodder available (Box 11). There were some concerns about the feeding of minerals on organic farms (Box 12). A number of comments related the feeding regime to the breed kept and in some cases the target market e.g. *"All beef is sold in farm shop. The animals are finished to suit our needs and this reflects in the feeding."* And *"more difficult to finish - because of insufficient dry matter intake."*

Box 11 Specific comments on the provision of fodder for organic beef.

"Winter fodder is the main problem. Cannot make enough silage for winter, will have to buy in from neighbours. The 10% rule (changed from 20% for LFA areas) will make it more difficult."

…"beef feeding has been overlooked in the past but this year there is plenty of fodder."

"…hard to make enough silage in dry summer"

"Estimation of dry matter intake (is a problem)"

Box 12 Comments concerning mineral deficiency in beef cattle.
"…get concerned about the risk of hypomagnesaemia because it is not permitted to offer magnesium minerals. Offered seaweed extract mineral and have had no problems."
"...minerals - no specific organic mineral blocks – derogations required to feed minerals - general purpose should be allowed"
"…used to provide a lick before conversion. Considering a supplement because there is some question about the herd being mineral deficient (sulphur/cobalt/magnesium)"

There were descriptions of feeding related to specific systems (Box 13). Some systems were reliant on concentrate inputs (Box 14), whilst other farmers emphasised that their systems were concentrate-free (Box 15).

Box 13 Comments relating to feeding and beef systems.
"…all stock out wintered and grazed extensively. Stock have access to shelter in woods in winter. No other feed is offered except in extreme circumstances"
"Extensive grazing works well. The farm is quite free draining and cattle are mostly outside. Sugar beet bought in for calves at weaning time. Making enough silage is a problem as there are few in-bye fields and some are too small to cut."
"…a simple system relying on grass and grass silage alone. No need of concentrates as the stock are sold quite young as suckled calves."
"…have moved away from pure bred South Devons that require more cereals to finish"

Box 14 Comments referring to concentrate feeding of beef cattle.
"Cattle do well on crimped cereal"
"…have grown swedes before and intend to look at oats/peas. Barley is purchased"
"…difficult to finish animals without concentrates within 30 month"
"This is exposed coastal moorland, we can't grow own concentrates so they all have to be bought in. Compound feed is expensive so last winter fed organic lucerne nuts, which let me down. Animals are averaging 30kg less than last year."
"…store cattle and Friesian heifers are generally fed grain silage/whole crop cereal forage mix the same as dairy cows"
"Last year he had to buy in extra hay. Have now built a shed with a deep litter bed - hoping to target muck spreading and get a better growth of grass next year"
"…keep animals out as long as possible"

Box 15 Comments emphasising concentrate-free feeding systems.
"…specifically chose Red Devon because they are very good forage animals needing little concentrate"
"…all fed on forage only. Calves are suckled with high cell count dairy cows to 6 months and then onto forage only diet"
"…no concentrate fed. Grow own kale and fodder beet"
"There are no concentrates used. Only one cut of silage is taken so the quality tends to be of low value, coarse grass. Silage made mid June to July."
"All cattle finished off grass"
"…cheap and cheerful. Use all the grass we can"

One farmer associated the feeding system with environmental concerns:
"Do not like silage because of ground nesting birds and effluent damage to environment. Consider that if good grass can be grown, good beef can also be produced. Time is needed to allow natural species of grass to return".

Health
Health concerns in organic beef systems were generally not viewed as a problem. Whilst a small percentage of farmers identified worms as a specific problem, many felt this had improved since conversion and they associated this with lower stocking rates. One farmer was concerned about the *"restriction on worming"* in organic systems. Others were concerned about mineral deficiencies (see Box 12).

Marketing of beef
Forty six farmers indicated that they would be selling finished cattle during the year of the survey (2002-2003), accounting for a total of 1,093 animals at an average of 24 animals per farm. The output per farm ranged from 1 animal to 200 animals per annum.

Of those farms selling animals before finishing (store cattle or calves), 21 farms were selling between 9 and 22 months, with just 2 farms selling at less than 9 months and 8 farms selling at more than 22 months. Of those farms selling finished animals, 83% (38 farms) were selling at 22-30 months, with the remainder finishing at less than 22 months. *"Slow growing cattle need longer than 30 months to finish*" was a comment from one farmer. Others also emphasised breed as a marketing issue (see beef breed section above). The average carcass conformation and fat class categories for male and female beef animals are given in Tables 17 and 18. As with the sheep farmer responses to the same question, a large proportion of "don't know" answers were received (almost half of all responses) when asked about

carcass and fat quality. This is partly a consequence of a number of producers selling through direct sales, where information on carcass quality is not provided.

Table 17 Average carcass conformation of organic beef animals

Males		Females	
Carcass conformation	No. of herds	Carcass conformation	No. of herds
U+	1	U+	1
U-	2	U-	0
R	15	R	11
O+	4	O+	8
O-	2	O-	2
Unknown	22	Unknown	22

Table 18 Average fat class of organic beef animals

Males		Females	
Fat class	No. of herds	Fat class	No. of herds
1	1	1	1
2	0	2	0
3	8	3	5
4L	12	4L	13
4H	1	4H	3
Unknown	19	Unknown	19

A number of producers commented that there was a general problem with marketing and achieving an organic premium for finished beef (Box 16). Others indicated that they had been more successful in marketing, particularly where specialist markets had been identified, or a local market has been developed e.g. *"I market 10 animals through the farm shop, the rest through Cornwall Quality Livestock (Producers Group)"*

Box 16 Beef marketing comments.
"Marketing of beef is a problem."
"Slaughter and marketing are a big problem, especially in Penwith"
"…the local butcher can not take a single animal on and besides, there is not a local market for the meat. This is a poor economy with not enough people to sustain a market in beef."
"There is a problem in having meat processed since conversion - especially for home kill. Too few outlets generally, particularly for beef"
"I am concerned about sourcing a suitable butcher/abattoir to handle Primitive lamb. They need to be cut by a specialist because the carcass is very different from lowland lamb. Need help to find suitable facilities for killing, hanging and cutting locally".
"…need an organic abattoir in Cornwall."
"…lack of kill days available and lack of outlets"
"…organic bodies could also do more to promote small local abattoirs and butchers - I have sold through the organic co-operative - which sells to large abattoirs - then to supermarkets - which seems to go against the principles of organic farming."

Pig production

Organic pig production was shown to be a minor activity in terms of the number of producers and estimated annual output. There were thirteen organic pig producers, nine of which had kept pigs before conversion and three were in conversion at the time of the survey. There was a total population of 72 organic sows in the county, with herd sizes ranging from 1 to 20 sows and an average herd size of 6.5 sows.

Pig breeds and breeding
The Gloucester Old Spot appeared to be the most popular breed with four farms keeping this breed, albeit in small herds. Three farms had Saddle-back or Saddle-back cross sows. Two of the largest herds were of Landrace/Large White crosses. All of the herds were using natural breeding rather than AI.

Housing and management
At least ten of the herds were using mobile arks and fenced paddocks for breeding sows and eight of the herds were farrowing at least some sows outdoors in arks. Eleven herds were finishing pigs and of these five were finishing outdoors (one was only finishing some pigs outdoors). Three herds were kept on permanent pasture all the time, two on grass leys all the time, with the others were using both permanent and short leys. Only five herds were utilising arable ground, and only one of these on a permanent basis, although six felt that their pig systems were part of a crop rotation. One herd was also occasionally using woodland.

Feeding
Four farms were using all home-grown, with a further two using mainly home-grown feeds. There were some comments on the price and availability of purchasing organic pig feeds, and also some expressed interest in feeding more waste products (vegetable and bakery).

Health and welfare
Predators, muddy conditions, fencing difficulties and difficulties in finishing were cited as the main problems with keeping pigs outdoors. Only two farmers felt that piglet mortality was above average in their herds. The estimate of live piglets born per sow per year ranged from 7 to 24. Two of the herds with lower levels of production had suffered a predation problem. Seven farmers said that they had a pig herd health plan, and only five of these had been written with veterinary assistance. One producer will stop pig production because nose-ringing is not permitted.

Marketing
The total number of live pigs born on organic farms in Cornwall was estimated from the survey data to be approximately 1,120. Based on producer estimates, approximately 750 pigs were finished on organic or in-conversion farms during 2002.

Seven farms were selling all finished pigs as direct sales to consumers, and a further two were selling some in this way. Six farms were selling at least some of their pigs to a local retailer and only three sold pigs direct to an abattoir. There were mixed sentiments from producers regarding marketing, with at least two reducing numbers because of lack of demand. One producer claimed that there was a large demand, but the price of organic feed restricted any market potential. Another claimed that marketing of organic pork was "*chaotic*".

Egg production

There were twenty organic egg producers in the county at the time of the survey. Of these, five had started conversion during 2002. Half of the producers had been egg producers before conversion. There was a wide range in flock size, with the largest being a 6,800 bird flock and the smallest consisting of just 7 birds. There were only nine flocks of 100 birds or more, and only 2 flocks of 1000 birds or more. Most producers purchased birds at approximately 16 weeks, with only two buying day old chicks, and one rearing home-bred pullets.

Poultry breeds
A wide range of poultry breeds were in use, with the two largest flocks using the Columbian Black Tail. The Black Rock breed was the most prevalent across the farms. Comments on suitable breeds included the requirement for docility to reduce feather pecking, the disease resistance qualities of breeds, the good foraging qualities of traditional breeds as well as their lower production levels, egg colour and the cost of pullets. There were conflicting comments regarding the relative benefits of the Black Rock.

Housing and management
Eleven of the producers kept birds in mobile housing and nine permitted birds to have unrestricted access to range. One producer commented that the Soil Association preferred the range to be fenced to reduce the risk of predation. Two producers said that they intended to switch to mobile housing to improve integration of birds into the crop rotation and to encourage more ranging. From 18 responses, eight farms were feeding birds entirely from purchased feed and three flocks (all small flocks) were being fed entirely home-grown feeds. Four flocks were purchasing less than half of feed and three were buying more than half. The high cost of purchased feed was a typical comment. Two producers stated they were concerned about restrictions on the use of synthetic amino acids in feed, and the non-availability of GM-free soya was also mentioned as a feeding concern.

Animal health and welfare
Only half of egg producers had a formal flock health plan and only half of these had developed the plan with veterinary help. Only one flock had had a major feather pecking problem and one had experienced this as a minor problem. Low stocking rate was highlighted as an important factor in reducing health problems, particularly feather pecking. Two producers were interested in rearing their own replacement pullets, partly to solve health problems.

Egg marketing
There was a wide variation in the scale of production, with peak egg production per day ranging from 6 eggs to 5,800 eggs per farm. Only five producers were able to estimate average annual production per bird. The average was 261 eggs per bird per year (ranging from 180 to 300). Only seven respondents could estimate total annual egg production, and this ranged from 720 eggs to 1.35 million. It was not possible from the survey data to accurately estimate the total annual organic egg production in Cornwall, although using average data from the answers received and data on flock size, a rough estimate can be made of approximately 2.5 million organic eggs produced in the county per annum.

Most farms were selling eggs through a range of local outlets and a number reported that the local organic egg market was flourishing. All but one producer were selling eggs as farm gate sales, but for most this was not the main market. Six producers were selling to local retailers, but only one had this as the main market outlet. Three were selling eggs on a contractual basis, with two of the largest producers selling all eggs in this manner.

Table-bird (broiler) production

Of the eight table bird producers, only two had been involved in broiler production before conversion. The average flock size ranged from 20 to 1000 and the number of batches reared per year ranged from one to twelve. From these data it is estimated that approximately 22,000 birds were reared in the county during 2002, with the lowest output being 35 birds reared per annum and the largest 12,000 birds per annum. With regard to expansion of flock size, one farmer was unsure whether to increase frequency of batches or whether to increase batch size.

Poultry breeds
The most popular breeds were Ross/Cobb (4 flocks) and Hubbard ISA257 (2 flocks). Two producers felt that the Ross/Cobb were superior, one because they required less bought in feed and the other because they grew well in the winter.

Housing and management
Five farms used mobile housing and three used static housing. Most birds were reared on permanent pasture or grass leys, with one flock being reared in an orchard. None of the flocks were using arable stubble/residue. Fox and crow predation were cited as problem areas. One farmer viewed the regeneration of grass following birds as a problem area.

Feeding
Three producers, including one of the larger flocks, claimed that all the poultry feed used was home grown. Only one producer said that all feed was purchased, although three were feeding less than half from home grown feed. Two farmers were using lupins along with cereals. One producer felt that feeding birds outdoors encouraged ranging and improved carcass quality. The shortage of a local feed mill was viewed as a constraint by one respondent. Another felt that whilst it was possible to finish fast growing strains on home-grown feed, this was not possible for slow-growing strains.

Health and welfare
Only half of producers had a flock health plan. Two had consulted a specialist poultry vet. Health problems included birds "going off their legs" and occasional batches with stunted growth. The frequency of batches and the length of production on the farm were both perceived as a potential health risk by one farmer.

Marketing
With regard to marketing, the larger flocks were producing birds on a contractual basis, whilst the smaller flocks tended to be sold at farm-gate or as local direct sales.

Veterinary support

Of those organic farmers that kept livestock, 64% felt that their vet was supportive and only 15% felt unsupported. Twenty-one percent did not know whether their vet was supportive. Although most organic livestock farmers (62%) used homeopathy, approximately half of these were using it regularly (Table 19). Table 20 gives an indication that advice for those using homeopathy is not generally available in Cornwall. Twenty three livestock farmers said they also used other "non-conventional" health treatments, and half of these used them on a regular basis. Many of these were dairy farmers who used Uddermint to treat mastitis. A range of other herbal treatments was also mentioned.

Table 19 Do you use homeopathy?

	% of responses
Yes, frequently	29
Not very often	33
No	38

Table 20 Where do you get advice on homeopathy use?

Source of advice	% of farmers using homeopathy
Books	38
Other Sources	35
Specialist Homeopathic Vet (not local)	27
Local Vet	9
Specialist Homeopathic Vet (local)	4

Forage production

Seventy-nine farms provided data on silage production. The average first cut area on these was 25 ha (total of 1,973 ha). Forty one farms indicated they took second cut silage (total of 923 ha) and twenty said they took a third cut (454 ha). It should be noted that these data reflect the minimum area of organic silage made in the county, as a small number of farmers did not provide information on conservation. At least 67 farms (data were only available from these farms) made approximately 397 ha of hay.

Twenty two farms made whole crop silage, of which eleven were dairy producers. A breakdown of the crops used is shown in Table 21.

Table 21 Whole crop silage production on organic farms

	No. of farms
Cereal only whole crop	8
Cereal/peas whole crop	9
Forages peas whole crop	2
Lupin whole crop	3
Maize whole crop	1

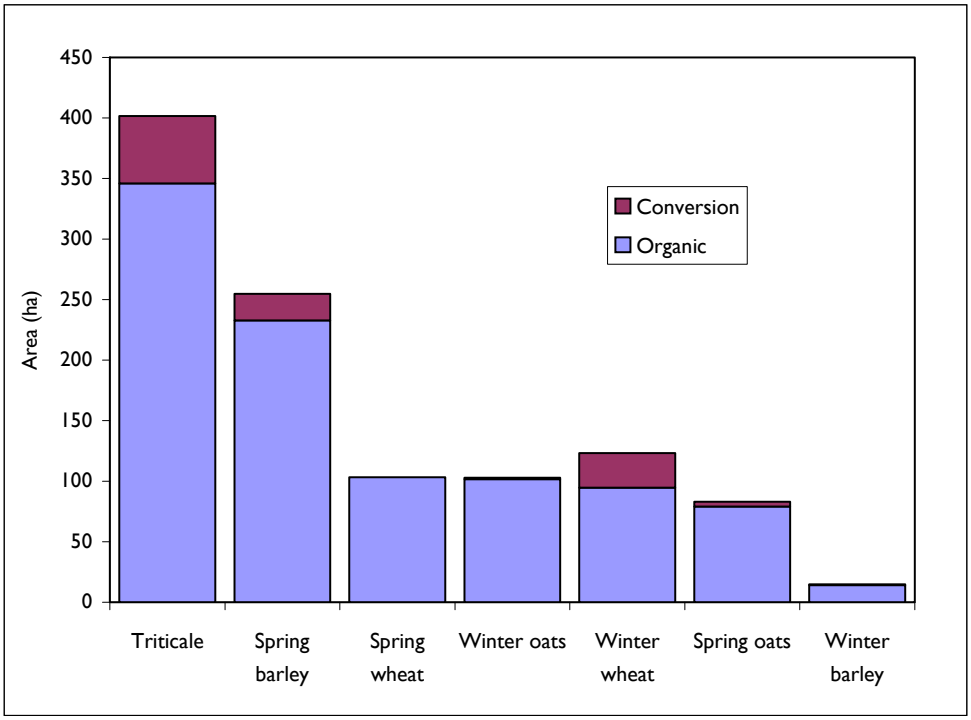
Ten farmers (12% of responding livestock farmers) indicated that they either had or would be crimping grain in the year of the survey. Six of these were dairy farmers. The most popular crop for crimping was triticale followed by barley.

Crop Production

Cereals

Altogether, fifty-eight Cornish organic farmers indicated that they grew cereals. A breakdown of the area of organic cereal production is given in Figure 11. The area grown in 2002 was slightly greater than that grown in 2001. In total, there were approximately 1100 ha of cereals grown, 90% of which was fully organic. Thirty seven percent of all the cereal area was grown as triticale, 24% as spring barley, 11% as winter wheat, 10% as spring wheat, 10% as winter oats and 9% as spring oats. Details were not available on the quantities of grain sold as opposed to that used for on-farm livestock feed. Furthermore, data gathered on predicted area of cereals for the 2003 season were felt to be unreliable, as many respondents either did not know or did not reveal what area they would be growing. In response to the comments made by organic cereal growers, the Organic Studies Centre has undertaken a study of organic cereal varieties grown in Cornwall, and their climatic suitability to the region. This survey indicated that 64% of the larger scale organic cereal producers in the region grow primarily for home use.

Figure 11 Organic cereal area in Cornwall 2002



Protein crops

The total area of legumes grown in 2002 as protein feed crops, at 375 ha, was very similar to that grown in 2001, although the area of forage beans declined and the area of both forage peas and lupins increased (Table 22).

Table 22 Area of organic protein crops grown in Cornwall (2001-2002)

	2001 (ha)	2002 (ha)
Winter beans	38	13
Spring beans	22	12
Forage peas*	223	280
Lupins	78	86
Total	362	391

*a further 3 farms grew pea/cereal mixtures but did not specify area.

Field vegetables

Nineteen producers indicated that they grew field scale vegetables, of which seven were also involved in growing other outdoor horticultural vegetables and six were producing protected crops. Organic potatoes and cauliflower were the most common field scale vegetable. Some of the larger scale commercial vegetable growers were able to provide data on the area of organic field vegetables grown. The majority of growers were small scale, growing mixed vegetables often for direct sale. It was not possible to gather full data on the wide range of crops grown by some small-scale producers.

There were thirteen commercial organic potato growers in the region, nine of which were growing an acre or more. Fifty-six percent of the crop area was grown as second early potatoes (Table 23).

Table 23 Area of organic potato production in Cornwall (2001-2002)

Potato Crop	2001 (ha)	2002 (ha)
Early	7.3	5.6
Second early	9.6	10.8
Maincrop	3.3	2.7
Total	20.2	19.1

Ten respondents indicated that they grew organic cauliflower, although only six were able to provide data on area, with the remainder occupying small areas. The total area from these farms ranged from 10.7 to 15.0 ha (there was some discrepancy over whether an autumn 2001 harvested crop was recorded as a 2002 crop). There were only four organic growers in the county who grew more than 1 acre during 2002/03.

Horticultural crops

Vegetables

Nineteen respondents were growing horticultural crops other than field-scale vegetables. It was not possible to obtain precise details of the actual acreage grown, as a number of farmers grew relatively small areas and were unable to provide these details. Data for a range of vegetables from those providing this information are summarised in Table 24. Of the nineteen respondents who grew outdoor vegetables (not field-scale), thirteen also had protected crops. Precise details of protected cropping were not available, although four and five growers indicated they had tomato and/or lettuce crops respectively. This is an area of Cornish organic production that requires more data in order to develop the market and understand the scale and intensity of production.

Table 24 Area of organic vegetable production in Cornwall (2001-2002)

	No. respondents*	Area (ha)		No. respondents*	Area (ha)
Broccoli/ calabrese	4	0.8	Leeks	8	3.2
Spring greens	5	8.1	Garlic	6	0.2
Cabbage	5	1.3	Carrots	5	1.4
Brussel sprouts	3	0.3	Parsnips	4	0.5
Onions	9	1.0	Swedes	4	2.8

* a further 4 growers indicated that they grew "a mixture of vegetables" but did not give details of area

Fruit production

There were four growers of commercial organic apples, with a total of less than 2 ha, two strawberry enterprises, two blackcurrant, one each of pear, raspberry and rhubarb. As with horticultural vegetables, there were no further details available on those growing very small areas.

Crop Management

Rotations

Seventy-one farmers gave details of their cropping rotations and of these, thirteen had two different rotations operating on the farm (these do not include permanent pasture or long term leys). White and red clovers were equally distributed in terms of their role in rotations, and there were fifteen cases where both red and white clovers were being used within a crop rotation. Thirty four rotations were specifically using red clover as an element of their crop rotations and 32 farmers (45%) specifically referred to white clover in the rotations. A further 26 rotations referred more generally to "leys" or "grass leys", a significant proportion of which may well have contained clovers. Fifteen rotations utilised both red and white clover. Full details of rotations are presented in Appendix 2.

Pests, weeds and diseases

The questionnaire included a section asking respondents to indicate which crop pests, weeds or diseases they had particular difficulty in controlling. A total of 340 pest, weed or disease problems were identified by 91 farmers (77% of respondents). Weeds in grass/clover (32% of all responses) and weeds in cereals (19% of all responses) were the most commonly identified problems, particularly docks and thistles. Pests of cereals and disease in potatoes (especially blight) were also commonly cited areas of concern. Although these data reflect specific problems in organic farming, they are also a reflection of the popularity of some crops over others. A summary of the responses is given in Tables 25, 26 and 27 and Figure 12.

Table 25 Reported diseases of organic crops

Crop		Disease	No. comments	Total
Cereals	Barley	Brown rust	1	17
	Barley	BYDV	2	
	Oats	Crown rust	3	
	Oats	Early die off of leaves?	1	
	Triticale	Everything!	1	
	Barley/triticale/wheat	Eyespot	3	
	Barley	Rynchosporium	2	
	Wheat/triticale	Septoria	4	
Vegetables	Cauliflower	Ring spot	2	15
	Potatoes/tomatoes	Blight	5	
	Courgettes	Downy mildew	2	
	Potatoes	Scab	1	
	Spinach	Brown rust	1	
	Tomatoes	Botrytis	1	
	Tomatoes	Downy mildew	1	
	Courgettes	Downy mildew	2	
Fruit trees	Apple	Apple canker	1	2
	Strawberries	Botrytis	1	
Legumes	Beans	Chocolate spot	1	1
Roots	Sugar beet	Downy mildew	1	1
Eucalyptus and pittosporum		Blackspot	1	1

Table 26 Reported pests of organic crops

Pest	Crop	No. responses	No. farms
Rabbits	All crops	15	14
Slugs	All	14	13
Birds	Cereals, peas, brassicas, carrots	13	13
Aphids	Cauliflower, triticale, eucalyptus and pittosporum, Sugar beet	10	5
Deer	Cereals	5	4
Leather jackets	Cereals	4	4
Black fly	Broad beans	3	3
Cabbage root fly	Brassicas/radish	3	3
Flea beetle	Brassicas	3	3
Carrot fly	Carrots	2	2
Red spider mite	Protected crops	2	2
Badgers	Ffeld vegetables	1	1
Bean weevil	Peas	1	1
Cabbage white butterfly	Brassicas	1	1
Greenfly	Protected crops	1	1
Wireworm	Potatoes	1	1

Figure 12 Pests, weeds and diseases in organic crops – a summary of responses

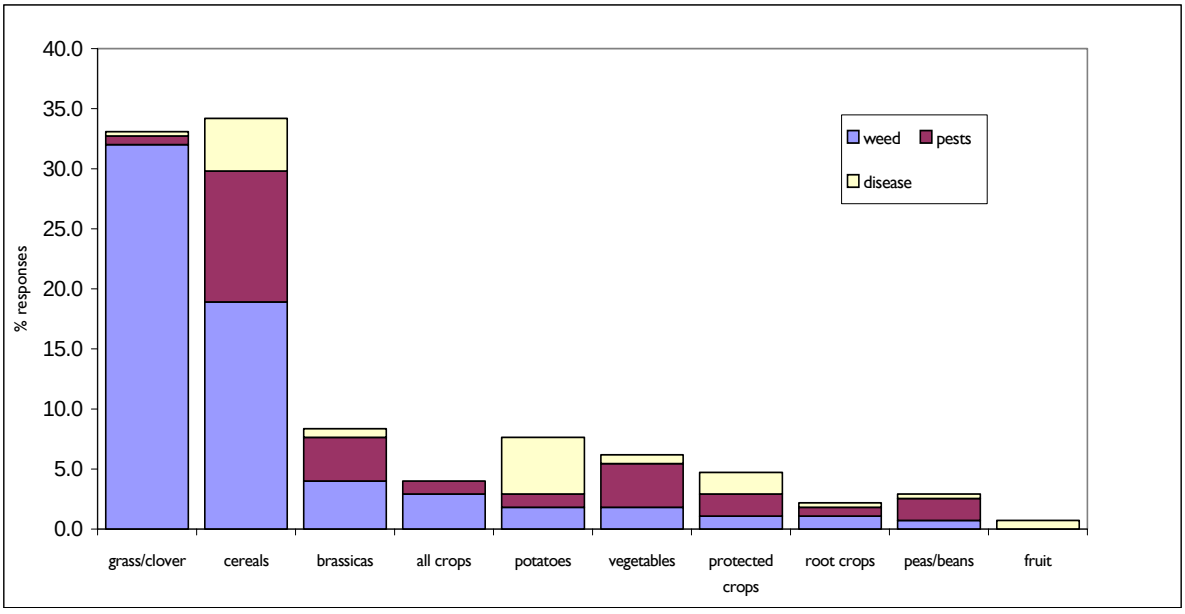


Table 27 Reported weeds in organic crops

	Responses*	% of responses*	No. farms affected	% of all farms surveyed	% of responding farms
Docks	82	38.1	62	52.1	77.5
Thistles (incl. creeping, spear and milky)	52	24.2	43	36.1	53.8
Charlock	12	5.6	10	8.4	12.5
Chickweed	9	4.2	7	5.9	8.8
Wild oats	7	3.3	6	5.0	7.5
Fat hen	7	3.3	4	3.4	5.0
Redshank	6	2.8	3	2.5	3.8
Groundsel	5	2.3	4	3.4	5.0
Buttercup (incl.creeping)	5	2.3	4	3.4	5.0
Ragwort	4	1.9	4	3.4	5.0
Nettles	4	1.9	4	3.4	5.0
Couch grass	3	1.4	3	2.5	3.8
Mayweed	2	0.9	1	0.8	1.3
Grass	2	0.9	1	0.8	1.3
Bindweed	2	0.9	1	0.8	1.3
Volunteer OSR	1	0.5	1	0.8	1.3
Shepherds purse	1	0.5	1	0.8	1.3
Rushes	1	0.5	1	0.8	1.3
Meadow grass	1	0.5	1	0.8	1.3
Marigolds	1	0.5	1	0.8	1.3
Lambs tongue	1	0.5	1	0.8	1.3
Field pansy	1	0.5	1	0.8	1.3
Annual weeds	1	0.5	1	0.8	1.3
Speedwell	1	0.5	1	0.8	1.3
All weeds	4	1.9	1	0.8	1.3
Total	215			(112 farms)	(80 farms)

* some weeds were commonly found in more than one crop on the same farm

Organic crop inputs

The participating farmers were asked to provide detail of the extent and range of crop inputs they were using (including grassland). The results are shown in Table 28. They were also asked to comment on issues associated with fertiliser use, soil fertility and crop nutrients. The most common comments are summarised in Table 29. There was a general concern over potash and phosphate levels in particular.

Table 28 The use of crop inputs on organic farms in Cornwall (no. of farms)

Input	Regular use	Occasional use	Never use	Input	Regular use	Occasional use	Never use
Farmyard manure	67	24	8	Phosphate	3	24	71
Seaweed/sea-sand	8	53	37	Potassium	3	18	77
Lime	5	48	48	Compost	12	5	78
Slurry	23	5	69	Mag. sulphate	1	4	91
Organic compound fertilisers	0	11	84				

Table 29 Summary of comments received on crop nutrition

Comment	Number of comments
Have suffered from, or worried about, nutrient loss since conversion (especially worried about phosphate and/or potassium levels)	10 (8)
Importance of soil sampling in nutrient management	8
Importance of green manure/composting	8
The timing of farmyard manure and/or slurry applications*	5
Soil fertility has improved since conversion	4
Purchased organic inputs are expensive	4
Getting the pH level right is important	3
Importance of legumes	3
The use of calcified seaweed	3

*other, more detailed questions on manure management were also asked in the survey.

Manure management

Questions were asked on the use and storage of farm yard manure on organic farms. Fourteen percent of farms were bringing at least some farmyard manure from other farms onto their own farms and 8% of farms were totally dependent on other farms for manure. Presumably most of this was coming from conventional farms as only one organic farmer responded saying that the farm supplied other farms with manure. With regard to storage, the farmers were asked how they stored manure, and ninety-eight responded. The results in Table 30 show that most were storing manure as a pile in a field.

Table 30 Responses to the question "How do you store farm yard manure?"

Manure storage	% of responses
As a pile in a field	47
Heaped on a concrete yard	23
In a specially designed storage area	16
In a windrow	11
Other places (e.g. in livestock housing until used)	8

Nineteen percent of farmers said they never "turned" farmyard manure during storage, and of those that did, half only turned once and 16% turned three or more times. Although 98% recognised the importance of farmyard manure to the fertility on their farms, only seven farmers indicated that they had manure nutrient analyses conducted. Whilst 67% knew approximately how much was applied to fields, only 18% knew more precisely the rates of application.

Twenty-one percent of farms said that they covered stored manure, although only 89 farms responded to this question. There were a large number of comments received on manure management. Many of these were concerned with the need to have more manure than the farm can produce, the cost and importance of storage and the importance of timing of manure applications. Examples of more specific comments are shown in Box 17.

Box 17 Example of comments referring to the management of manure

"grassland seems to prefer two applications of half the normal amount - separated by 2 months - rather than one normal size application"
"don't like the idea of nutrients being lost while stored in a field"
"to follow an ideal manure management system is too expensive for an extensive livestock farm"
"Do not store slurry because it is dangerous and there is a cost implication. Animals come inside at night from November and are in cubicles January to February. Have obtained a derogation from allowing the spread of slurry all year round"
"Ideally should turn and keep it covered but don't often get around to doing it"
"best spread early in spring"
"cannot always spread FYM when allowed to by Soil Association regulations"
"need to know more about the best use of FYM and in particular the timing of application on crops"
"chicken manure is applied from a local organic flock once a year April-June"
"a purpose made storage place, under cover would be useful - would ease management"
" would like to find a good way of covering FYM without cover blowing away"
"horse manure used for greenhouses is 4 years old"
"FYM includes non-organic straw bought-in - would like to buy organic straw"
"going to build a concrete area with retaining walls. It will be sloped but there are no plans for the run-off. Hope to get a grant as it is an NVZ"
"FYM always applied on aftermath and the number of fields treated is being increased"
"can't get organic manure, so it has to be covered for 6 months before using"

Some vegetable producers were using compost and two commented: *"compost all vegetable waste, all trimmings, produce left over from shop. Seaweed, nettles and comfrey are added*"; *and "compost is turned once. Nutrient analysis is done on the soil, not on the compost.*"

Organic seeds

Questions were asked regarding the availability of organic seeds. Seventy-seven percent replied that they had tried to buy organic seeds and of these 62% had had difficulty in obtaining them. A quarter of farmers had not tried to buy organic seeds at the time of the interviews. Sixty four farmers made comments on the availability of organic seeds and of these forty seven specifically named a crop or crops that they had had difficulty obtaining seed for. By far the most frequently mentioned problem crops were cereals, with half of all comments referring to difficulties in obtaining organic cereal seeds for the varieties they wanted to grow. Fodder crops such as kale, stubble turnips and fodder beet were also frequently mentioned, as were brassica seeds, and in particular cauliflower seed, but also broccoli/calabrese, spring greens and cabbage. As well as these, grass seed, white clover, lupins, linseed, lucerne, vetch, peas, potatoes, swedes, mustard, sunflower, spring greens, tomato, pepper, courgette, onions, garlic, water cress and buckwheat were specifically mentioned.

There were fewer responses to the question regarding obtaining seeds locally, in Cornwall, although there was a similar picture of non-availability. A number of producers said that they were starting to use more home-saved seed. As well as availability, quality was an issue for some in terms of vigour and cleanliness. A number of producers referred to problems in obtaining seeds for varieties that were suited to Cornish conditions.

Organic Standards, Certification and Principles

The organic standards

The survey included an assessment of which organic standards the farmers of Cornwall found the most difficult to implement. Ninety-three (79.5%) of respondents made a total of 152 comments. These have been summarised in Table 31. By far the most widespread problem area was viewed as the sheer quantity of paperwork, including record keeping that farmers have to complete in order to comply with regulations. Other comments on standards not listed in the table included suitability of breeds, conservation, the inspection process and mushroom production.

Table 31 Summary of producer comments on organic standards

Standard issue	No. of responses	% of responses
Paperwork	35	23.0
Animal health/welfare	30	19.7
Livestock feeding regulations	19	12.5
Organic seeds - availability and cost	14	9.2
Complexity/rationale of regulations	11	7.2
Certification/inspection costs	10	6.6
Crop inputs	9	5.9
Manure management	8	5.3
Livestock housing	3	2.0
Others	3	2.0
Quality of advice	2	1.3
The conversion period	2	1.3
Non-organic livestock	2	1.3

There were a large number of comments referring specifically to organic standards (Box 18). Some of these referred to the cost of registration, and particularly in a situation of decline in farm-gate prices for organic products.

Box 18 Producer comments on organic standards and certification issues

"…ever tightening standards must not be allowed to increase costs of production, especially in view of dramatic reductions in prices for produce, especially milk."

"…there should be work done to produce a comprehensive computer programme for organic standards to take into account organic feeding/rationing of animals, field records (rotations and inputs, crops etc). This programme should be able to cope with standards of the two main certifying bodies and be able to be used for inspection purposes. This would be an excellent aid for farmers and cut down on paperwork and would centralise information."

"The Soil Association are bringing in a new standard for having to grow own concentrates. Very small enterprises will be unable to do this - seems they are pushing people into going larger - against principles of organic farming."

"Worried that farm can no longer pay registration costs, particularly since the cost was shared with another grower who is no longer growing. Can't afford to maintain organic status."

"…the cost of certification for the farm is high for a smallholding and this is a problem balancing the viability of certification with the amount of produce sold."

"…feel that the amount of paper work make it very difficult, especially for small growers who already have a low turnover. The certification fees are penalising these people who ought to be encouraged. However, I would not support a local certifying body because the work of the Soil Association does in other ways is very good (e.g. raising awareness, local outlets, GM foods)."

"Small producers are not being helped by the Soil Association."

"…quite disillusioned with the organic sector, particularly the cost of inspection and the lack of organic premium."

"…paying Soil Association subscription fees - far too high for small farms."

Other responses referred to the complexity of standards e.g *"Too many rules and regulations. All the forms could be simpler e.g. recording what the cattle are eating on a daily basis - pettiness of some standards"* and *"…despite organically farming prior to conversion, (I have) found the rules and regulation book overwhelming and difficult to understand."*

Soil, manure and nutrient standards

The earlier section on manure management highlighted some issues concerning storage and the timing of manure applications. Other comments received include those in Box 19.

Box 19 Comments on soil, manure and nutrient management standards

"Having to have soil analysis done and apply to put down potash when I know it needs it."
"6 months manure storage - facilities required."
"Organic farming is not going as well as he would like. The grass is not growing well and he cannot use fertiliser to boost it."

Animal health standards

The comments made on animal health and welfare issues were varied and have been grouped together in Table 31 (previous table). For example, some were concerned about the general impact on health and welfare of reduced conventional medicine use, whilst others were having difficulty controlling specific conditions, such as worm infestation. Some of these comments are described and quantified in more in Table 32 and examples of more specific comments are illustrated in Box 20.

Table 32 Summary of responses to animal health and welfare standards

	No. of responses	% of animal health/ welfare responses	% of all responses
Worm control	11	36.7	7.2
Mutilations	6	20.0	3.9
Withdrawal period of drugs esp. fly control	3	10.0	2.0
Dry Cow Therapy	2	6.7	1.3
Vaccine use	2	6.7	1.3
General restriction on drug use	2	6.7	1.3
Rationale of welfare legislation	2	6.7	1.3
Scab control	1	3.3	0.7
BSE audit	1	3.3	0.7
Total	30		

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Box 20 A selection of comments on animal health and welfare standards

"Frustrated by lack of efficient wormers. At present using wormer with 2 weeks withdrawal period for milk - not allowed to use ivermection based wormer with only 48 hour withdrawal. Don't think homeopathic wormers work."
"…sheep flock health and worming regime. It is difficult to farm without seeking derogations for whole flock worming."
"Not being able to castrate or dock tails on lambs. Have been allowed to dock tails because of severe fly strike problems."
"…ceased sheep production because of difficultly controlling worms in organic systems"

The certification bodies

A number of critical comments were received concerning the certification bodies (Box 21).

Box 21 Comments concerning the organic certification bodies

"…there is no support from the OF&G who get too much money for what they do. I think the farm assured scheme has taken over from organic schemes."
"The official organic organisations should pull together more - too much bureaucracy, too many restrictions putting more financial pressure on farmers. If you are registered with one body, you cannot sell through another as organic unless you are registered with them too. I would prefer not to farm under any organic certification body, but wouldn't change the way I farm."
"…feel that the Soil Association swamp farmers with info, most of which is not applicable. This must be very expensive - they should economise"
"I need help with reducing the amount of bureaucracy"
"I rent the majority of land to non-organic farmers but still have to pay Soil Association fee on all acreage."

Box 21 (continued)
"Generally there is not enough information around on all the issues raised. The level of information from the Soil Association is usually restricted to ticket sales for conferences."
"I enjoy farming organically but less now than I used to because it is so restrictive. I agree with the general principles of Soil Association and ESA and similar bodies, and understand that regulation is necessary, but find there is too much interference and paperwork."
"I feel that the Soil Association and other bodies are moving away from the small farm principle. Fees have now increased from £60.00 per year to £300.00 - hard for small farmers to pay this amount."

Organic principles

There were a number of responses that referred to the general principles and philosophy of organic farming. Some of these have been quoted in relevant sections of the report. Others are para-phrased below (Box 22). There was a particular emphasis on the excessive amount of paperwork that organic farmers feel that they have to complete, the direction in which organic farming is heading and the structure of the organic farming sector. There were also specific examples of organic farming principles.

Box 22 Responses regarding the principles of organic farming
"(I am) concerned about the inefficiency in the overall management of organic farming - lots of paperwork, lots of inspectors, long distances travelled by milk tankers to pick up loads and taking it out of the county"
"…organic management is not necessarily sustainable in the wider sense. Energy costs are not fed into production systems. This aspect would be of interest and I would like more information on this."
"I have a biodynamic farm. The background is education - the farm supports residents and promotes their health. The farm is run according to Rudolph Steiner's philosophy."
"I am concerned about the future mismatch of combinable crops and livestock leading to a lack of feed and straw available for organic farmers in the south-west

Conservation and the Environment

Opinions on whether or not conversion to organic farming had improved the bio-diversity on farms gave a general impression that many felt that this was the case. The most widespread observation seems to have been an increase in wild plants, birds and soil insects, although one farmer felt that wild plant populations had declined. There were fewer responses concerning improvements to wild mammal populations and soil structure (Table 33).

Table 33 Opinions on changes to bio-diversity and farm environment since conversion

Changes since conversion	Birds	Wild mammals	Wild plants	Soil insects	Soil structure
Increased	54	40	59	53	36
No change	46	60	40	47	64
Decreased	0	0	1	0	0

Sixty-eight respondents made a comment regarding conservation, the environment and organic farming. These comments were mainly giving examples of specific changes to the farm biodiversity and environment.

Bio-diversity

Specific comments on bio-diversity are given in Box 23. There was a strong emphasis on wildlife populations and habitats.

Box 23 Farmer comments on biodiversity
"I would like research into small bird populations. Pied wagtail and yellowhammers have gone. Farm was low-input before conversion so no change in wildlife populations."
"It would have been worthwhile to have had monitoring of species populations before and after conversion."
"(There has been) a large increase in wild bird nesting and breeding, especially curlews and hen harriers."

Box 23 (continued)
"The changes are due to clearance of rhododendron from woodland."
"…have seen more butterflies and hares"
"I have seen an increase in the badger population."
"There are more weeds!"
"…the standards on the farm relating to conservation and the environment has increased since converting"
"Growing a lot of spring crops and winter stubble has led to more weeds. There has been an increase in the bird population."
"Have not been farming for very long. "There has been no change. There are skylarks, buzzards, newts, bog myrtle and signs of otters."
"…grey legged partridge has gone. Butterflies are rare this year"
"…increased buzzards. Tight grazing of grass limits nesting sites especially for sky larks. An increase in docks and a decrease in plant population in hedgerows due to cattle grazing hedgerows."
"Less lapwings, same amount of skylarks and golden plover. Less curlew. Not a lot of difference because the farm has always been low input."
"…a few more cornflower in seeded grass"
"Was a maize grower before conversion and was worried about spray and soil erosion. Soil now very friable."
"….not sure if mammals have increased or stayed the same."
"…more weeds - due to ground disturbance".
"…unimproved grassland and therefore organic farming is self evidently good for the environment."
"…soil 'freer' with the use of red and white clover in set-a-side"
"…a lot more birds of prey and barn owls, an increase in seed eating birds and larks. Fewer sparrows and cuckoos."
"…barn owls, bats, kestrels, peregrine nest"
"…many swallows this year, kestrels, tawny owls, barn owl nested a few years ago. Now leaving arable stubble for over wintering bird populations. Skylarks a problem as they nest in spring crops"
"…more clover, especially red, appeared on the farm"

Farming methods and approaches

The importance of the environment to organic farming was captured in the many comments received on this issue. A number of these are presented in Box 24. Some specified that the farm had been low input or "almost organic" before conversion and therefore no changes had taken place.

Box 24 Comments on the environment and organic farming
"…always farmed in an organic fashion - farmed extensively before."
…"was farming in a fairly extensive way before conversion so little change has been seen"
"…farmed extensively before"
"…on grassland with no fertilisers applied the ground seems to drain better, with less poaching by cattle, so would hold cattle longer in the autumn"
"…farmed extensively before conversion and really have not changed much except don't use fertilisers any more"
"…have created habitats for wildlife by planting trees and this seems to be working (created wildlife corridors)"
"…the problem of cultivation for weeds in growing arable crops is jeopardising ground nesting birds"
"…contemplated converting livestock and whole farm - main reason for not doing it was weed control"
"…trimming of hedges should be annual not bi-annually - reason being that there is a high growth of hedges in Cornwall"
"…a major observation in organic farming is that it presents a whole farm approach, which is going to produce better results than managing in a conventional farming system."
"…conservation is complementary to organic"
"…would like to dig more ponds to encourage slug eating amphibians. This farm has never been farmed intensively and has always had plenty of birds, mammals, etc"
"…would like general "good practice" guides on all habitats. Plan to do a survey on invertebrate populations"
"…have deliberately managed the farm by planting woodland, created habitats and corridors and cutting forage later in the year. I feel that things are improving in an environmental sense."
"…hedge cutting every 2 years is a bad idea on his farm. Much of the tree wood is ash and sycamore on the hedges which is very fast growing so when cut every 2 years is very difficult to cut and makes an unsightly mess."
"…being an organic farmer has made countryside stewardship easier to maintain"
"…environment a lot nicer."
"…much more enjoyable"
"…essential part of organic farming"
"…was conservation minded before conversion"
"…organic production helps improve the environment. If conservation is important there is no choice but to farm organically"

Box 24 (continued)
"…I have always been aware of wildlife and conservation. There is a lot of wildlife: owls, bats, foxes, invertebrates, etc"
"…we have created a 0.25 acre lake. Before conversion we only used a minimum of sprays and fertilisers so have not yet seen much change"
"…we have ploughed (ready) for 10 acres of new woodland and approximately 1 mile of hedges. Fully committed to conservation and environment. 0.75 acre conservation lake"
"…have planted 500 trees. Would like to see more planting of hedges"
"if there was more time there are things which I would like to do on the farm - such as planting after Dutch Elm disease to replace the ones that died"

Involvement in environmental schemes

Fifty nine percent of farmers (of 113 responses) said that they had a whole farm conservation plan. Most plans had been drawn up either with independent advisors or by the farmers themselves. Only 24% had been drawn up through a DEFRA - funded scheme. A breakdown of responses regarding involvement in Government - funded schemes is given in Table 34. Not surprisingly, the Organic Farming Scheme was heavily subscribed-to by those farmers that started conversion after the inception of the scheme.

Table 34 Participation in Government Schemes

	% of responses
Organic Farming Scheme	72*
Countryside Stewardship Scheme	
Applied before converting	17
Applied after converting	18
Successful application	26
Woodland Grant Scheme	
Applied before converting	10
Applied after converting	3
Successful application	9
Farm Woodland Premium Scheme	
Applied before converting	4
Applied after converting	3
Successful application	4
Hill Farm Allowance	
Applied before converting	7
Applied after converting	1
Successful application	6
Environmentally Sensitive Area Scheme	
Applied before converting	5
Applied after converting	2
Successful application	5
Rural Enterprise Scheme	1
Energy Crops Scheme	0

*includes all organic farms, including those that were organic before the Scheme started.

There were many examples of farmers being involved in environmental schemes and having sought advice on environmental issues, and these are summarised in Box 25.

Box 25 Comments regarding agri-environmental schemes
"Involved in English Nature Wildlife Enhancement Scheme"
"have had FWAG visit"
"The farm is adjoining an English Nature reserve. English Nature are very encouraging over conversion. Disappointed that Countryside Stewardship Scheme are not willing to give much help. The farm is in an area of outstanding natural beauty"
"Back to Nature! have applied for CSS, but it seems that the people involved cannot be bothered from DEFRA to administer the scheme as it should be."
"applied for woodland improvement grant 2 years ago - for improving woodland - although not part of the holding"
"have had advice from English Nature and the National Trust"
"…would like to join RSPB whole farm bird survey"
"…waiting for organic stewardship scheme. Would like some guidance on better management"

Box 25 (continued)
"Countryside Stewardship - reinstatement of old orchard, hedges, meadow - getting rid of bracken/brambles and encouraging wild flowers, digging pond etc"
"…penalised by Countryside Stewardship Scheme for being small farmer. Tree planting not eligible for Woodland Scheme"
"…would like to organic and conservation schemes together"
"…delayed conversion in order to get grant from OFS."
"…FWAG help with conservation plan"
"…not enough money for what we do. Was conservation minded before conversion"
"Will apply for CSS after OFS finished"
"…pasture is much lusher now. More clover established. … planting wild flowers in the hedgerows"
"Against SA and other official bodies making conservation plans compulsory - more unnecessary interference and paperwork"
"The whole farm conservation plan was drawn up using advice from DEFRA, EN, CWT, Barn Owl Trust, Forestry Commission, Restormel Countryside Officer and the Gaia Trust"
"Countryside Stewardship Scheme, Woodland Grant Scheme and the Farm Woodland Premium scheme operational on one farm and applied for on the other farm." Improvement to wildlife can be confirmed I have farmed there for 4 years."
"Have only been at the farm for one year so I do not know how it was prior to conversion."
"…do not need to earn a living from the land but are very keen on conservation and care of the environment"
"…would like to see more funding for organic farmers because they are looking after the environment"
"…working with the National Trust regarding grazing of heath land"
"…had a heathland ecology expert through DEFRA and also consulted with the National Trust"
"This is a small farm basically run as a conservation project. Would like to see the government supporting conservation more."
"…use BTCV schemes and host Taproots days for ecological activities and training."

Labour, Income and Marketing

A series of questions were asked that referred to the farm economy, labour use and economic prosperity post-conversion to organic production.

Diversification

Eighty seven percent of those interviewed said that organic farming was their main farming activity i.e. provides more income than from conventional farming, although 60% said that they had other on-farm income outside of farming. By far the most important source of other on-farm income was on-farm accommodation, with 39% of all farms surveyed having some form of income-generating accommodation on their farms. Farm shops (6%), horses (6%), food processing (5%), agricultural contracting (4%), craft/skills (4%) and leisure/tourism (4%) were also mentioned. Thirty percent of organic farmers said that they were diversifying outside farming more at the time of the survey than they were before converting to organic production.

A number if examples of farm diversification were provided (Box 26)

Box 26 Examples of farm diversification
"*…operates organic enterprise alongside a successful horse riding stable. There is also an animal feed shop that is not linked to the organic farm.*"
"*Spins wool from home produced Primitive sheep, which are brown, to woven rugs/blankets - hope to make car rugs with waterproof backing for picnic, sheepskin rugs in natural colours, etc. It is intended to sell these things through farmers markets and maybe someday on a website"*
"*…planning to start a community model of finance facilitators for others to earn an income. Had a company established to develop small cottage industries and local projects for the community. Within this the aim is to enhance and enable the community. It is a new economics-based concept. The aim is to steer away from the normal economic basis of business. The research/experiment is to do with how to develop a better well being for the whole place.*"
"*part time farmer with an interest in music and drama and the arts generally. An adjoining small cottage to the farmhouse is used by tourists and friends as a peaceful and tranquil place to work on music or art hobbies/careers.*"
"…I bought a 6 acre plot of land 10 years ago with the idea of being a market garden. Have completed conversion with the Soil Association and have already planted some vines and some fruit trees. The rest of the field has been fallow for much of the time during the last 10 years. This autumn 2 tunnels for market gardening will be erected. During the last 2-3 years

Box 26 (continued)
ryegrass/white and red clover have been grown as a green manure to raise fertility. A source of FYM has been found. In early 2003 the fields and tunnels will be planted with various vegetables and exotic fruits and herbs. Organic bees for organic honey are also being considered, as is organic egg production and organic turkeys"
"*Considering how to utilise mining relics on the farm to supplement income from a dairy enterprise. Although this would involve considerable investment, there is potential as a tourist attraction"*

Labour use

Organic farmers were asked whether they employ more or less staff since converting to organic production. The results (in Table 35) indicate that there may have been a decrease in full-time staff but an increase in part-time and seasonal labour after conversion. However, caution should be applied when interpreting these results as many farms are family farms with no employed labour (and in some cases the question was not answered). Also many indicated that there had been no change in labour on the farm. One farmer commented: "*It is difficult to answer the question, as there are lots of other things happening so labour is divided between organic and other enterprises*."

Table 35 Employment of farm labour since conversion to organic farming

	Full time staff	Part-time staff	Seasonal labour
More labour employed	5	10	11
Same amount of labour employed	59	61	32
Less labour employed	9	5	5

Data in Table 36 suggest that although there is a shortage of skilled agricultural labour in the region, this is not unique to organic farms. However, some farmers did identify specific areas of skilled labour where there could potentially be specific organic issues (Box 27).

Table 36 Availability of farm labour on organic farms in Cornwall

Do you find difficulty in employing farm staff?	Number of responses	Do you find it more difficult to employ staff since converting to organic farming?	Number of responses
Yes	30	Yes	7
No	29	No	48
Don't employ staff	47	Don't employ staff	42
No response	9	No response	18

Box 27 Comments on farm labour on organic farms
"…operate with mainly family labour and dedicated stockmen"
"…good herdsmen are really hard to find - this is becoming a real problem! Staff really need to be interested in organic farming."
"Manual labour is difficult to find for hand weeding."

On some farms, volunteer labour, notably in the form of those volunteering through the organisation World-Wide Opportunities on Organic Farms (WWOOF) were important contributors to the farm labour (Box 28).

Box 28 Comments on volunteer labour on organic farms
"…employed WWOOF people in the past. The farm not feasible without this help."
"There is one full time live-in volunteer."
"…interested in looking at using seasonal casual staff from WWOOF and would like to hear about experiences of this from other producers."
"The (farm) supports 8 residents. They help on the farm."

Marketing

Local and direct sales
There was strong evidence that conversion to organic farming increased the extent of local and direct sales of farm produce (Table 37). Eleven organic farmers indicated that they operate a box scheme. These have either always

farmed organically or have started the box scheme since conversion. Examples and comments on local marketing issues and initiatives are quoted in Box 29.

Table 37 Changes in direct and local marketing since conversion

Has the amount of direct sales changed since conversion?	No. of responses	Has the amount of local sales changed since conversion?	No. of responses
Increased	30	Increased	31
Decreased	3	Decreased	5
No change	56	No change	56
Don't know	5	Don't know	4

Box 29 Local market issues and initiatives

"The local farmers market has no proper standards and it is abused, with food bought in from other places."

"The home freezer business is oversubscribed."

"…organic bodies could also do more to promote small local abattoirs and butchers - I have sold through the organic coop - which sells to large abattoirs - then to supermarkets - which seems to go against the principles of organic farming".

"…have recently started direct selling own beef/lamb on a low key basis to locals and visitors. …would like to see this increase. … would like to know how to apply for Objective 1 funding for a cold store for beef/lamb, rather than using a deep freezer"

"Prior to this year we were selling all produce to other organic market gardeners for their farm shops and box schemes".

"This year we have started our own box scheme successfully. This has been through personal contact without advertising. Currently supplying 16-18 boxes a week with 8 varying items in each box. These items are random to start with but becoming variable to suit individual customers. Considering opening a farm shop in future but unsure if there will be enough interest."

"…interested in developing local contacts to source relevant information in Cornwall from marketing advice to growing crops. Also interested in co-operatives and would like details of any local groups running".

"…strongly believe in local food for local people and have various ideas for enhancing and enabling the community."

"…surpluses are sold directly at an agricultural show and have occasionally supplied local pubs and a delicatessen. In the future there is a plan to have farm gate sales with an honesty box."

"A survey is needed into market outlets for organic and in-conversion products"

"*…intend to sell produce through farmers markets and a small box scheme*"

"…before conversion we kept more suckler cows and sold suckled calves at 6 months in the traditional way. Now almost converted the intention is to sell cattle finished and therefore now seeking suitable outlets. Thinking about some direct sales but need to find an abattoir to do this."

"*Objective 1 funding gave £5000 for research into marketing Cornish products.*"

"…have recently started a box scheme for beef and intend expand it to pork and chicken. At the moment this is for friends and local villagers but hope to expand. When an animal is ready for sale, it is advertised in the local newsletter, with useful information about organic farming eg grass fed beef versus feedlot cattle, as well as recipes. This seems to work well at moment. ….concerned at what may happen when the price of organic premium is increased, and feel that encouragement and help with marketing will be needed"

"…realised that the farm would not be sustainable on just beef and cereal production 3-4 years ago and since then have introduced a market garden enterprise and a table bird enterprise. These have both been successful and outstrip the income from beef and cereals, but they do require a lot of work. The market garden was started 18 months ago with a 1.5 acre plot including some covered area. This was extended by a further 0.5 acre this year. The field is south facing and surrounded by deer netting. Sales are through farmers markets and an organic shop and a restaurant, plus a small box scheme with 7-8 different items".

"… foliage grown for florists, but although organic, there is currently is no organic market"

"*…considering setting up a pasteurisation plant to sell milk through the same contacts as a craft enterprise. Would like help looking at this project.*"

"*…make and sell ice cream, both retail and whole sale throughout the county. Would like to make organic ice cream but it is prohibited by the extra costs of added fruit ingredients and stabilisers, making it too expensive unless sold through supermarkets – this in turn would make the business large and require heavy investment. This is prohibiting many farmers that wish to diversify organically into retail and wholesale food sectors*"

Marketing structure

There were also a significant number of comments referring to the approach and structural and infra-structural issues associated with marketing organic produce in Cornwall and generally (Box 30).

Box 30 Farmer comments on the structure of the organic market

"…we require a central marketing scheme in Cornwall. It is difficult to market your produce if you are small and don't direct sell. Surplus food is wasteful"

"Requires cooperative marketing strength"

"...disillusioned with the way organic farming is taking with government directives - which are supposed to be encouraging organic farming - but the marketing seems not to be aimed at supporting British organic producers, just bringing in more, cheaper imports to sell through supermarkets."

"…only a very small amount of milk is processed in Cornwall and marketed as organic. This needs to be addressed as there could be great potential in branding a Cornish Organic Milk processed product e.g. cheese, ice cream, yoghurt etc. This could be a useful project for Objective 1 funding"

"…the problem is how to deal with the dominance of supermarkets. Organic South West is setting up a co-operative but the main traders do not want to deal with them. Processors who deal with smaller butchers are non existent. …would like a Co-operative but it would have to be slick, well run and professional."

"…organic farming needs a more positive marketing strategy; need more protection for British products from foreign imports, possibly large co-operatives that will benefit organic farming as a whole, not just small ones."

" grants are needed to develop small business and help market small lots of stock"

"Imports are not to our standards."

"Marketing should focus on the importance of the body's immune system and how this is strengthened by not using unnatural additives"

"…cannot stress the importance of marketing enough. At the moment the supermarkets have the complete monopoly of organic and conventional produce, and importing foreign rubbish when we have our own produce which cannot be sold is an insult!"

"Purchasing feed inputs is very expensive and a buying group to purchase in bulk and be able to discount prices would be a distinct advantage"

"*…the SA is leaning towards the supermarkets and is not much help. …the small producers are getting lost"*

"*…help is need with marketing* "

"…would prefer to be working with a co-operative of other producers"

"…wasting a lot of time in the farm shop dealing with the marketing"

"…have to sell non-organic produce in order to survive and have to produce an inefficiently large range of vegetables in order to keep the public happy. In a co-operative growers could concentrate on a smaller range of products which could then go to various outlets with information fed into a data base so A would grow a vegetable and B would take it.

"*…back is against the wall when it comes to marketing and the power of supermarkets*"

Income

Regarding income from organic farming in the county, there were more farmers who felt that their income had increased (41%) since conversion compared to those that felt income had decreased (30%) (Table 38). However, it should be noted that 12% of those who answered this question felt that they had suffered a significant decrease in income since conversion. Some farmers stated that their income increased in the years immediately after conversion, but since then it had declined.

Table 38 Responses to the question "Has your income changed since conversion?"

	% of responses
Significantly improved	10
Slightly improved	31
No change	29
Decreased slightly	18
Decreased significantly	12

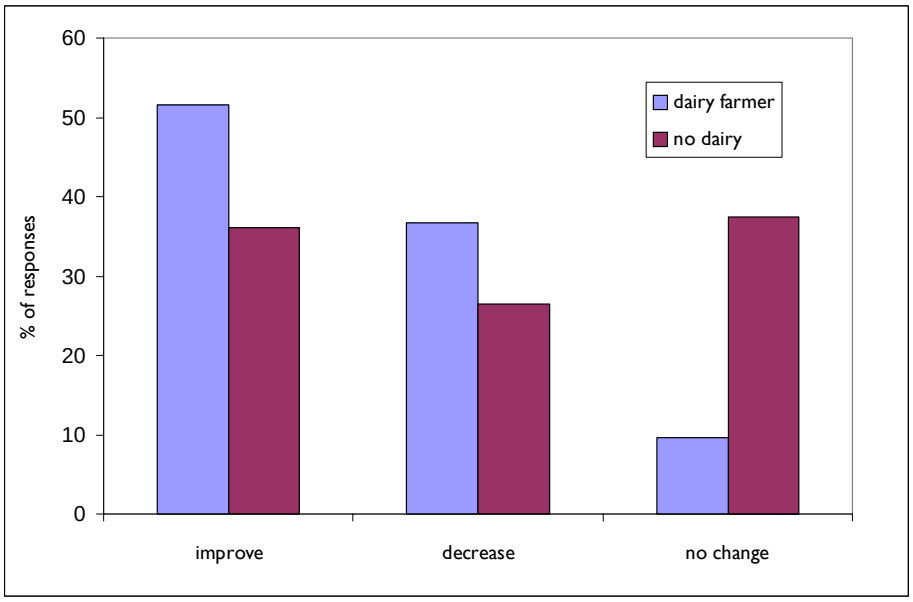
A large percentage of farmers (72%) said that they would continue to farm organically even if there were no price premiums on organic produce (Table 39). Sixty one percent of respondents said that they enjoyed farming more since conversion, whereas only 5% enjoyed farming less.

Table 39 Responses to the question "Would you continue to farm organically with no price premiums?"

	No. of responses
Yes	78
No	22
Don't know	8

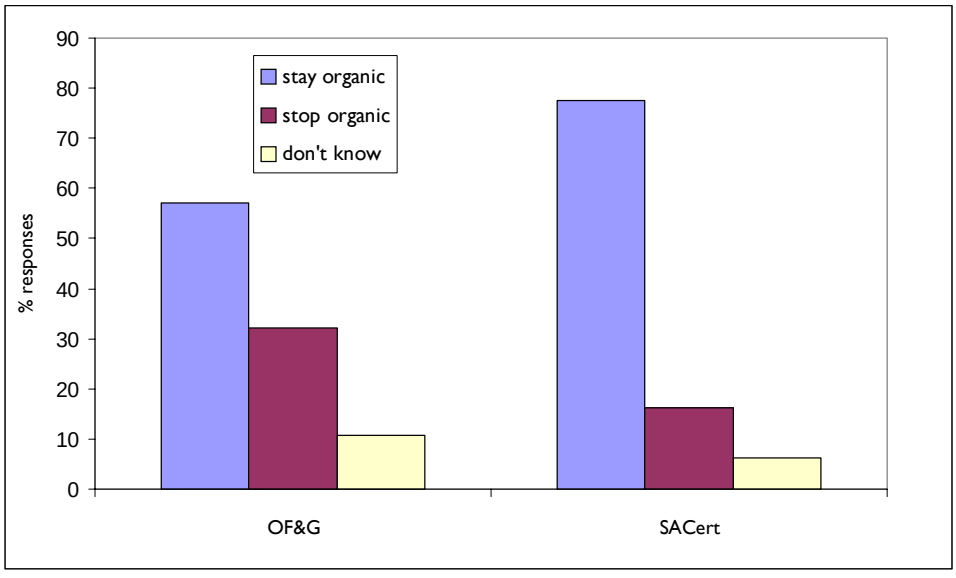
There were differences between enterprise groups in their response to whether or not income has changed since conversion. An example of this difference can be seen in Figure 13. Dairy farms are compared with other farm situations. The response appears to reflect the decline in the market price for organic milk over recent years.

Figure 13 Comparison of income changes since conversion between dairy farmers and other farm types



There were also differences in the responses to the question of farming without premiums between the two groups registered with either the SACert or OF&G (Figure 14). Whilst there appeared to be a commitment to farming without a premium from those registered with SACert, this was less apparent with those registered with OF&G. These differences were probably associated with differences in the distribution of enterprises within each certification body, as discussed earlier.

Figure 14 Comparison of commitment to organic farming between members of certification bodies



Concluding Comments

This survey has provided the first detailed description of organic production in Cornwall. These data will be used by the Organic Studies Centre to form the basis of a strategy for organic farming research and development relevant to Cornwall. The information gathered will also be used to inform other parties concerned with development of the organic sector in the UK generally, and the south west of England specifically.

Some of the problem areas identified, such as mastitis in dairy cattle, helminth control in sheep and weed control in grass and crops are common to many organic systems throughout the UK. This represents an opportunity for collaborative effort to address these issues, develop guidelines and disseminate technical information through demonstration, training and publications.

There are also regional issues, such as the suitability of crop varieties, which require more specific local effort and resources. The study has revealed a diverse range of enterprises within the county, offering opportunities for greater within and between farm integration and resource sharing.

The survey has also provided important information regarding the relative strengths and weaknesses of organic farming in Cornwall, and has shown considerable variation across the sector in terms of income and marketing. The results do give a general impression of the social, economic and environmental benefits. However, this is not consistent across all farms, and perhaps future strategies for development of the sector need to be more system or circumstance specific.

Considerable emphasis has been placed on the views of producers. It is hoped that these views will provide both researchers and policy makers with significant direction in their endeavours to promote rural industries, and especially those associated with farming.

Whilst this report has provided considerable detail, the depth of the survey was such that many of the detailed analyses that are now possible could not be described in their entirety. Although the individual survey responses are confidential, further details pertaining to specific enterprises and topics are available from the Organic Studies Centre.

Since the completion of the study, there have been new entrants to organic farming in the county and some of those surveyed are no longer registered as organic. In order to ensure that the consequences of these developments are fully incorporated into the activities of the Centre, and to ensure that the Centre continues to be focused on industry needs, a second survey will be conducted during 2005.

Acknowledgements

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Appendix 1

The Questionnaire

Appendix 2 Details of organic crop rotations

Rotation No.	Year1	Year2	Year3	Year4	Year5	Year6	Year7	Year8	Year9
1	White clover ley	White clover ley	White clover ley	White clover ley then triticale	Triticale then winter oats	Winter oats then 4 yr grass clover ley			
2	White clover grass ley	White clover grass ley	White clover grass ley	White clover grass ley	Winter wheat	Spring barley/vetches	Spring barley	White clover grass ley	White clover grass ley
3	Set-a-side	Barley	Oats	Set-aside ley					
4	Barley/triticale	90% grass - Barley/triticale	10%oats 90% grass-barley/triticale	90% grass - all cereals					
5	Ley	Ley	Ley	Cereal	Cereal under-sown	Ley			
6	Grass clover	Grass clover	Grass clover	Grass clover	Triticale	Possibly lupins			
7	Spring wheat	Spring barley	Sugar beet or potatoes	Clover/ryegrass mix	Clover/ryegrass mix				
8	Winter oats	Spring barley (stubble turnips)	Under-sown spring barley	Mixed clover sward	Mixed clover sward	Mixed clover sward			
9	Grass clover	Grass clover	Grass clover	Spring barley & forage rape break crop	Spring oats	Spring wheat under-sown with grass/clover			
10	Potatoes	Field scale vegetables	Spring barley	Spring barley under-sown	Grass	Grass			
11	Potatoes	Triticale	Stubble turnips	Spring barley	Grass	Grass			
12	Grass/clover ley	Cauliflower	Spring greens	Barley	Oats	Clover (6-7years)			
13	Grass	Grass	Veg	Cereals	Cereals				
14	Grass/clover	Grass/clover	Root veg	Other horticultural crops	Grass/clover	Grass/clover			
15	Stubble turnips/spring barley	Spring oats/winter rye	Spring barley/oats	Ryegrass/clover ley	Ryegrass/clover ley	Ryegrass/clover ley			
16	Barley	Triticale	Grass	Grass	Grass				
117	Mixed vegetables	Mixed vegetables	Mixed vegetables	Fertility building ley	Fertility building ley				
18	Cereal	Grass	Grass	Grass					
19	Roots (swedes/kale)	Spring barley (under-sown ryegrass/clover)	Ryegrass/clover	Ryegrass/clover	Spring wheat/oats	Roots			
20	Setaside	Setaside	Wheat	Beans	Wheat/triticale	Grass/clover			
21	Winter triticale	Spring oats	Spring beans/oats	Grass/clover	Grass/clover	Grass/clover			
22	Grass	Wheat	Vetch	Cauliflower	Potatoes				
23	Cauliflower	Grass/clover mix	Grass/clover mix	Grass/clover mix	Cauliflower				
24	Cauliflower (on poorer land)	Grass/clover	Grass/clover	Grass/clover	Grass/clover	Cauliflower			
25	Grass	Potatoes/cauliflower	Grass	Grass					
26	Horticulture	Fertility building	Fertility building	Fertility building					
27	Red clover mix	Red clover mix	White clover	White clover	Arable silage mix	Red clover mix			
28	Triticale	Oats	Barley under-sown with white clover	Red clover	Red clover	Triticale			
29	Red clover/ryegrass	Red clover/ryegrass	Cereals (triticale)	White clover	White clover	White clover	Triticale	Red clover/ryegrass	Red clover/ryegrass
30	Cereals	Forage peas	Red clover ley	Red clover ley	White clover ley	White clover ley	White clover ley		
31	Red clover	Red clover	Cereal/triticale	Lupins	Spring barley under-sown	White clover	White clover	White clover	White clover
32	Red clover	Red clover	Triticale	Spring barley under-sown	White clover ley	White clover ley	White clover ley	White clover ley	White clover ley
33	White clover ley	White clover ley	White clover ley	White clover ley	White clover ley/peas or triticale or lupins	Triticale, peas or lupins/red clover ley	Red clover ley	Red clover ley	Red clover ley/white clover ley
34	Red clover ley	Red clover ley	Cereal	Cereal	Forage peas under-sown	White clover ley	White clover ley	White clover ley	White clover ley/cereals
35	White clover ley	White clover ley	White clover ley	White clover ley	Cereals	Cereals	Red clover ley	Red clover ley	Cereals
36	Red clover ley	Red clover ley	Cereals	White clover ley	White clover ley	White clover ley	White clover ley	White clover ley	Cereals
37	Cereals	Red clover/rye grass	Red clover/rye grass	Red clover/rye grass	Grass ley/white clover	Grass ley/white clover	Grass ley/white clover	Grass ley/white clover	Grass ley/white clover
38	White clover/grass	White clover/grass	White clover/grass	White clover/grass	Kale/annual rye overwinter	Barley/peas under-sown with red cl/grass	Red clover/grass	Red clover/grass	
39	White clover ley	White clover ley	White clover ley	Triticale - turnips/rape	Under-sown spring wheat	Red clover	Red clover	Triticale	Spring cereal under-sown white clover ley
40	Red clover ley	Red clover	Red clover	White clover ley	White clover	White clover	White clover	White clover	White clover
41	Red clover	Red clover	Red clover	Triticale	White clover ley	White clover ley			
42	Pigs on ley	Spring wheat	Oats and barley	Under-sown spring wheat	Ryegrass/redclover	Ryegrass/redclover	Spring wheat	Oats/barley under-sown 5year ley	
43	Barley/triticale	Red clover	Barley/oats/triticale	Set-a-side red clover	Barley triticale				
44	Spring cereals	Winter cereal/forage rape	Spring cereal under-sown with red clover	Red clover ley	Red clover ley	Spring cereal			

Rotation No.	Year1	Year2	Year3	Year4	Year5	Year6	Year7	Year8	Year9
45	Grass/red clover	Grass/red clover	Wheat/triticale	Lupins/beans	Spring barley under-sown with grass/red clover				
46	Lupins/red clover	Winter triticale	Spring barley						
47	Red clover/ryegrass	Red clover/ryegrass	Red clover/ryegrass	Triticale	Triticale	White clover ley			
48	Grass/red clover	Grass/red clover	Wheat	Beans/lupins	Triticale	Peas			
49	Red clover	Red clover	Red clover	Lupins	Spring wheat	Red clover			
50	Red clover ley	Red clover ley	Swedes	Under-sown oats and peas	Red clover ley	Red clover ley			
51	Potatoes	Carrots/parsnips	Leeks/onions	Legumes	Brassicas	Green manure (red clover)			
52	Red clover	Red clover/triticale	Triticale/vetch	Vetch/spring barley uindersown with Lucerne	Lucerne	Lucerne	Lucerne	Triticale/vetch	Spring barley under-sown with red clover
53	Winter wheat	Triticale	Under-sown spring oats	Red clover	Red clover				
54	Grass ley/red clover	Grass ley/red clover	Grass ley/red clover	Cereal, rape/stubble turnip	Cereal, rape/stubble turnip				
55	Grass/red clover	Grass/red clover	Spring wheat	Spring oats	Lupins	Triticale			
56	Barley/peas/under-sown red clover ley	Red clover ley	Red clover ley						
57	Winter cereals	Rape or stubble turnips	Spring cereals	Rye/vetches/catch crop	Beans under-sown with red clover	Set aside red clover	Winter roots		
58	Grass ley	Grass ley	Grass ley	Rotation 1					
59	Triticale	Triticale	Red clover	Red clover	Red clover				
60	Red clover	Red clover	Potatoes	Cereal	Red clover				
61	Kale	Corn	Grass/clover	Grass/clover					
62	Spring cereals	Winter cereal/forage rape	Spring cereal under-sown with white clover	White clover ley	White clover ley	White clover ley	White clover ley	White clover ley	Spring cereals
63	Spring oats	Beans	Triticale	White clover ley	White clover	White clover	White clover	Oats	Beans
64	Barley/peas under-sown with white clover/grass	White clover/grass	White clover/grass	White clover/grass	White clover/grass	White clover/grass	White clover/grass	As long as possible	
65	White clover	White clover	White clover	White clover	Barley whole crop under-sown with white clover	White clover	White clover	White clover	White clover
66	Winter barley/vetches	Spring wheat/vetches	Spring barley/grass, white clover ley	Grass, white clover ley	White clover grass ley	Lupins	White clover grass	White clover grass	Winter wheat/spring barley
67	Set aside	Triticale	Oats	Oats	White clover ley	White clover ley	Set aside		
68	White clover ley	White clover ley	White clover ley	White clover ley	Stubble turnip/spring barley	Forage peas and spring barley under-sown clover ley			
69	Cereal	Cereal	White clover ley	White clover ley	White clover ley	Cereal	Cereal	Clover ley	Clover ley
70	White clover grass ley	White clover ley	White clover ley	White clover ley/triticale	Triticale/vetch	Spring barley under-sown with white clover			
71	White clover ley	Ley	Linseed under-sown white clover ley	Ley	Ley	Spring oats under-sown			
72	Triticale	Winter oats/white clover	White clover	White clover	White clover	White clover	White clover	Triticale	Oats
73	Barley/peas/under-sown white clover ley	White clover ley	White clover ley	White clover ley					
74	White clover ley	White clover ley	White clover ley	White clover ley	White clover ley	Spring wheat	White clover ley		
75	Triticale	Lupins	Spring barley	White clover	White clover	White clover			
76	Potatoes	Brassicas	Other vegetables	Alliums	Legumes & squash				
77	Peas/barley	Peas/barley	Triticale	Peas/barley					
78	Spinach/courgettes	Courgettes/spinach							
79	Green manure	Lettuce	Brassicas	Legumes	Onions and leeks	Green manure			
80	Courgette	Carrots	Green manures	Sweetcorn	Legumes	Green manures			
81	Salads	Legumes	Brassicas	Roots	Onions and alliums				
82	Brassicas	Rest (non-organic pigs)	Potatoes	Other veg, beans, onions, etc					
83	Roots	Other (celery, courgettes)	Brassicas	Beans	Green manure				
84	Vetch	Sugar beet	Wheat	Vetch	Cauliflower				