

Horticulture

Horticulture is a specialised form of intensive farming. Depending upon circumstances it may apply equally to the production of vegetables, fruit, shrubs, trees and flowers.

The distinction between horticulture and arable farming is not always clear; generally horticulture involves cultivation on a small scale, often with a degree of protection to the growing crop. In the United Kingdom, in 1994, the total area of land under horticultural crops was 188 thousand hectares, whereas that of wheat alone was over 1 million hectares.

The main centres of horticulture are largely determined by climate and the proximity of large centres of supply and distribution. Those regions which have few severe or late frosts and warm summers, favour most crops, but particularly the less hardy species which may have a higher market value. Likewise, fertile soils, such as sandy loams, warm up quickly in the spring allowing germination and growth to start as soon as possible, thus producing a crop that is ready for harvesting earlier in the year. This is important when the price of a fresh commodity may be significantly higher if it can be out to market before the main crop becomes available. Both climate and fertile soil have made the Vale of Evesham, Kent and East Anglia important horticultural centres.

Sometimes a crop may be grown in a certain area because it is the only place suitable for its production. Potatoes are very susceptible to viruses and so it is important to produce disease free seed potatoes to ensure a clean crop. Aphids which carry potato viruses are not present above a certain altitude and so that is where seed potatoes are grown.

Vegetables

Approximately 70% of horticultural produce is vegetables, the most important of which are peas, cabbages, cauliflowers, carrots, Brussel sprouts, runner and French beans, lettuces, onions, broad beans and celery. Many different parts of these plants are used as food such as the stem of celery, the root of carrots and the flowers of the cauliflower.

Vegetables are grown in one of two ways. They can be sown directly from seed or reared to the seedling stage and then planted out. Planting seedlings requires more labour but ensures that no space is wasted if any seeds fail to germinate.

The use of glasshouses extends the growing season, some simply providing protection from the weather, others being heated so that crops can be grown earlier or later. For the cost of heating to be justified the extra price that early or out of season produce commands must exceed the cost of heating. Plastic 'tunnel type' greenhouses are popular because they are easy to erect and much cheaper than glasshouses. Cloches and frames are also used to protect plants from wind and frost.

As well as protection from the weather, plants must be protected from pests, diseases and weeds. Controlling chemicals are widely applied by various means including spraying or fumigating. Where possible, these chemicals are designed to kill the target pests without harming any useful animals which might aid the farmer. For example, ladybirds eat aphids although they cannot control their numbers unaided.

Horticulturalists have made commercial use of the pest's natural enemies to control them. The use of any organism to regulate the numbers of pests is called biological control.

Part of the skill in horticulture is in harvesting the produce at the right time and storing it in good condition. Vegetable and salad crops such as cabbages and lettuces are picked by hand. Others such as peas are harvested mechanically.

Once the crop has been harvested there are several ways in which it can be stored, depending on the type of produce. The bulk root vegetables such as beet root, onions and potatoes may be stored in clamps or barns for at least three months where they are kept cool, dry and airy. They are then sold when required. The remainder are put into cold store for sale later on, thus giving the United Kingdom a year round supply.

Fruit

The term 'fruit' is used to describe any succulent, juicy part of the plant, such as apples, pears, plums and cherries. We find fruits on many different kinds of plants, for instance, cherries grow on trees, strawberries grow on trailing plants and gooseberries on bushes. Location will depend on soil and climate eg cherries and apples in Kent, raspberries in parts of Scotland.

In orchards the trees or bushes are set out in neat rows with just enough space between them so that when each is fully grown the leaves will not touch. Some orchards are cultivated, grass growing around the trees and bushes is kept short by mowing. Early summer is the most worrying time for the fruit farmer because there can be late frosts.

A severe frost can destroy the whole crop. Once the fruitlets have appeared many of the smaller ones are cut off as a tree can only grow a limited amount of good fruit. This ensure that all the fruit will grow to a good size.

As the fruits begin to ripen the surrounding leaves may be carefully cut away so that the sun can ripen the whole of the fruit. During the Summer the fruit swells as starch is formed and as the fruit ripens the starch is converted to sugar.

Most fruits in the fresh fruit markets are hand picked as it is essential that they should be perfect in appearance. Machine harvesting tends to bruise fruit. When required for processing and drying the fruits are often picked by

machines. Although this may slightly damage the fruits and plants, it makes it possible to harvest large areas in a day. The time when the fruit should be removed from the tree or bush depends on its type and the variety, whether the fruit is to be sold for eating at once or stored and transported to market. Usually most fruits are picked as close as possible to the time they are eaten so that they are at their best.

Ornamental Plants

These can be trees, shrubs, herbaceous perennials, annuals and bulbs. The first three categories of this list are usually known as hardy nursery stock and are produced by specialist nurseries who grow these crops either in containers or in open fields.

Container grown plants have increased in popularity over the last thirty years because, with proper after care, they can be planted at almost any time of the year. Field grown trees, shrubs and herbaceous perennials are usually only available for transplanting in late autumn, winter and early spring.

All nurseries, including bedding plant nurseries, contain specialist facilities for propagating plants from seed or cuttings, plus glasshouses, polytunnels and shade tunnels for growing the stock on to saleable size.

Production of flower bulbs such as Daffodils (Narcissi) and Tulips is usually concentrated in open field situations requiring an easily cultivated, fertile soil. The open soils of the East Anglian Fens is one region particularly suited to bulb production, an industry celebrated annually by the famous flower festival in the market town of Spalding, Lincolnshire.

From farm to supermarket

With the rise in the number of farms now owning cooling facilities, it is now increasingly common for the freshly picked crop to be stored at low temperatures. Produce such as cauliflowers, calabrese, broccoli and radishes are refrigerated where the temperature and humidity are carefully controlled. Keeping them at a temperature of 1.5 - 4.5°C prevents the crop from deteriorating.

The vegetables and fruit are packed into trays, boxes, sacks or punnets, so reducing the risk of damage and making transportation in bulk easier. They are then taken to wholesalers or retailers in refrigerated conditions. Many growers do not have the facilities for packing and grading, so individual growers send their produce to a central store where this is carried out.

If delivered to a central fresh food market the vegetables and fruit are then sold to retailers (greengrocers). Local farms and market gardens also supply greengrocers, but often because of their limited size they cannot always supply produce of a standard quality in large numbers.

When the vegetables and fruit eventually reach the shops, they are still in their finest conditions as they have been chilled from farm to shop. This is the 'cool chain' system. Sometimes the crop is harvested early and growers sell their produce direct to wholesalers, supermarkets, local greengrocers, market stall-holders or through their own farm shop. A feature of the vegetable trade is the early morning markets and most large cities have a wholesale market eg Birmingham and Manchester, which serves the neighbouring towns. Other growers are commissioned by freezing and canning companies to grow food specifically for them.

Amenity Horticulture

Amenity land has been defined and classified as areas with a value to the public, either aesthetic, recreational or environmental. Amenity horticulture is the creation and maintenance of this land by skilled and professional people with a wide range of expertise. Amenity horticulture is an expanding sector in the industry, as leisure and recreational time and facilities increase throughout society.

Public parks are looked after by teams of gardeners who maintain the park, cut the grass, plant the borders with bedding plants, prune shrubs and trim hedges. Specialist arboriculturalists climb the trees and carry out pruning, often with chain saws.

Sometimes parks will include a large greenhouse where ornamental, tropical and sub-tropical plants may be grown. These require specialist knowledge about the plants and how to manage the greenhouses. Modern glasshouses are used to raise plants from seed or cuttings to plant out in the parks or gardens. This is called propagation.

There are many botanic gardens all over the world, the two most famous in Britain are Kew and Edinburgh. These house collections of plants, from around the world, are studied by students and scientists and also enjoyed by the public as a park.

Plants are used by amenity horticulturalists to improve the environment for the people living in it. Motorway verges, public car parks and town centres are landscaped to make the environment look more attractive, as well as to ease the problems of pollution and noise.

Sports facilities are also regarded as amenity horticulture and this involves mostly the maintenance of lawns for the playing of sports. Golf courses, football pitches, tennis and cricket lawns all require cutting, feeding, weeding and aerating. This is mostly carried out by sophisticated machinery.

The design of gardens, both private and public, together with sports facilities such as golf courses, are carried out by garden designers or landscape architects. The need to survey a site and carry out detailed technical drawings of the garden. Each plan will include details of a variety of plants, chosen for

their suitability for the particular soil type and climate, as well as those that look attractive together and produce an overall effect.

The landscape contractor will take these designs and carry them out. This involves hard landscaping which is the laying of paths and patios, small walls and fences. Soft landscaping is the planting of trees and shrubs, the laying of turf or sowing a lawn from seed.

Interior landscaping is carried out inside buildings using house plants on a large scale to improve the working environment. These need to be planted, installed and then maintained regularly.

Further reading

Horticulture by Pamela Minett. £3.95. 1995. Available from ASE Booksales, College Lane, Hatfield, Herts AL10 9AA. Tel: 01707 267 411

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