

Oilseeds

Oilseed rape is a Brassica crop, like cabbage, swede and turnip. Indeed, most of the crop sown in this country is botanically, a non-bulbing form of swede. It has been grown in England since the 16th century and has prospered because it is the highest yielding oilseed crop adapted to our temperate climate.

Oil from the crop was originally used primarily as a lamp oil. It provided a cheaper alternative to olive oil, which had to be imported from Mediterranean countries, but was also used as a cooking oil in less affluent homes. It flourished as a lamp oil on the railways until it was replaced by paraffin, when cheap mineral oils became available. During the 1960s and 1970s plant breeders developed varieties with a nutritious oil which encouraged its utilisation as a cooking oil and in foods. With the new market possibilities, production increased and now the UK produces about 1.3 million tonnes of oilseed rape from 400,000 hectares each year. Most is used in home markets but some oil and seed are exported.

Harvest

When the pods are ripe during July and August, the crops are harvested using a combine harvester which threshes the seed and leaves the rest of the plant in the field. The seeds are small - about the size of this 'o' - and contain about 40% oil. They are delivered to a seed crusher for the extraction of the oil. After crushing, the remaining part of the seed is in the form of meal which, because of its high protein content, is used in feeds for animals.

Uses for the oil

The oil then goes to the refiner where it is processed and refined. It is used in the manufacture of many products, including margarine, crisps, mayonnaise and ice cream. Generally oilseed rape crops produce 2.5 to 3.5 tonnes per hectare of seed which contain 1 to 1.5 tonnes of oil, with the balance as meal.

Farm Crop

Farmers sow the seed in August and September - for the winter crop - or in the spring. Most farmers grow the higher yielding winter crop, although they have to be vigilant as pigeons feed on the leaves during the winter and, if not discouraged, growth will be impeded and yield reduced. On the other hand, growth of the spring crop is more likely to be restricted by lack of moisture at crucial times for germination and growth. It is essential for the farmer to be alert as diseases and pests may attack and damage the crop. These may have to be stopped by applying chemicals at the right time. But these chemicals are expensive and the farmer has to consider carefully whether the disease or pest levels warrant the cost involved.

Flowering

Oilseed rape crops are normally in full flower in May when their vivid yellow colour brightens the countryside. Most rapeseed is self-pollinated but pollination is assisted by insects and wind: the fertilised flowers develop into pods. Oilseed rape is sometimes blamed for causing hay fever. The pollen does not travel far and pollen from grasses and trees, which are common causes of hay fever, are in the air at the same time as that from oilseed rape flowers.

Plant breeding

(For further information refer to the accompanying sheet in the series 'Plant Breeding and Genetics') The type of oilseed rape farmers sow today differs from that grown 50 years ago as plant breeders have much improved the crop. Disease resistance, stiffer stems and higher yields make the crop more reliable. Glucosinolates in the meal, which have a bitter taste, have been reduced to make it more acceptable to farm animals. Above all, the quality of the oil has been improved so that it is now rated by nutritionists as one of the healthiest oils available. Rapeseed oil is already being used as a medium for the production of antibiotics. It also has attractive qualities for the production of biodegradables, and therefore environment-friendly, lubricants and biodiesel.

The future

Plant breeders are continuing to improve oilseed rape but it is expensive and takes many years to produce a new variety. New biotechnological techniques are now available to assist and the potential for the crop is vast as new varieties are likely to assist in the manufacture of soaps, cosmetics, plastics, specialist industrial oils and pharmaceuticals.

Other oilseeds

Sunflowers - this is a warm temperate crop but has been grown successfully in the south of England in recent years. But the UK production is very small compared with 120,000 tonnes imported annually.

Linseed - this is the oilseed form of flax with blue, sometimes white, flowers which provide an attractive diversion to the landscape. The national area is over 60,000 hectares. The oil is used for making linoleum, varnishes and for oiling cricket bats. The meal left over after crushing is, like that of rapeseed, fed to animals.

Further Reading

Brassica Oilseeds: production and utilisation (1995). D S Kimber and D I McGregor (eds). CAB International, Wallingford.

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Oilcrops of the world (1989). G Robblelen, R K Downey and A Ashri (eds). McGraw-Hill, New York.

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