

## INTRODUCTION

Hazelnuts (*Corylus spp*) and walnuts (*Juglans regia*) are two types of nut producing trees which can be grown in Wales.

Hazel is a generic name covering more than 15 species of *Corylus* shrubs / trees. The demand for hazelnuts is very seasonal, mainly limited to the Christmas period. Most of the hazelnuts eaten in Wales are imported from southern Europe.



**Female hazel flower**

Hazelnuts are a rich source of vitamin E, and also supply useful amounts of calcium, dietary fibre and vitamins B1 and B6. Hazelnut oil is used in cosmetics and for culinary purposes.

Hazel trees are well suited to integration with other farm activities particular grazing as this controls the spread of suckers from the trees. Chickens can benefit from the shelter provided by hazel trees and pigs fed on cobnuts can fetch very high prices at select restaurants and specialist outlets.

## SITE SELECTION

The hazel is more hardy than most nut bearing species and can be grown throughout Wales. Soils must be moderately fertile and heavy clay soils should be avoided. Hazels will grow in soil pHs ranging from 4.5 to 8.5, but around pH7 is ideal. Frost hollows should be avoided as frost may damage flowers.

## VARIETIES

Potential growers should be aware that the main area for hazelnut production in the UK is Kent and the varieties recommended for the UK are only tried and tested for the conditions in the south east of England. Specialist advice should be sought before purchasing trees for Welsh conditions.



**Hazelnuts**

Trees to be used for nut production have usually been grafted onto non-suckering rootstocks. Trees are generally bought 1-2 years after grafting. A number of varieties are available, the most common being the Kentish Cob. Gunslebert, Butler, Cosford Cob and Nottingham Cob are other established varieties. The choice of variety will depend largely on the planting site and the target market.

## ESTABLISHMENT

A planting density of around 860 trees / ha is recommended with rows 4m – 5m apart (to allow machinery access) and 2m – 3m within row spacings. To ensure adequate pollination it is advisable to include a mix of at least 10% of at least one other variety, evenly distributed throughout the stand. Any nearby wild hazel will also pollinate most varieties. Planting is usually carried out by hand between October and November. Management during establishment mostly involves controlling weeds and suckers.

**Table 1: Plantation establishment costs - hazels**

Establishment costs	£/ha
Trees (from £6/tree)	5,500
Planting costs (approx)	1,500
First year care (approx)	2,000
<b>Total</b>	<b>9,000</b>

## PESTS AND DISEASES

Squirrels can have a devastating effect on production. A site away from other woodland and surrounded by open ground will help to discourage squirrels, and larger scale operations may be less drastically affected by squirrel activity.

In addition to squirrels, other pests include the nut weevil and gall mite, both of which can be controlled by pesticides or grazing with chickens which will eat the weevil larvae. Suckers and weeds must also be controlled.

### HARVESTING AND ECONOMICS

Trees generally become commercially viable 5-6 years after planting, and can produce 2.5 tonnes / ha at this stage. In south east England, the target yield is 3.5 - 4 tonnes per hectare 8-10 years after planting. The current value of hazelnuts is around £2/kg

Once established, if correctly managed and maintained, a hazel orchard can remain productive for around 100 years.

### WALNUTS

Walnuts (*Juglans* spp) are native to Asia and America. They were first imported into the UK several centuries ago and have been grown primarily for their timber. Walnut timber is valuable and prized for making decorative furniture and gunstocks. The ripe nuts are edible, can be pressed to extract oils or can be pickled when young. *Juglans regia* is the "traditional" walnut tree in the UK

### SITE SELECTION

Walnuts are not entirely frost hardy, and should not be grown in areas susceptible to severe frosts. A freely draining soil is best on a site which receives plenty of sun. As with all trees for fruit or timber production, sites with high wind exposure are best avoided.

### VARIETIES

The majority of walnuts planted for nut production are grafted onto a rootstock known to be reliable. There are a range of varieties available to growers in Wales. Potential growers should seek advice from a professional walnut nursery to determine the best variety for their site and requirements. In Wales, Grafted Walnuts of Llandeilo, have a wealth of experience in this area.

Although walnuts are, in theory, self-fertile incorporation of a second variety (one pollinator per every twenty main crop species) is recommended to improve pollination.

### ESTABLISHMENT

Planting is best carried out during winter (November to February). If a fruiting orchard is the objective, young trees (between one and four years) are commonly planted at a spacing of 9m giving 138 trees per hectare.

The trees need little management during their first five or six years, during which time they will not bear fruit. It is essential to ensure they have adequate water, in some areas irrigation may be necessary.

### PESTS AND DISEASES

Although there is a range of diseases which walnuts may become infected with, they are, on the whole, not serious and will not endanger the plantation. Good husbandry can control most problems. The most serious issue is the control of squirrels. In areas with large populations of grey squirrels, walnut production may not be viable.

### HARVESTING

The main harvest of mature nuts takes place annually (around October). Harvesting is generally by hand, making it a labour intensive process. Competition from imported nuts is fierce and growers will need to seek a niche market for their products if they are to compete successfully. There is also a market for young walnuts picked green in June and pickled.

### TIMBER

The timber of walnuts is valuable, currently fetching a better price than oak. However, it will take at least forty years before timber can be taken from a plantation, so this is very much an investment for the long term.



Walnut fruit