

Walnuts for Timber Production and Landscaping

Walnuts are woodland trees and can grow up to 25 metres or more, and have wide, spreading canopies. For timber production, seedlings should be planted at 5m x 5m and interplanted with other 'nurse' tree and shrub species. For amenity trees, at least 12m should be between adjacent walnut trees. Their valuable timber is used for high-quality furniture, cabinets, interior joinery, gunstocks and for decorative products. Top quality veneer quality logs can be worth thousands of pounds each.

Description of the different species and hybrids:

Common walnut (*Juglans regia*): Originally from Asia and now widespread across Europe. It is frequently grown for fruit and timber. The dark timber, often richly patterned, is highly valued for decorative joinery. The leaves have 5-7 leaflets with the terminal leaflet being large. The leaflet margins are smooth edged and the leaves are aromatic when crushed. Nuts vary greatly in size and shape but typically have shallow fissures and light coloured shells. The bark is smooth when young and grey in colour, becoming fissured after about 15 years.

American black walnut (*Juglans nigra*): Native to USA with its natural range covering most of the eastern United States, occurring widely through native deciduous woodlands. Its distinctive dark coloured heartwood makes it much valued as a timber tree. The leaves have 9-17 leaflets with the terminal leaflet being small or absent. Leaflets tend to angle down from the midrib. The leaflet margins finely serrated and leaves are not aromatic when crushed. The midrib underside the leaf is covered with fine hair. Nuts vary greatly in size and shape but typically have deep fissures, thick shells and are dark coloured. The bark is ridged from a young age. The husks are green, lightly textured and very aromatic.

Arizona black walnut (*Juglans major*): The Arizona black walnut is native to south western USA and Mexico. It is able to tolerate poorer site conditions than the American black walnut, and its seedlings have been used as rootstocks for the common walnut fruit production in arid and salty regions. Its hybrids with the Common walnut are extremely vigorous.

Hybrid walnuts:	NG23	American black walnut x Common walnut
	MJ209	Arizona black walnut x Common walnut

Both hybrids walnuts are the result of breeding programmes in France. In appearance both hybrids are quite similar with the leaves comprising of 7-12 leaflets and the terminal leaflet is quite large. The leaflet margins are coarsely serrated and do not angle down from the hairless midrib. The leaves are not very aromatic when crushed. Nuts vary greatly in size and shape but typically have deep fissures and the thick shells are dark coloured. The bark is ridged from a young age. The husks are green, lightly textured and very aromatic. The hybrid seedlings grow very vigorously (typically 15% or more than the pure species and extension growth of often more than 1m in a growing season is not unusually once established. To maximise the hybrids growth potential and to maintain good form, early pruning of side branches is necessary. Hybrids are much less susceptible to Anthracnose (a fungal infection) than the pure species.

Hybrids, particularly MJ209s, are more tolerant of drier conditions and poorer soils than either Common or Black walnut. The hybrids also have a higher capacity to survive in flooded soils whereas the Common walnut is particularly sensitive to flooding. Thus on marginal sites hybrid walnuts show very strong growth over pure walnut species.

Rotation times

On ideal to good sites (sheltered sites with deep, fertile soil and good water availability), rotations times between 22 to 40 years (to provide 1m³ per stem, 40+cm dbh) have been reported in France, Italy and Spain compared to 55+ years for Common and Black walnuts. In the UK, hybrid rotation times are predicted to be 45 to 50 years.

The rapid growth of the hybrids results in an even grained, straight timber with characteristics that are intermediate of the parent species. The timber is particularly sought after for veneer because of its uniformity and ease of staining. The form of NG23 tends to be better than MJ209 which because of its vigorous growth can produce heavy side branches if not pruned early.