

North American Broadleaved species

Alder red category C

Native range

Native to coastal areas of north west America from southern Alaska to California.

Provenance choice

It has been trialled on a wide range of sites in Britain and some provenance studies have been carried out. Preferred seed sources should be from good British stands or from coastal Washington or British Columbia.

Site requirements

A light demanding pioneer species which is suited to humid maritime environments and therefore is best suited to western and upland Britain. In its natural range it is often found in mixture with Douglas fir, Sitka spruce and other conifers. This is a pioneer and light demanding species which can grow very fast on suitable sites but is often quite short lived; it is cold hardy throughout Britain but is very vulnerable to spring and early autumn frosts. It is not tolerant of exposure. Best growth is found on soils of poor to medium nutrient regime and fresh to wet soil moisture. It is not suited to peat or alkaline soils and growth is limited on drier or nutritionally very poor soils.

Pests and pathogens

Has a low level of susceptibility to *Phytophthora alni* root and collar rot, compared with black alder.

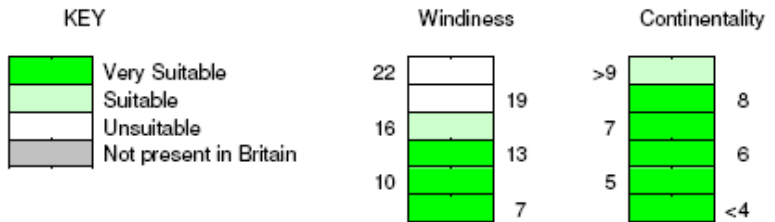
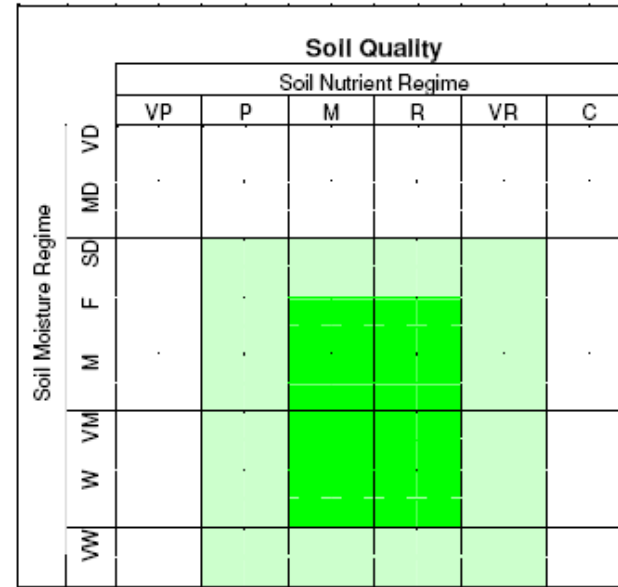
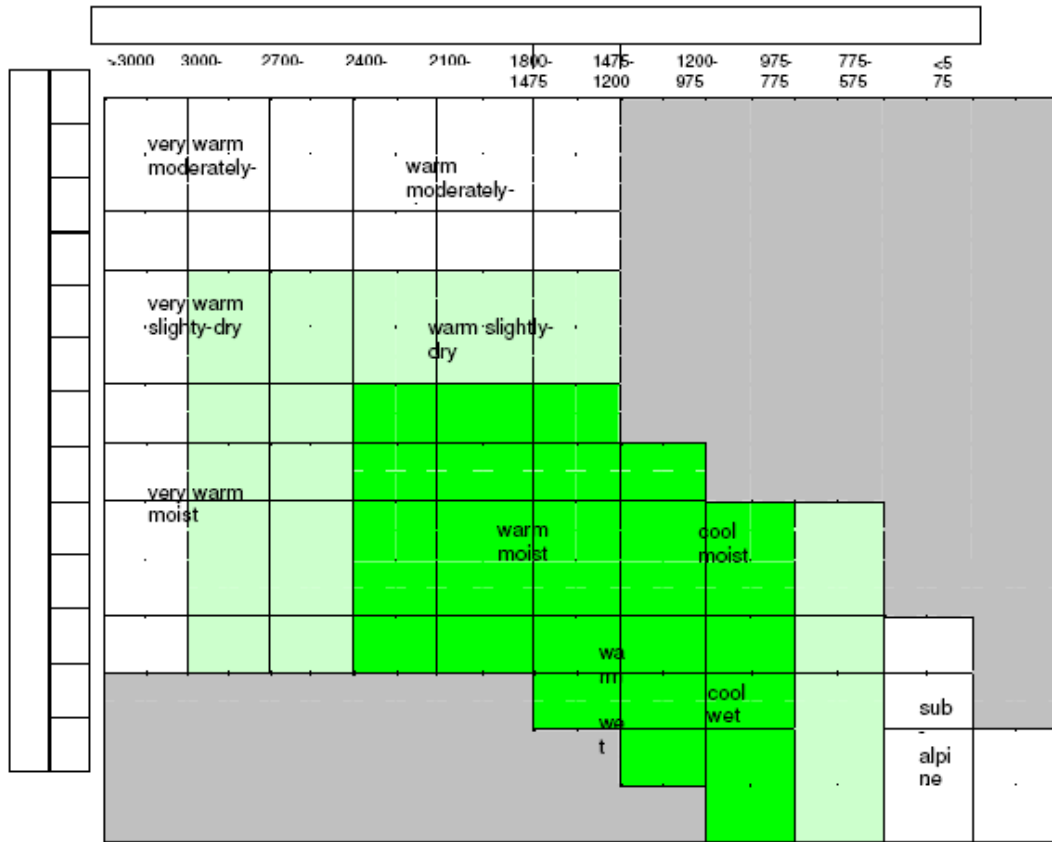
Use

The species could find an increasing niche as a component of conifer forests in western Britain.

109	Kielder	WACO
204	North East Lowland	
301	Lake district	WACO
302	North West	WACO
305	Peninsular	WACO
401	Yorkshire Moors	
402	East Midlands	
403	West Midlands	WACO
404	West England	WACO
405	South East	
406	East Anglia	

No UK French forest quality

Red alder - *Alnus rubra*



Maple, big leaf category C

Native range

Native to the coastal areas of north west America from Vancouver Island south to central California. It is found naturally in forest types with conifers such as Douglas fir and Sitka spruce.

Provenance choice

Very few plots have been established in Britain and no provenance trials have been carried out; seed sources from Washington should be preferred.

Site requirements

A species of intermediate shade tolerance which should be cold hardy throughout Britain but appears to be best suited to a humid climate with > 1000 mm rainfall. Not very tolerant of exposure. Prefers soil of poor to medium soil fertility and of fresh to moist soil moisture. It is not suited to very dry or very poor soils, to alkaline conditions or to peat soils.

Pests and pathogens

Susceptible to Verticillium wilt, overmature bigleaf maples are often decayed by root rot (*Armillaria* spp.) and butt rots (*Ganoderma applanatum*). In the USA it can also be affected by *P. ramorum*.

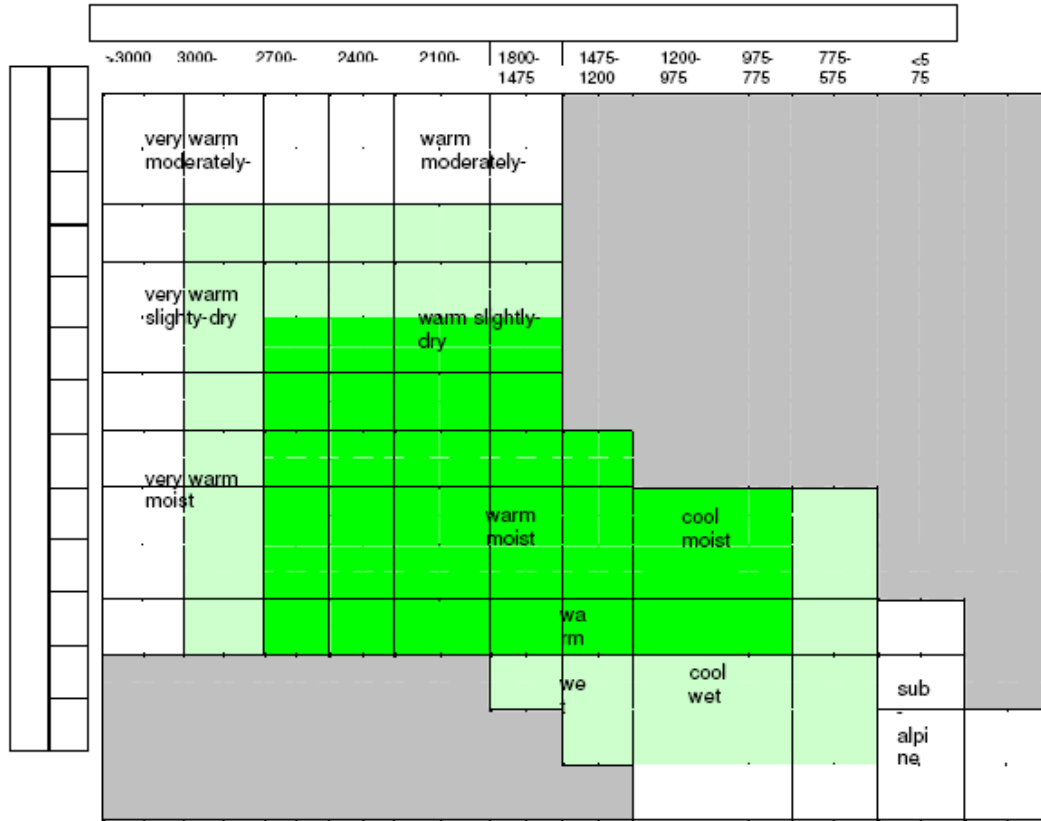
Use

This species could find a greater role in western parts of Britain, particularly on acid brown earths where sycamore and Norway maple are not as suited.

109	Kielder	WACO
	North East	
204	Lowland	
301	Lake district	WACO
302	North West	WACO
305	Peninsular	WACO
401	Yorkshire Moors	
402	East Midlands	
403	West Midlands	WACO
404	West England	WACO
405	South East	
406	East Anglia	

No UK French forest quality

Big leaf maple - *Acer macrophyllum*

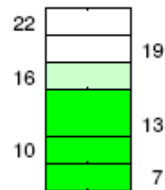


Very wide latitudinal range so provenance may be important

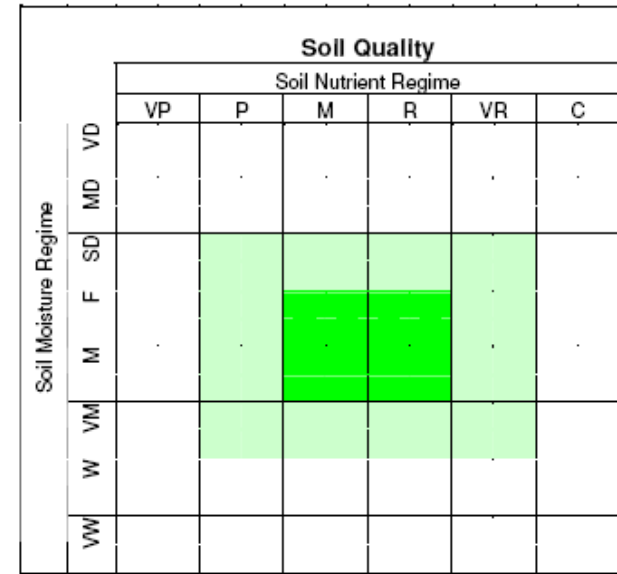
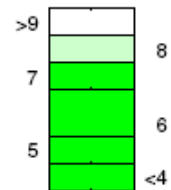
KEY



Windiness



Continentality



Maple silver category C

Native range

Native to southern Canada and the eastern United States.

Provenance choice

A number of plots have shown promising growth in southern Britain but no provenance trials have been established; seed sources from the northern part of the natural range should be used.

Site requirements

This is an early successional species with rapid early height growth; its tolerance of shade is influenced by site quality being higher on better sites. Best growth is found on soils of poor to medium nutrient regime and slightly dry to moist moisture status. It is not suited to alkaline, very dry, very poor, or peat soils. It is cold hardy but is not as tolerant of exposure as sycamore.

Pests and pathogens

Sapstreak disease, caused by the fungus *Ceratocystis virescens*, is a serious threat to silver maples in North America, although the pathogen is not present in Europe. Sapstreak is a fatal disease; infected trees do not recover. Like other maples, it is also susceptible to Verticillium wilt.

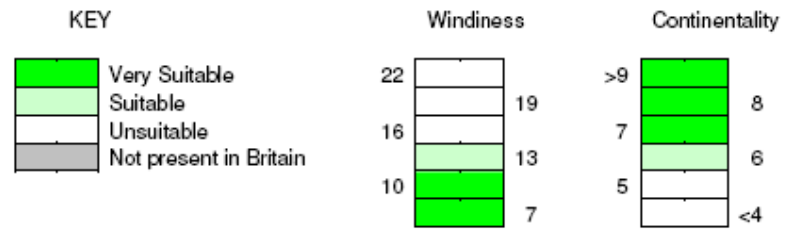
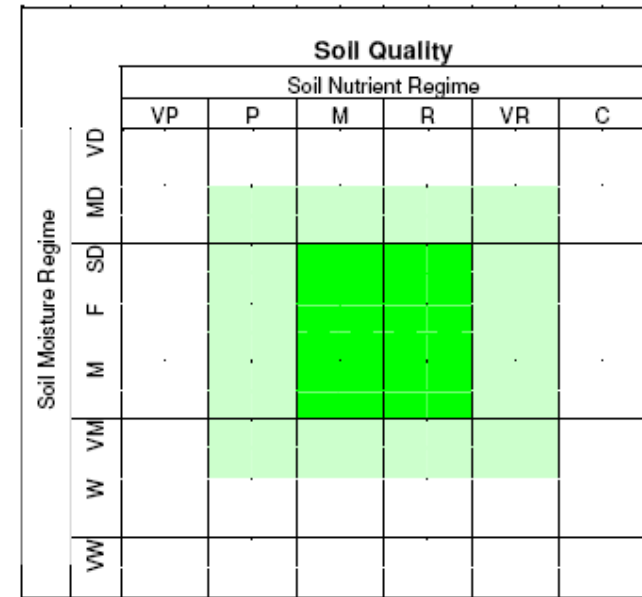
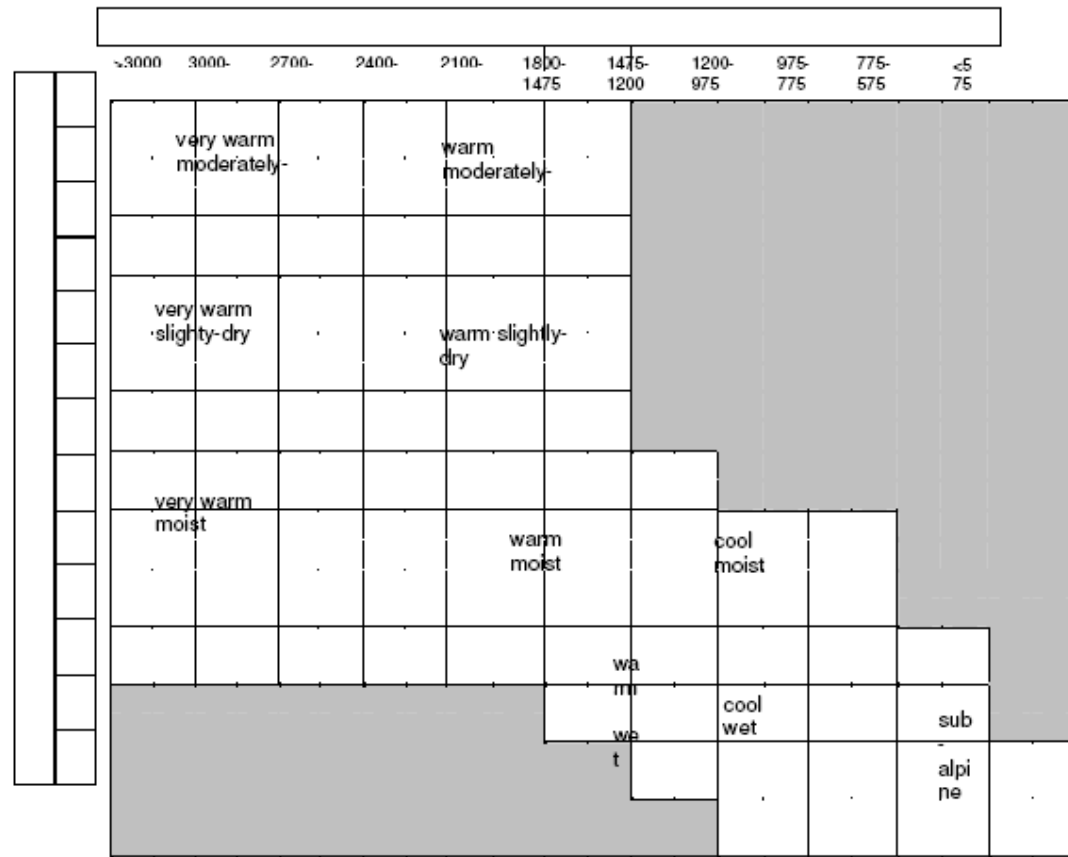
Use

This is a species which appears best suited to lowland Britain and which may find a greater role with climate warming.

109	Kielder North East	
204	Lowland	
301	Lake district	
302	North West	
305	Peninsular	
401	Yorkshire Moors	
402	East Midlands	NE USA
403	West Midlands	NE USA
404	West England	NE USA
405	South East	NE USA
406	East Anglia	NE USA

No UK French forest quality

Sugar maple - *Acer saccharum*



Oak red

categoryB



Native range

Native to eastern North America and a long standing plantation species in Holland, Belgium and northern France.

Provenance choice

Very few provenance trials in Britain and few forest plots; seed should be sourced either from southern Canada or from good stands in north western Europe.

Site requirements

A shade intolerant species which is fully cold hardy in Britain and is widely planted as a specimen tree for its autumn foliage colour. Best suited to moderately dry to moist soils of poor to medium nutrient status, and outgrows native oaks on acid sandy loams. The species is windfirm and moderately tolerant of exposure and of drought.

Pests and pathogens

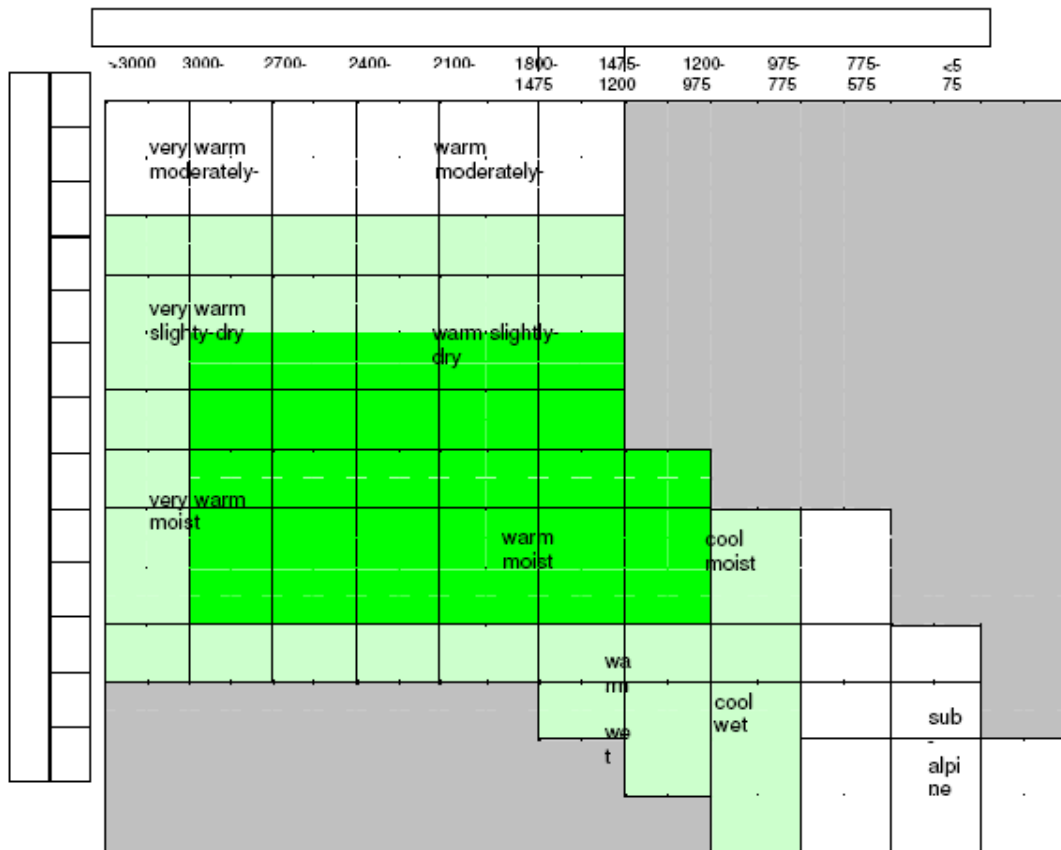
Records suggest red oak is susceptible to *Phytophthora* root rot. *Armillaria* root rot (honey fungus) may also kill it, especially if weakened by drought or other causes.

Use

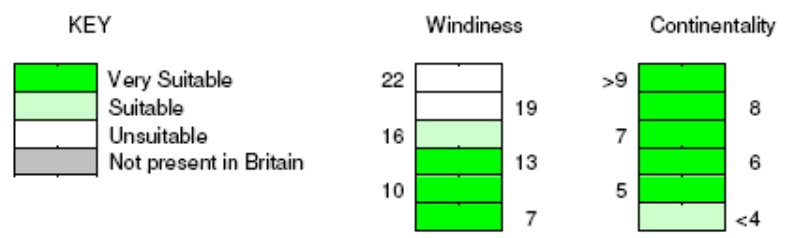
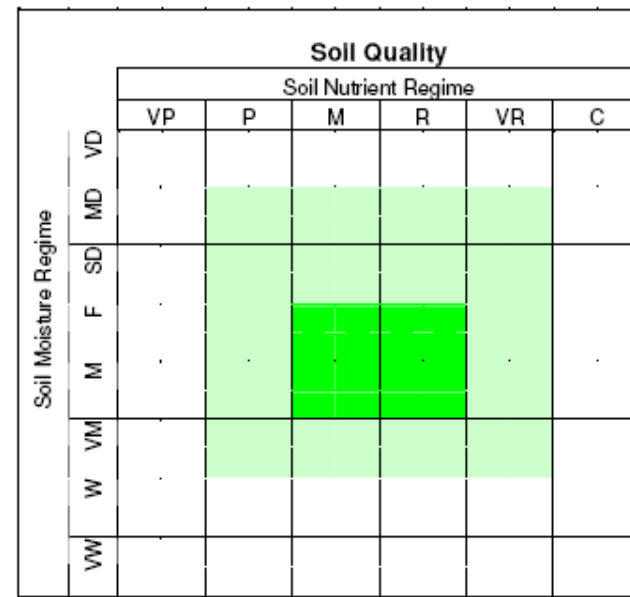
This is a species which could find an increased role on drier soils in southern and eastern Britain as result of climate warming.

109	Kielder	
	North East	
204	Lowland	
301	Lake district	
302	North West	
305	Peninsular	
401	Yorkshire Moors	QRU901 NORD OUEST
402	East Midlands	QRU901 NORD OUEST
403	West Midlands	QRU901 NORD OUEST
404	West England	QRU901 NORD OUEST
405	South East	QRU901 NORD OUEST
406	East Anglia	QRU901 NORD OUEST
No England registered but plenty of good stands		QRU901 NORD OUEST

Red oak - *Quercus rubra*



Material from the drier parts of north west of range in Minnesota might be useful.



Walnut black

category C

Native range

Native to east and central north America, but grown in southern Britain and western Europe for nearly four centuries.

Provenance choice

Late flushing varieties identified in French breeding programmes or provenances from the northern part of the natural distribution (New England, southern Ontario) should be preferred. A hybrid between black and common walnuts (*Juglans x intermedia*) is reportedly less sensitive to frost.

Site requirements

This is a light demanding species which is very vulnerable to spring and autumn frosts. It produces a very high value timber on suitable sites. It is moderately tolerant of exposure. It should be planted on medium to very rich soils of fresh to moist soil moisture; availability of soil moisture is important for good growth in dry spells. Alkaline soils of good rooting depth are also suitable. Very dry, very nutrient poor or very wet soils should be avoided. Trials suggest that the use of nitrogen fixing nurse crops can be beneficial.

Pests and pathogens

Generally considered to be more resistant to *Armillaria* root rot (honey fungus) than common walnut.

Use

While it is likely to remain confined to lowland parts of Britain, climate warming should increase the range of suitable sites for this species in northern England, Wales, and parts of Scotland.

109	Kielder North East	
204	Lowland	
301	Lake district	
302	North West	
305	Peninsular	JNI 900 FRANCE
401	Yorkshire Moors	
402	East Midlands	
403	West Midlands	JNI 900 FRANCE
404	West England	JNI 900 FRANCE
405	South East	JNI 900 FRANCE
406	East Anglia	JNI 900 FRANCE

Black walnut - *Juglans nigra*

