

**APPENDIX NO. 11**

**APPROVED LANDSCAPING METHODS**

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A long, thin tongue or hinge allows the laid stem to be twisted and positioned to best advantage.

Laid stems are secured to prevent them being damaged by livestock rubbing or pushing against the hedge and to prevent damage from strong winds. Cut stems are secured to posts driven into the hedge bank interwoven with suitable rods (hazel/willow) to give stability.

#### **Coppicing of Hedgerows**

Long neglected and overgrown hedges with sufficient vigour may be coppiced (cut back to 10 cm. from ground level). This may be carried out with a chainsaw or circular saw. Gaps should be filled by in-planting similar species. e.g. blackthorn or holly quicks. New growth that emerges from ground level must be protected by fencing from livestock and weed competition until established.

Only broadleaf species are suitable for coppicing; in general conifers do not regenerate from cut stumps.

#### **Species that will regenerate when coppiced include:**

Hawthorn (*Crataegus monogyna*), Birch (*Betula pendula*), Alder (*Alnus glutinosa*), Willow (*Salix alba*), Poplar (*Populus nigra*), Ash (*Fraxinus excelsior*), Sycamore (*Acer pseudoplatanus*), Oak (*Quercus spp.*), Hazel (*Corylus avellana*), Sweet Chestnut (*Castanea sativa*), Holly (*Ilex aquifolium*).

#### **New Hedgerow Establishment**

##### *Guidelines for Site preparation:*

Burn off a metre strip of vegetation beforehand and by using one of the following methods:

- Glyphosate is the preferred option in summer and repeat 4 weeks pre planting.
- At least once pre-planting,
- Cover with black polythene (1m wide) at least for 6 months.

Plough or break up soil in a trench

- 0.6m wide and 0.3m deep
- using plough or mini digger with 25cm bucket

Add well composted FYM or compound fertiliser

Rotavate soil

Mound planting is recommended where drainage is not ideal

Form a potato ridge. Deeper rooting depth leads to better drainage

Avoid water logged, shallow and very exposed sites

Ensure the site has sufficient soil

Kill off grass and weeds beforehand

Avoid planting the hedge too close to a wall or fence

##### *Species selection:*

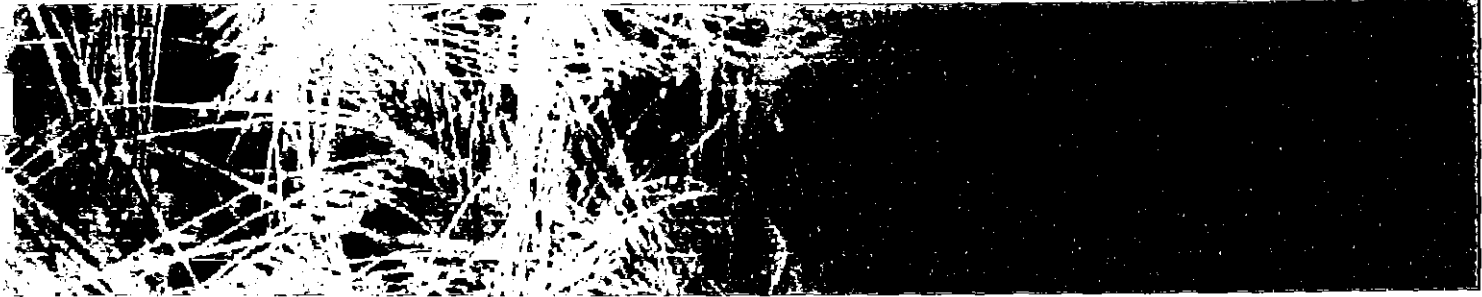
In order to conserve Ireland's genetic biodiversity the species selected should originate from suitable indigenous sources of native seed. Species selection should be considered in the context of the desired function of the hedgerow. A multi-species hedge, will have more wildlife and aesthetic interest while a stockproof hedgerow will require a predominance of thorny species. A stockproof hedge should have a minimum of 80% thorny species.

Select species suitable to the site. A mix of species is more attractive and valuable to wildlife.

Use of native species of Irish origin must be prioritised.

Use hawthorn as the dominant species.

Include other suitable species as desired: Choose from native plants e.g. blackthorn, hazel, holly, spindle, dog rose, crab, guelder rose etc.



Look around you – follow nature's example.

*Planting Guidelines:*

Plant between November and February

Don't plant in very wet or frosty conditions

Plant density for a stock proof hedgerow should be 8 plants per metre run.

Plant hawthorn in single rows (at c.140mm centres) or double staggered rows (c.400mm apart and c.375mm between rows).

Plant a multi-species hedge in a single row at suitable plant spacings. Depending on species selection aim for 4- 6 plants per metre run.

Suggested plant density options:

2-8 hawthorn/metre

2-6-beech/ metre

2-5 holly/ metre

Other planting densities depend on species

*After planting care:*

Aftercare is essential for the successful establishment of the newly planted hedgerow

Trim back spindly top growth of hawthorn to encourage basal growth.

Fence appropriately to exclude all stock and to protect against rabbits and hares.

Grass and weeds must be controlled

Different control methods:

- o Black polythene
- o Biodegradable mulches egg wood chippings
- o Mechanical/manual control
- o Herbicides applied according to Measure 6

Replace dead plants at the appropriate time.

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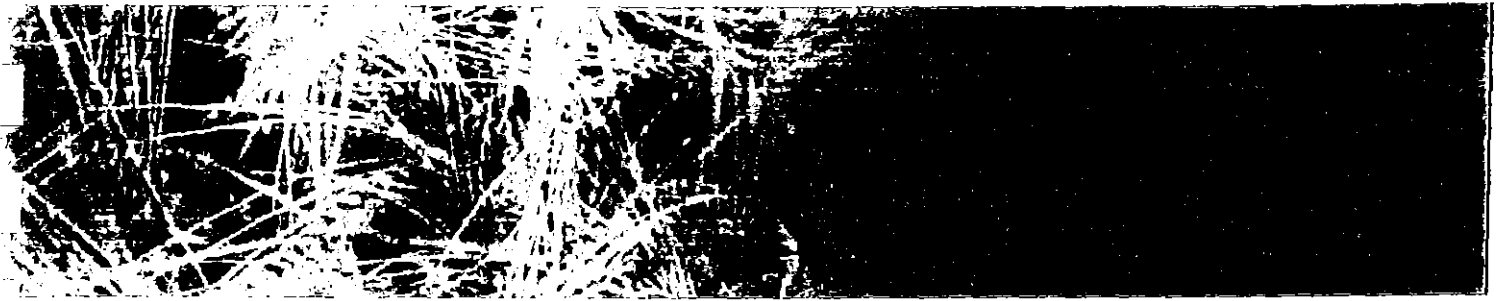
**NATIVE BROADLEAF TREES**

SPECIES	OPTIMUM SITE	CHARACTERISTICS	REMARKS
Pedunculate Oak <i>Quercus Robur</i>	Well-aerated deep fertile loams. Will do well on heavier soils	Slow growing, long lived tree once the climax vegetation over most of the country	Major forest species. One of our few native broadleaved trees. Very high amenity value
Sessile Oak <i>Quercus Petraea</i>	Tolerates less rich and lighter textured soils than Q. robur	Oaks will not produce good timber on excessively drained or sandy soils	Major forest species. Native to Ireland. Now designated as Irish national tree
Ash <i>Fraxinus Excelsior</i>	A very exacting species demanding good soil conditions, preferably sheltered, moist well-drained fertile loam soils	A fast growing species regarded as not being suitable for large scale planting	Major forest species. Native tree.



Wild Cherry <i>Prunus Avium</i>	Fertile deep well-drained mineral soils. Preference for slightly acid soils but will do well on deep loams over limestone	Fast growing, light demanding, requiring considerable space. The only commercial broadleaved tree with attractive blossoms	Major forest species. Native tree. May suffer from bacterial canker and aphid attack
Alder <i>Alnus spp</i>	Common alder is a very hardy accommodating species suitable for wet sites. Good wildlife species. Grey and Italian alders will tolerate and grow well on drier sites. Italian alder is has a preference for more alkaline sites	Fast growing nitrogen-fixing tree. Suitable broadleaf for even the wettest sites	Minor forest species. Common Alder is a native tree. Coppices freely and can be used in mixtures on very infertile sites. Valuable shelter tree
Birch <i>Betula spp</i>	Pioneer species suited to very acid soils and peats	Fast growing, hardy species, withstands exposure and frost well. Useful as a nurse crop in mixtures but must be kept under control or it will smother a slower growing tree species	Minor forest species. Native tree. Young trees coppice freely. May be used as a soil improver. Can be mixed into shelterbelts
Willow <i>Salix spp</i>	Useful species for wet sites and streamsides	Fast growing useful for conservation and amenity but rarely for timber production. Willow can be used in a variety of ways as a shelterbelt system	Minor forest species. Native tree.
Whitebeam <i>Sorbus Aria</i>	Most fertile mineral soils	Attractive amenity tree also suitable for shelter	Minor forest species. Native tree. Tolerant of exposed and coastal sites
Rowan <i>Sorbus Aucuparia</i>	Suitable for lowland and hill acidic sites. Will tolerate even alkaline sites	Hardy tree suitable for exposed sites. Widely used amenity tree	Minor forest species. Native tree. Offers good support for wildlife

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### NATIVE CONIFER

SPECIES	OPTIMUM SITE	CHARACTERISTICS	REMARKS
Scots Pine <i>Pinus Sylvestris</i>	Thrives on light textured or sandy soils. Tolerant of acid conditions. Avoid poorly drained or alkaline soils and exposure to coastal winds	A strong, light demanding slow growing tree. Can be used as a nurse species. Unsuitable for high elevations or shelter-belt	Major forest species. Once native but died out, now comes from imported sources. Regarded as the best conifer for both amenity and wildlife. Attracts insects, birds and red squirrels

### OTHER COMMON TREE AND SHRUB SPECIES IN THE IRISH LANDSCAPE AND THEIR CHARACTERISTICS

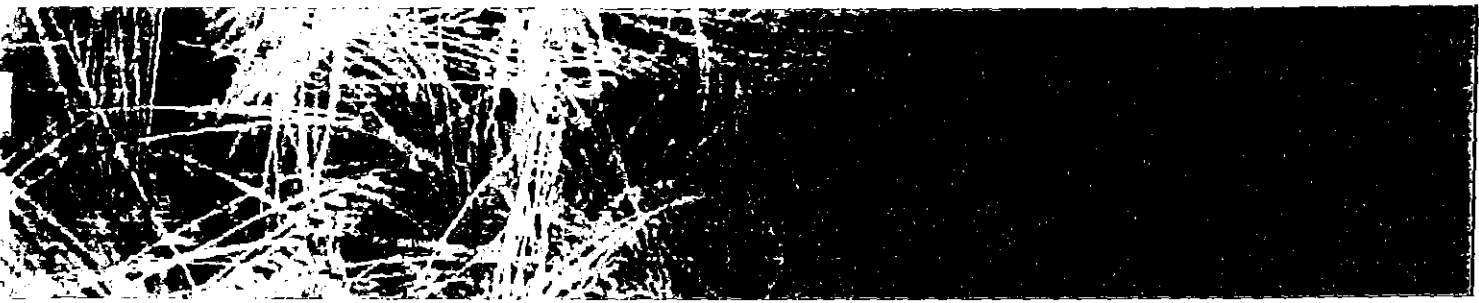
Species	Characteristics/Remarks
Beech <i>Fagus Sylvatica</i>	Well drained, loamy, fertile soils with a preference for soils derived mainly from limestone Tolerant of shade when young. Creates dense shade and suppresses ground vegetation as it reaches maturity Major forest species. Non-native tree. Benefits from a nurse on exposed sites. Useful for under-planting. Grey squirrels can be very destructive particularly to young beech
Sycamore <i>Acer Pseudoplatanus</i>	Prefers a moderately fertile free draining soil. Tolerant of calcareous soils Fast growing tree that seeds easily. Withstands exposure and smoke pollution very well Major forest species. Non-native tree. Grey squirrels can be very harmful. A windfirm tree. Rich in wildlife value. Valuable for shelter
Poplars <i>Populus</i> Hybrid clones	Very exacting species requiring deep, well drained moderately fertile sites Very fast growing, light demanding tree. Some species susceptible to bacterial canker, select disease resistant clones only Potentially major forest species. Non-native tree. Offers great prospects as Short Rotation Forestry species for pulpwood, paper and particle board

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Species	Characteristics/Remarks
Red Oak <i>Quercus Rubra</i>	Grows well on poor sandy soils A fast growing tree, less suited to heavy soils Minor forest species. Non-native tree. High amenity because of its red and russet colours in the autumn
Horse Chestnut <i>Aesculus Hippocastanum</i>	Thrives on all except waterlogged sites but has a preference for fertile soils An excellent amenity tree used mainly for avenues or as a specimen tree Minor forest species. Non-native tree
Walnut <i>Juglans spp</i>	Deep, well drained, loam textured, moderately fertile soil. Suitable for well sheltered sites with a southerly aspect J. nigra grows somewhat faster than J. regia but timber may not be as highly figured. Worth pruning to give a clean stem Potentially major forest species. Non-native tree. Abnormal growths called "burr walnut" are much sought after for veneer, an example of diseased or malformed wood being more valuable than healthy timber
Lime <i>Tilia spp</i>	Grows on a wide range of sites, but prefers moist fertile limestone soils Relatively fast growing. Suitable for planting as an amenity tree. Attracts swarms of aphids in summertime causing sticky "honeydew" to cover foliage that drips off to ground vegetation Minor forest species. Non-native tree. Tree flowers are strongly scented and a great attraction for many insects and a rich source of nectar for bees
Norway Maple <i>Acer Platanoides</i>	Prefers a deep, moist, alkaline soil. Tolerates less fertile and drier sites than sycamore. Avoid exposed sites and frost hollows Fast growing tree when young. An attractive amenity tree. Greenish yellow flower makes a beautiful sight in early spring. Brilliant red, green and gold coloured leaves in the autumn Minor forest species. Non-native tree. Grey squirrel can be very damaging

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Species	Characteristics/Remarks
Privet. <i>Ligustrum vulgare</i>	Medium sized bushy shrub, partially evergreen, closely related to the hedging species, <i>Ligustrum ovalfolium</i> , a Japanese import. Flowers white, heavily scented followed by small black berries.
Sea Buckthorn <i>Hippophae rhamnoides</i>	Shrub of coastal areas. Will succeed in almost any soil. A dense bushy shrub 1-1.5 m high: branches armed with stout spines. Small green flowers followed on female plants by attractive orange-yellow berries, which are normally avoided by birds. Excellent shrub for maritime exposure.
Snowberry <i>Symphoricarpos rivularis.</i>	A twiggy shrub with small pinkish flowers followed by white globular fruits. Spreads freely by root suckers. The white globular fruits are very striking in the Winter hedgerow.
Dogwood <i>Cornus sanguinea</i>	The straight red stems of this shrub are very conspicuous in hedgerows in Winter. It grows to six foot, has dark - green untoothed opposite arranged leaves that turn dark red in Autumn. The hawthorn scented white flowers are followed by black fruits. Dogwood is common in limey soils and roots readily from hardwood cuttings stuck in Autumn.

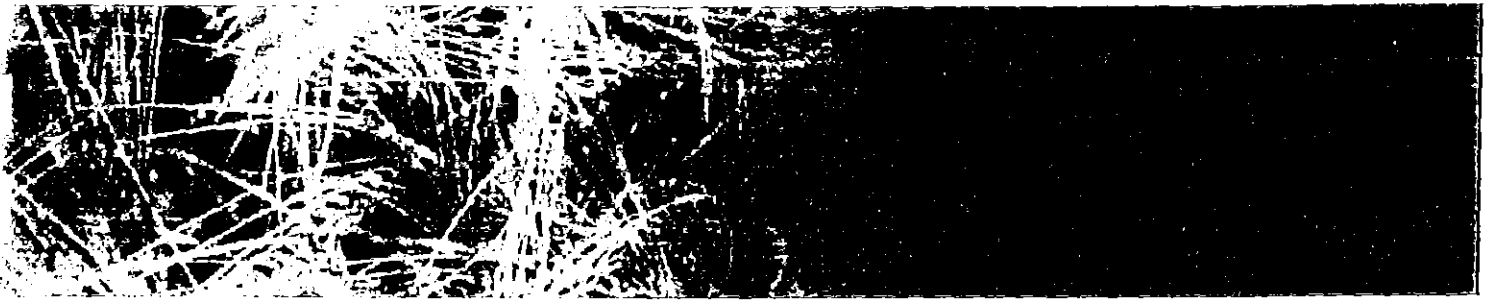
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#### NATIVE HEDGEROW SPECIES

Species	Characteristics	Sites
Whitethorn (Hawthorn) <i>Crataegus monogyna</i> .	Ubiquitous native hedge plant tough, hardy and fast growing. Withstands hard cutting and laying. Displays great variation in flower hue at blossom time. An important source of pollen and nectar for invertebrates; major bee forage plant.	Tolerant of most soils except where very wet. Does not thrive at high elevations. Susceptible to Fire Blight disease; should not be planted near tree/shrub nurseries or commercial orchards.
Blackthorn or Sloe <i>Prunus spinosa</i> .	Quick growing shrub, forming an impenetrable stockproof barrier when well established. Throws out root suckers requiring regular management. Excellent plant for gapping hedgerows. Stand up well to cutting. Can be propagated from rooted suckers. Tends to become bare at the base.	Blackthorn does well on heavy and sandy soils. Salt tolerant, suitable for coastal and exposed situations.
Hazel <i>Corylus avellana</i>	Hazel is very suitable to coppice and lay. It has high amenity and wildlife value: an important early source of pollen for bees. The coppiced stems have many uses.	Hazel does well on loams and mildly acid soils. Not tolerant of wet situations. Good choice for free draining limestone soils.
Holly <i>Ilex aquifolium</i>	Slow growing evergreen with high amenity value. Forming a tough stockproof barrier. Good plant for gapping. Susceptible to frost damage.	Holly will grow on clay soils, sands and gravel. Very tolerant of shade. Will not grow on wet sites. Both male and female plants are required to produce berries.
Gorse (Furze or Whin) <i>Ulex europaeus</i>	Abundant in drier parts of Ireland. Does not form a good stockproof barrier on its own. Should be cut back hard when it gets leggy and thin at the base. Gorse should not be laid but trimmed in late Winter.	Gorse does well on poor light soils. Will grow on very dry and exposed sites where other species cannot thrive. It is salt tolerant and suitable for coastal and exposed sites.





Species	Characteristics	Sites
Willow <i>Salix species.</i>	Willow is a native tree, the many species hybridise readily. The tree is fast growing, producing heavy wood. The plant lends itself to laying. Willows make poor stockproof hedges yet have high wildlife and amenity value. The male flowers, catkins, are an early source of pollen for bees.	Useful for wet sites where species choice is limited. Will tolerate flooding. Can be propagated from hardwood cuttings.
Crab Apple <i>Malus pumila.</i>	A good hedge can be made with crab, it is less impenetrable than Hawthorn or Blackthorn. Should be mixed with other species. Provides good wildlife habitat and has high amenity value.	Suited to free draining fertile soils, will not thrive in heavy cold clays. Crab apple occurs intermittently in hedgerows and where present should be retained and allowed develop to maturity.

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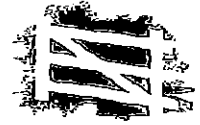


NATIVE HEDGEROW SPECIES contd

Species	Characteristics
Elm. <i>Ulmus species.</i> in particular <i>Ulmus glabra.</i>	Wych Elm ( <i>Ulmus glabra.</i> ) is a rare native now only encountered in mountain glens in the North West. English elm ( <i>Ulmus procera</i> ) was reintroduced in Norman times. Elm never attained the importance in hedgerows here as in England. It was originally planted as an ornamental parkland tree. Despite the ravages of Dutch Elm Disease, it is often encountered in hedgerows as suckers that may eventually succumb to the disease. Where present, it should be retained.
Dog Rose. <i>Rosa species.</i>	Dog Rose and other related rose species are a common constituent of hedgerows scrambling through trees and shrubs. Their blossoms and fruit (hips) have high amenity value and are an important source of food for wildlife. Where present they should be retained.
Briars, Blackberry. <i>Rubus species.</i>	Briars often provide extra stockproofing in a hedge. The flowers and fruit provide a wide range of food for wildlife. Blackberry is an important bee plant in Ireland. Briars left unchecked will encroach out into fields by means of tip rooting and should be controlled.
Guelder Rose <i>Viburnum opulus</i>	Handsome hedgerow shrub with high amenity value. Large vigorous shrub with lobed maple like leaves which colour richly in Autumn. The white flowers produced in June and July are followed by crimson fruits which are eaten by birds.
Elder <i>Sambucus nigra.</i>	A ragged, gnarled, small tree common in hedgerows with greyish corky bark and branches containing a soft pith. The white flowers are followed by bunches of purplish fruits. Flower and fruit provide food for a wide rang of wildlife species.
Woodbine, Honeysuckle. <i>Lonicera periclymenum.</i>	Woodbine is a climbing shrub scrambling through hedgerow trees and shrubs. It has high amenity value. The fragrant flowers provide nectar and pollen for insects and are followed by crimson berries readily eaten by birds.



Species	Characteristics
<p>Clematis. Travellers Joy, <i>Clematis vitalba.</i></p>	<p>A climbing shrub often completely covering hedges and bushes. It climbs by twisting its leaf stalks around other plants. The small insignificant greenish cream flowers attract bees and flies. The masses of feathery fruits so conspicuous in Autumn and Winter give this plant the colloquial name "Old Man's Beard". A shrub that thrives in limey soils. Beautiful shrub of the Autumn hedgerow particularly eye-catching after overnight frost.</p>
<p>Spindle-tree, Pegwood, <i>Euonymus europaeus.</i></p>	<p>Vigorous green stemmed hedgerow shrub occasionally a small tree. The wood is very hard and was used in former times to produce wooden skewers and clothes pegs. The small greenish flowers are followed by eye catching scarlet 4-lobed seed capsules: Spindle or Peg wood is a strikingly beautiful shrub in winter.</p>
<p>Ivy <i>Hedera helix.</i></p>	<p>Ivy is a native evergreen plant with high wildlife value: it provides habitat for insects and nesting sites for birds. It flowers late in the Autumn and is the last important nectar and pollen plant available to insects. The black fruits which ripen in spring are eaten by birds and small mammals, in particular by pine martins. Ivy is not a parasitic plant: the small rootlets put out by the climbing shoots help the plant to adhere to it's support: they have no penetrative powers. In trees, ivy clings to it's host, it does not feed on it, and while the tree is in good health the ivy will be a secondary plant and although ascending the trunk and branches can do no harm. Should the tree decline for any reason and fail to leaf the ivy will take over as is often seen on elm that has succumbed to Dutch Elm Disease.</p> <p>Where necessary ivy should be managed. Ivy may be allowed to develop on some trees within a hedgerow but controlled on others or allowed to grow unchecked for many years and controlled when the growth becomes too heavy. On sound walls ivy is harmless and in fact beneficial, keeping them dry in winter and cool in summer. Walls that are very weak can be pulled down if a weight of ivy has bushed out at the top of the wall and then becomes heavy with snow or rain and susceptible to the pull of strong winds. Clipping obviates this possibility and the life of many walls could be prolonged by a well managed ivy cover. Ivy covered walls should be clipped over in late Spring. If required ivy can be removed from trees and walls by cutting the stem just above ground level and making a second cut at least 10 cm. above the first cut. The resultant detached section of stem should be removed.</p>



**Species suitable for screening farm buildings, walls etc. under Measure 8**

Suitable tree species can be selected from the species listed in Table 2 above. In addition species from the following can be selected in the mix:

**Deciduous Species:**

Beech (*Fagus sylvatica*), Sycamore (*Acer pseudoplatanus*), Poplars (*Populus Hybrid clones*), Red Oak (*Quercus Rubra*), Horse Chestnut (*Aesculus Hippocastanum*), Walnut (*Juglans spp.*), Field Maple (*Acer campestre*), Norway Maple, (*Acer platanoides*). Lime (*Tilia spp.*)

**Conifers:**

Larch (*Larix spp.*), Corsican Pine (*Pinus nigra var. maritima*), Monterey Pine (*Pinus radiata*), Lawson Cypress (*Chamaecyparis lawsoniana*), Western Red Cedar (*Thuja plicata*), Western Hemlock (*Tsuga heterophylla*), Macrocarpa (*Cupressus macrocarpa*), Korean Fir (*Abies koreana*).

Suitable self clinging plants for use around farmyards include the following.

Ivy: *Hedera species*. Green leafed varieties should be chosen. Ivy is a shade loving plant should not be grown on a South facing wall.

Climbing Hydrangea: *Hydrangea petiolaris*, vigorous, climbs by aerial roots, decidious.

Virginia Creeper: *Parthenocisus tricuspidata*, vigorous, decidious.

**Climbers Requiring Support**

Honeysuckle: *Lonicera periclymenum*, needs support to climb.

Russian vine: *Polygonum baldschuanicum*, Very vigorous rampant, twinning plant, needs support to climb.

To screen farm buildings in coastal exposed sites the following species are recommended:

**Trees:**

Conifers: Sitka Spruce (*Picea sitchensis*), Lodgepole Pine (*Pinus contorta*), Corsican Pine (*Pinus nigra var. maritima*), Maritime Pine (*Pinus pinaster*), Monterey Pine (*Pinus radiata*)

Broadleaf trees: Sycamore (*Acer pseudoplatanus*) Strawberry Tree (*Arbutus unedo*), Willow (*Salix species*). Alder (*Alnus glutinosa*), Holm Oak (*Quercus ilex*). White poplar (*Populus alba*) Elder (*Sambucus nigra*).

**Shrubs:**

*Escallonia* in species and variety, Burnet Roses (*Rosa pimpinellifolia*), *Rugosa* roses, *Hypericum calycinum*, *Griselinia littoralis*, *Phormium tenax*, *Tamarix*, *Viburnum tinus*, *Ulex europeaus*, *Eleagnus*, *Fuonymus*, *Fuchsia magellanica*, *Senecio greyii*, *Pittosporum*, *Hebe*, *Olearia species* in particular *O. traversii*, *O. albida*, *O. macrodanta*, *Hipophae rhamnoides*, *Lupinus arboreus*, *Atriplex halimus*.