

HEDGING PLANTS

for cities, towns, villages
and the landscape

Trees are the bones of The Green City. Shrubs in various forms and colours as well as perennials for a wide range of uses are essential parts of the greenery. And what about hedging plants? They offer more versatility than you might think.

The assortment of plants that can be used for hedges, offers many possibilities for cities, towns, villages and the landscape. Also, scientific evidence shows that hedging plants contribute to a healthy climate and biodiversity.



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Hedges are the best air purifiers in streets

Hedges planted along streets, roads and motorways are the most effective means to combat air pollution, since hedging plants by nature capture soot, a major component of particulate matter, from the air, resulting in up to 63% less soot, scientists from the Global Centre for Clean Air Research showed. In several spots in the English city of Guildford they assessed the effect of trees, hedges and combinations of trees and hedges on air quality. Hedges purified the air best with the wind blowing parallel to the road, followed by wind blowing across the road. Trees combined with hedges also purified the air, but trees alone did not do this at all, as their canopies and foliage are too high up to filter exhaust gases of passing traffic. More than half of the world's population live in urban areas. According to the European Environmental Agency air pollution in many towns and cities is too high, causing major environmental health risks. Hedging plants are the best natural way to reduce these risks. In addition, urban heating is reduced by hedges. Another favourable effect of hedges is that they hide roads, industrial estates, etc. from view, so that people experience less nuisance from (freight) traffic. They hardly filter noise, however.



Out with school fences, in with hedges and hedgerows

Schoolyards, day-care centres and public playgrounds are traditionally fenced off, but the current trend is to use natural fences: planted hedges and hedgerows. Various scientific studies have shown that hedges create a stimulating learning environment for schoolchildren, improving their performance. The natural greenery and the growing and developing plants may spark the children's interest in nature. Moreover, hedges and hedgerows around schoolyards are beneficial for the climate, as they retain water, which does not have to be discharged to the sewage system. In addition, plants absorb CO₂ (carbon dioxide), release O₂ (oxygen) into the air and remove soot and other particulate matter that is harmful to health from the air. And last of all, flowering and fruit-bearing species attract useful insects such as bees and butterflies, as well as birds.

Hedges in the landscape improve biodiversity

Hedges play important roles in the landscape and nature. They form a natural demarcation of roads or paths, protecting the hinterland area, but flowering species of hedges are also a rich source of food for fauna: in spring bees benefit from blossoms, in autumn birds eat the berries. Besides, hedges provide safe cover for birds and other animals to make their nest or take shelter. In other words: hedges are of high ecological value. Research in Britain and Germany, countries where hedges are part of tradition, has shown that in networks of hedges and wooded banks some three to seven thousand species of flora and fauna can be found. The more varied hedges are, the more biodiversity thrives, especially when native species are used.

Examples of hedges native to the Netherlands and the surrounding countries are:

- ▶ Crataegus monogyna (hawthorn)
- ▶ Prunus spinosa (blackthorn)
- ▶ Rhamnus cathartica (buckthorn)
- ▶ Frangula alnus (alder buckthorn)
- ▶ Rosa canina (dog rose)
- ▶ Rosa rubiginosa (sweet briar)
- ▶ Alnus glutinosa (black alder)
- ▶ Salix alba (white willow)

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Planting a hedge that is different

There is a large and varied assortment suitable for planting as a hedge. It comprises deciduous species such as *Acer campestre* and *Spiraea x vanhouttei* as well as evergreens including *Buxus sempervirens*, *Ilex aquifolium*, *Hedera helix*, *Osmanthus burkwoodii*, *Photinia fraseri* 'Red Robin', *Prunus laurocerasus* 'Novita', *Prunus laurocerasus* 'Genolia' and *Prunus lusitanica* 'Angustifolia'. Conifers are also suitable, including, in addition to the well-known *Taxus baccata*, species with green scales, such as *Thuja occidentalis* 'Emerald', yellow scales, such as *Chamaecyparis lawsoniana* 'Ivonne', and blue scales, such as *Chamaecyparis lawsoniana* 'Columnaris'. For inspiration a number of species are listed here which are little used as hedges but well-suited to be used as such:

► *Aronia melanocarpa* (black chokeberry)

Blooms from mid-May with groups of small whitish red flowers, followed by bluish black berries. Is resistant to road salt.

► *Berberis aggregata* (clustered barberry)

Blooms with light yellow flowers in summer, followed by edible orangy red berries. The sour tasting berries have a medicinal effect.

► *Berberis thunbergii* 'Atropurpurea' (Japanese barberry)

A barberry with red leaves, blooms in May/June with yellow to red flowers, followed by red berries which are eaten by birds. Suitable for low hedges.

► *Chaenomeles japonica* (Japanese quince)

Blooms in spring with salmon to orangy red flowers, followed by leaves and fragrant greenish yellow fruits resembling small apples. The plant is impenetrable due to its dense growth habit and branch thorns. There is no need for trimming, although trimming into block shapes is possible.

► *Cornus alba* 'Sibirica' (Siberian dogwood)

Blooms in spring with umbellifers of small white flowers. Often there is a second blooming. After flowering white berries appear which are eaten by birds.

► *Cornus mas* (Cornelian cherry)

Blooms abundantly on bare branches from early spring, with small flowers massively colouring the hedge yellow. Forms edible berries towards autumn.

► *Ligustrum vulgare* 'Lodense' (European privet)

Smallest privet, grows 25-35 cm per year, which makes it suitable for low hedges. The shrub is fine-leaved and has an upright growth habit. Semi-evergreen, the plant holds its leaves for a long time.

► *Salix purpurea* 'Nana' (purple willow)

Young leaves are greenish grey, turning bright yellow in autumn. Easily tolerates trimming, so well-suited as a hedge.

► *Salix repens* var. *nitida* (silver creeping willow)

Young twigs first grow upright and later grow overhanging. Small silvery leaves. Attracts bees and butterflies and is well-suited for use as a natural, rustic hedge.

► *Spiraea douglasii* (hardhack)

Blooms in summer with many pink flowers covering the entire top of the plant.

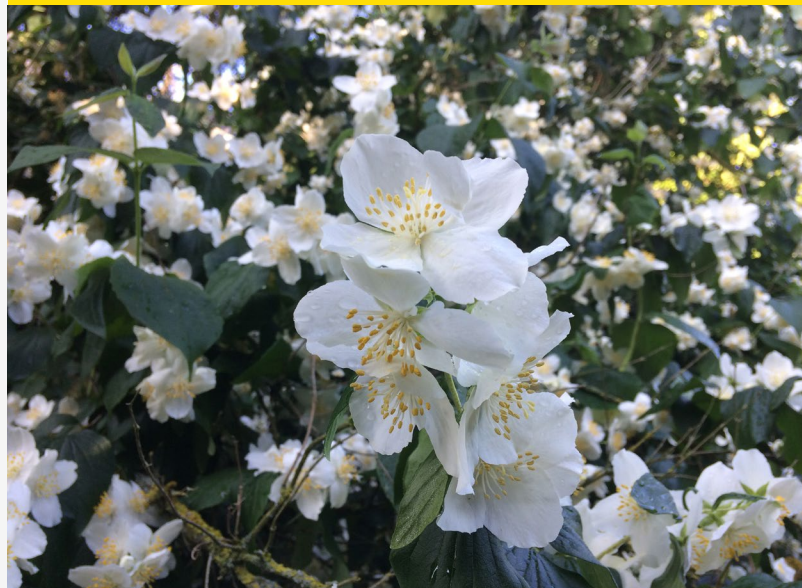
► *Symphoricarpos x chenaultii* 'Hancock' (snowberry)

Blooms in summer with small pink flowers, followed by distinctive red and purplish pink berries.



Hedges attracting birds

- *Amelanchier lamarckii* (juneberry)
- *Carpinus betulus* (European hornbeam)
- *Crataegus monogyna* (hawthorn)
- *Prunus avium* (sweet cherry)
- *Pyracantha coccinea* (scarlet firethorn)



Fragrant hedges

- *Buddleja davidii* (butterfly bush)
- *Deutzia gracilis* (slender deutzia)
- *Philadelphus virginal* (mock orange)
- *Rosa rugosa* (Japanese rose)
- *Syringa vulgaris* (common lilac)

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Hedges in and around parks

People experience parks in cities, towns and villages as small green oases where they can relax. Hedges are particularly suited to screen parks (no matter how small they are) off from busy roads, providing shelter. As part of a hedge planting beds can be laid out with flowering plants or ornamental shrubs with distinctive leaves, forms and colours, accentuating the changing of the seasons.

For inspiration a few examples of hedges in and around parks are listed here:

► **Acer campestre** (field maple)

Easily tolerates trimming and clipping. The ornamental value is formed by light green leaves turning bright yellow in autumn.

► **Crataegus monogyna** (hawthorn)

Combines well with *Acer campestre*, e.g. planted alternately to form a hedge. In this way a dense, impenetrable hedge is formed.

► **Carpinus betulus** (European hornbeam)

Requires little maintenance as it is slow growing. Is suitable for trimming, e.g. trimming into block or pyramid shapes. The European hornbeam is ideal for making a plant tunnel, also referred to as an arched trellis or a berceau.

► **Fagus sylvatica** (European beech)

A *Fagus sylvatica* hedge provides dense foliage nearly year-round. The plants hold their leaves until spring (as opposed to *Carpinus betulus* which sheds its leaves in autumn). Soon after this young and fresh green leaves appear. *Fagus sylvatica* can be combined with the purple European beech, *Fagus sylvatica* 'Atropurpurea'.

► **Ligustrum ovalifolium** (garden privet)

A classic plant for use as a hedge. It holds its dark green leaves during the winter, although the leaves may fall off with too much frost. In addition to *Ligustrum ovalifolium*, the assortment includes variegated cultivars such as 'Argenteum' (silver green) and 'Aureum' (yellow green).

► **Spiraea x vanhouttei** (bridal wreath spirea)

Especially suitable for use as an luscious hedge. Blooms abundantly with small white flowers in spring. Has a broad growth habit with overhanging branches.

► **Weigela**

Well-suited for planting as a hedge, has a spreading growth habit with overhanging branches. It is a deciduous shrub with varied flowering cultivars, including 'Red Prince' with bright red flowers and 'Rosea' with reddish pink flowers.



Hedging plants with a proven positive effect

What hedging plants have a positive effect on climate, air quality and the living environment? Wageningen University & Research conducted a scientific research with various tree species to answer this question. Four of these species are suitable for use as hedging plants:

► **Alnus glutinosa**

High trapping capacity for NOx, high CO2 capture, high value as a source of pollen for insects.

► **Carpinus betulus**

High trapping capacity for NOx, very high CO2 capture.

► **Crataegus monogyna**

High CO2 capture, high value as a source of nectar for insects.

► **Taxodium distichum**

High trapping capacity for particulate matter, very high CO2 capture.



Stichting De Groene Stad is committed to a fine, healthy living environment, promoting the use of greenery in and around buildings, villages, towns and cities. Trees and plants demonstrably contribute to a better climate en cleaner air and promote human well-being.
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