Plant portrait - Hippophae salicifolia

This article originally appeared in the August 1996 edition of the Friends of PFAF newsletter.

When we first moved to Cornwall, one of the first plants I put out was a small group of Hippophae salicifolia. They were about 60cm tall and looked rather lost in the middle of this large empty field. A month later, the rabbits had done their worst and each of the plants had lost most of their bark. I thought that this was the death-knell for them, but put some protection around them just in case.

Along came the spring and the plants grew away as though nothing had happened to them. By the end of their first summer they were about 1.5 metres tall and looking wonderful. They have managed to keep up this same rate of growth in subsequent years and the largest is now over 6 metres tall and really looking like a tree. The plants have been impervious to the frequent strong winds we get here and have also been unaffected by droughts or exceedingly wet weather.

They also look quite beautiful. Of a very upright habit, their deciduous leaves have a somewhat silvery hue and look rather like the leaves of a willow tree. They fruited for the first time this year. Two of the three plants have turned out to be female and the other is a male (what wonderful luck) and one of the females had a particularly heavy crop. The fruit is rather small, about 3mm in diameter, and is very fiddly to harvest. It is carried right next to the branches and these branches are often armed with large thorns. The fruit itself tastes like a sharp lemon, which is not to everyone's taste raw. Our 16 month old son loved it and ate it in quantity. He was frequently asking us to pick it for him. If you cannot stomach much of it raw, the fruit makes a superb juice or can be cooked to make jams and other preserves. What makes this fruit rather special is that it is quite possibly the most nutritious fruit that can be grown outdoors in Britain. It is very rich in vitamins (especially C) and minerals and also contains essential fatty acids. These fatty acids have been shown to prevent cancer when taken as part of the diet and experiments in Sweden are indicating that they can be used in treating cancer. A superb lotion for treating burns can be made from the fruits and also from the young twigs. This lotion is said to prevent scarring.

The tree is very vigorous and also enriches the soil with nitrogen. It has a very vigorous root system and has been planted on steep slopes to stabilize the soil. It also produces suckers freely so is not a plant to grow in a small space. If you have room for it, however, then it is a very worthwhile plant to grow. It needs a position in a well-drained soil with at least a reasonable amount of sun, but apart from that it is not really fussy.

Database
The database has more details on these plants: Hippophae salicifolia.
<table>
<thead>
<tr>
<th><strong>Family</strong></th>
<th>Elaeagnaceae</th>
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</thead>
<tbody>
<tr>
<td><strong>Synonyms</strong></td>
<td>None known</td>
</tr>
<tr>
<td><strong>Known Hazards</strong></td>
<td>None known</td>
</tr>
<tr>
<td><strong>Habitats</strong></td>
<td>Alluvial gravel, wet landslips and riversides to 3500 metres[51].</td>
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<tr>
<td><strong>Range</strong></td>
<td>E. Asia - Himalayas.</td>
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</tbody>
</table>

**Summary**

**Physical Characteristics**

*Hippophae salicifolia* is a deciduous Tree growing to 15 m (49ft 3in) at a fast rate. It is hardy to zone 8 and is not frost tender. It is in flower in April, and the seeds ripen from Sep to October. The flowers are dioecious (individual flowers are either male or female, but only one sex is to be found on any one plant so both male and female plants must be grown if seed is required) and are pollinated by Wind. The plant is not self-fertile. It can fix Nitrogen.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and can grow in nutritionally poor soil. The plant prefers acid, neutral and basic (alkaline) soils. It cannot grow in the shade. It requires dry moist or wet soil. The plant can tolerate strong winds but not maritime exposure.
Habitats

Woodland Garden Sunny Edge; Bog Garden;

Edible Uses

Edible Parts: Fruit.

Fruit - raw or cooked[2, 46]. A very nutritious food, and possibly the most nutritious fruit that can be grown in temperate climates. It is very rich in vitamins, especially vitamin C, plus minerals and bioflavonoids, and is also a source of essential fatty acids[214]. It comes ripe in late summer, though it can be eaten for about a month before this, and will hang on the tree until mid-winter, by which time the flavour has become much milder, though it has also become very soft and difficult to pick[K]. We and many of our visitors really like this fruit, however the flavour is somewhat like a sharp lemon and a lot people find this too acid for them[K]. It also makes a good salad dressing[K]. The fruits of some species and cultivars (not specified) contain up to 9.2% oil[214]. The fruit is used for making preserves[105, 183]. It is being increasingly used in making fruit juices, especially when mixed with other fruits, because of its reputed health benefits[214]. The fruit becomes less acid after a frost or if cooked[74].

Medicinal Uses

Plants For A Future can not take any responsibility for any adverse effects from the use of plants. Always seek advice from a professional before using a plant medicinally.

Cancer; Cardiac; Poultice.

The tender branches and leaves contain bio-active substances which are used to produce an oil that is quite distinct from the oil produced from the fruit. This oil is used as an ointment for treating burns[214]. A high-quality medicinal oil is made from the fruit and used in the treatment of cardiac disorders, it is also said to be particularly effective when applied to the skin to heal burns, eczema and radiation injury, and is taken internally in the treatment of stomach and intestinal diseases[214]. The fruit is a very rich source of vitamins and minerals, especially in vitamins A, C and E, flavanoids and other bio-active compounds. It is also a fairly good source of essential fatty acids, which is fairly unusual for a fruit. It is being investigated as a food that is capable of reducing the incidence of cancer and also as a means of halting or reversing the growth of cancers[214].

Other Uses

Fuel; Pioneer; Soil stabilization; Wood.

The plant is very fast growing, even in areas exposed to maritime winds, and it makes an excellent pioneer species for providing shelter and helping to establish woodland conditions. The plant is very light-demanding and so will eventually be shaded out by the woodland trees, thus it will never out-stay its welcome[K]. The trees have an extensive and vigorous root system and sucker freely once established. They are thus excellent for stabilising the soil, especially on slopes, and are often planted in the Himalayas to prevent land slips on the mountain slopes and create conditions for the re-establishment of woodlands[K]. The wood is very tough and hard - it can be used for many purposes including wheel hubs and other applications where toughness is essential[K]. It is also used for fuel[146].

Cultivation details

Succeeds in most soils so long as they are not too dry[200]. Grows well by water[1, 11]. A fast-growing and very wind-resistant tree, it is an excellent pioneer species for re-establishing woodlands[K]. This species is not hardy in the colder areas of the country, it tolerates temperatures down to about -10°C[200]. Members of this genus are attracting considerable interest from breeding institutes for their nutrient-rich fruits that can promote the general health of the body (see edible and medicinal uses below)[214]. The deeply cleft bark favours the growth of epiphytes[146]. Plants in this genus are notably resistant to honey fungus[200]. This species has a symbiotic relationship with certain soil bacteria, these bacteria form nodules on the roots and fix atmospheric nitrogen. Some of this nitrogen is utilized by the growing plant but some can also be used by other plants growing nearby[200]. Dioecious. Male and female plants must be grown if seed is required.
Propagation

Seed - sow spring in a sunny position in a cold frame[78]. Germination is usually quick and good although 3 months cold stratification may improve the germination rate. Alternatively the seed can be sown in a cold frame as soon as it is ripe in the autumn. Prick out the seedlings into individual pots when they are large enough to handle and grow on in a greenhouse for their first winter. Plant out in late spring into their permanent positions. Male seedlings, in spring, have very prominent axillary buds whilst females are clear and smooth at this time[78]. Cuttings of half-ripe wood, June/July in a frame[200]. Difficult[113]. This is the easiest method of vegetative propagation[214]. Cuttings of mature wood in autumn[200]. Difficult[113]. The cuttings should be taken at the end of autumn or very early in the spring before the buds burst. Store them in sand and peat until April, cut into 7 - 9cm lengths and plant them in a plastic tent with bottom heat[214]. Rooting should take place within 2 months and they can be put in their permanent positions in the autumn[214]. Division of suckers in the winter. They can be planted out direct into their permanent positions and usually establish well and quickly[K]. Layering in autumn[200].

Expert comment

Author

D.Don.

Botanical References

1151200

Links / References

[K] Ken Fern Notes from observations, tasting etc at Plants For A Future and on field trips.

Comprehensive listing of species and how to grow them. Somewhat outdated, it has been replaces in 1992 by a new dictionary (see [200]).


Lots of entries, quite a lot of information in most entries and references.


A classic with a wealth of information on the plants, but poor on pictures.


An excellent and very comprehensive guide but it only gives very short descriptions of the uses without any details of how to utilize the plants. Not for the casual reader.
uses without any details of how to utilize the plants. Not for the casual reader.


A very readable and good pocket guide (if you have a very large pocket!) to many of the wild plants in the Himalayas. Gives many examples of plant uses.

[74] Komarov, V. I. Flora of the USSR.

An immense (25 or more large volumes) and not yet completed translation of the Russian flora. Full of information on plant uses and habitats but heavy going for casual readers.


A bit dated but a good book on propagation techniques with specific details for a wide range of plants.


The most comprehensive guide to edible plants I've come across. Only the briefest entry for each species, though, and some of the entries are more than a little dubious. Not for the casual reader.


A very detailed book on propagating trees. Not for the casual reader.


Written last century, but still a classic, giving a lot of information on the uses and habitats of Indian trees. Not for the casual reader.


Excellent. Contains a very wide range of conventional and unconventional food plants (including tropical) and where they can be obtained (mainly N. American nurseries but also research institutes and a lot of other nurseries from around the world.


Excellent and very comprehensive, though it contains a number of silly mistakes. Readable yet also very detailed.


A quarterly magazine, it has articles on Himalayacalamus hookerianus, hardy Euphorbias and an excellent article on Hippophae spp.

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