Ostrya carpinifolia in Europe: distribution, habitat, usage and threats

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Ostrya carpinifolia Scop., known as European hop-hornbeam, is a small to medium-sized deciduous tree that can reach up to 25 m. After coppicing it often loses its arboreal habit appearing in form of a tall shrub of just 3-6 m tall. Its conical or irregular crown bears alternate obovate-lanceolate, acuminate and dentate leaves 3-10 cm long, rounded and symmetric at the base, with 10-15 secondary veins per side. The flowers are produced in spring along with leaf bud opening, with male catkins 5-10 cm long and female catkins 2.5-10 cm long. The fruit forms pendulous clusters 3-8 cm long with 6-20 seeds, which become golden-brown in autumn; each seed is a small nut 2-4 mm long, fully enclosed in a bladder-like involucre. The bark of young stems is dark grey and smooth, while it is scaly, rough, longitudinally fissured and dark-brown in mature trees.

Habitat and Ecology

This hop-hornbeam is a xerothermic plant, which means that it shows rather constant transpiration and osmotic pressure values also under moderate drought stress conditions. Thus, it is able to colonise windy and sunny slopes, but it is mostly found in rainy areas or under wet microclimatic conditions (e.g. deep and humid ravines and canyons) where air humidity is constantly available. This explains why in the northernmost part of its range this species behaves as a light-demanding pioneer that prefers sunny and warm places, while in the southernmost countries it grows better in semi-shaded and more humid sites. The European hop hornbeam often grows in rocky areas and on shallow and poorly developed soils, mainly on limestone but also on volcanic and gypsum rock outcrops. It plays an important role in the total biomass composition of many degraded sites.

Important and Usage

The wood of the hop-hornbeam is very hard and heavy, difficult to work and is used in the past for different purposes, especially in rural areas, for making small items and charcoal. It tends to crack when dried, so it is not appreciated for industrial purposes, although it still represents an excellent firewood.

European hop-hornbeam is a species suitable for the reforestation of many degraded sites. For this very purpose, in central Italy most hop-hornbeam woodlands are still intensively exploited as coppice. The ability to colonise dry areas and shallow lime- and magnesium-rich soils makes this tree species suitable for the reforestation of many degraded sites. It is also used to form hedges and as an ornamental tree along roadsides. Hop hornbeam is one of the hosting trees of the white truffle (Tuber magnatum).

Ostrya carpinifolia

More often, the communities which it dominates represent an early and unsteady step of progressive succession processes under low-disturbance conditions they rapidly evolve towards mixed broadleaved forests dominated by deciduous oaks (mainly Quercus pubescens, but also Quercus cerris, Quercus congets, Quercus petraea and Quercus frainetto), by conifers like Pinus nigra subsp. dalmatica and subsp. nigra in the Balkan peninsula, Cedrus libani between 1500 and 1800m in South Anatolia, Syria and Lebanon, Pinus brutia and Pinus nigra up to 1700 m in Anatolia, more rarely by Quercus cociferae-limons in Eastern Mediterranean countries or by Fagus sylvatica along the northern border of its range, for example in central and northern Italy and in Bulgaria.
Ostrya carpinifolia

Tree species | European Atlas of Forest Tree Species

Field data in Europe (including absences)

Isolated tree in winter. This species is a small tree rarely exceeding 25 m.

Observed in Europe

CABI, European Atlas of Forest Tree Species

References

Field data in Europe (including absences)

Accessions in Europe

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Mature fruits covered by the dry and brown bladder-like involucre.

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Threats and Diseases

The European hop-hornbeam is known to be resistant to various diseases, but unusual and extensive dieback caused by chestnut blight (Cryphonectria parasitica) and chestnuts (Castanea spp.) whose distribution may be affected by several fungal diseases like twig blight and canker, caused by Cryphonectria parasitica (Murr) Barr. 19-31 The tree is also vulnerable to the European oak bark beetle (Scolytus intricatus) which is found on oaks (Quercus spp.), beeches (Fagus spp.) and chestnuts (Castanea spp.) whose distribution may partially overlap with that of the European hop-hornbeam19-30.