**Quercus palustris in Europe: distribution, habitat, usage and threats**

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**Quercus palustris** Muenchh. is commonly known as pin oak, Spanish oak or swamp oak. The epithet palustris means “swampy”, as pin oak is primarily found on wet sites. It is native to the eastern United States, but has also been introduced into Europe in the last centuries.

Pin oak is a fast-growing deciduous tree reaching 25 (40) m tall, usually with a straight and undivided trunk. Unlike many oaks, it develops a shallow, fibrous root system. The bark is grey-brown with fissures on surface higher up the trunk. The trunk usually has many small drooping branches that persist for a long time after dying and form small “pin” knots in the wood. The twigs are reddish-brown and smooth, and the buds are small (3 mm), dull brown and almost hairless. The leaves are alternate, ranging from 8 to 15 cm long, with five or seven lobes, and deep sinuses between the lobes. They are bright green above and shiny pale green below, with characteristic brown tufts of hair in the vein-axils. In the autumn they turn a rich scarlet-brown and often stay on the tree into the winter. Flowering occurs in April or May. The dark-brown acorns are about 1 cm long with a very shallow cup on a short stalk. It is not particularly long-lived and reaches physiological maturity at 80 to 100 years.

**Distribution**
The natural distribution of pin oak is the north-central and eastern United States. It was introduced in Europe at the end of the seventeenth century, primarily as an ornamental, but it has some potential as a forestry species.

**Habitat and Ecology**
Pin oak occurs primarily along major rivers, in wet soils along swamps and streams. It is tolerant of moist soil conditions and can grow on poorly drained and seasonally (winter) flooded sites. It prefers moist, rich, acidic, well-drained soils. In Europe: distribution, habitat, usage and threats. It prefers moist, rich, acidic, well-drained soils. In Europe: distribution, habitat, usage and threats. It prefers moist, rich, acidic, well-drained soils. In Europe: distribution, habitat, usage and threats.

**Importance and Usage**
Pin oak has thin bark and is particularly susceptible to fire and to decay associated with fire damage. It is susceptible to most of the diseases of oak including the pathogen *Phytophthora ramorum*, as well as oak wilt (*Ceratocystis fagacearum*) and several insect species including the gypsy moth (*Lymantria dispar*).

**Threats and Diseases**

**References**