

Mini data sheet on *Broussonetia papyrifera*

Added to the EPPO Alert List in 2016 - Deleted in 2019

Reasons for deletion:

Broussonetia papyrifera was added to the EPPO Alert List in 2016 but as no immediate risk was perceived, it was transferred to the Observation List in 2019.

Why

Broussonetia papyrifera (Moraceae) is a small to medium size deciduous tree species native to East Asia and reported as invasive in Africa, parts of North America (Tennessee), parts of South America, Pakistan, and parts of the EPPO region.

EPPO Region: Austria, Bulgaria, Croatia, France, Georgia, Italy, Slovenia, Spain, Russia, Ukraine.

Africa: Ghana, Tanzania, Uganda.

Asia: China (native), India, Indonesia, Japan (native), DPR Korea (native), Republic of Korea (native), Malaysia, Pakistan, Taiwan (native), Thailand (native).

North America: USA (Alabama, Arkansas, Connecticut, Florida, Georgia, Hawaii, Illinois, Kentucky, Kansas, Louisiana, Maryland, Massachusetts, Mississippi, Missouri, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, West Virginia).

South America: Argentina.

Oceania: Australia, Samoa, Solomon Islands, Tonga.

Morphology

B. papyrifera is a deciduous tree growing up to 15 m tall. The bark is light grey and smooth with shallow fissures or ridges. Leaves are simple, alternate and 8-20 cm long and variable in shape (unlobed, ovate cordate to deeply lobed, with lobed leaves more frequent on fast-growing young plants). The upper surface of leaves is rough touch with the soft underside. The species is dioecious and male flowers appear yellowish white and are arranged in an elongated inflorescence. Female flowers are arranged in a round inflorescence. Fruits are red to orange/yellow and 1-4 cm in diameter.

Biology and ecology

B. papyrifera is a fast growing species capable of growing 3-4 metres in the first 6 months. It requires well-drained soils. *B. papyrifera* is wind and insect pollinated and seeds have a germination rate of 50 % or less in moist soils. The plant readily regenerates from cut stems, and root suckers adding to its ability to quickly colonise habitats even when the plant is cut back.

Habitats

B. papyrifera can tolerate a wide range of climatic conditions which enables the species to flourish in tropical and temperate climates. It can grow in areas with an annual rainfall of 700-2 500 mm. *B. papyrifera* does not grow well under full shade and is suited to disturbed habitats, in particular to riparian habitats and gaps within subtropical forests. In Hawaii (US), it is found growing alongside streams. In Pakistan, the species thrives in degraded scrub land occupied by other invasive alien plants (for example *Lantana camara*). In Bulgaria, *B. papyrifera* grows in the warmer regions in damp soil close to waterways.

Pathways for movement

B. papyrifera has been introduced into new regions mainly as an ornamental species or for fuel-wood, cloth, paper, pulp or fodder. The bark of *B. papyrifera* has been used for almost 1 500 years to make paper. In Islamabad, Pakistan, the species was widely planted to ‘green’ the city.

Impacts

B. papyrifera can form dense stands which displace native vegetation, retard forest regeneration and water availability. In the Margalla Hills National Park in Pakistan, *B. papyrifera* has invaded large areas outcompeting native plant species. In Ghana, it has invaded forests and spread into farmland where it competes with crop species for water. In Islamabad, Pakistan, *B. papyrifera* has been shown to exacerbate asthma due to the vast quantities of allergenic pollen flowers produce.

Control

Due to the vigorous regrowth from cut stumps, vegetative root regeneration and seed dispersal, control using traditional methods is both labour intensive and costly with repeated applications needed to achieve a restored habitat. Manual removal (uprooting) and cutting coupled with an application of systemic herbicides have been shown to be effective in controlling shrub forms of the plant. There are currently no known biological control agents for this species.

Sources

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