

**Ecology and silviculture of wild service tree (*Sorbus torminalis* (L.) Crantz):
a literature review**

Valeriu-Norocel Nicolescu¹, Eduard Hochbichler², Jaime Coello³, Serena Ravagni⁴ and
Valentina Giuliatti⁴

¹University "Transilvania" of Brasov, Faculty of Silviculture and Forest Engineering,
Brasov, Romania.

²University of Natural Resources and Applied Life Sciences, Department of Forest and Soil
Sciences, Institute of Silviculture, Vienna, Austria.

³Àrea de Gestió Sostenible, Centre Tecnològic Forestal de Catalunya, Solsona, Spain.

⁴CRA-Centro di Ricerca per la Selvicoltura, Arezzo, Italy.

Wild service tree (*Sorbus torminalis* (L.) Crantz) is widely distributed across western, central and southern Europe as well as north-west of Africa and south-west of Asia. Across this range the species occurs at elevations between 100 m and 2,200 m, especially in plain and hilly areas.

It is considered as a *submediterranean species* and requires warm climates specific to the oak-dominated forests. Wild service tree can grow on both acid and base-rich soils (pH between 3.5 and 8), being adapted to soils subjected to temporary flooding alternating with dry periods.

It grows quickly in height (40-60 cm, even 100 cm per year) in the first years and can reach 25-30 m in height under optimum site and light conditions. Wild service trees grow slowly in diameter but can reach 50-60 (even 70 or 80) cm.

It shows good self-pruning and does not develop epicormic branches following heavy artificial pruning or thinning. A frequent defect of wild service trees is the presence of low forks (at heights inferior to 3 m), hindering the production of high-quality veneer logs.

Wild service tree is a *light demanding* and *post-pioneer (early succession)* species, very sensitive to the competition in the tree layer and reacting positively to late thinning.

The species shows a good potential for natural regeneration, both generative (by seeds) and vegetative (by stump sprouts or root suckers). The root suckers are more shade tolerant than the seed-originated seedlings and as the latter are preferentially browsed by deer and small rodents their protection by fencing may be required.

The silviculture recommended for wild service trees is *intensive, dynamic and tree-oriented*. It involves high intensity *weeding* and *cleaning-respacing*, targeting the complete elimination of tall surrounding trees. *Formative pruning* is recommended for removing the forks and thick ascending branches and prevent the occurrence of the *chandelier* crown form. It is followed by *high pruning*, targeting the production of a branch-free bole of minimum 3 m (best 6-7 m) length. *Heavy thinnings from above* are performed subsequently, favouring the final crop trees selected at the end of thicket-beginning of pole stage. At rotation ages of 100-120 years, these free-grown trees for veneer production are expected to have at least 60 cm d.b.h. and regular annual rings of 2.5 to 4 mm wide.

Valeriu-Norocel Nicolescu

Faculty of Silviculture and Forest Engineering, University “Transilvania” of Brasov
Sirul Beethoven nr. 1, 500123 Brasov, Romania
Phone number: +40-268-418600 ext. 15
Fax number: +40-268-417898
E-mail address: nvnicolescu@unitbv.ro

Poster - WG2 contribution