



High-Value Timber Production in Agroforestry

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High-value timber trees like this oak provide high-quality wood thanks to their straight, branch-free trunks and promote agrobiodiversity within agroforestry systems.

The main high-value timber tree species are (i) pedunculate (or "English") oak (*Quercus robur*) with durable wood, ideal for furniture and flooring. It has a mean annual increment often 2–8 m³ ha⁻¹ yr⁻¹ and requires long rotations; (ii) wild cherry (*Prunus avium*) with a high-value timber for furniture (€1,500–3,000 m⁻³), ready for harvest after 25–40 years but needs regular pruning, (iii) sycamore maple (*Acer pseudoplatanus*) used for instruments and high-quality woodworking (€1,200–2,500 m⁻³ for premium logs) that requires careful branch management, (iv) black walnut (*Juglans nigra*) with a premium veneer wood (€1,500–5,000 m⁻³ for premium logs) that prefers deep, well-drained soils or (v) chestnuts with high value timber trees. Chestnut needs a set of key management techniques such as (a) pruning formation starting at 3–5 years to maintain the dominant leader while removing competing branches (b) high pruning aiming to produce a clear bole in a 6 m log length that makes compulsory to annually remove lower branches while leaving at least 30% of the crown length (c) an initial planting distance 5–8 m, followed by progressive thinning, when no genetic improved varieties are available and (d) protection from browsing by using protectors to avoid livestock/wildlife damage, especially in silvopastoral systems.

The economic potential depends on the species and the soil-climate conditions for the tree growth, but commercial thinning can provide between 500 to 1,500 € ha⁻¹ with €15,000–50,000 ha⁻¹ for final harvest after 40–60 years. Using high value timber tree species in agrisilviculture may provide annual income from field crops and CAP subsidies (direct payments, Eco-Scheme 3 in Germany). Moreover, certification (FSC, PEFC) allows for a 15–25% price premium.

High-value timber production in agroforestry is a long-term investment with ecological and economic benefits. With appropriate selection of high value timber species and targeted management, farmers can benefit from premium timber, greater climate resilience, and increased diversification of their operations.



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