

Experiences with valuable broadleaves in Mediterranean mountains of North-East Spain: forest restoration through high quality timber production

Jaime Coello Gómez¹, Míriam Piqué Nicolau¹

¹*Sustainable Forest Management Department; Forest Technological Centre of Catalonia*

ABSTRACT

Upper Mediterranean conditions have an interesting potential for growing valuable broadleaves. Our working area is predominantly hilly-shaped, very forested (>50% cover) and located around 600 m a.s.l. Forest land property is mostly private (80%), generally as small estates with a combination of forest, grazing and agricultural uses creating a mosaic.

Forests are predominantly overdense due to forest management abandonment, and are notably dominated by conifers. This situation led to major forest fires in the last two decades, with fundamental environmental and social impacts. Moreover, many marginal agricultural fields are being abandoned, with the consequent productive losses and colonization by conifers in high density. This fact results in the homogenization of landscapes, and in increased risk of forest fires, due to fuel continuity.

We are working since 1999 in the assessment of the potential of these marginal agricultural fields as well as highest quality forest sites for hosting valuable broadleaves. We identified three objectives for growing broadleaves in our conditions:

- High quality timber production
- Environmental protection: reduction of forest fires risk, creation of barriers for fire, biodiversity enrichment
- Social welfare: maintenance of productive systems, income and employment generation in rural areas, landscape quality improvement and prevention of forest fires

Our specific research activities are so far focused on valuable broadleaves plantations; we settled 8 experimental sites of around 1 ha each. We work mostly on marginal agricultural fields, with predominantly extensive management. We evaluate the performance (survival and growth) of different vegetative materials of *Juglans*, *Prunus avium*, *Fraxinus* and *Sorbus*. We also test different techniques aiming to increase plant fitness while reducing the labour input need: mulching, shelters, mixed plantations, etc.

Our first results show that upper Mediterranean conditions are suitable for growing valuable broadleaves. We had very high survival rates, while growth varied significantly among sites, species and treatments. Overall performance of all species is being satisfactory in general, with annual diameter growths of around 0.5 – 1.3 cm, and annual height growths of 35 - 70 cm. We found that mulching is an interesting technique for enhancing the growth of valuable broadleaves plantations under extensive management.

KEYWORDS

Forestation, Broadleaves, Mediterranean

Jaime Coello

Sustainable Forest Management Department; Forest Technological Centre of Catalonia

Pujada del Seminari S/N; E-25280 Solsona – Lleida (Spain)

Phone number: +34 973 481 752

Fax number: +34 973 481 392

e-mail address: jaime.coello@ctfc.cat