



Trees and forests on mountain farms: measuring performance and innovating to support the evolution of Pyrenean grassland systems

Introduction

Over the years, agriculture and forestry have undergone a certain split which has led to spaces being specialized (mechanization, reduction in the workforce) in their uses. However, agroforestry is experiencing renewed interest among farmers, especially in large crops where it fulfills several objectives: thermal regulation, fight against erosion, preservation of biodiversity, production of timber, energy wood or fruits, heritage vision, etc.

Agroforestry and silvopastoralism have their place in livestock farming, particularly within an extensive mountain or foothill suckling cattle system. Their development is still little observed in the field while the forest can provide great services to livestock breeders: production of animal bedding, contribution to food and fodder autonomy (supplements with forest fruits and fodder on the ground), diversification of marketed production and sources of income (sale of wood). Without forgetting environmental benefits such as reduction of erosion, nitrogen absorption or animal welfare.

Methodology and results

AGROSYL aimed to promote innovative agricultural practices linked to forests and wood. The project was structured around four experiments: creation of a technical silvopastoral route; establishment of white mulberry trees as fodder trees; study of the impact of wood mulch as bedding on animal welfare and analysis of the productive potential of fruit trees (oaks, chestnuts, cherry trees, hazel trees) after selective thinning in the stands. Each experiment took place in three stages:

- Construction of a system for experimenting with technical solutions: diagnostics with groups of farmers, state of the art on proven solutions and implementation of pilots.
- Capitalization of results: monitoring-evaluation of pilots, marketing study (commercial development potential), comparison with similar projects, and construction of a support offer (agrosilvopastoral advice).
- Dissemination of results and implementation of innovations: coordination of OG, dissemination, awareness and training among farmers and advisors.

The silvopastoralism experiment was carried out on three farms. The objective was for the owners of the settlements to reclaim their forests by grazing their animals there. 27 plots per farm were created in order to measure the evolution of forage resources on the ground. Main findings: the forage resource becomes established from the 3rd year and the forest cover regains space over the same period of time.

5,000 white mulberry plants were planted on 0.25 ha at GAEC Authier in 2017. For material reasons, ensiling the mulberry harvest to give it to livestock was not satisfactory.

The farmer therefore integrated the plot of mulberry trees into the livestock's grazing route in order to manage the grass cover before the plants explode. When the grass reserves run out during periods of extreme heat, the mulberry plants take over. The wood mulching experiment was carried out within two GAECs. No significant difference was observed between the two types of mulching (pure straw and mixture) on the behaviour of the livestock. The visual appearance of the cleanliness of the livestock is much better on litter with a pad underlay, although the appearance of the litter itself is dirtier. Finally, the fruit experiment was carried out in parallel with the silvopastoralism experiment on a farm. The partners noted that the plots having undergone the greatest removal of stems (40% compared to 30% and 0% for the control block) produced the most fruits.

Lessons learned

For farmers, the project offered a support framework to appropriate and implement agroforestry and silvopastoral practices. For forest owners, AGROSYL made it possible to get closer to breeders and to implement silvopastoral practices in their forests. For advisors, the project defined a prototype of agrosilvopastoral advice that could be applied in their territories. For research institutes, the project provided references acquired through the monitoring of pilot sites, on a subject bringing innovation.

The white mulberry seems to be adapted to many soils and pedoclimatic contexts and resistant to drought. For some breeders, wood mulch represents an alternative to straw from cereal producers, the purchasing costs of which are high.

The continuation of the project consists in particular of supporting breeders who own wood to integrate silvopastoralism. It is also desirable to continue the production of knowledge on fodder trees by adopting new planting methods as well as other types of livestock farming.



Figure 1. Silvopastoral practices in Midi-Pyrénées.

Grégory Sajdak - IDF © CNPF

The information presented in this factsheet was developed by the FOREST4EU partner, drawing on the innovations and knowledge generated by the indicated operational group with their explicit authorization.

Further information

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