

CONTEXT PROFILE



ITALY



FARMER

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INNOVATION

Tree management in agro-silvopastoral farms
to increase pasture availability and productivity



[Video](#)



MAIN DOMAIN OF THE INNOVATION

Improvement of grassland management



SOIL TYPE

Sand



FINANCE/INVESTMENT

Mid



AGROCLIMATIC AREA

Mediterranean South



MANAGEMENT

Pasture Dairy



MARKET

Local-rural



CLIMATE

Mild winter



TECHNICAL

Easy



SOCIAL

Full-time farmer

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Case Study: IT_12	Agroclimatic Zone								
Item (Key Innovation Elements)	Alpine	Atlantic Central	Atlantic North	Atlantic South	Boreal	Continental North	Continental South	Mediterranean North	Mediterranean South
Deciduous tree management (downy oak = <i>Q. pubescens</i>) to increase pasture productivity thanks to the better enlightenment	++	++	++	++	++	++	++	+++	+++
Use of tree leaves and acorns as supplementary forage for dairy sheep at the beginning of summer (late May) and in autumn-winter, respectively	++	++	++	++	++	++	++	+++	+++
Integration of high-biodiverse understory pastures and high-productivity sown pastures in the rotational plan from the end of summer to late spring	++	++	++	++	++	++	++	+++	+++
Summer grazing on stubbles, dry vegetation and evergreen shrubs	+++	++	++	++	++	+++	+++	+++	+++
Sheep rest under not managed trees and do not damage sown pastures = No parasites overload.	+++	++	++	++	++	+++	+++	+++	+++
Strenghts of the system: biodiversity; increased resilience?; conservation of traditional landscape	+++	++	++	++	++	+++	+++	+++	+++

+++ Strong transferability ++ Slightly limited transferability + Very limited transferability ✗ Generic information/not relevant

Implementation Gaps

- The cleaning up of shrubs and the understory vegetation could be subjected to restrictions due to legal regulations
- The cost for cleaning up the understory and manage trees could be very high.
- Not adapted for dense forests

Research Gaps

- Quantification of forage availability and quality of sown and natural pastures
- Herbage intake
- Animal welfare and productivity
- Seasonality of forage availability
- Nutritional and nutraceutical characteristics of tree leaves
- Soil fertility and management
- Evaluation of the ecosystem services released in the system.

Suggestions to Adapt

- Grazing animals can be conveniently used to clean up the understorey to avoid the use of mechanical equipment.
- The system is suitable also for beef cattle.
- Downy oak trees are characterized by a high genetic variability and are highly adaptable to several environments. It is worth to keep this species into consideration also in the case of planting trees in grasslands because:
 - They are among the most frequent hosts of all the economically important truffles (*Tuber aestivum*, *T. macrosporum*, *T. magnatum*, *T. melanosporum*, *T. uncinatum*). The mycorrhization of trees could increase the diversity of farm income.
 - Considering the remarkable increase of tree ring size of the downy oak in response to the increased atmospheric CO₂ compared to other species, its increased use in Southern Europe could be a very effective tool to mitigate the greenhouse effect.
- Use of ration grazing and electric fences can improve the pasture utilisation and growth

COST-BENEFIT ANALYSIS

INVESTMENT COSTS

Total initial investment costs at start up:	mid
• Initial authorisation costs (e.g. sanitary, veterinary, etc.)	not applicable/not known
• Initial advisory costs	mid
• Initial buildings and machineries	mid
• Initial certification costs	not applicable/not known
• Initial working capital (personal qualification, marketing and promotion, etc.)	not applicable/not known

ON-GOING COSTS

On-going advisory costs	not applicable/not known
On-going certification costs	not applicable/not known
On-going buildings and machinery costs	not applicable/not known
On-going working capital	high

BENEFITS RELATIVE TO ORIGINAL SYSTEM

◦ Economic

Reduction in energy consumption (electricity; fuel consumption)	high
Reduction in input use (fertilizers; pesticides; feed) etc.	not applicable/not known
Payback period	high
Product value added	not applicable/not known
Additional farm income through agroecological/agri-environmental payment schemes	not applicable/not known

◦ Environmental

Animal feed self-sufficiency increase	high
Biodiversity increase	not applicable/not known
Improved nitrogen cycling	not applicable/not known
Soil regeneration	not applicable/not known
Animal health and welfare improvement	high

◦ Social

Workload reduction	not applicable/not known
Engagement of young generation	not applicable/not known

Literature

National Language

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English

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