



The silvopastoral trial at Elm Farm

Agroforestry for integrated livestock
and bioenergy production

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YEAR

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FUNDING - PROJECT

EU FP7

- SOLID

- AGFORWARD

The silvopastoral trial at ELM Farm, Berkshire, (2011-2019)¹ was a custom experimental plot funded by the EU SOLID² and AGFORWARD³ projects and designed to examine the economics and practicalities of silvopasture with biofuel production. The system consisted of a pasture herbal ley, with willow and alder tree strips.

The findings are of great relevance as agroforestry is assessed by Defra for inclusion in the post-Brexit Environmental Land Management system:

- The system returns a positive Net Present Value (NPV) but involves a large initial outlay and a 5-year period of tree maturation before returns can be realised. This initial low output phase continues to constrain adoption of agroforestry and may need subsidy support.
- Trees have no impact on ley or arable within strips during the establishment phase, and a minimal impact thereafter.
- Jute sheet mulching improves sapling establishment compared to a no-mulch control. Woodchip and plastic mulch also produce high rates of sapling survival and perform equally well. The mulches of organic origin are preferred as they will decompose naturally.
- Tree rows contain a high diversity of wild plants (none of which caused significant weed problems in alleys) and an abundance of beneficial organisms such as earthworms.
- Cattle enjoy the trees, scratching on them and lying among them. Cattle will also browse on tree leaves and prefer willow to alder. Willow can act as a food buffer during times of low grass availability.
- These behavioural interactions can damage trees and conflict with bioenergy production. Conflicts can be lessened with single strand electric fencing or introducing cattle only prior to biofuel harvesting to strip leaves.

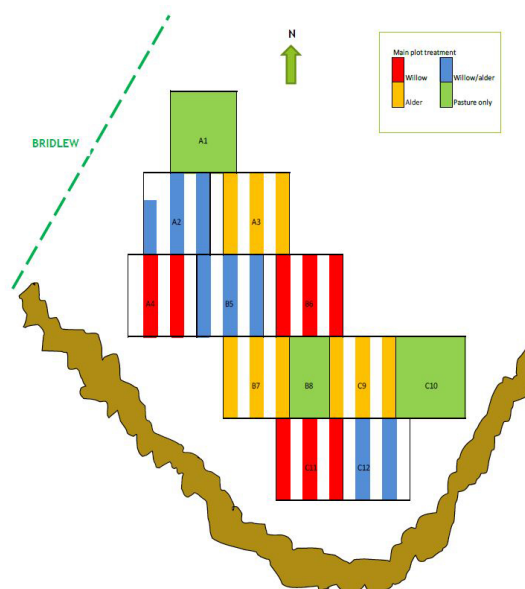


Diagram of the silvopastoral trial at Elm Farm. Pasture alleys are 21m wide and tree strips, 3m wide. Alleys, shown white in the diagram, contain pasture

FURTHER READING

1. Westaway & Smith (2020) tinyurl.com/y2wcrvo4
2. SOLID project website: solidairy.eu
3. AGFORWARD project website: agforward.eu