



## AGROFORESTRY SYSTEMS: SILVOPASTORAL, SILVOARABLE



Year of foundation	2001
Specialization	Organic crop growing and poultry in free-range yard planted with poplars for timber.
Farm area	Silvoarable plots: 65 ha. Size of the silvopoultry yard: 2,5 ha
Number of employees	1
Year of starting agroforestry practices	1997
Location	France, Gers, Céran
Web page	...

Alain Magnaut is a French farmer, from the region of Gers. He decided to **turn traditional poplar forestry plots in a silvopoultry agroforestry design by adding a chicken yard under the trees.**



*Stevedore storing and moving poplar logs*



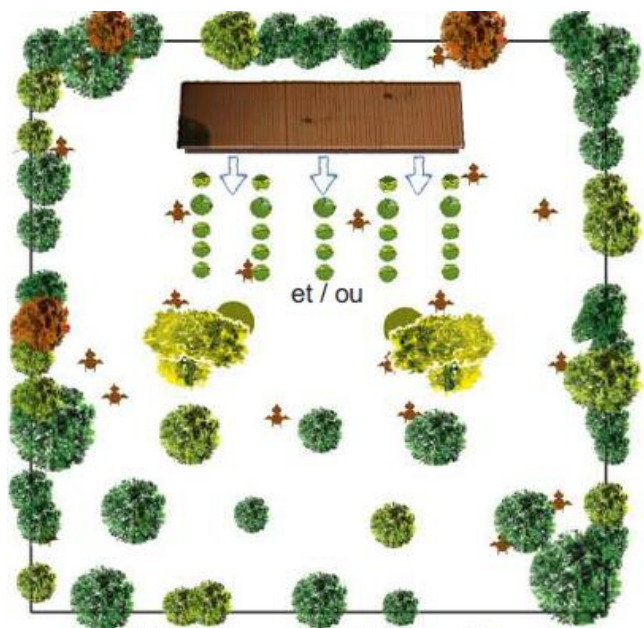
In 1980, several plots of the farm were planted with poplars, mainly to mitigate the damages caused by the floods of the local river, the Gers. These forestry plots could be compared as silvicultural monoculture. These trees were harvested in 1997, and before the re-planting, Alain Magnaut thought about how to increase value and productivity of these plots. **He chose to add the breeding of free-range certified poultry.**

**The 2,5 hectares silvopoultry yard is a success, with well-developed trees and healthy chicken under them. Alain Magnaut also grows crops with silvoarable designs on 65 hectares, with diversified varieties of trees.**



*Chicken under poplar in the silvopoultry free-range yard*

- **The association of a poultry activity brings short term revenues that complement the long-term revenue of the sale of timber.** This enhances the balance sheet of the plot.
- **The animal well-being is increased** thanks to wind and rain protection, shade and the feeling of safety that provide trees.



*Possible design of a diversified silvopoultry free-range yard*

The area dedicated to this type of system ranges from 1 to 6 hectares per chicken house, depending on the type of building. **Some criteria must be taken into account to ensure an optimal association between trees and chicken:**

- **A limited shade of 30 to 40% equally distributed**
- **A good protection against wind for the whole yard**
- **Absence of mud zones or stagnant waters**
- **Access to the chicken house properly maintained**

In the periphery of the system, trees must be planted to constitute a hedge with good wind-break properties. The space around the chicken house must be clean and easy to maintain. **In front of the building hatches, along 15 to 30 meters, lines of low hedges and thickets will encourage chicken** to explore more of the yard. Beyond these low hedges, high trees can be planted to provide shade.

Alain Magnaut underlines the **importance of the proper planting and pruning of the poplar trees**, especially if the sale of timber is the finality. He has been taught by his father the know-how to take care of poplars, but he clearly recommends to follow trainings for pruning or to be accompanied by professionals.

## DESCRIPTION OF USED TECHNICS DURING ESTABLISHING OF AGROFORESTRY SYSTEMS

Poplars were selected for their economic value and demand on the market, also because it is a fast-growing tree.

**There were planted with a 7x7 meters spacing, reaching a final tree density of 204 trees/ha.**

**It is important to mulch the trees with hay, especially in the first years, however it can attract wild animals, and be displaced by the chickens. The best option could be ramial chipped wood.** You can install chickens rather quickly in the yard, even if the trees are still young, but it is better to wait at least one year.

**The installation of a good sward, that can abide shade is important and must be done before the addition of the chickens to the system.** Then, the management of the browsing of the chickens must be closely monitored, to allow the sward to regrow adequately. This can be achieved by using **“rotational grazing” systems and mobile poultry houses.**



*Alain Magnaut and his poplars*

## THREATS/CHALLENGES

- **The trees can have a negative impact on the development of the yard's sward.** Since the success of the system depends also primarily on a good grass availability for the chickens, the implementation and good management of adapted herbaceous species for the sward layer must be considered.
- **Fall of material such as branches during climate events or pruning operations can be dangerous for the chicken houses.** Trees must be strategically placed to prevent this kind of threats.
- **Thickets can be shelters where predators can hide**, and since chicken are more encouraged to range freely, they can fall prey to them.

By choosing to turn his forestry plot of poplars into a silvopoultry yard, **Alain Magnaut managed to keep his timber production and at the same time develop a new activity of poultry breeding, certified free-range, and increasing animal welfare.**

The poplar trees were harvested in 2018 with an average selling price of 55€/m<sup>3</sup>, for a total production of 528m<sup>3</sup> on his 2,5 hectares of silvopoultry, meaning a total revenue of 29'040€. The total cost of maintaining the trees reached 5'462€. The operation is clearly positive in terms of margin.



*Manual felling of a poplar tree*

## FUTURE PLANS

Satisfied by his 1st experience, Alain Magnaut plans to replant his poultry yards with poplars, benefitting now from incentives offered by the poplar sector to dynamize the plantations.

## FINAL RECOMMENDATION

## KEY WORDS

Poultry, timber, free-range, yard, poplar, silvopoultry



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