



## AGROFORESTRY SYSTEMS: SILVOARABLE, FOREST GARDEN



Year of foundation	2012
Specialization	Organic crop growing (wheat for bakery) and grass-finished cattle.
Farm area	110 ha
Number of employees	4
Year of starting agroforestry practices	2018
Location	France, Gers, Lasseube-Propre
Web page	<a href="https://therealfoodfight.uk/">https://therealfoodfight.uk/</a> <a href="https://www.facebook.com/realfoodfight/">https://www.facebook.com/realfoodfight/</a>

The Real Food Fight (Ferme à Naroques) is a polyculture farm in the region of Gers, France, focused on production of organic wheat for bakery and grass-finished Red Sussex cattle. **In 2018 silvoarable agroforestry was implanted in one of the plot of the farm and a very diversified forest garden in another plot.**



*The forest garden plot during dry season – September 2019*





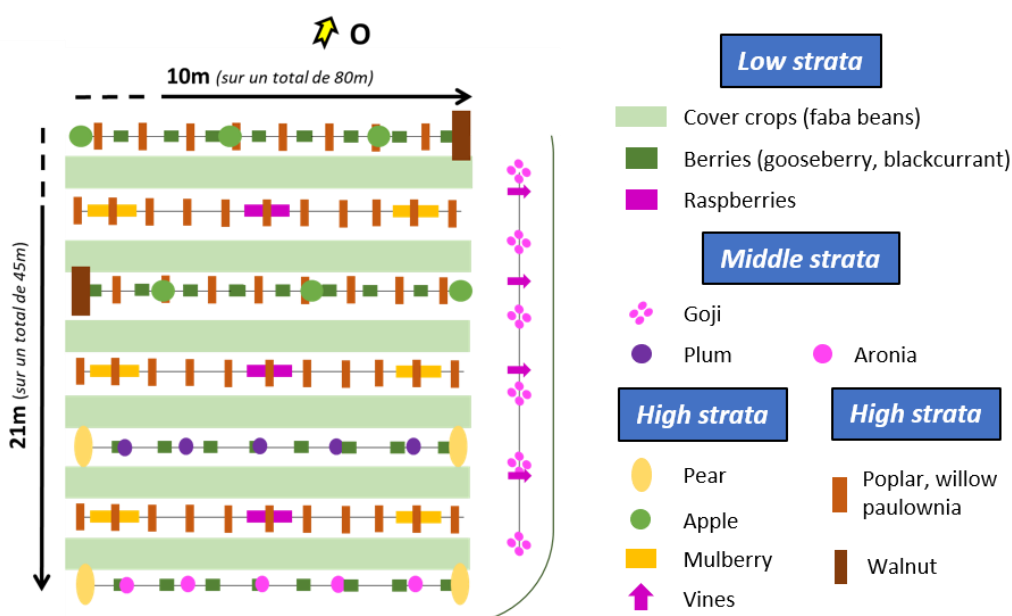
The Naroques farm was a classical farm of the region of Gers, with large plots dedicated to pastures or crops. With the installation of Andy Coecup, the farm was converted to **organic agriculture** and the search for an **integrated model between crops and animals**. In this dynamic, **agroforestry was part of the equation, mainly to increase the fertility of the soil, water retention and animal well-being**, providing cows with shade and protecting them from the wind

Agroforestry was first implemented in a **silvoarable fashion** (lines of trees in the pasture, with hedges around) on **15 hectares of pastures / crop fields**. Then, a **forest garden was planted to provide the farm's shop and bakery activities with fruits for the pastries and vegetables to sell**. Both of the agroforestry plots are still very young; however, trees are vigorous and display a healthy state and fast growth. The forest garden has already given a harvest of berries and summer vegetables.



*The forest garden plot with faba beans mulch cut – May 2019*

➤ The lines of trees in the silvoarable plot are expected to **decrease erosion which is severe in the region and provide a good environment for the cows** to develop a better health state, without impacting the growth of the pastures and the crops.



*Design of the forest garden plot at the Real Food Fight farm*





This forest garden was designed following rules of stratification and succession to have the densest system possible and produce the most fruits and vegetables on a small piece of land. This system is inspired by the work of Ernst Götsch that was mostly developed in Brazil. The experimental plot of the Naroques farm is an adaptation for temperate climates to evaluate the possibility of high-densification of productive agroforestry systems. The plot was **planted during a workshop** coupled with a training with more than 30 participants. The planting was financed both by a foundation and a small part of the revenues of the training.

Designing such a forest garden requires knowledge about natural strata and period of succession of each plant included in the model, to be sure to associate properly the species. Also, to be well aware of the cycle of production of the plants to anticipate a planting schedule guaranteeing a staggering of the work tasks (weeding, harvesting, pruning...).

## DESCRIPTION OF USED TECHNICS DURING ESTABLISHING OF AGROFORESTRY SYSTEMS

The forest garden was planted respecting a dense association of plants, respecting the original strata of a forest, and anticipating the succession of species. This allowed to plant 11 species of trees (mainly for fruits), associated with shrubs and berries. Lines of trees are spaced by 3 meters and trees are spaced approximately by 1 meter. Between the lines of trees is planted a cover crop, or lines of vegetables. Vegetables are also planted on the line of trees. This ultra-high density will be partly maintained thanks to intensive pruning. The soil was sub-soiled but it has not been sufficient and large holes were manually dug for each tree (cutting or sapling). **The whole plot is protected by a strong fence.**



*General view of the silvoarable plot of the Naroques farm*

## THREATS/CHALLENGES

- The challenge is to adapt a high-density agroforestry model that proved to be successful in tropical conditions to temperate ones.
- The other challenge is to assess if the high workload required by such a plot is “paid” by high productivities.



The forest garden plot at the Naroques farm aims to produce the most quantity of vegetables and fruits with the less inputs and land possible. **It is still at an experimental stage to assess the performance of such a dense agroforestry design.**

The model is still very young (1 year old), but the main lesson learned is that the farmer must be crystal clear on the time he wants to spend for this kind of system. The one planted at the Naroques farm is based on a **very intensive involvement of the farmer, especially for pruning and harvesting.** In the case of Andy Coecup, whose main activities are crops and cattle, the system, which is more fruits and vegetables oriented, is not ideal and probably won't be pushed at its highest potential.



*Red Sussex cows benefitting from the shade of a hedge*

### FUTURE PLANS

The forest garden plot has still to reach its maturity. However, for the pastures and crop fields of the Naroques farm, more silvoarable plots are to be implemented.

### FINAL RECOMMENDATION

The objective of the design must be very clear: focus on fruits/vegetables/ or woody products? And, also, **the commercial outlets for all of the products. The very diversified production is particularly adapted to short-circuit deliveries of food baskets to consumers.**

### KEY WORDS

Forest farming, forest garden, vegetables, fruits, silvoarable, breeder, cows, animals, wheat, organic



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