

## AGROFORESTRY SYSTEMS: SILVOARABLE



Year of foundation	2018
Specialization	Growing of medicinal plants and soft fruit
Farm area	3 ha
Number of employees	2
Year of starting agroforestry practices	2018
Location	Tomášov (district Senec)
Web page	-

**Gabica farm is a family business.** Initially, the farm began to devote to industrial automation and the production of single-purpose machines. Frequent contact with farmers (supply of machinery for farmers and processors of their products) was sufficient reason to start working in agriculture. The parents of the founders of the farm came from agricultural families and therefore working on the farm is close to them. They were also led by the idea of a different approach to land, as the only source of livelihood, what is commonly traded in their region.



The farm was founded in 2018 with the intention of building a family farm. The long-term goal of the farm is the **specialization in cultivation of medicinal plants and their processing (refining)**.

**The farm has started agroforestry from the beginning. Even before the farm was found, they started their first experiments with technical crops.**



- The farm expects from agroforestry practices to reduce the environmental burden of crop production.
- Retention of water in the soil and prevention of erosion is also expected.



At the time of preparation, founders of the farm had no information on agroforestry practices. Knowledge was drawn mainly from generational knowledge and one of the owners comes from an agricultural family. **In the past, before the era of agricultural cooperatives, agroforestry practices were a standard procedure that was required by law since the end of the 18th century.**

The family farm considers education as a basic prerequisite for success before the concrete implementation of agroforestry systems. Education should focus on the establishment, maintenance and care of agroforestry systems. It is also important to care for the trees, shrubs and their use to increase the quality of the soil. Equally important is education on the combinability and tolerance of individual crops, trees and shrubs.

## DESCRIPTION OF USED TECHNICS DURING ESTABLISHING OF AGROFORESTRY SYSTEMS

**At the edge of the plot was buffer zone that has been planted by white clover. A tree line consists of hybrid of black poplar and green belt of "meadow flowers and grasses". This was followed by planting lavender in the each second row. The reason for such a lavender planting was the high soil depletion. This approach resulted in more frequent mechanical working to eliminate weeds. After the second row was planted, the space between the rows was planted with microclover. The microclover was sown as an adjacent crop to naturally nitrogen fixation to the soil. The trees were planted 3 m apart in the first row and 6 m in the second row, while the rows were shifted to the center of the spacing. It was planted using a soil drill behind the tractor.**



## THREATS/CHALLENGES/RECOMMENDATIONS

- The biggest threat, according to the family farm, are farmers for which “huge plots with monoculture” represent the best agricultural practice and at the same time those farmers for which the idea of alley cropping on arable land means a limitation in land management.
- The use of “**active chemical protection**” on neighboring areas is also a major threat.
- **Overpopulated wild animals** is a serious problem in the agricultural land. For this reason, **mechanical protection (mesh) of trees against wild animals is needed.**
- Their main challenge is to get the birds and wildlife back into the green alleys under the trees. From the beginning, they also build **perches for predators on the corner of their land.**
- When they plant trees and crops, it is increasingly challenging to maintain water in the soil by permanently crop covering during the summer. **During the dry season they use selective irrigation, especially at the beginning of tree growth.**

The family farm in cooperation with the manager of the hunting association created a program – **“Restoration of trees near cartway” with the involvement of children, school and the municipality.** However, this prepared program did not meet the understanding of the mayor of the village, so they began to implement it on their own land.

**During the observation it was found that comparing the first two sown parcels with and without the trees line, quite large differences in growth and yield of raw material (essential oils from crops) can be observed.**



## FUTURE PLANS

The Gabica family farm would also like to gradually expand to **cattle breeding. Agrotourism** is supposed to help in seasonal work and at the same time to support sport.

## FINAL RECOMMENDATION

“The diversity of crops can also ensure partial protection of neighboring crops, whether plants or predators involved in green belts. Climate change teaches us to retain water as much as possible.”

Personal recommendation:

*“Applying good practices also requires common sense when you combining activities and crops. It is always necessary to look at local conditions, because 100 meters away this crop may not flourish at all.”*

## KEY WORDS

Agroforestry systems, alley cropping, lavender, clover



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