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MULTIPLE- CROPPING PATTERNS AND AGROFORESTRY SYSTEMS

CORRESPONDING
MODULE 2



Introduction

Agroforestry is characterized by the management of trees and shrubs in combination with livestock, conventional crops or mixed farming. Put simply: in the past, foresters learned from farmers how to grow profitable monocultures, today farmers learn how to grow trees [1].

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Agroforestry systems in the Czech Republic

Miller's farm in the village of Úholičky is located in the Central Bohemian Region and currently farms approximately 880 hectares of land. In cooperation with the Czech University of Agriculture in Prague (ČZU), he established an experiment that counts six rows of trees separated by a wide strip of soil (so-called alley cropping). The system allows Miller to grow valuable trees on one plot of land at the same time as normal crop production. There are other benefits at play:

- protection of crops from extreme weather (for example wind),
- better water retention,
- increasing biodiversity.

For Farmer Miller, the important functions of the experiment are landscape fragmentation, water retention, game return, and tree timber yield. Here, the expectation of yield is combined with the desire to create a functional and vibrant piece of landscape.



Podpoľanie is one of the few areas in Slovakia where the symbiosis of growing trees and crops has been preserved to this day (Photo © T. Belko)

Another example of a farmer using the concept of agroforestry, but with a slightly different concept, is Daniela Pitka. He took exactly the opposite route to agroforestry. When he started farming on neglected plots in 2001, with the feeling of a forester, he left some of the more valuable trees on the spot when clearing them. He followed this up by restoring old orchards and establishing new ones. Over time, he managed to restore the landscape character that was once typical for the location on his land: a mosaic of pastures and orchards. But he

did not stop there and by establishing ponds, he fundamentally increased the volume of water retained on the land. At the same time, it created a suitable environment for numerous birds, reptiles and amphibians, which immediately inhabited it.

Pitek appreciates the aesthetic value of the landscape, biodiversity and the comfort that the shade of trees brings to grazing animals. The farm currently covers approximately 600 hectares and the combination of grazing and fruit growing is proving to be profitable in this case.

Since this is an already established culture, Daniel Pitek can also offer some valuable experience:

- He established the vegetation, as mentioned, from the original raids, by planting the shoots and from the network.
- He does not irrigate the newly established stands, he compensates for the lack of water by planting in the autumn months.
- Plastic protectors did not work for him to protect him from wild animals.

The successful farmer also offers advice: "Don't do everything at once, but start with everything gradually. One learns what works and what doesn't through practice, observation and mistakes."

From a bird's eye view, the strips of agricultural land between rows of trees are strikingly reminiscent of plowlands typical of Czech villages since the Middle Ages. So is this an innovation at all? "We're more or less going back to the procedures that were here before."

Jiří Rom





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Why introduce agroforestry systems in Czech agriculture?

Czech agriculture needs to quickly adapt to climatic and growth conditions, because on the one hand there is a risk of a dry season, on the other hand there may be long-term rains that the landscape will not be able to stop and infiltrate.

The soil in the fields often lacks an organic component and countless natural water reservoirs, pools and wetlands have been abolished in the past.

Agroforestry can significantly contribute to mitigating and even revitalizing the Czech landscape. In addition to the highly environmental function, the production function also creates a management chapter, which is why Agroforestry cannot be dismissed from this point of view either.

Agroforestry belongs to farming methods that are closer to nature and make maximum use of the environment.

Although agroforestry is specific primarily to agriculture, it also has a strong place in forestry, especially if we talk about the so-called medium forest. The benefit of forestry for Agroforestry is indisputable in terms of the breeding of forest trees and the production of high-quality planting material of more valuable forest trees such as bird cherry, rowan, field pear, etc., which would open completely new market opportunities for forest nurseries.

The most relevant agroforestry systems for the Czech Republic

On the basis of previous knowledge and the current state, we have defined the main types of agroforestry systems that come into consideration:

- Cultivation of woody plants on permanent grasslands.
- Cultivation of trees on arable land.
- Combined agroforestry systems combining the two previous ones.
- Other agroforestry systems that cannot be assigned to the previous ones.

Further information and references

1. <https://ekolist.cz/cz/publicistika/priroda/agrolesnictvi-na-poli-jako-v-lese>
2. https://www.researchgate.net/publication/357016918_Agrolesnicke_systemy_a_potential_ich_vyuzivania_na_Slovensku



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3. [https://
www.aleserber.cz/
inpage/
agrolesnictvi/](https://www.aleserber.cz/inpage/agrolesnictvi/)



ANNEX – STRUCTURE OF MODULE CONTENT TO PREPARE SLIDES

<p>Module Name:</p> <p>The name of the partner:</p> <p>Country:</p>
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The name of the module	
Target group involved	
Current information about the topic	
Principles of the specific module	
Basic terms/measures of the module/topic	
Training materials (tasks, case studies, exercises)	
Short description of the materials	
Link of the online resources (film or video resources)	
Specific images (to support the purpose of the resources)	
Duration	
Materials	
No of Learners/Representatives	
Individual or group work	



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Step by step guide	
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