Agroforestry Business Model Innovation Network

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Chestnut: Multipurpose Tree Species in Chestnut-Poultry Silvopasture Orchard

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Silvopasture system combing planting chestnut trees and poultry farming

Chestnut (*Castanea sativa* Mill.), is one of the oldest non-native tree species in Slovakia. Unfortunately, this promising tree faces insufficient care from the state bodies, as there are no specific management measures for it yet. It is possible to plant it in the open country and at the same time as part of agroforestry systems. In the western part of Slovakia is situated a chestnut-poultry silvopasture orchard. This chestnut agroforestry orchard is managed by private farmer on 1.2 ha and the cultivation is supplemented by animal farming (about 50 pieces of poultry and geese). There is no specific time management of poultry grazing in the orchard. Only a part of the poultry grazes freely, so no problems with soil compaction have been observed. Chestnut trees are planted to produce nuts used for human consumption and direct sale. The main research aim of this pilot research-demonstration plot is to evaluate the growth parameters of chestnut individuals in such agroforestry system. Based on the measurements conducted it was found that 21 years after planting, average diameter at breast height of chestnut individuals reached 14.5 cm. Further 21 years after planting, average height of chestnut individuals reached 5.2 m. The obtained measurements show that chestnut trees have a good soil and climate conditions at the above mentioned agroforestry orchard, since one of the important factors, which is the relief of the hills, creates favourable conditions for mitigating the differences between the annual and daily temperature fluctuations. In this way, the chestnuts can survive the adverse effects of low temperatures, summer heat or lack of moisture.

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