## Influence of historical forest managements on the condition of coppice

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## Introduction and objectives

The aim of the project is to determine the impact of grazing and litter raking and to quantify its effect on the condition of the coppice from the dendrometric and pedological point of view. Silvopastoral systems (grazing is part of them) are another historical management methods that gain more and more interest nowadays. Grazing and litter raking in forests are prohibited by law (Act No. 289/1995 Coll.) and the ongoing research seeks to bring new insights and change the way we look at these forest managements. Still, very little is known about livestock grazing in forest understory.

The main hypothesis is if traditional forest managements can contribute to maintaining or increasing coppice diversity under the conditions of sustainable forest and agricultural management. The research plots are a unique combination of forestry and agronomy (as agroforestry).

Methodology

- research plots established in 2017, within Forest Enterprise Masaryk Forest in Křtiny
- sessile oak stands with 80 standards per hectare » in conversion to coppice-with-standards
- 15 research plots (each 40×30 m) with buffer zones, and they vary in terms of forest managements
- grazing period is from June to October since 2018, three of the six research plots are grazed
- managed (controlled) grazing, every 14 days the sheep (Šumavka breed) are moved to another plot
- circumferences of the oak standards and number, height and diameter of sprouts are measured
- from each research plot 4×15, i. e. 60 soil samples in November are taken
- following pedological properties Ah horizon, organic horizon, the amount of litter, soil reaction, nitrogen, carbon stock content are evaluated



Mean values (level of significance  $\alpha$ =0.05) of circumference relative growth ratio of oak standards in years 2017-2022 compared between different treatments. RGR (%) – relative growth ratio of oak standards, C – control plots, LR – litter raking plots, G – grazing plots.

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