

The effect of selection-cutting to the soil in Pilis-hills

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The Pilisszentkereszt area is situated Pilis-hills, where about 2000 ha territory is managed by selection cutting. The aim of experiment is the economics analysis of management, as well as present such practical forestry methods, which are suitable for the national relation silviculture, nature conservation and public welfare viewpoints. In the course of fieldwork we examined in above-mentioned forest block the habitat relations and resulted soil changes in gaps.

We opened 10 soil profile in the territory. On the basis of these examination we established, that the watery acidity of soil samples was between 4,3 and 8,2 (Figure 1.). The slightly alkaline pH appeared only deeper layers, where was significant. In compliance with acidity appeared the carbonic chalk in deeper layers, that amount is between 4,1 and 18,4%.

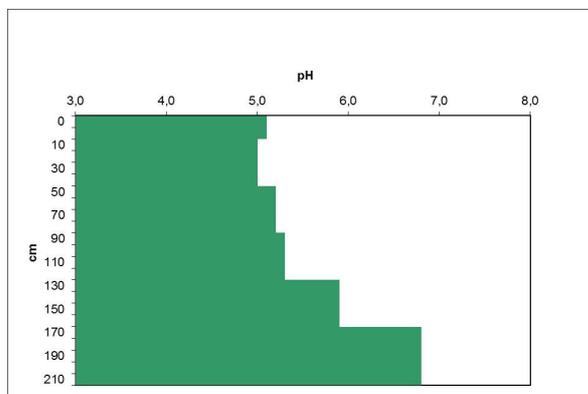


Figure 1. The watery pH in the 7. soil profile

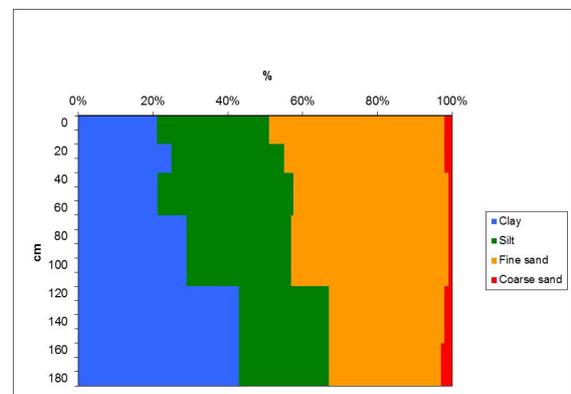


Figure 2. The particle size distribution in the 3. soil profile

By quarter of measured samples wasn't concretion, of this amount changed between 15 and 84 %. For establishing of physical assortment of soil we done the international Atterberg-type separate measuring, which that showed, that the clay content of soils was between 15 and 45 %, and the silt content was between 20 and 36 % (Figure 2.). The greater part of the examined soils were adobe physical assortment.

The humus content of soil was between 0,5 and 9,98%. The higher values was found naturally in the upper layers. The humus content in the upper layers is generally between 5-6% and in one soil profile approaches to 10%.

The half of the examined soil profiles are classify as rendzina type, which belong to rock-origin soils. These was established on compact calcareous bed-silt. The characteristic of their form are the strong humification and the slight leaching. The other part of soils in area is the lessivated brown forest soil type, which belong to Cental and South-east European brown type. In the creation of brown forest type play an important part the origin of woody vegetation microclimate, the soil climate, the organic substance (produced by means of trees, which fall down to surface in every year) and mainly the fungal microflora. In case of lessivated brown forest soil type the process of humification, leaching and claying are following the clay migration and medium acidification.

On the basis of examination made in two gaps we pronounce, that in case of smaller gap much bigger the amount of litter, as larger gap. At the greater gap in below the stand measured mass of litter does not come near to determined medium of mass of litter in smaller gap. Probably the difference is

rather follow from absence of litter in larger gap, that traceable to more occurrence. The exaggerated size of gap inducing larger displacement of air, which transport farther on the litter. The much bigger moisture content data nad the witout restraint come sunshine the conclusion can be drawn, that the degradation process much faster in the greater gap, as in case of smaller gap. In the larger gap the soil surface is moist microclimate in under *Rubus fruticosus*, which verify that postulate, that the covering of dense *Rubus fruticosus* greatly decrease to the possibility of evaporation of soil.

The moisture content of litter in case of smaller gap showed generally equal dispersion. In direction of medium of gap is continuously grow the values, which in the middle point approach the 70%, in contradiction to smaller gap, where the maximum value is 29%. This occurrence explainable the canopy density of smaller gap, where the foliage drain off the meaningful part of precipitation. We measured the moisture content of soil, and we detected similar lowly data in case of smaller gap in total territory, in contradiction of larger gap, where in the direction of middle pont of gap we got gradually grow data. The rooted state of soil influence to the moisture of soil inside the gap. The rooted state of soil in the greater gap obviously smaller (because the distance is larger of gap border), than at smaller gap.

The values of acidity measurement are almost similar in gaps and in stands. We made a comparison between two pH value of gaps. The data of smaller gap indicated to somewhat acidic pH. We observed too, that data of smaller gap were well stable, than results of larger gap. The size of gap essentially determined to vegetation of gaps and the pass off process in the soil. In case of too larger gap streaming the *Rubus fruticosus* to the territory and difficult appearing the regrowth.

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