



Does the precipitation redistribution of the canopy sense in the moisture pattern of the forest litter?

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Precipitation is trapped and temporarily stored by the surfaces of forest crown (canopy interception) and forest litter (litter interception). The stemflow and throughfall reach the litter, thus theoretically the litter moisture content depends on these parts of precipitation. Nowadays the moisture pattern of the forest floor, both spatial and temporal scale, have growing respect for the forestry. The transition to the continuous cover forestry induce much higher variability compared to the even aged, more-less homogeneous, monocultural stands. The gap cutting is one of the key methods in the Hungarian forestry. There is an active discussion among the forest professionals how to determine the optimal gap size to maintain the optimal conditions for the seedlings. Among the open questions is how to modify surrounding trees the moisture pattern of the forest floor in the gap?

In the early steps of a multidisciplinary project we processed some available data, to estimate the spatial dependency between the water content of forest litter and the spatial pattern of the canopy represented by the tree trunk. The maximum water content depends on dry weight of litter, thus we also analysed that parameter. Data were measured in three different forest ecosystems: a middle age beech (*Fagus sylvatica*), a sessile oak (*Quercus petraea*) and a spruce (*Picea abies*) stand. The study site (Hidegvíz Valley Research Catchment) is located in Sopron Hills at the eastern border of the Alps.

Litter samples were collected under each stand (occasionally 10-10 pieces from 40·40 cm area) and locations of the samples and neighbouring trees were mapped. We determined dry weight and the water content of litter in laboratory. The relationship between water content and the distance of tree trunks in case of spruce and oak stands were not significant and in case of the beech stand was weakly significant. Climate change effects can influence significantly forest floor moisture content, therefore this factor has also taken into account.

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