



Comparison between forest floor interception of a beech, grass-moss and pine plot

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Although often not considered in hydrological models, forest floor interception is a significant process in the hydrological cycle. With a view to a better understanding and quantification of this process, a special device has been developed to measure forest floor interception. It consists of two aluminium receptacles, which are mounted above each other and continuously weighed. The upper one has a permeable bottom and is filled with forest floor. The percolated water from the upper receptacle is collected in the lower one. From the difference between the weight of the receptacles and the rainfall, the amount of forest floor interception can be calculated.

Forest floor interception is depending on various processes, such as the weather conditions, layer thickness and forest floor type. The latter is now investigated. To that end, three experimental sites have been equipped with a forest floor interception device. The first setup is in the Huewelerbach catchment in central Luxembourg. In this plot the device is installed underneath the canopy of a beech forest, where the throughfall is accurately measured with a dense network of rain gauges. The second plot is in a forest clearing in Westerbork in the northeast of the Netherlands, where grass and moss interception is investigated. The third setup is in the Botanical Garden of the Technical University of Delft in the west of the Netherlands. Here the device has been installed underneath a pine tree, so the upper basin is filled with pine litter. Again the throughfall is measured with rain gauges.

From the results it appears that the amount of forest floor interception of the three forest floor types differs significantly. Although we should take into account that for the grass-moss setup besides evaporation from interception also transpiration occurs.

But, after compensation the difference remains.

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