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塔塔加地區台灣雲杉天然林冠層截留與林內降雨之研究

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摘　要　降雨截留探討的主題除了蒸發所產生的截留損失外，另一課題則爲冠層截留導致林內降雨量的再分配現象，而這個現象對地表之雨滴沖蝕可能有其重要影響。本研究選擇台灣南投縣塔塔加地區之台灣雲杉天然林分爲試驗樣區，以荷重式集雨器進行林內降雨量與林外降雨量觀測，目的爲瞭解在降雨事件發生時，雲杉林林分冠層結構對於降雨量的再分配現象。

本研究結果顯示，研究期間 4 個林內觀測點的降雨累積量均小於林外累積雨量，所佔比例從 72.14～94.56%不等；再根據雨場分析，台灣雲杉林的冠層飽和點最大爲 6.6mm。綜合其他相關參數採修正 Rutter 模式進行冠層水分平衡分析，因冠層厚度、樹冠滴落雨集水面積與遮蔽效應等因子綜合影響，截留現象造成林內降雨量有-12%~12%的再分配情形。

關鍵字：截留量、樹冠層截留儲存飽和點、林內降雨再分配、Rutter 模式。

A Study on Canopy Interception and Rainfall within a Natural Stand of Picea morrisonicola Hay. in Tatachia Alpine Ecosystem, Central Taiwan.

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ABSTRACT　The main topics of rainfall interception study focus not only on interception loss by evaporation but also the rainfall redistribution caused by canopy structure and microclimate. The latter could be a main factor causing raindrop erosion inside a forest. This study aimed to view the interception phenomenon by using loadcell rainfall gauges inside and outside a natural stand of Picea morrisonicola Hay. in the Tatachia Alpine Ecosystem, central Taiwan.

The results from measurements of all 4 rain gauges under canopies showed the accumulated throughfall were 72.14~94.56% of gross precipitation. The maximum interception capacity was 6.6mm based on rainfall events analyst. A combined factor of canopy structure, drip fall water collecting area, shading effect and water flow on canopy caused a -12% to 12% rainfall redistribution according to modified Rutter model analysis.

Key words:　interception, canopy capacity, rainfall redistribution, Rutter model.

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