

Throughfall, stemflow and interception loss in *Grewia optiva* and *Morus alba* in north west Himalayas

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Abstract: The study examined and compared the throughfall, stemflow and canopy interception in *Grewia optiva* and *Morus alba* tree stands in western Himalayas. Incident precipitation on tree can be partitioned into throughfall, stemflow and interception which have significant contribution in water balance in forest ecosystems. Total 39 rainfall events were studied for analyzing rainfall partitioned components in 5 years old plantations of *G. optiva* and *M. alba* in Dehradun, India. Maximum and minimum rainfall depth per event recorded during the study period was 1.01 mm and 121.70 mm respectively. Plastic funnels were fitted with the trees to trap the stemflow and plastic buckets were used to collect the throughfall. Average stemflow, throughfall and interception were 2.5%, 86.7% and 10.8% of total incident rainfall for *G. optiva* whereas, for *M. alba* it was 8.6%, 76.4% and 14.7% respectively. The funneling ratio for the entire rainfall events was found more than 1 for both the trees. The characteristics nature of the tree canopy in *M. alba* resulted in unique stemflow yield in comparison to *G. optiva*. *M. alba* funneled almost 3.5 times more stemflow than *G. optiva*. The proportion of rainfall partitioned components varied for both the trees due to their distinguished morphological characteristics. Results clearly show that interception loss varies with tree species type and contributes a significant proportion of incident rainfall towards catchment water balance.