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Root Layering in a Tropical Forest after Logging (Central Vietnam)

ZDENEK CERMÁK

Mendel University in Brno, Czech Republic

Abstract

Indigenous stands of tropical rain forests in the region of Kon Ha Nung are one of the most preserved forests in Vietnam. Despite the logging activities mainly in the 1970's, it was possible to preserve intact forests free from any primary harvesting. In the past, other stands were influenced by logging to various extent. Some of those stands are managed presently; others were left to natural development. This study deals with the influence of harvesting activities on the root system in forest stands. In primary stands and in stands with known harvest intensity, samples of root systems were collected. The total weight of dry basis and their layering within the soil profile were assessed. The data were analysed with a set of statistical methods. The collected roots were divided into three classes: class I ≤ 1.0 mm, class II 1.1–5.0 mm, class III over 5.0 mm in diameter. In the monitored plots, the total weight of dry basis of fine roots to 1.0 mm ranged from 2.34–3.24 t ha⁻¹. But the emergence of root mats typical for a vegetation of tropical rain forest, however, was not confirmed. The weight of dry basis of roots from 1.0–5.0 mm ranged from 6.57–9.69 t ha⁻¹. The majority of roots of class I is presented in the top 10.0 cm of the soil and their share drops with increasing depth. The roots of class II are distributed more equally. It was impossible to prove the influence of the logging on the root system.

Keywords: Root layering, root mat, selective logging, tropical rain forest