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Vegetation Management – Mechanical Technique Efficiency and Litter Decomposition

João P. F. Carvalho¹, Ana L. Moinho¹

¹Universidade de Trás-os-Montes e Alto Douro, Dep. Ciências Florestais e Arquitetura Paisagista, CITAB

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Abstract

A mechanical technique for forest vegetation treatment is presented and analysed. A brush-cutting machine is used with Mediterranean-type vegetation, the performance of working time components and litter decomposition are evaluated. Equipment components are described as well as benefits and limitations of the technique. Two sites were compared in terms of vegetation composition and biomass, mechanical working performance and litter decomposition rates. Litter decomposition was followed over a 2-year period. A working productivity between 3 and 4 h.ha⁻¹ was obtained for different site and vegetation conditions. A major reduction of litter dry mass happens in the first 6 month after vegetation cutting. Litter decomposition rates range from -0.32 to -0.14 per year and the time for total decomposition ranges between 4 to 6 years. Litter nutrient composition presents the following order N>Ca>K>Mg>P. The relative mobility of these nutrients follows the order N>K>Ca>Mg>P. The estimated annual nutrient net release is about 91.8 kg N.ha⁻¹, 4.5 kg P.ha⁻¹, 52.8 kg K.ha⁻¹, 39.5 kg Ca.ha⁻¹ and 13.7 kg Mg.ha⁻¹. Application situations of the technique are indicated.