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LITTERFALL AND LITTER DECOMPOSITION IN CHESTNUT HIGH FOREST STANDS IN NORTHERN PORTUGAL

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Sweet chestnut (*Castanea sativa* Mill.) is an important species in Northern Portugal as for fruit as well as for timber. Today, the role of the chestnut areas is not limited to production of fruit and timber but also to other aspects such as landscape, environmental and ecological protection, which are very important. Consequently, its sustainable management is essential in maintaining the health and vitality of the chestnut areas, therefore increasing the economical and social benefits of the local population. The site sustainability depends on the knowledge of the inputs and outputs of the system. Litter is an important reservoir of nutrients in maintaining the site's productivity and sustainability. In poor nutrient soils, the ecosystem's productivity is highly influenced by the efficiency of nutrient cycling. However, growth and productivity of forest ecosystems depend mainly on the amount, nature and decomposition rate of litter. The aim of this research is to study the litterfall, the litter decomposition process and the factors regulating the rate of litter decay in these ecosystems to improve the sustainable management of chestnut areas. We assess litterfall by using litter traps and decomposition of litter by utilizing the nylon mesh bag technique, in order to understand the amount of organic matter and carbon and nutrient return and their release in soils of three high forest chestnut stands, located in Northern Portugal (Marão, Bornes and Padrela). We intend to compare the prediction of litterfall obtained with littertraps and quadrate methods methodologies. The outcome of this study will be helpful for the sustainable management of chestnut areas in this region where such studies do not exist.