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To understand maquis biomass spreading in Eastern Mediterranean Region

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Abstract: The "shrubs, which are generally always-green and dominated by hard-leaved species, that are 2-5m in length in Mediterranean Basin" are named maquis. Scrub populations called maquis have significant role in agro-silvo-pastoral systems having limited water potential, and they have also potential to reduce the effects of climate change by acting as a carbon pool because of their high portion within the vegetation in places, where they spread over. The aim of our study is to determine the aboveground and belowground biomass storage capacities of maquis spreading over Eastern Mediterranean region and to reveal the change in amount of biomass stored depending on certain vegetation and habitat conditions. Thus, it was aimed to understand the biomass of maquis populations and to provide useful data. In determining the plot areas, in order to ensure the standard firstly, the regions, where the maquis flora covers 70% or more, were selected. In order to reduce the slope-related errors, the study was started on the lands with 5-10% slope, and the study areas were distributed in accordance with the aim of this study (in dimensions of 10m x 10m) to various altitude, exposure and vegetation height levels. The belowground sampling was carried out in 2 m x 2 m sample areas in same plot. In addition, the mean age determined in the sample areas is treated as another variable. While designing, in order to reveal the maquis' biomass, 4 groups of samples, which were believed to have effect on the biomass, were established, and then they were divided into sub-groups. And then, by using t-test and variance analysis, it was examined if there are differences between these sub-groups.
According to the data obtained in our study, the mean aboveground biomass amount was found to be 24,183 ton/ha. Moreover, it was determined that the belowground biomass contains approximately 41,062 ton/ha of root. Of the total fresh biomass amount, approximately 63.98% consists of dry matter. In accordance with the obtained results, the root/shoot ratio was found to be 1.7. In statistical evaluations, there was no relationship between group and subgroups and biomass quantities with sufficient confidence level. The reason is that the data obtained from the sample plots show a very wide variation. On the other hand, correlating the subsequent studies on determining the maquis biomass with the mean vegetation heights is the most acceptable approach.
Keywords: Biomass, Maquis, Altitude, Exposure, Height, Age