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Effect of Aridity Gradient on Physico-chemical and Microbial Characteristics of Pine Forest Soils

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Authors' contributions

This work was carried out in collaboration among all authors. Author AHB designed the study Authors MZ and AA managed the analyses of the study. Author RG performed the statistical analysis. All authors read and approved the final manuscript.

Original Research Article

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ABSTRACT

The objective of this study was to see the effect of the bioclimatic stage on certain characteristics of the soils of the forests of western Algeria.
For realized this work have selected three forest areas populated at 90% by Aleppo Pine and located in the bioclimatic stages humid, semi arid and arid. For each station, some physical, chemical and microbiological analyses were carried out that could have an impact on the vegetation and the biological processes of the soil.
The results showed that there is a great heterogeneity between the different stations and that the water and nitrogen content depends on the aridity gradient. On the other hand the amount of carbon is more important in the humid and arid zone and lower between the two stations. Regarding microbial biomass have noted that it does not depend on the aridity gradient. The enzymatic activities studied are more pronounced in the humid zone and almost the same in the semi arid and arid.

Keywords: Basal respiration; microbial biomass; enzymatic activities; drought.

1. INTRODUCTION

Soils are the support of plant life, animal and microorganisms; their qualities depend on mineral and organic substances and the amount of gas and water circulating in these pores [1]. In Algeria there is a mosaic of soil according to their geographical location and the climatic conditions that dominate in each region. Indeed, the more we go down to the Sahara the more the climate is harsher with important thermal amplitudes, the more scarce the vegetation and the more accentuated soil degradation [2]. The observation is all the more alarming in the forest

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