



Physical and chemical properties of soils under some wild Pistachio (Pistacia atlantica Desf) canopies in a semi-arid ecosystem, southwestern Iran.

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Pistacia atlantica Desf. is one of the most important wild species in Zagros forests which is of high economical and environmental value. Sustainability of these forests primarily depends on soil quality and water availability. Study the relationships between trees and soil is one of the basic factors in management and planning of forests. Hence, this study was undertaken with the objective of assessing the effect of tree species on soil physical and chemical properties in a semi-arid region (Kohgilouye Province) in the southwestern part of Iran. The experimental design was a factorial 4×2 (4 depths and 2 distances) in a randomized complete block design with six replications. Soil samples (0-20, 20-40, 40-60 and 60-80 cm depth) were taken from beneath the tree crowns and adjacent open areas. Soil samples were analyzed for physical and chemical properties. The results showed that wild pistachio canopy increased mostly organic carbon, hydraulic conductivity, total N, SP, available K+, P (olsen), EC, EDTA extractable Fe²⁺ and Mn²⁺, while bulk density, CCE and DTPA extractable Cu²⁺ were decreased. Pistachio canopy had no significant effect on soil texture, Zn²⁺ and pH.