



## **Effect of Oak (*Quercus brantii* Lindl.) Canopy on Soil Properties of Zagros Forests, Southwestern Iran (Case Study: Yasouj Region)**

Hamidreza Owliaie

Yasouj University, College of Agriculture, Soil Science Dept., Yasouj, Islamic Republic Of Iran (h\_owliaie@yahoo.com, 00987412224840)

The distribution of canopy trees can impose within-site patterns of soil properties and understory plant composition. Trees in many forests affect the soils below their canopies. Study the relationships between trees and soil is one of the basic factors in management and planning of forests. Zagros forest ecosystem is one of the main destroying forest ecosystems in Iran and plays an important role in soil protection. *Quercus brantii* is the most important woody species in these forests. This study was conducted to determine the influence of oak canopies on some physicochemical properties of soils of three oak forests in Yasouj region. The experimental design was a factorial  $3 \times 3 \times 2$  (3 depths, 3 regions and 2 distances) in a randomized complete block design with four replications. Soil samples (0-20, 20-40 and 40-60 cm depth) were taken from beneath canopies and adjacent open areas. The results showed that oak canopy increased mostly organic carbon, total N, SP, available  $K^+$ , P (Olsen), EC, EDTA extractable  $Fe^{2+}$ ,  $Zn^{2+}$  and  $Mn^{2+}$  While CCE, pH, and DTPA extractable  $Cu^{2+}$  were decreased. Oak canopy had no significant effect on soil texture. Our results suggested that the presence of *Quercus brantii* individuals may be an important source of spatial heterogeneity in these forests.

Key words: oak, forest, canopy, soil properties.