



Change in soil properties as indicators of soil quality in an agropastoral area of Sardinia.

A. Canu (1), C. Zucca (2)

(1) CNR Institute of Biometeorology, Sassari, Italy, (2) NRD, University of Sassari, Sassari, Italy, (a.canu@ibimet.cnr.it / Phone: +39 079 268246)

Sardinia (Italy) is an island representative of Mediterranean rural areas, where agropastoralism is the main economic activity, with more than 80% of the total area used for agriculture.

Intense agropastoral activities, particularly tillages and other activities realised with heavy machinery, are causing severe soil erosion and compromising agricultural productivity.

Soil physical and chemical properties have been altered by erosion, such as the fertile topsoil has been lost and soil productivity has been reduced by erosion processes.

The study area is located in central-eastern Sardinia. The climate is dry sub-humid, with a mean annual temperature of about 17 °C and mean annual precipitation ranging from 500 to 700 mm, with an autumn maximum, a season which also is characterised by storms and high rainfall intensities.

The objective of this work is to assess the impacts of land use on soil characteristics in an agropastoral area. Sampling sites were selected in relation to land use suitability and land use history and with particular reference to the intensity and frequency of agronomical practices such as tillages and mechanical shrub removal. Soil profiles were described in 14 plots; furthermore, a total of 42 soil samples (3 sampling point in each plot) were collected. Physical and chemical soil properties were analysed. The results were treated statistically.

The results show differences in physical and chemical properties of soils in relation to land use. The land use influences markedly all physical and chemical soil properties analysed in this study and caused severe soil degradation in most of the situations

analysed.