

SOIL ORGANIC MATTER CONTENT AND SOIL PHYSICAL-CHEMICAL PROPERTIES AT THE UNIVERSITY OF EMBU

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ABSTRACT

Organic matter plays important and multi-faceted role in soil physical and chemical properties. Physically soil organic matter influences soil texture, soil moisture content, water holding capacity and bulky density. Organic matter also influences soil chemical properties. Soil productivity is therefore influenced by a combination of organic matter effects on soil physical and chemical properties. Studies on soil physical and chemical properties show huge disparities at local levels. The aim of the project was to establish the relationship between soil organic matter and soil physical and chemical properties in soils at the University of Embu. Soil samples were collected at approximately up to 30 cm depth at three time points using a soil augur from land under agriculture, forested areas and along the banks of the various dams at the University. The soils were brought back into the laboratory, whereby soil organic matter, pH, moisture content and water holding capacity were measured. SOM, SMC and WHC were significantly different ($p < 0.05$) among the different lands, furthermore there were positive correlations between SOM to SMC, and WHC. This study confirms the importance of SOM in soil chemical and physical properties. The sample sizes, however, were small and more sampling could be done in future. Nevertheless, this report could be used as an advisory tool towards the management of SOM in soils within the University of Embu.