CHARACTERIZATION OF THE PHYSICO-CHEMICAL PROPERTIES OF THE SOIL IN THE EXPERIMENTAL POLYGON IN THE FRAMEWORK OF THE PHD THESIS "IMPACT OF CONSERVATION TILLAGE SYSTEMS AND COVER CROPS ON SOIL QUALITY INDICATORS AND YIELDS IN EZĂRENI FARM, IAȘI"

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Abstract

In this study, initial data is presented in terms of the physicochemical properties of the analyzed plot. In topographic plot 127a, the following soil quality indicators were analyzed: bulk density, soil moisture (initial and at sowing), capillary capacity, total capacity and soil pH. To determine the bulk density, undisturbed soil samples were taken, using cylinders (5 cm diameter, 5.1 cm height) with a volume of 100 cm^3 and a bottom cut at an angle of 15°. Bulk density was sampled from three points on the diagonal and four depths from 0 to 40 cm. Bulk density values ranged between 1.26 g/cm^3 and 1.36 g/cm^3. Initial moisture was determined using soil sampling probes and aluminum vials at six depths from 0-90 cm. Moisture values ranged between 14.92% and 19.82%. After sowing the winter pea crop, soil moisture was determined in both tillage systems. In the conventional system, the resulting values ranged between 17.95% and 21.90% and in the no-tillage system the values recorded ranged between 10.52 % and 17.89 %. Capillary capacity was determined in the laboratory on samples collected from the field in metal cylinders. It expresses the amount of water the soil can hold in the capillary pores. The values recorded had values ranging between 30.90% and 37.6%. Total water capacity was determined using naturally settled soil samples. This indicates the amount of water the soil holds when all soil pores are filled with water. The resulting values ranged from 34,21 % to 40,78 %. Soil pH was determined by the potentiometric method in aqueous suspension. On the 0-20 cm depth the soil reaction is neutral and on the 20-40 cm soil layer the resulting soil reaction is slightly alkaline.

Key words: bulk density, moisture, capillary capacity, total water capacity, pH