

STUDY ON THE EFFECTS OF CONVENTIONAL SOIL TILLAGE APPLIED TO WINTER AND SPRING PEAS ON SOIL PHYSICAL PROPERTIES

Cosmin GHELBERE¹, Ilie NISTOR¹, Tudor George AOSTĂCIOAEI¹, Denis ȚOPA¹,
Gerard JITĂREANU¹

e-mail: ghelberecosmin@yahoo.com

Abstract

Tillage technology is especially important because it improves the physical, chemical, and biological properties of the soil, resulting in greater fertility and optimal crop growth and development conditions. This research aimed to determine the values of physical properties obtained from the technologies applied to two peas crops on an area of 10 ha, i.e. winter peas (5 ha) and spring peas (5 ha) during 2021-2022. The physical properties that have been analysed in this study are bulk density, penetration resistance and soil moisture, within the farm S.C. COMPANIA OPREA S.R.L., it is located in Munteni commune, Galați County. This was analysed as follows: bulk density was determined from three points located on the diagonal of the plot in three replicates over four depth intervals, penetration resistance was determined using the penetrometer to measure penetration resistance to a depth of 80 cm and for moisture determination soil samples were taken from 6 intervals up to a depth of 90 cm. The results obtained from the analyses were: the bulk density of the winter peas crop was between 1.26-1.44 g/cm³, while the values for spring peas were between 1.15-1.48 g/cm³. The penetration resistance of winter peas in the first 10 cm the soil has a medium resistance with a value of 2.60 MPa increasing slightly up to 15 cm, then it records a minimum value of 2.37 MPa at a depth of 30 cm. In the case of the spring peas crop, at the surface, the value is 1.48 MPa, and in the soil layer 20-40 cm depth the values are between 3.16 and 4.28 MPa. Moisture in winter peas ranges from 5.21% to 17.17% and in spring peas from 4.99% to 17.44%.

Key words: (tillage, peas, soil moisture, bulk density, penetration resistance)