THE IMPACT OF NITROGEN AND PHOSPHORUS FERTILIZATION ON SOIL PHYSICO-CHEMICAL INDICATORS ON SLOPED PLOTS OF WINTER WHEAT CROPS IN EASTERN ROMANIA

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Abstract

Winter wheat is one of the most important crops in Romania, ranking second in terms of cultivated area. This research investigates the influence of nitrogen and phosphorus fertilization on key soil physico-chemical indicators in a moderately eroded cambic chernozem soil in Eastern Romania. The study was conducted on sloped land at the "Mircea Moțoc" Soil Erosion Research and Development Station in Perieni, Vaslui County, located in the middle basin of the Țărnii Valley, in the Tutova Hills. Fertilization was applied in a differentiated manner, tailored to the specific growth stages of the wheat, taking into account factors such as species, variety, soil conditions, and other agronomic variables. Soil samples were collected from fertilized and unfertilized plots across three sections (upstream, middle, and downstream) at a depth of 0-10 cm to assess nutrient levels and other relevant soil characteristics. The results showed that soil pH ranged from 4.78 to 5.98, nitrogen content varied between 0.103% and 0.181%, and humus levels fluctuated between 1.97% and 3.5%. These findings highlight the direct impact of fertilization on soil quality and the importance of precise agrochemical treatments to optimize agricultural production while preserving soil resources.

Key words: slope, fertilization, soil