THE INFLUENCE OF CROP ROTATION AND FERTILIZATION ON AGRICULTURAL YIELD IN THE CONTEXT OF CLIMATE CHANGE ON SLOPED LANDS IN THE BÂRLAD PLATEAU

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Abstract

In Romania, severe droughts of varying intensities frequently impact large parts of the country, particularly the southern and eastern regions. Sloped agricultural lands, prone to erosion, cover approximately 43% of the country's agricultural area. Due to their extent and productive potential, these lands play a decisive role in Romanian agriculture, including in drought-affected areas. In addition to achieving competitive yields, soil conservation on these lands is essential. In this context, it is necessary to adapt and integrate both traditional and innovative methods to reduce soil erosion to acceptable limits and improve soil fertility. In the Bârlad Plateau, the topographical conditions and lack of water sources prevent the use of irrigation on sloped lands to offset moisture deficits, leaving crop production dependent solely on precipitation. The aridity of the region is exacerbated not only by the lack of rainfall but also by the terrain, which reduces the effectiveness of precipitation through runoff and diminishes the soil's water retention capacity due to surface erosion. This study investigates the role of crop rotation and fertilization in the quality and quantity of the primary agricultural crops on sloped lands in the upper sub-basin of the Țărnii Valley, Bârlad Plateau, over the past 10 years, in the context of climate change. The research highlights how rainfall patterns and surface runoff impact crop yield and emphasizes the importance of efficient soil and water resource management in areas at high risk of erosion.

Key words: drought, slope, rotation, erosion