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PHYSIOLOGICAL RESPONSE OF SWEET CORN (*Zea Mays L. var. Saccharata*) CULTIVAR ZEATON TO ORGANIC AND ORGANO-MINERAL FERTILIZATION

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Abstract – Sweet corn is highly sensitive to environmental conditions, particularly during the reproductive stage, when physiological stability is crucial for yield formation. Under increasing climate variability, nutrient management plays an important role in enhancing plant tolerance to abiotic stress. The aim of this study was to evaluate the physiological response of sweet corn cultivar Zeaton to organic and organo-mineral fertilization under the agro-climatic conditions of Plovdiv, Bulgaria. Field experiments were conducted during the 2024–2025 growing seasons at the Agricultural University of Plovdiv. Three treatments were compared: non-fertilized control, organo-mineral fertilization with Gold Forte, and organic fertilization with Triumfalis. Physiological parameters related to photosynthetic efficiency, chlorophyll content, and canopy temperature were assessed. Both fertilization treatments improved plant physiological status compared to the control. The organic fertilizer showed the strongest positive effect, indicating enhanced photosynthetic activity and improved thermal regulation under variable climatic conditions.

Keywords – Abiotic stress tolerance; canopy temperature; chlorophyll index; climate variability; field experiment; photosynthetic efficiency; plant nutrition

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