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BOOK OF ABSTRACTS









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SALT STRESS-INDUCED RESPONSES IN ARUGULA (*ERUCA SATIVA*) PLANTS

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Abstract

An increase in salinized soil is caused by a mix of pollution and modern farming practices and it is among the elements that most severely restrict the yield. Arugula (*Eruca sativa*) is green leafy vegetable from Brassicaceae family, reach in vitamins (A, C, and K), proteins, and fibers. Thanks to its compounds, arugula possesses strong antioxidant and anti-inflammatory properties. To estimate the effect of soil salinity, arugula plants were exposed to 0 mM NaCl (C), 40 mM NaCl (T2) and 80 mM NaCl (T3) concentration for 60 days during the 2024 growing season. Plants were grown in pots in indoor growing conditions. Every treatment was carried out in three replicates. The arugula plants early stress response was estimated using temperature. A stress reaction is indicated by the leafs progressive drop in temperature upon exposure to salt solution. Handheld multispectral sensor Plant-O-Meter was used to measure plant spectral reflectance. Two different vegetational indices (VI) were used to assess the plant response: Normalized Difference Vegetation Index (NDVI) and Enhanced Vegetation Index (EVI). Calculation of f-ratio values shows significant differences between treatments for both calculated index. Using ANOVA for multiple comparison analysis testing shows significant differences between NDVI values of T1 and T3, and T2 and T3. EVI values show significant differences between T1 and T2, and T1 and T3 treatments. These results indicate potential usage of NDVI and EVI in stress prediction in arugula using remote sensing tools.

Key words: *arugula, salinization, leaf temperature, NDVI, EVI.*

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