Biology Seminar

12:30 - 1:30 pm
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BGS 0165

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Identification of waterlogging-tolerant sesame accessions from diverse germplasm in a quest for resilient crops

Waterlogging (WL) stress drastically impacts sesame crops, making them highly susceptible by hindering growth and development. Among the oil-seed crops, sesame (*Sesamum indicum* L.) is a nutritionally rich crop well adapted to grow in semi-arid regions. Waterlogging stress adversely affects the growth of sesame by limiting diffused oxygen availability in soil and generating hypoxic, subsequentlyasca anoxic conditions. Hence, identifying and characterizing the promising trait is necessary to conserve germplasm exploitation during WL stress conditions. Therefore, the present study was conducted to screen the genotypes by assessing morphological traits, including shoot height (SH), root length (RL), SPAD measurements, and branches per plant (BPP). The observation reveals that RL, SH, and SPAD significantly varied in sesame accessions, providing practical insights for future research and crop development. Hence, accession EC377024 and IC129289 showed highly tolerant and susceptible behaviour. The statistical analysis, including G × E interactions, Pearson's correlation, and principal component analysis (PCA), supports the selected trait that can be used to screen the WL susceptible crops. The genotype chosen, with its potential to aid in crop improvement and enhancement of nutritional quality, is a significant outcome of this study, with practical implications for the future of agriculture.