
Oral sessions | Abiotic Stress for Crop Production | O34: O₂ Deficiency, Submergence

[O34] O₂ Deficiency, Submergence

Chair: Mikio Nakazono (Nagoya University, Japan)

Chair: Feng Yu (Hubei University, China)

Fri. Sep 10, 2021 9:45 AM - 11:45 AM Room 3 (Oral) (Abiotic Stress for Crop Production)

10:25 AM - 10:40 AM

[O34-03] Response of Rice Varieties with Difference Submergence Tolerance to Two Period of Submerged Stress

(Invited Speaker)

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Indonesia has very large area of swamp land to support agricultural production and food security. However, these swamp areas are not yet supported by proper agricultural facilities so that the rice farmers are facing some problems of submerged stress during germination and vegetative phases. This study evaluated the growth response of rice genotypes different to submergence tolerance to two stages of submerged stress using three tolerant rice genotypes FR13A, Inpari30 and Inpara5 and two sensitive ones Ciherang and Pegagan. Submerged stress treatment was carried out twice, five days submerged stress in the germination phase and 10 days submerged stress treatment at 27 DAS. Submerged stress treatment in the germination phase led to a lower increase in plant height in submergence tolerance varieties, however in the recovery phase a week after treatment, intolerant varieties showed higher growth rate. The effect of submerged stress at the germination phase continues until 27 DAS, and it is greater on intolerant varieties. In the second submerged stress treatment, except for Inpara5, tolerance varieties showed better growth compared to intolerant varieties. FR13A had the highest tolerant ability after double submerged stress as it had the highest shoot and root growth rate during recovery period. There is no significant difference among Pegagan, Ciherang, Inpara 5 and Inpari 30, but Inpara 5 and Inpari 30 were better than Pegagan and Ciherang varieties, as seen from the level of stress resistance to submerged stress.