
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)

10:40 AM - 10:55 AM

[O34-04] Adaptive Responses to Flood in Wild Rice Species with Various Genomes Other Than AA

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In the Asian cultivated rice *Oryza sativa*, there are two adaptive responses to flood: submergence tolerance and floating ability. Submergence tolerance, conferred by *SUB1A*, is response to complete submergence at the seedling stage, whereas floating ability, conferred by *SNORKEL* (*SK*) genes, is response to gradual submergence at the mature stage. We investigated the presence of these genes and growth response to submergence in *Oryza* wild rice species belonging to different genome groups from *O. sativa* (AA genome), such as BB (diploid *O. punctata*), BBCC (*O. minuta* and tetraploid *O. punctata*), CC (*O. eichingeri* and *O. officinalis*), CCDD (*O. alta*, *O. grandiglumis* and *O. latifolia*), EE (*O. australiensis*), and FF genome species (*O. brachyantha*). Upon complete submergence of 14-d-old seedlings for 2 weeks, accessions of BBCC, CC, CCDD, and EE genome species displayed a high survival rate. On the other hand, gradual submergence of 50-d-old plants promoted internodal elongation in accessions of BB and CCDD genome species and consequently the plants were not drowned at least for 10 days. The results suggest that genes involved in submergence tolerance and floating ability are present in CC and EE genomes, and BB and DD genomes, respectively. However, in these genomes, *SUB1A* and *SKs* genes could not be detected.