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| Category   | : 8th Rice Genetics Symposium  |
| Select Theme   | : Genetics of Abiotic interactions: Stress tolerance and Mitigation  |
| Endorsement email  | :  |
| Genetics of Abiotic interactions Stress tolerance and Mitigation Keyword 1 | : submergence  |
| Genetics of Abiotic interactions Stress tolerance and Mitigation Keyword 2 | : flooding   |
| Genetics of Abiotic interactions Stress tolerance and Mitigation Keyword 3 | : anaerobic germination  |
| Title of Entry   | : Exploiting <i>Oryza glaberrima</i> in breeding for flood tolerance   |
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| Co author 2  | : V Semwal   |
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| Affiliation 1  | :  |
| Affiliation 2  | :  |
| Select only one type of presentation                                       | : 15 minute oral presentation  |
| Abstract   | : <i>O. glaberrima</i> is a cultivated rice species in Africa. It is considered to be a rich source of tolerance genes to various stresses affecting rice production, including flooding. AfricaRice genebank has in its possession about 2000 <i>O. glaberrima</i> accessions. We systematically screened almost the entire set <i>O. glaberrima</i> for tolerance to three types of flooding stresses – (1) flooding at early stages, which require anaerobic germination ability, (2) flash flooding, which requires quiescence strategy, and (3) stagnant flooding, where water stays in rice field for longer periods. We found excellent level of tolerance to stagnant flooding and anaerobic germination in the <i>O. glaberrimas</i> . Similarly, we screened the lowland NERICAs, which are interspecific derivatives of <i>O. glaberrima</i> and <i>O. sativa</i> , to all the three stresses. We found good tolerance to stagnant flooding tolerance among the NERICAs. Based on these screenings best performing accessions for the three different traits were selected. These selected accessions have been used in crosses with <i>O. sativa</i> lines to develop mapping populations. For submergence tolerance we have identified a large-effect QTL. This novel QTL is different from SUB1 and is found to act additively with SUB1. Thus, this QTL could be used to enhance submergence tolerance of SUB1 varieties. For stagnant flood tolerance we have identified moderate effect QTLs. Screening for anaerobic germination is currently ongoing and results will be presented during the meet. New genes/alleles from the <i>O. glaberrima</i> could complement those obtained from <i>O. sativa</i> . |

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