[P3] Abiotic Stress for Crop Production

2021年9月9日(木) 12:15 ～ 14:00 Room 3 (Poster) (Abiotic Stress for Crop Production)

13:15 ～ 14:00

[P3-22]Evaluation of Salinity Tolerance in Rice Lines Carrying Overlapping Chromosome Segments of *Oryza longistaminata* in a Genetic Background of Kernel Basmati

*Nominated for Presentation Awards

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In the Hola irrigation scheme, which is developed in semi-arid area of Kenya, Basmati rice varieties with locally preferred aromas are grown. However, rice cultivation in this area is suppressed by salinity stress. *Oryza longistaminata*, a wild rice species native to Kenya, is an important donor for improvement of rice tolerance to environmental stresses, including salinity. To determine the chromosome regions of *O. longistaminata* involved in salinity tolerance, we evaluated *Longistaminata* Chromosome Segment Introgression Lines (LCSILs) carrying chromosome segments from *O. longistaminata* in the genetic background of Kernel Basmati. We conducted a pot experiment using nine lines, which were selected in a previous study. Two types of soils were used in the experiment, a weakly acidic sandy clay collected from a rice growing area in the Central Highlands of Kenya (soil A), and weakly alkaline sandy loams collected from the Hola irrigation scheme (soil B). LCSIL 19 and 48 were classified as a group with strong salt tolerance in both soils treated with NaCl (approximately 150 mM). In addition, the Na^+ and Na^+/ K^+ of leaf blades for LCSIL 19, 20, and 48, which maintained higher yield under salted soil B, were lower than those of the parent line, Kernel Basmati. In LCSIL 19, 20, and 48, chromosome segments of *O. longistaminata* could be located on chromosomes 4, 5, and 11, respectively, and genes contained therein may have been involved in the regulation of leaf Na^+ and Na^+/ K^+.