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Allelic diversity and seedling tolerance of some rice (*Oryza sativa*) germplasms under salt stress

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There are vast numbers of divergent rice germplasms in Sri Lanka. As the development of salinity tolerant cultivars has become a prioritized research area, it is necessary to assess these varieties and utilize them in breeding programs. Previously a major salinity tolerant QTL called *Saltol* 1 has been discovered in chromosome 1 of Pokkali derived germplams. Assessment of SSR markers at the region of *Saltol 1* QTL and phenotypic assessment of seedling stage of rice germplasms would give some insight into the understanding of salt tolerance. In this regard, we analyzed twenty rice germplasms, including traditional and improved varieties, with five SSR markers closely linked to *Saltol* 1. Also morphological traits of the seedlings were assessed under saline condition which was created with 100mM NaCl concentration (12 ds/m) in hydroponics. Results showed that root length, shoot length, fresh root weight, and dry root weight were significantly different among varieties. Survival index and visual injuries were exhibited that some traditional varieties and exotic varieties are extremely tolerant even than Pokkali, the well-known salt tolerant check variety. The dendrogram obtained from cluster analysis of DNA markers indicated that some of the tolerant varieties were grouped in separate clusters. Polymorphic banding patterns of SSR markers obtained from tolerant and susceptible varieties near *Saltol 1* would be useful in selecting parental lines for the rice improvement breeding programs designed for salt tolerance**.**

Key words: Rice germplasms, salinity tolerance, *Saltol 1* QTL, SSR markers

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