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Differential Salinity Tolerance among *Oryza glaberrima*, *Oryza sativa* and Their Interspecies Including NERICA

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Abstract: Salinity tolerance has been extensively studied in *Oryza sativa*, but little is known about the salt tolerance levels in *Oryza glaberrima* and the interspecific progenies including New Rice for Africa (NERICA). In this study, the salinity tolerance of the three cultivated rice species, *O. glaberrima* (54 genotypes), the interspecific progenies (21) including NERICA (7) and *O. sativa* (41) mainly grown in West Africa were examined comparatively. At 10 days after sowing (DAS) 80 mM NaCl was added to the culture solution, and the plants were grown for 10 more d. The ratio of shoot biomass in the 80 mM NaCl solution to that in the control was significantly higher in the interspecific progenies than in the other two species, and the relative root biomass was significantly lower in *O. glaberrima* than in the others. The vegetative growth of six genotypes including the salt tolerant Pokkali, and NERICA4 and its parents were evaluated further in pot experiments irrigated with 80 mM NaCl solution from 22 to 52 d after sowing. At 30 d of the salt stress, CG14 and Mala noir IV (*O. glaberrima*) were killed by salt, while WAB56-104 and NERICA4 survived; Pokkali maintained the highest relative shoot biomass growth at all sampling times of 10 d intervals. These results indicate that *O. glaberrima* is relatively weaker to NaCl salinity, while the interspecific progenies are fairly tolerant during the seedling stage, and that the relatively high salt stress tolerance of NERICA4 is derived from the *O. sativa* parent, WAB56-104.

Keywords: [African rice](#), [Interspecific progenies](#), [New Rice for Africa](#), [Salinity tolerance](#), [Screening](#)

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