

# PHYSIOLOGICAL BASIS OF SUSCEPTIBILITY AND TOLERANCE IN RICE UNDER COMPLETE SUBMERGENCE

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**Abstract:** A pot experiment was conducted during the Kharif season 2010-2011 with submergence tolerant varieties (NDR 9930111, Swarna Sub 1 and IR 64 Sub 1) and intolerant varieties (Mahsuri, Swarna and IR 64) rice genotypes in order to find out physiological traits associated with submergence tolerant and intolerant. Plants were raised in pots. At the age of 21 days seedling, pots were submerged in tank for 10 days. One group of plants were kept outside as non submerged control set. After 10 days submergence period, the plant were taken out from submergence tank and placed in open again for survival and recovery growth. Plant recovery was recorded 20 days after de-submergence. Tolerant genotypes had moderate elongation ability during submergence as compared to susceptible genotypes with greater elongation. Submergence tolerant genotypes NDR 9930111, Swarna Sub 1 and IR 64 Sub 1 had higher dry weight of shoot after submergence as compared to susceptible genotypes. Tolerant genotypes had higher total carbohydrate as compared to intolerant during submergence and stored carbohydrate is utilized for regeneration after de-submergence.

**Keywords:** Susceptibility, Rice, seedling, Kharif

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