RESEARCH ARTICLE

CHARACTERIZATION OF ROOT SYSTEM ARCHITECTURE UNDER ARSENIC AND CADMIUM STRESSES IN RICE

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Abstract: Rice is major food crop for the world. Arsenic (As) cadmium (Cd) are the major heavy metal pollutant present in soil and water that disturb physiological and metabolic process of the plant cell and reduces the plant growth and yield. We have evaluated the effect of these two heavy metals on root system architecturein basmati and non-basmati (IR-64) rice genotypes. Both the variety showed significant increase in root length and number of lateral roots in MS medium at variable concentration (20, 40 and 60 µM) of As and Cd stresses, similarly root fresh weight, root dry weight and root length was found to be increased in soil medium under both the stresses condition. There was no significant difference was observed between IR-64 and Pusa basmati in root growth parameters.

Keywords: Arsenic, Cadmium, Heavy metal stress, Root system architecture

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