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A CASE STUDY

Effect of vapour pressure deficit on iron exclusion in rice genotypes

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SUMMARY

Root iron (Fe) exclusion in rice is considered as a strategy of iron toxicity tolerance in lowland rice. Two lowland rice genotypes with contrasting responses to Fe^{2+} stress in hydroponics were evaluated in green house condition. Plants were subjected to the four levels of Fe stresses (0, 500, 1000 and 1500 mg Fe^{2+} L^{-1}) for four days under conditions of low and high vapor pressure deficit. Irrespective of rice genotypes, lower levels of Fe stresses stimulated the root Fe oxidation. It, however, declined at higher rates of Fe stresses. Dry atmospheric significantly enhanced the root Fe exclusion. Rice root excluded on average of 114 mg Fe g^{-1} root dry matter when rice was grown in a moist atmosphere and exceeded 671 mg Fe g^{-1} root dry matter in the dry atmosphere.

Key Words : Hydroponic, Iron toxicity, *Oryza sativa*, Root oxidation, Vapor pressure deficit

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