Abstract

In this study *Oryza sativa* L. cv. Super 1509 was grown in different concentrations of NaCl i.e (15,30, 45 and 60 mM) and LiCl i.e (1,2,3 and 4 ppm). Each salt had 4 treatments i.e T0, T1, T2, T3 and T4 and each treatment had 5 replicates, while T0 was used as control. Their growth parameter i.e change in height and number of leaves were measured on weekly basis. Physiological traits such as rate of photosynthesis (*A*) rate of transpiration (*E*) and stomatal conductance (g_s) were measured using Infra-Red Gas Analyzer. Chlorophyll content of each treatment was measured as well. After harvesting the fresh and dry weight of each replica and weight of shoot root and grains was recorded. Replicates of T4 showed the minimum growth and reduced number of leaves. Furthermore, the other treatments (T0, T1, T2, T3, T4) after four weeks the length of plant and number of leaves were reduced significantly as the compared to control. Na+ and K+ uptake in roots, shoots, leaves and grains was analyzed by using flame photometer. The maximum level of K+ was found in shoot of T3 and T4. The level of K+ in grains was found minimum than in roots, shoots and leaves. The K+ uptake in roots was found minimum in T4. The Na+ uptake found maximum in shoots. The Na+ uptake in roots showed minimum in T1 and T2. Lithium uptake was found maximum in leaves of T3 and T4. The present study concludes that the rice plant cultivar Super 1509 could tolerate the NaCl stress upto 60 mM and LiCl upto 4 ppm. This can help in its cultivation in different soils.