

## THE ABILITY OF SORGHUM AND MILLET IN ACCUMULATION OF SALTS PLANTED HYDROPONICALLY AT DIFFERENT SALINE STRESSES.

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### ABSTRACT

Hydroponic experiment carried out using static solution culture technology to study the ability of sorghum and millet in grown at several levels of salt stresses as well as the ability of these plants in the compilation of salts in shoots and roots. The results showed a decrease in the weights of dry matter with increasing levels of added NaCl of 0, 50 100 m.mol. Liter<sup>-1</sup> with more than sorghum, with average values of dry matter to sorghum 7.700 and 3.877 g and millet 5.510 and 2.884 g of the part shoots and roots, respectively. The results showed also that the plant millet showed lower rate of decrease in dry matter when exposed to salt stress, as were 25.76% and 47.11%, while in the sorghum 36.93% and 60.50% at level 50 and 100 m.mol NaCl, respectively. The results showed superiority of millet in the increased ion concentration of sodium and chloride in the tissues of plants with increasing their concentration in the nutrient solution. The concentration of sodium in millet was 0.510% and 1.974%, and in Sorghum 0.453% and 1.80% and concentration of chloride in millet was 0.381% and 1.274%, in sorghum was 0.319% and 1.167% at a level of 50, 100 m.mol NaCl, respectively.

The results showed in general a decrease in concentration of potassium, calcium and magnesium ions in the shoot and root of sorghum and millet with increasing levels of salinity. Potassium ion concentration in the vegetative part of millet was significantly higher than the sorghum, which stood at 2.913% and in sorghum was 2.374%. While in the root, the rate of potassium ion concentration of the sorghum is higher than the rate of concentration in millet as it was for sorghum 2.124% and 1.912% for millet. The results showed a significant increase of calcium and magnesium in the shoots and roots of millet more than sorghum as the average concentration of calcium in the vegetative part 0.292, 0.387% and in the roots of 0.259, 0.419%, while the average concentration of magnesium in the vegetative part 0.136, 0.147% and in the roots 0.096, 0.108% to plant sorghum and millet, respectively.

**Key words:** Hydroponic, ion accumulation, sorghum, millet, salt stress.