EXPRESSION OF THE VACUOLAR PROTON PUMPS FROM *Vigna unguiculata* (L.) WALP LEAVES AND ROOTS UNDER SALT STRESSES.

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The accumulation of Na^+ in the central vacuole represents an important mechanism for plants to cope with salt stress. It is known that V-ATPase and V-PPase play essential roles in plant responses to environmental changes. The electrochemical gradient promoted by these enzymes is the driving force for the accumulation of ions and other solutes in the vacuole being important to maintain cytosolic ion homeostasis and cellular metabolism. The aim of this work was to evaluate the transcriptional responses of V-PPase (*HVP*), V-ATPase subunits A (*VHA-A*) and E (*VHA-E*), from *Vigna unguiculata* (L.) Walp cv. Vita 5 leaves and roots against salt stress and the Na^+ and K^+ contents in different parts of the plant. *Vigna unguiculata* seeds were germinated in the dark, at 25°C, on filter paper soaked with distilled water during 3 days. After this period the seedlings were transferred to Hoagland's medium for 3 days and then submitted to salt stress (0.1 M NaCl) for different time exposition (0, 6, 12, 24 hours). The total content of potassium (K^+) and sodium (Na^+) were determined by flame photometry. The transcript levels were evaluated through semi-quantitative RT-PCR. The results showed that the Na^+ content increased under salt stress condition in all plant organs. It was observed an abrupt increase in Na^+ level in roots and hypocotyls but only a slight increase in leaves. The levels of K^+ increased tenuously at 6 and 12 h in roots, hypocotyls and leaves and decreased at 24h in roots and hypocotyls. The transcript levels of subunit A of V-ATPase increased at 6 and 12 h treatment and it has no change at 24 h when compared to control condition. In roots the subunit E of V-ATPase increased on 6, 12 and 24h being the most significant with 24h. The same profile was observed for V-PPase transcripts in leaves and roots. Our results indicated that both vacuolar proton pumps were up-regulated by salinity in attempt to avoid the Na^+ toxicity.