Effects of Amiloride on Sodium Accumulation in Intact Lycopersicon esculentum Plants

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RESUMEN

Amiloride, a diuretic drug, has been reported to specifically inhibit Na+ /H+ exchange in tonoplast vesicles. The effects of amiloride on Na+ accumulation, uptake, and retention, and stability of leaf membranes in intact tomato plants treated with 25 mM NaCI were studied. The presence of 0.1 mM amiloride in the root medium caused an increase in Na+ accumulation in leaves and a decrease in roots. This increase was not related to a modification of Na+ uptake rates by roots of amiloride-treated plants. Higher Na+ retention in such plants was found in pulse-chase experiments. Leaf discs from treated plants also showed enhanced membrane stability as determined by electroconductivity tests. Proton extrusion from roots was inhibited by amiloride, but this effect was not associated with Na+ transport. It is suggested that, in the present system, amiloride may have affected the Na+ retranslocation mechanism in leaves.

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