Abstract

The effects of copper toxicity on the photosynthetic activities of Avicennia germinans was investigated using two CuSO₄ concentrations (0.062 and 0.33 M) added in Hoagland’s solution in an aerated hydroponic system. Photosynthesis and chlorophyll fluorescence were measured after 30 h of copper stress. Results obtained in this study show that increasing levels of Cu +2 of 0.062 and 0.33 M Cu +2 resulted in a general reduction of the stomatal conductance (28 and 18%, respectively) and 100% of inhibition of net photosynthesis. Additionally, at these concentrations of Cu +2 , reductions of chlorophyll fluorescence parameters were also observed. These changes suggested that the photosynthetic apparatus of Avicennia germinans was the primary target of the Cu +2 action. It is concluded that Cu +2 ions causes a drastic decline in photosynthetic gas exchange and Chlorophyll fluorescence parameters in A. germinans leaves.

Keywords

Avicennia germinans , chlorophyll fluorescence, copper, photosystem II, photosynthesis.