

B209 Mercury-Induced Hydrogen Peroxide Formation and Phytotoxicity in Tomato

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The effects of Hg on hydrogen peroxide formation, lipid peroxidation and antioxidative enzyme activities were studied in *Lycopersicon esculentum*. The phytotoxic level of Hg (up to 50 μ M) increased hydrogen peroxide production, malondialdehyde level, peroxidase and catalase activities in both leaves and roots but decreased chlorophyll level in leaves and biomass. Our results suggest that Hg-induced phytotoxicity in tomato seedlings can be ascribed to enhanced production of toxic oxygen species and subsequent lipid peroxidation (oxidative stress). (Supported by KRF 1997-003-D00194)

B210 pH Effects on Vegetative Growth of *Spirogyra setiformis* (Charophyceae)

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The effects of acidification on *Spirogyra setiformis* (Roth) Kützing, one of the common macro-benthic freshwater algae in Korea, were examined by the culture experiment. Relative growth rates of *S. setiformis* filaments were determined under a range of pH 4.0-10.0 in the laboratory. The plants were able to grow undamaged between pH 5.0 and 7.0. Maximum growth rates were around pH 6.0. In most cases the filaments of many isolates fragmented frequently and showed a limited growth at pH 8.0 and 9.0. However most plants died after one week at the extreme conditions of pH tested (pH 4.0 and 10.0). Combined effects of temperature and pH were also examined. In general, relative growth rates increased with a rise in temperature from 10°C, reaching a maximum at 30°C, the highest temperature tested. However, the plants exhibited some variations in their growth rates in different pH conditions.