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Rubisco의 activation과 carbamylation에 미치는 고 CO₂ 농도의 효과

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광합성의 CO₂ 고정과정에 관여하는 rubisco의 작용을 연구하기 위한 목적으로, 정상 CO₂ 농도(350 ppm)와 고 CO₂ 농도(650 ppm)에서 기른 kidney bean 잎을 재료로 하여 dual beam spectrophotometer를 사용하여 rubisco의 activity, carbamylation을, μ 및 K_{cat}를 측정 비교하였으며, 일정기간 후 고 CO₂ 농도에서 정상 CO₂ 농도의 조건으로 옮겨 성장시킨 다음 다시 rubisco의 parameter와 photosynthetic parameter를 측정하므로써 정상 CO₂ 농도에 의한 회복여부를 조사하여 rubisco의 activation과 carbamylation에 미치는 고 CO₂ 농도의 효과를 연구하였다.

E211

Effects of Lead and Cadmium on Growth, Chlorophyll Content, ALAD Activity, and Root and Leaf Anatomy in Maize Seedlings

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The effects of lead and cadmium on growth, chlorophyll content, δ -aminolevulinic acid dehydratase(ALAD) activity and morphology of root and leaf were studied in maize seedlings. Application of lead and cadmium caused a reduction of root and shoot growth, chlorophyll contents and ALAD activity. The deleterious effect became more pronounced with increasing concentration of the metals. Cadmium was found more toxic than lead for the plants.

Light microscopy showed that the most serious effects of lead and cadmium toxicity occurred at the epidermal and root cap cells. Many cells of the cortex contained a granular material which rendered them densely staining. Radial walls of the epidermal cells were either cleft apart or unusually thickened. In leaves, however, gross anatomy of leaves treated with the metals did not differ significantly from the controls. However, cells contained fewer and smaller chloroplasts and lacked starch grains. Our results indicate that toxic effects of the heavy metals appear to be manifested primarily in roots and secondarily on aerial plant parts.