22 Effects of Cytokinin on Adventitious Root Formation from Cotyledon Explants of Lettuce Seedlings

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The purpose of this experiment was to justify the effect of cytokinin on the formation of adventitious root from organized tissue, cotyledon rather than unorganized tissue, callus. When the cotyledon segments of *Lactuca sativa* L. seedlings grown up for 2, 3, 4 and 6 days were cultured in MS medium supplemented with zeatin, kinetin and benzylaminopurine, adventitious root formation was promoted in juvenile rather than mature explants. The maxium number of adventitious roots (8 / explant) were obtained from the cotyledon explant of 3-day-old seedlings treated with kinetin of 0.05 mg L^{-1}. Under the culture of 16 h photoperiod, rhizogenesis was promoted on MS medium supplemented with cytokinins, but in the darkness culture, was inhibited. In the treatment of cytokinin of high concentration, adventitious roots were formed after forming white callus on the basal cut end of explant. On the other hand, explants cultured on MS basal medium or on medium with cytokinin of low concentration, formed adventitious roots of one or two without callus formation at the basal cut end of cotyledon midrib after culture of 7 days. Therefore it was clarified that cytokinins do not inhibit but promote the formation of adventitious root.

Keywords: rhizogenesis, *Lactuca sativa* L., cytokinin, illumination