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Abstract

The effect of light and the anaerobic condition on the basis of morphogenesis of rice seedlings was investigated. The length of epicotyl was not affected significantly by light, but the inhibition become dominant when the seedlings was treated simluteniously by light and anaerobic condition. It was indicated that both factors had the synergy effect on the growth of seedling. Catalase activity increased with the growth of seedlings. The enzyme activity and the length of epicotyl showed very high positive correlation. Catalase activity was inhibited effectively by the anaerobic condition, especially in the seedlings of Taichung San 3 which appeared more sensitivity. Enzyme extracted from the epicotyl of Taichung San 3 could be separated into five isozymes. According to the number of isozymes and the distribution of the enzyme activity, it was concluded that the molecular nature of the enzyme should be tetrameric constitution which was derivated from two type of subunits. The subunit which showed higher mobility to the anode was induced by light. Unexpectively only four isozymes was observed from the extract of Taichung 65 epicotyls. The molecular constitution, activity of the isozymes and the resistance to the anaerobic condition were discussed.