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## Histochemical and Ultrastructural Identification of Enzymatically Isolated Calcium Oxalate Crystals in the Leaf of *Ipomoea batatas*

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In situ distribution, histochemical identification, ultrastructural configuration and energy dispersive x-ray spectrometric analysis of intracellular crystals of calcium oxalate in the leaf of sweet potato(*Ipomoea batatas*) were studied by light and scanning electron microscopy. Leaf segments were cleared in the mixture of sodium hydroxide and chloral hydrate, and observed with light microscope. Calcium oxalate crystals were isolated by incubation of segmented leaf tissue in the enzyme mixture of macerozyme, cellulase and pectinase. Isolated protoplasts were bursted by adding of water and mild agitation. Isolated crystals were purified by sucrose density gradient centrifugation. Histochemical identification of the crystals were carried out with silver nitrate-rubeanic acid methods to investigate the hydrate form of calcium oxalate. Ultrastructural identification and energy dispersive x-ray crystallography with scanning electron microscope have been carried out to investigate the topography and ionic configuration of the crystals.