

Differential Changes in the Steady State Levels of Thylakoid Membrane Proteins during Senescence in *Cucumis sativus* Cotyledons

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Chloroplast structure and function is known to alter during foliar senescence. Besides, the alterations in the structural organisation of thylakoid membranes changes in the steady state levels of thylakoid membrane proteins occur due to leaf ageing. We monitored temporal changes in some of the specific proteins of thylakoid membrane protein complexes by western blotting in the *Cucumis sativus* cotyledons as a function of the cotyledon age. We observed that the levels of D1 and D2 proteins of photosystem II started declining at the early stages of senescence of *Cucumis* cotyledons and continued to decline with the progress of cotyledon age. Similarly the level of Cyt *f* of Cyt *b₆/f* complex declined rapidly with progress of senescence in these cotyledons. The reaction centre proteins of photosystem I were relatively found to be more stable than that of photosystem II reaction centre proteins reflecting possibly the disorganisation of photosystem II prior to photosystem I. The 33 kDa extrinsic protein (MSP) of oxygen evolving complex, the LHCII apoprotein and the β -subunit of ATPsynthase showed the declined levels with the progress of cotyledon age. However, the extents of loss of these proteins were not as high as the reaction centre proteins of photosystem II and the Cyt *f*. These results provide that during senescence, proteins of thylakoid membranes degrade in a specific temporal sequence and thereby affect the temporal photochemical functions in *Cucumis sativus* cotyledons.