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Molecular analysis of physiological stage of leaf senescence

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A B S T R A C T

Senescence is a final developmental stage of leaf, which is very important as genetic and physiological aspects. Many genes are activated at this stage and most of them show remarkable transcript. The function of senescence is to control regulatory physiological changes. This include cessation of photosynthesis, chloroplast degradation, chlorophyll loss and protein breakdown. Senescence can be initiated by a wide variety of different internal and external factors, as well as being an essential part of plant development; senescence in leaves is also induced prematurely by a number of different environmental stresses. Since plants cannot escape from adverse environmental conditions senescence is one mechanism that plants have evolved to cope with such problems. Interestingly, senescence could be induced in plants even after harvest. This phenomenon is observed in such vegetables like broccoli, lettuce and cabbage. Many different senescence–enhanced genes have been isolated, characterized and cloned. Expression analysis of these genes showed a broad range of expression some time before phenotypic changes to last stage of senescence. So it seems that many signaling pathways should be involved in this process.

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Key Words

Gene Expression, Leaf Senescence, Post Harvest Senescence, Programmed Cell Death (PCD)