

Title Flower Senescence-Strategies and Some Associated Events
Author Waseem Shahri and Inayatullah Tahir
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Abstract

Different strategies of petal senescence and some important events associated with it have been discussed. On the basis of sensitivity to ethylene and associated symptoms of senescence, petal senescence has been classified into five different classes; besides changes in membrane permeability, autophagy and involvement of VPEs (Vacuolar processing enzymes), degradation of nucleic acids, protein turn over and remobilization of essential nutrients during petal senescence have been discussed. Nucleus appears to play a central role in administrating the execution of the events associated with petal senescence. Protein turn over appears to be an important factor governing petal senescence in both ethylene-sensitive and ethylene-insensitive flower systems and that the loss of membrane integrity, vacuolar autophagy and remobilization of essential nutrients being its important consequences. Autophagy seems to be a main process responsible for cell dismantling and remobilization of macromolecules besides final disintegration of nucleus. A large number of senescence-associated genes have been found to be differentially expressed during petal senescence. On the basis of the available literature, a schematic model representing some important events associated with petal senescence has been constructed. The review recommends that more elaborate work is required at cellular and organelle level to understand the ethylene-independent pathway and its execution in both ethylene-sensitive and ethylene-insensitive flower systems. It also recommends that ethylene sensitivity should not be generally assigned to plants at the family level on the basis of response of a few species in a family.

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