Special Issue

Molecular Mechanism of Petal Senescence and New Technology for the Extension of Flower Life

Message from the Guest Editors

Flower longevity is an important trait determining the quality of commercial flowers. In the petals of many plants, including carnations, petal senescence is regulated by endogenous ethylene. In contrast, the petal senescence of other plants, including gladioli, is independent from ethylene. Irrespective of ethylene dependence, programmed cell death (PCD) is involved in petal senescence. In ethylene-dependent types of flowers, there have been many studies on ethylene biosynthesis and ethylene signaling networks. It is possible to extend the longevity of petals by using inhibitors of ethylene action or biosynthesis. In ethylene-independent flowers, petal longevity can be regulated by the silencing of genes involved in PCD. In addition, it is known that plant hormones such as cytokinin delay the senescence of petals. In this Special Issue, we welcome the submission of articles containing novel findings that contribute to our understanding of the molecular mechanism of petal senescence exhibiting ethylene-dependent or ethylene-independent characteristics. We also welcome articles on new technologies for controlling petal senescence.

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Plants is an open access journal which provides an advanced forum for research findings in areas related to plant function, its physiology, biology, taxonomy, stresses, and its interactions with other organisms. It publishes original research articles, reviews, reports, conference proceedings (peer reviewed full articles) and communications. In original research papers, it is important that full experimental details are provided. We also encourage timely reviews and commentaries on topics of interest to the plant research community.

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