

Introduction to Challenges and Strategies to Improve Crop Productivity in Changing Environment

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Climate change discourage floral bloom – An overview

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Abstract

Global warming due to release of greenhouse gases is recognized as a major threat to biodiversity. The changing global climate is affecting the phenology of plants. As a consequence, ecological relations such as floral bloom, insect emergence, plant-pollinator symbiosis and migration of birds are falling out of synchronization thereby causing an imbalance in nature. Plants possess a complex gene regulatory mechanism to perceive the environmental stimulus and decide the time of flowering. Vernalization is the pre-requisite cold treatment necessary for initiation of reproductive phase (flowering) in many plants grown in temperate climatic conditions. Many perennials, annuals and biennials including *Arabidopsis*, members of Brassicaceae and cereals must go through the exposure of cold before the onset of flowering. It has been observed by scientists that plant populations are not optimally adapted to the effect of climate change forming them to migrate in limited landscapes. It shows phenotypic plasticity or adaptive evolution, which devoids plants from their climatic envelope or mutualistic partners. The review highlights the mechanism of flowering and its importance in a changing environment.

Keywords: Climate change; FLC gene; Vernalization

Plants are the key components of the ecosystem; depend upon biotic and abiotic factors for their vital metabolic activities. These essential life processes of plants are greatly