



CONTROL OF FLOWERING TIME AND APPLICATIONS FOR PLANT BREEDING



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Towards Understanding the Genetic Mechanism of Temporal Response to Photoperiod in *Arabidopsis*

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In annual and biennial plants the vegetative phase of plant development is characterized by two subphases: the juvenile vegetative phase (JVP) and the adult vegetative phase (AVP). While the JVP is insensitive to photoperiod, it is during the AVP phase that the shoot apical meristem acquires the competence to respond to floral inducers required for the transition to the reproductive phase. While the transition within the vegetative phase as revealed by physiological and biochemical markers is relatively well understood, comparatively little is known about the genetic mechanisms involved in this process.

This study examines the genetic factors that regulate the onset of plant competence to respond to photoperiod. An experimental system has been developed in *Arabidopsis* that allows the length of the JVP to be measured. Among the three best known wild types, Col-0 was found to have the shortest JVP length. Moreover, by applying a mutant screen, it was possible to identify defined mutations of *loci*, which have an altered temporal response to the onset of floral competence.

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