PL-1

MOECULAR STUDIES OF VERNALIZATION

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Many plants regulate the timing of flowering by monitoring environmental cues such as changes in the length of day and changes in temperature. Many plant species, such as Arabidopsis and baechu, require the prolonged cold of winter in order to flower in the spring. The signal transduction pathway by which prolonged cold is sensed and flowering is thus promoted is known as vernalization. In the fall season flowering is prevent by the high level of expression of a repressor of flowering, FLC. Exposure to prolonged cold results in an epigenetic switch off of FLC to permit flowering in the spring season. This switch off is caused by modifications to FLC chromatin. The specific chromatin modifications that cause this epigenetic switch and speculation as to how the duration of cold is measured will be discussed.