

## Chilling and heat requirements of apricot cultivars for blooming in an apricot collection

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Dormancy is a developmental process that involves a suspension of temporary growth of any plant structure containing a meristem. In fruit trees of temperate regions, endo-dormancy of flower buds is a key process to prevent frost damage and ensure reproductive success. After the exposure to a certain period of low temperatures, buds overcome endo-dormancy and re-acquire the competency to respond to external stimuli, passing to an eco-dormant state, until suitable conditions allow growth resumption and budburst. Several temperature-based models have been developed for monitoring dormancy-associated events, such as chilling and heat requirements for flowering. Although their accuracy is affected by genotype, environment and (probably) their interactions, these models are still widely used to classify the cultivars behavior. In this work, phenotypic variation for chilling and heat requirements was investigated over two growing seasons and using different models (Chilling Hours, Chilling Unit, Dynamic model, Growing Degree Hours, ASYMCUR) in an apricot collection of more than 100 accessions. Results indicate similar performances among the tested models and a high variability among accessions for both chilling and heat requirements, ranging from 600 to 1100 Chilling Hours and 2000 to 7000 Growing Degree Hours, respectively. However, flowering covered a period of only 2 weeks. Blooming date appeared more correlated with heat rather than chilling requirements, independently to the model used for estimation. Therefore, at least in a Northern Italy environment, the blooming period seems more influenced by temperature conditions promoting the overcome of eco-dormancy rather than chilling requirements satisfaction.

**Keywords:** *Prunus armeniaca*, flowering, dormancy, chilling.