

Poster Presentations Abstracts

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Flower development and dormancy in *prunus avium*

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In many woody perennials flower development lasts for several months, and at winter this development is halted as the flower buds enter a dormant period. In this way, flower development supports the low winter temperatures, and adapts the subsequent reproductive process to the suitable conditions of spring and summer. Still dormancy is not just a survival strategy, but also a requisite for proper flowering and is one of the main drawbacks for the cultivation of temperate fruit trees to warmer latitudes. In spite of its agricultural implications, what occurs during dormancy remains elusive. Chilling requirements are genetically controlled for they vary among genotypes, and have been traditionally calculated in an empirical way with different mathematical models. Recently there is a search for the genetic control of this process, but this search is hindered by the absence of a biological frame where to fit results. In this work, flower development is characterized in sweet cherry (*Prunus avium*) with microscope image analysis combined with cytochemistry. Results show at what stage flower buds enter dormancy and what are the first events at waking up time. These events mark a sporophytic gametophytic boundary and the onset of the new male gametophyte generation, with meiosis taking place in the anther. But also the observation of reproductive structures, along the dormant period, surprisingly shows that important changes in carbohydrate accumulation occur during this apparently flower bud dormant stage.