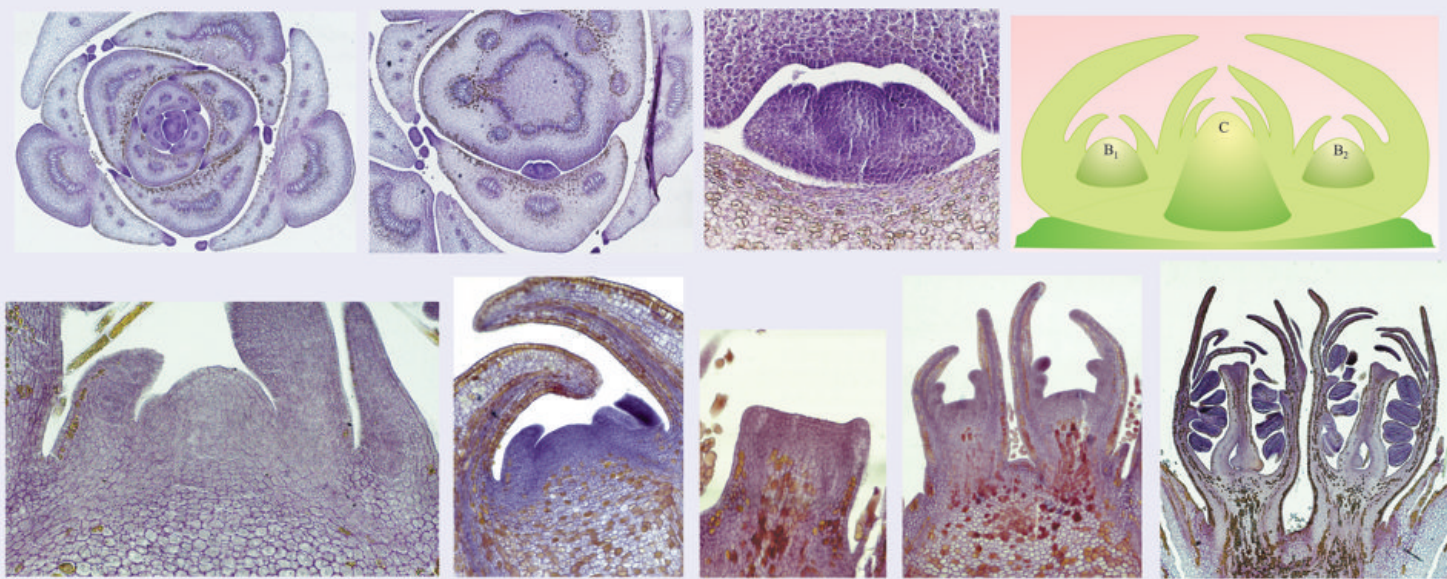


Formation of lateral buds on the shoot and initiation of generative differentiation in sweet cherry

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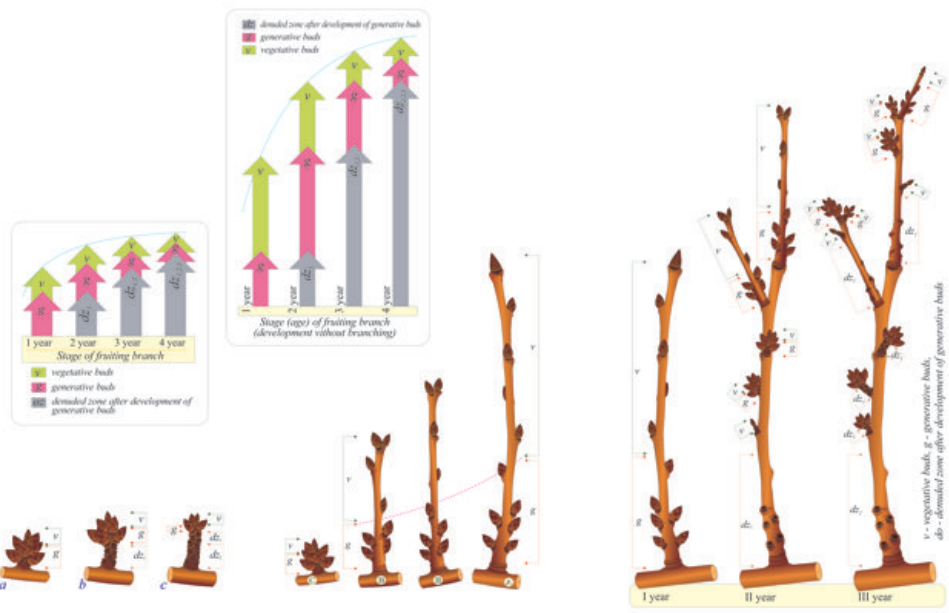
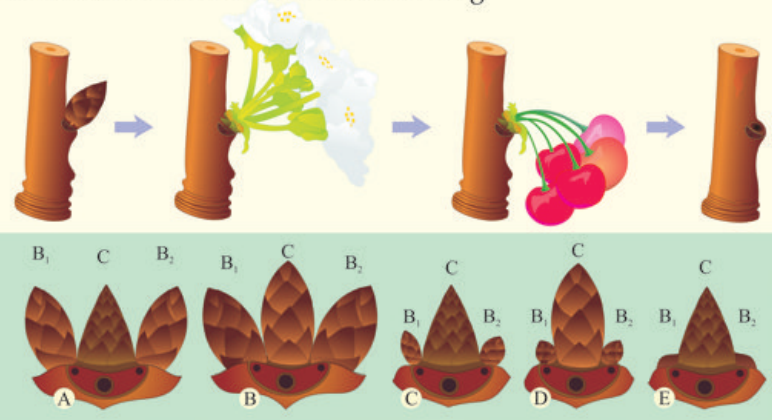


During the dormant period there are vegetative and flower buds on one-year-old fruit-bearing twigs in sweet cherry. The apical meristem in vegetative buds is covered with covering leaves and scales. There are also few leaf primordia, while in flower buds are only present flower primordia with different degrees of differentiation with covering leaves and scales, as well.



During vegetation flowers will develop from flower buds and then fruits after fruit set; therefore, the nodes holding individual flower buds become denuded after fruit-bearing.

Vegetative buds, depending on their position on the growth and the growth position in the canopy, form different categories of one-year-old growths, i.e., shoots and fruit-bearing twigs. Also, depending on growth dynamics during vegetation, the growths of different length and bud structure will be formed. Although the bud structure on the nodes along the growths is conditioned by numerous factors, the main principle of directing vegetative cones to vegetative or generative programme of differentiation is a conservative property on genotypic level. The differences among the bud structures exhibited by their abundance and arrangement along the twigs result from ecophysiological factors, i.e., interaction between genotypes and growth conditions.



Sweet cherry is a fruit species which primarily form fruit-bearing twigs on the individual buds on a node, while the presence of mixed fruit-bearing twigs is significantly less. Generative buds are formed at basal nodes of the fruit-bearing twigs, while vegetative buds are formed at apical parts. The abundance of non-identical bud categories on fruit-bearing twigs is conditioned by the length of these fruit-bearing twigs. As far as shorter fruit-bearing twigs are concerned, the abundance of nodes with generative buds in relation to total length is proportionally higher than in long fruit-bearing twigs. The fact that the nodes with generative buds later become denuded is essential for defining specific pomotechnics which will model generative bud zone, that is, the denuded zone of fruit-bearing sweet cherry trees as well as new growth initiation in terms of formation new fruit-bearing twigs for next vegetation.

This paper presents the results of monitoring the dynamics of the formation of lateral buds on shoots as well as the process of initiation of generative differentiation in the following cherry varieties: Burlat, Stella, Drozan's Yellow and Carna. The processes were integrally analyzed with emphasis on varietal characteristics of particular stages.