

P67 – Analysis of phenology and ripening quality traits in segregating populations derived by crossing ‘Corvina’ with divergent varieties

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Abstract

Adaptation of varieties to changing climatic conditions is a major breeding target, which includes the selection of late ripening varieties/clones, whose bunches may escape the warmer summer condition by postponing the ripening period. However, assessment of the genetic basis of phenology and quality related traits is a prerequisite to develop breeding programs for grapevine varieties adapted for the cultivation in specific viticultural areas and/or to identify the candidate genes for the new breeding technology approaches.

The present work reports a two-season evaluation of traits segregation in populations derived from crosses of the red skinned cv. ‘Corvina’, the principal local variety of the Valpolicella wine area (Verona, Italy), with other two cultivars: the white skinned cv. ‘Solaris’, highly divergent from ‘Corvina’ for the phenology and fruit ripening traits, and the red skinned cv. ‘Cabernet Sauvignon’, whose bunches shows distinctive ripening and post-ripening traits from ‘Corvina’. One hundred and forty-two and one hundred and 29 seedlings were developed respectively for each population, propagated and grown under field conditions. During each season the main phenological stages from budbreak to berry maturation were determined for each genotype in the populations. At full ripening, several clusters from each plant were harvested for measuring main morphological and technological parameters. The data collected was then used to evaluate the distribution of each trait across the individuals in each population. Correlation analyses have been performed between traits collected in the two seasons or across traits. The comprehensive information obtained will be used for QTL mapping. The identification of genetic markers associated with the studied traits will help accelerating the selection of new cultivars more adapted to the changing climatic conditions. Altogether, the described approaches will finally allow to improve our current understanding of the genetic control of phenology and berry quality traits in grape, thus helping and assisting breeding.

Keywords: cross population, phenotyping, ‘Corvina’, ‘Solaris’, ‘Cabernet Sauvignon’