



**ICGBG**

XII International Conference on  
GRAPEVINE BREEDING and GENETICS

July 15-20, 2018  
Bordeaux FRANCE

**ABSTRACT BOOK**  
**GBG 2018 – Bordeaux, France**  
**15 – 20 July**



## Characterization of the reproductive performance of a collection of grapevine varieties

Sergio Ibáñez<sup>a</sup>, Jérôme Grimplet<sup>a</sup>, Elisa Baroja<sup>a</sup>, Silvia Hernáiz<sup>a</sup>, Javier Ibáñez<sup>a,\*</sup>

<sup>a</sup>*Instituto de Ciencias de la Vid y del Vino, CSIC-Universidad La Rioja-Gobierno La Rioja, 26007 Logroño, Spain*

\* **Presenting author:** javier.ibanez@icvv.es

Genetic, physiological and environmental factors interact in grapevine to determine the flower number in the inflorescence and the fruitset rate. Abnormal behavior in the reproductive performance may cause coulure (excessive fall of flowers) or millerandage (excessive presence of seedless berries and/or live green ovaries (LGOs)), which may affect yield. In this work, the reproductive performance of a set of 129 wine grape and table grape cultivars was studied in two consecutive growing seasons. Measures of reproductive performance were taken in ten inflorescences/bunches per cultivar and included flower number per inflorescence, berry number per bunch, fruitset (%), coulure and millerandage indices (0-10). The flower number per inflorescence was estimated from the number of flower caps collected in fine mesh bags set before bloom. After flowering, flower caps from each individual bag were scanned and the digital images were used for manual or automatic counting, with a dedicated tool developed in ImageJ. Those clusters used for flower counting were collected at harvest time and characterized, including counts of seeded berries, seedless berries and LGOs. Different methods were used to estimate fruit set, millerandage and coulure indices. Fruitset average values among all the cultivars was 46-48% in 2016 and 41-43% in 2017. The whole range of variation for fruitset among cultivars was very high, more than 90% every year. Within cultivars, differences in fruitset between years ranged from 0 to 40%, with an average difference around 9-10%. Coulure and millerandage indices also showed great variability among cultivars, reaching the whole range of variation, while they were stable between seasons (difference average: 1 unit). The results allow establishing a preliminary classification of a large number of cultivars according to their fruitset rate. Besides, the huge variability found constitutes a very suitable base for the study of the genetic processes involved in the grapevine reproductive performance.

**Keywords:** berry number, coulure, flower number, fruit set, image analysis, millerandage, phenotyping, reproductive development