The impact of crop load on Pinot Noir fruit for sparkling wine production and base wine composition.

FL Kerslake¹, JE Jones¹ and RG Dambergs¹,²

¹ Tasmanian Institute of Agricultural Research, Perennial Horticulture Centre, University of Tasmania, PO Box 46, Kings Meadows, 7249, Tasmania, Australia.
² The Australian Wine Research Institute, Private Bag 98, Hobart, 7001, Tasmania, Australia.
Corresponding authors email: Fiona.Kerslake@utas.edu.au

Poster Abstract

The phenolic composition of Pinot Noir fruit destined for sparkling wines impacts on the mouthfeel, flavour and aroma. Whilst much is known about how this can be controlled in the winery, little is known about the effect of viticultural management practices specifically for sparkling wine production. In New World viticulture, fruit for sparkling wines is most often cropped at a higher level than for tables wines, however the impact of these high crop loads on fruit quality is predominantly anecdotal.

The current study investigated the impact of varying crop load through pruning level in Pinot Noir destined for sparkling wine. Fruit composition parameters were measured and the phenolic profile of fruit and base wines from three different Pinot Noir crop loads (low, medium and high) in two seasons (2010 and 2011) were analysed. Base wines were produced using standard protocol small scale winemaking (12 kg ferments).

The variability of cool climate seasonal weather conditions was evident in fruit and base wine composition. A significant variation in yield was achieved in both seasons, predominantly through bunch number. Higher crop load in both seasons reduced grape sugars when all treatments were harvested on the same day, but increased grape total phenolics. The spectral fingerprint of the base wines separated the low crop from other treatments, however this was not at the traditional 280 nm wavelength for total phenolics, suggesting that other phenolic compounds were affected by crop load treatments. These findings suggest crop load does affect phenolic composition of Pinot Noir fruit and base wines for sparkling wines, however the traditional total phenolic measurement is insufficient.