Growing Super Sangiovese in the King Valley

Joel Pizzini*, Warren Proft*, Stephen Lowe* and Erika Winter*

* Pizzini Wines, “ Chrismont Wines, *Stony Creek Vineyard, GrapeLinks Viticultural Knowledge Management (e.winter@bigpond.net.au)

Introduction
Sangiovese is a flagship variety in the King Valley in NE Victoria. A key objective of the 5-year study encompassing 25 vineyards was that vignerons understand the crucial parameters that influence Sangiovese grape and wine quality, and the viticultural practices that can be implemented to manipulate those parameters to produce top range wines.

Material and Methods
The Sangiovese blocks are located at altitudes between 250 and 455 m with a diverse range of aspects and slopes. Vines were planted between 8 and 28 years ago and cane or spur pruned on mainly VSP trellises. As in previous benchmarking studies1 canopy traits were assessed on 20 shoots at veraison and pre-harvest for vine balance (cm² of active leaf area/g fruit), degree of cane lignification, leaf health and cluster exposure. Data loggers (Tinytag, Hastings, Port Macquarie) in the bunch zone recorded temperature hourly from mid-December to harvest. Soil temperature (TinytagPlus, Hastings) was measured all year at 100 mm depth. Irrigation and rainfall were monitored. Soil moisture was recorded by Enviro Scan Solo (Sentek) probes. Petioles were analysed by Vintessential, Dromana. Berry Sensory Assessment2 was undertaken pre-harvest and grape chemistry from 20 bunches was analysed by AWRI, Adelaide. Small lot wines were made from 25 kg of fruit by Chrismont Wines. King Valley Wines performed post ferment chemical wine analysis and AWRI assessed wine phenolics.

In 2016, 2017 and 2018 pre-flowering (EL 17) basal leaf removal3 (PFLR) of 6 leaves (Fig. 1, left vine) was performed in one row of several sites, from which grapes were analysed separately and separate wines were made.

Pre-flowering partial leaf removal improved grape colour and tannins (except in C18 with accidental heat loads in PFLR vines) (Fig. 7). Wine chemistry showed that high grape tannins resulted in high wine tannins and that PFLR treatments led to a higher amount of pigmented tannins. Wine tastings revealed an improvement in palate volume, hue and colour in most wines from the PFLR treatments (Fig. 8) in particular in 2018.

Results and Discussion
The King Valley has ideal conditions for Sangiovese with cool nights and warm days, but global climatic variability and the influence of the mountains can lead to high rainfall pre-veraison making it difficult to initiate RDI (Regulated Deficit Irrigation). A weather proof way of producing smaller berries and bunches was demonstrated via pre-flowering basal leaf removal. This led to lighter and looser bunches compared to controls, even in the rainy 2017 (Fig. 3).

By veraison, leaf area in PFLR vines was similar to that of the controls. Over the 5 years vine balance was improved at all sites to >10 through less trimming and better control of fruit weight per shoot (ideally < 300 g). Differential canopy management (open to E/S and leaf cover over W/N) was adopted to prevent afternoon heat loads on bunches (Fig. 4).

For each site and in each of the 5 years the cornerstones for highest fruit quality were: (I) Moderate bunch zone temperatures through canopy management, (II) adequate vine balance with longer shoots and fruit weight control pre-flowering, (III) crop estimation after cap fall and partial bunch removal if needed at berry diameter of 2 mm, (IV) Botrytis prevention, (V) pre-veraison RDI when possible and (VI) maintaining healthy leaves through targeted irrigation up to ripe harvest.

Grape tannin concentrations were seasonally affected and site related (Fig. 6) with lower tannins in all sites in the rainy 2017. In 2018 advanced management practices enhanced tannins even in cooler sites (blue).