



# Varieties

## Glossary

AAVWS	Australian Alternative Varieties Wine Show
AB&D	Alpha Box & Dice
AG	antique green
ASWS	Australian Small Winemakers Show
Cfa	Climate classification
Coulure	failure of grapes to develop after flowering creating gaps
DOC	Controlled designation of origin (Italy)
DOCG	Controlled and guaranteed designation of origin
FFG	Fall From Grace
GI	Geographical indicator
LBAM	light brown apple moth
Mg	magnesium
Millerandage	grape bunches contain berries that differ greatly in size and, most importantly, maturity.
MJT	mean January temperature
NWSA	National Wine Show of Australia
Pruned to vigour	means if it is vigorous you leave more buds, less vigorous less buds, therefore pruned to vigour.
RNA	Royal National Agricultural
RS	residual sugar
SO <sub>2</sub>	Sulfur dioxide
TA	Titrateable acidity
VA	volatile acidity
VSP	vertical shoot positioning

## New South Wales

### Di Lusso Estate

#### Picolit

**Region/sub region:** Central West region – Mudgee

**Planting date:** November 2002

**Rootstock or own roots:** Grafted vines over Kober5bb

**Planted area:** 800 vines (1 acre)

**Slope:** Less than 1%

**Elevation:** 460 m

**Climate and weather:** The climate is warm and temperate in Mudgee. There is a great deal of rainfall, even in the driest month. According to Köppen and Geiger (2007), this climate is classified as Cfa. The average annual temperature is 15.3 °C in Mudgee. The rainfall here averages 717 mm/year.

The driest month is June, with 46 mm of rainfall. The greatest amount of precipitation occurs in January, with an average of 81 mm.

The warmest month of the year is January, with an average temperature of 22.6 °C. The lowest average temperatures in the year occur in July, when it is around 7.7 °C

The difference in precipitation between the driest month and the wettest month is 35 mm. The variation in temperatures throughout the year is 14.9 °C.

**Viticulturist:** Rootstock planted in 1999 by Mudgee Viticultural (Jim and Tony Muller). Grafted vines: Tony Hoare (Hoare Consulting, South Australia).

**Growing tips and tricks:** Due to a genetic micronutrient deficiency, Picolit suffers from floral abort, and thus has a very strong tendency to produce a very poor fruit set. Otherwise, it has thick skins and is a low disease risk. We have gained reasonably better yields when boron and/or molybdenum are applied via foliar spray pre-flowering, and when flowering occurs during windless, dry weather.

Picolit suits a vertical shoot positioning (VSP) structure and needs to be netted due to the birds.

**Pruning:** Pruning to two buds gives the best results, with shoot and fruit thinning very seldom required.

**Canopy management:** Picolit's canopy generally develops easily (we use two foliage wires), and remains strong through to harvest.

**Irrigation:** No special needs.

**Fertiliser:** Refer section above to alleviate floral-abort problem.

**Pest and disease issues:** Picolit is not particularly susceptible to mildew or botrytis, and spray maintenance is as per other varieties.

**Budburst:** Late September. Picolit is somewhat vulnerable to mid-late October frosts.

**Flowering:** Around third week in November, with fruit set early December

**Veraison date:** Mid January.

**Harvest date:** By using bird netting, we encourage the fruit to ripen to over 15 Baumé – that is, to around mid-March.

**Yield:** The widest possible range of yields – from 100 kg/acre to 3 t/acre – depending on the season. (the reason there are only 20 or so growers of this variety in Italy, and three in Australia. Bunch size in a normal year is around 75 gm and berry size well under 1 gm.

**Winemaker information:** David Kyngdon (di Lusso Estate).

**Winemaking notes:** The fruit is left to ripen up to 20 Baumé through using the cordon cutting method and netting the vines to protect them against bird damage. The fruit is hand harvested and immediately crushed, pressed, cold settled and the clear juice racked off the solids. The juice was fermented at 13 °C in stainless steel. The fermentation is stopped so the wine retains the desired sweetness. The wine is stabilised and clarified before bottling.

The wine is a mid-straw colour. There is crisp green apple, pineapple and lime cordial aromas and flavours. The palate has a lovely balance of acid and sweetness. The acid is crisp, providing length, and prevents the finish from being cloying. It is lighter in style than botrytis affected wines.

**Free SO<sub>2</sub>:** 35.2 mg/L

**RS:** 125.2 g/L

**VA:** 0.71 g/L

**pH:** 3.35

**Titratable acidity:** 6.2 g/L

**Alcohol:** 10.0%

**Domestic or export market:** Domestic

**Markets and marketing:** Price points: cellar door – \$29 per 375 ml bottle.



Figure 2. Depicting floral abort



Figure 3. A Picolit bunch in a good year



Figure 4. Picolit bottle – 375 ml

## Di Lusso Estate

### Aleatico

**Region/sub region:** Mudgee

**Planting date:** November 2010

**Rootstock or own roots:** Grafted vines over Kober5bb.

**Area under plant:** 1500 vines (1.8 acres)

**Slope:** Less than 1%

**Elevation:** 460 m

**Climate and weather:** The climate is warm and temperate in Mudgee. There is a great deal of rainfall, even in the driest month. According to Köppen and Geiger (2007), this climate is classified as Cfa. The average annual temperature is 15.3 °C. The rainfall averages 717 mm.

The driest month is June, with 46 mm of rainfall. The greatest amount of precipitation occurs in January, with an average of 81 mm.

The warmest month of the year is January, with an average temperature of 22.6 °C. The lowest average temperatures in the year occur in July, when it is around 7.7 °C.

The difference in precipitation between the driest month and the wettest month is 35 mm. The variation in temperatures throughout the year is 14.9 °C.

**Viticulturist:** Rootstock planted 1999 by Mudgee Viticultural (Jim and Tony Muller). Grafted vines by Tony Hoare (Hoare Consulting, South Australia).

**Growing tips and tricks:** Like many Italian varieties, Aleatico has a strong tendency to over-crop. We will remove up to 60% of the fruit before veraison, otherwise the bunches will cluster together, ripen unevenly and become prone to disease. Aleatico has a very thin skin and is therefore highly prone to bunch rot. For our small vineyard, Aleatico must be netted, as it is the birds' favourite variety – otherwise we will lose the entire crop. Aleatico suits VSP structure and requires moderate watering.

**Pruning:** Pruning to two-bud spurs gives best results, with 30–35 buds per vine. The vine will still require both shoot and fruit thinning.

**Canopy management:** Apart from a tendency to overshoot, the canopy generally develops easily. We use two wires to raise the canopy, and take care to thin the shoots to allow for sufficient air circulation.

**Irrigation:** No special needs.

**Fertiliser:** No more than other varieties.

**Pest and disease issues:** Due to the characteristics noted above, the variety tends to suffer from bunch rot, botrytis and downy mildew. It must be closely watched.

Aleatico is the birds' favourite variety – we have no choice but to net it.

**Budburst:** Early, but consistent. Somewhat vulnerable to mid–late October frosts (for which we use Envy frost protect spray).

**Flowering:** Around last week in October.

**Veraison date:** Aleatico tends to be the first variety to change colour, and starts approximately four weeks after fruit set. Veraison is characterised by very uneven colouring, which lasts as such for at least three weeks.

**Harvest date:** We harvest separately for two different styles:

1. For a rose, we harvest at around 12.5 Baumé.
2. For a dessert style, fruit comes in over 15 Baumé.

**Yield:** If not closely managed, the variety will yield a large crop – on two-bud pruning the propensity is towards 6 t/acre – we bunch thin to approximately 3.5 tonnes. Average berry weight around 9 g and bunch size 130 g.

**Winemaker information:** David Kyngdon (di Lusso Estate).

**Winemaking notes:** The fruit was machine harvested at 13.5 Baumé, crushed and pressed to tank. The juice was settled then fermented with an aromatic yeast at 10 degrees. Fermentation was halted when it had dropped to 7 Baumé. This allowed for a wine that has 139 g/L of sugar.

**Aleatico is famous for and intense rosewater character:** the “Turkish delight” that fuses with lychee, lemon and musk. A high acid cuts through the sweetness, allowing for a fresh finish.

**pH:** 3.20

**Titrateable acidity:** 8.5 g/L

**Alc/vol:** 6.7%

**RS:** 139 g/L

**Markets and marketing:** Rosé – \$23 a bottle cellar door; Dessert wine \$29 (500 ml) cellar door.



Figure 5. Aleatico at veraison



Figure 6. Aleatico netted

## Angullong

### Barbera

**Region/sub region:** Orange region

**Planting date:** 1999

**Rootstock or own roots:** Own roots

**Area under plant:** 2.9 ha

**Clone:** CDFVF6V4

**Soil type:** Clay-loam

**Slope:** Medium

**Elevation:** 605–620 m

**Climate and weather:** Average annual rainfall 750 mm, fairly evenly spread (60–70 mm/month), except drier during March to May (45–50 mm/month).

**Viticulturist:** Vineyard manager is Jim Diprose; viticultural consultant is Tim Esson.

**Growing tips and tricks:** We have found Barbera can tend toward biennial bearing. Some seasons we need to thin the fruit load, but this does not seem to necessarily reflect the seasonal conditions at the time. We are also very careful with our irrigation scheduling to minimise berry size and bunch tightness. We have found that when bunches are very tight, internal berries tend to split, rather than external berries being pushed off. Although Barbera is very acidic, late season botrytis can then be a problem.

**Pruning:** Barbera is not an easy variety to prune. It tends to throw a lot of blind buds, which slows pruning, and has very strong tendrils, making cane removal difficult, thus more expensive to prune than other varieties. Our Barbera is usually pruned to around 10–12 × 2 bud spurs/m of cordon, but this can vary considerably according to bud fruitfulness. Primary bud necrosis can be a problem in some seasons. We have trialled cane pruning to improve fruitfulness, with little success, so we have reverted to spurs.

**Canopy management:** Our Barbera can have quite vigorous vegetative growth. We routinely trim the canopy to about 60–70 cm on the morning side (row orientation is north–south), and around 1.2 m on the afternoon side. Foliage wires are lifted on the morning side pre-trimming.

**Irrigation:** Barbera is not a heavy water user, and irrigation is scheduled according to plant requirements, as the season progresses. As mentioned above, excess irrigation/rainfall after fruit set can create issues with berry size and bunch tightness.

**Fertiliser:** Nothing special to date. Depending on seasonal conditions, we have, from time to time, applied calcium and magnesium to reduce bunch stem necrosis. This is usually applied around Christmas, pre veraison.

**Pest and disease issues:** There are no particular disease issues with our Barbera, except occasional late season botrytis.

**Budburst:** Early to mid season, similar to Merlot.

**Flowering:** Mid to late season, after Shiraz and before Cabernet.

**Veraison date:** Mid season.

**Harvest date:** Mid season.

**Yield:** Crop is often thinned to requirements – generally around the 8–9 t/ha. If left unthinned, yields can be as high as 13–14 t/ha in a heavy-yielding year.

**Winemaker information:** Jon Reynolds.

**Winemaking notes:** Under low-cropping conditions, Barbera will develop attractive, dark plummy characters with ample soft tannins. Barbera is also a high acid variety that needs to be picked ripe. The fruit is monitored for Baumé, pH and total acid levels during ripening. Harvesting is determined by taste, with ripe tannins being important; usually occurring around 14–14.5 Baumé. We also usually wait for titratable acidity to fall to below 6.5g/L. Fruit is machine harvested with typical analyses of 14–14.5 Baumé, pH of 3.45–3.75 and titratable acidity of 5.0–6.5. Fruit is de-stemmed with rollers open to retain some whole berries and transferred to 8 tonne static fermenters. Additions are typically cultured yeast, yeast nutrient, tannin, cultured malo-lactic acid bacteria and, in some years, tartaric acid. Fruit is soaked for 3–4 days at which point the cultured yeast begins the fermentation process. Once the fermentation has begun and the skins have risen to form a cap, the fermenting juice is racked (drained off) and returned over the skin cap. This is usually done every six hours to keep the skin moist and cool and to maximise colour extraction in the process. The malo-lactic acid bacteria culture is added at about 6 Baumé and co-fermented with the yeast fermentation. When fermentation is almost complete, all free juice is drained and the skins pressed. In most seasons, all the pressings are returned to the free run portion. Maturation is 12 months in French oak puncheons, approximately 25% new with the remainder in second and third year use barrels. Before bottling, the wine is lightly fined with egg whites, partially cold stabilised and cross-flow filtered.

**Show results:** Silver medal, Class 14 2016 NSW Wine Awards.

**Domestic or export market:** Domestic.

**Markets and marketing:** Angullong Fossil Hill Barbera 2015; RRP: \$26; Domestic, cellar door and online.

## Toppers Mountain

Variety: Nebbiolo



Figure 7. Nebbiolo bunches close to harvest.

**Synonyms:** Spanna, Picotener, Prunent, Picotendro.

**Sub region:** Northern New England Australia.

**Planting date:** 2007

**Rootstock/own roots:** Richter 110

**Area under plant:** Two acres.

**Clone:** 230, 111, MAT3, MAT7, Lampia

**Soil type:** Red soil (basalt)

**Slope:** Easterly

**Elevation:** 890 m

**Climate and weather:** Predominantly summer rainfall with 900 mm annually and 600 mm throughout the growing season. Temperatures range from  $-5^{\circ}\text{C}$  to  $-6^{\circ}\text{C}$  in the winter to  $36^{\circ}\text{C}$  peak in summer.

**Viticulturist:** Mark Kirkby

**Growing tips and tricks:** Crop reduction is imperative to achieve balance and ripeness; leaf reduction is recommended post berry set with air flow and extra sunlight on the bunches an advantage. Keeping the canopy in check early is also recommended to improve air flow.

**Growing do's and don'ts:** Don't over water as this will definitely dilute the flavour profile. Watering should stop three weeks before harvest to intensify the flavours. Do plant multi clone plots to improve wine quality with a particular attention to the MAT3 and MAT7 clones to deliver weight to the wine.

**Pruning:** Four arched canes with 15 internodes in length for each cane.

**Canopy management:** Leaf size – Medium to large with leaf variation observed. Open petiole sinus with three lobes common.

**Growing habit:** Semi plagio-tropic with canopy wires needed to contain the hanging shoots quite early. I have noticed that before flowering the vine can look quite messy and therefore wire lifting is required.

**Shoot strengths:** Tips are fragile and shoots can grow vigorously, therefore shoot damage is noticeable early in the growing season. Can be vigorous in quality soils.

**Irrigation:** Normal applications at vital growing points is recommended: budburst, flowering and veraison. In dry years you might need 0.5 ML/ha.

**Fertiliser:** Early applications of zinc and boron will help fruit set.

**Pest and disease issues:** Quite resilient; in most cases there are large bunches of small, round berries with thick skins. I have observed some botrytis in extremely wet years (nearly all wine grape varieties displayed bunch rot in 2010 and 2011). In Piedmonte, Italy I observed minor traces of powdery mildew, however, this is easy to contain through a thorough spray program.



Figure 8. Nebbiolo leaf and bunch morphology.

**Budburst:** Early bud burst (Before Pinot Noir and Chardonnay) therefore a site on a slope or at the top of a hill is preferred to avoid frost risk. I have seen this variety budburst in the third week of August.

**Flowering:** Mid November with little or no issues observed. In wet years, only minimal loss through coulure.

**Veraison date:** Last week in January and can continue over a three-week period.

**Harvest date:** Late April with Baumé levels around 13 recorded. It appears the variety has a lengthy period in which it can be harvested. Phenological ripeness occurs early April.

**Tonnage :** 2.5–3.5 t/acre delivers ideal quality.

**Winemaker :** Mike Hayes – Symphony Hill Wines for Toppers Mountain Wines.

**Winemaker notes:** Lampia clone proved to be a poor clone for colour and this is the clone that had issues with botrytis. The 230 clone delivers structure to the mid palate and the 111 clone has the beautiful fragrance of freshly picked roses. MAT3 and MAT7 clones are quite beneficial, delivering tannin and assertive acidity. Cold soaking for four weeks is recommended to extract colour and flavour with no extended maceration required as it may deliver stringent tannins. Barrel aging in old clean barrels is recommended, as new barrels appear to destroy the delicacy of perfume for which this variety is famous. A Baumé of 12.5 appears to suit the style we are chasing from this property, with 3.2 pH and in some years titratable acidity as high as 9 g/L.

**Show results:** Toppers Mountain and Symphony Hill have won numerous gold medals and Best Wine of the Show from The New England Wine Show. Toppers Mountain has been awarded gold medals at the Berlin International Wine Show and the Hong Kong Wine Show. The Nebbiolos that come from Toppers Mountain vineyard consistently gain attention from the wine writers along the east coast of Australia. Common points for the wines are above 93, and it appears the variety has found a place in the New England.

**Domestic market:** This is where we have an issue with Nebbiolo. Generally speaking, the wine reaches its peak after 8–10 years and therefore, when consumed early, the high acidity and low tannins are

not favourable with young consumers. If selling in a cellar door situation, attention to food matching and educating the public is necessary and ongoing.

**Market and marketing strategies:** When served with the appropriate food, Nebbiolo is enjoyed by all. Best food suggestions include steak with a small amount of fat to counteract the tannins and acidity and increase richness; osso bucco is another food suggestion to tame the aggressive tannins. Hand selling is required and varietal education is important to achieve repeat sales. Generally speaking, this is a masterful wine style that commands respect, however, the variety appears to challenge Australian wine consumers.

## Angullong

### Sagrantino

**Region/sub region:** Orange region

**Planting date:** 2011

**Rootstock or own roots:** Own roots

**Area under plant:** 1.1 ha

**Clone:** Mat 1

**Soil type:** Clay–loam over clay, drainage good to fair (pooling can occur in the lower parts during extended wet weather).

**Slope:** Medium

**Elevation:** 600–620 m

**Climate and weather:** Spring frosts are an issue. The Sangrantino, being mid season to burst, has been singed by frost in the past, but not badly.

**Viticulturist:** Vineyard manager is Jim Diprose, viticultural consultant is Tim Esson.

**Growing tips and tricks:** Sagrantino is a comparatively new variety at Angullong, and we are still learning. As far as I am aware, we have the only planting in the region. It has proven to be more difficult to grow than other varieties, and appears to be more sensitive than other varieties to soil moisture and fertility levels. We lost a number of vines in the second season when soil moisture was too high in the poorer-drained part of the block.

**Growing do's and don'ts:** Don't over water, particularly when vines are young.

**Pruning:** Up until the current 2016–17 season, we have spur-pruned all the Sagrantino at a 2-bud-spur every 10–12 cm along the cordon. Each vine has been pruned to vigour to date, according to growth and cordon size. This year we cane-pruned two rows as a trial, mainly to see if this helped to reduce shoot thinning, and if harvesting was easier. No clear results have yet been seen.

**Canopy management:** We found the Sagrantino to be more difficult to train than other varieties. Canes can be rather brittle, so additional care is needed during

cordon training. Internode spacing is much shorter than usual, and we found that vigorous tendril growth often caused problems by catching and deforming shoot tips. We found that a shorter interval between training passes helped.

Bunches are fairly tight, and mechanical harvesting has been difficult. We have found that we need to hit fairly hard to get the fruit, and some cane damage has resulted, but yield has not suffered in the following year. We shoot-thin early to reduce crop load and to keep the canopy open. This might not be needed as the vines age.

**Irrigation:** So far, the Sagrantino does not appear to be a high water user. We monitor the moisture levels closely though, after losing some young vines through over-watering.

**Fertiliser:** No special fertilising regime is used so far. We fertigated with urea in the first year as would occur with most new plantings.

**Pest and disease issues:** Downy and powdery mildew seem to be well controlled with a normal spray program, and Sagrantino does not appear to be particularly prone to any specific diseases. Botrytis has not been an issue to date. We have had some problems with blister mite, requiring high rates of sulfur for control.

**Budburst:** At Angullong, Sagrantino is one of the earlier varieties to burst in the spring, after Chardonnay, similar to Verdelho and Riesling.

**Flowering:** Flowering is early–mid season, similar to Shiraz.

**Veraison date:** Mid season.

**Harvest date:** Mid–late season. To date, the Sagrantino has been harvested after all varieties except Cabernet.

**Yield:** Variable so far, probably due to the vines being very young. The 2017 vintage was about 9 t/ha, but some bunch and shoot thinning occurred, and it was a vigorous growing year. We expect to continue having to bunch thin, though the vines might settle more as they age.

**Winemaker information:** Jon Reynolds.

**Winemaking notes:** This variety is indigenous to Umbria in central Italy. Being the newest variety with which we have worked, we have allowed this wine to show us what it can do in terms of varietal expression. Known for its naturally high levels of tannin, we are careful to not overwork the skins during fermentation.

Sagrantino can produce amazing intensity of colour and flavour with big tannins that are chalky and in the softer spectrum. Fruit is monitored for Baumé, pH and titratable acidity during ripening.

Harvesting is determined by taste, with ripe tannins the main determinant. Typically, ripeness usually occurs around 14–14.5 Baumé. Fruit is machine harvested with typical analyses of 14–14.5 Baumé, pH 3.40–3.8 and titratable acidity 5.5–6.5. Fruit is de-stemmed with rollers open to retain some whole berries and transferred to 8 tonne static fermenters.

Additions are typically cultured yeast, yeast nutrient and cultured malo-lactic acid bacteria. The crushed fruit is soaked for 3–4 days, at which point the yeast begins the fermentation process. Once the fermentation has begun and the skins have risen to form a cap, the fermenting juice is racked (drained

off) and returned over the skin cap. This is usually done once every six hours to keep the skins moist and cool and to maximise colour extraction while limiting harsh tannin extraction during the process. Rack and returns are discontinued once the ferment reaches about 4.0 Baumé to limit further extraction of hard tannins. The malo-lactic acid bacteria culture is added at about 6 Baumé and co-fermented with the yeast fermentation.

When fermentation is almost complete, all free run is drained and the skins are pressed. Depending upon the season, some or all of the pressings are returned to the free run portion. Maturation is for 12 months in French oak puncheons, approximately 25% new and the remainder in second and third use barrels.

**Show results:** Gold Medal at the Australian Italian Varieties Wine Awards 2016 and Silver Medal, Class 13, 2016 Orange Wine Show.

**Domestic or export market:** Domestic

**Markets and marketing:** Angullong Fossil Hill Sagrantino 2015; RRP: \$26; Domestic, cellar door and online.

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## Angullong

### Sangiovese

**Region/sub region:** Central Ranges zone/Orange region

**Planting date:** grafted vines: 1998 originally as Marsanne and grafted over in 2011 to Sangiovese with clones Mat6, Mat7, VCR5 and VCR6.

**Area under plant:** 2.05 ha

**Clone:** Own-rooted 2000 with clone H6V9

**Soil type:** Own rooted – gravelly clay-loam, very well drained. Grafted vine area – clay-loam over clay, drainage good to fair (pooling can occur during extended wet weather).

**Slope:** Medium

**Elevation:** 570–620 m

**Climate and weather:** Spring frosts are an issue across all varieties at Angullong and, as in many areas, local topography is critical. Thus our two blocks of Sangiovese, being earlyish to burst, are planted higher up the slopes.

**Viticulturist:** Vineyard manager is Jim Diprose, viticultural consultant is Tim Esson.

**Growing tips and tricks:** Sangiovese is not difficult to grow as such, but achieving the required fruit quality is a different story. The biggest issue is over-cropping, through both bunch number and bunch

size. At Angullong, the older clone over-crops more than the newer clone and, whilst the new clones still require thinning, these vines may settle down as they age. Timing fruit thinning appears to be a significant issue – thinning early results in the vines compensating with larger berries. We have found that veraison, or just after, gives the best results. Varying the bud numbers at pruning, as well as early shoot thinning, appear to make little difference.

**Pruning:** All our Sangiovese is spur-pruned at 10–12 × 2-bud spurs/metre of cordon. Cane pruning trials have been discussed, but not yet implemented.

**Canopy management:** All our Sangiovese requires some canopy manipulation. We lift foliage wires, and trim to about 60–70 cm cane length on the morning side of the canopy to allow better light exposure and air flow. At the same time, the afternoon side is left to sprawl, and is trimmed to about 1.2 m cane length, to give better protection from over exposure and sunburn.

**Irrigation:** Sangiovese is not a high water use variety at Angullong. As a guide, it does use more than the older clone (H6V9), which receives additional water, but this is due to gravelly soils rather than varietal requirement. Restricting the availability of water post fruit set helps to minimise berry size and bunch weights.

**Fertiliser:** No special fertilising regime is used. With over cropping being the norm, additional fertiliser is

not required while the vines remain healthy and in reasonable balance.

**Pest and disease issues:** The major issue is botrytis, mostly due to the large bunch size making spray penetration rather difficult. Downy and powdery mildew seem to be well controlled with a normal spray program, and the variety does not appear to be particularly prone to any specific diseases.

**Budburst:** At Angullong, Sangiovese is our earliest variety to burst in the spring, along with the Chardonnay.

**Flowering:** Flowering is early, similar to Chardonnay.

**Veraison date:** Early – it is the first of the reds to begin colour change. Again, similar to Chardonnay.

**Harvest date:** Mid-late season for table wine. We harvest the fruit for our own label when it is deemed flavour ripe. Sugar levels are obviously important, but flavour more so.

**Yield:** Yields are not really relevant as such, since all our Sangiovese is thinned to requirements and can vary season to season depending on canopy size, weather etc. Bunch weights can often exceed 500 g and berries can also end up very large if irrigation/rainfall is not timely. Target tonnage for table wine is usually around 8 t/ha, for rosé about 10–12 t/ha. Often up to half the crop is dropped at, or just after, veraison.

**Winemaking notes:** This variety originated in central Italy, occupying the greater part of Tuscany.

Clonal selection is important in the winemaking process and Angullong has concentrated on this by selecting improved Sangiovese clones such as VCR and MAT. As a result, considerable improvements in colour and flavour have been achieved. Fruit is monitored for Baumé, pH and titratable acidity during ripening. Harvesting is determined by taste, with ripe varietal flavours and colour being the main determinants. These usually peak at around 13.5–14.0 Baumé, although this varies depending on seasonal conditions. Sangiovese is an early-ripening

variety. Fruit is machine harvested with a typical analysis being 13.5–14.0 Baumé, pH 3.35–3.45 and titratable acidity 6.5–7.0. Sangiovese is naturally a high acid producer so it is important to get this down to below 7.0 g/L before harvest. The VRC and MAT clones have proved to develop a more intense colour than the H6V9 clone and flavour profile.

Fruit is de-stemmed with rollers open to retain some whole berries, chilled and transferred to 8 tonne static fermenters. Additions are typically cultured yeast, yeast nutrient and cultured malo-lactic acid bacteria. The crushed fruit is soaked for 3–4 days at which point the yeast begins the fermentation process. Once the fermentation has begun and the skins have risen to form a cap, the fermenting juice is racked (drained off) and returned over the skin cap. This is usually done every 4–6 hours to keep the skins moist and cool and to maximise colour extraction in the process. The malo-lactic acid bacteria culture is added at about 6 Baumé and co-fermented with the yeast fermentation.

When fermentation is almost complete, all free run is drained and the skins pressed. Depending upon the season, some or all of the pressings are returned to the free run portion. Following fermentation, maturation of at least 12 months follows in second and third use French oak puncheons to avoid overt oak characters and to maintain the variety's natural tannin structure. Blending the various clonal batches following maturation is an important part of the Sangiovese wine-making process and now defines our regional style. Before bottling, the wine receives a light egg white fining then undergoes cross-flow filtration and partial tartrate stabilisation.

**Show results:** Silver Medal, Class 23, NSW Small Winemakers Wine Show 2016 and Silver Medal, NSW Wine Awards 2016.

**Domestic or export market:** Domestic.

**Markets and marketing:** Angullong Fossil Hill Sangiovese 2015; RRP: \$26; Domestic, cellar door and online.

**VINE SIGHT**



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## Toppers Mountain Wines

### Touriga Nacional



Figure 9. Touriga Nacional bunches going through veraison.

**Synonyms:** Azal Espanhol, Mortagua, Carabunera, Touriga Antiquo

**Sub region:** Northern New England

**Planting date:** 2009

**Rootstock/own roots:** Own roots

**Area under plant:** 1 acre

**Clone:** E6V12.

**Soil type:** Red soil (basalt)

**Slope:** Easterly

**Elevation:** 890 m

**Climate and weather:** Predominantly summer rainfall with 900 mm annually and 600 mm throughout the growing season. Temperatures range from  $-5^{\circ}\text{C}$  to  $-6^{\circ}\text{C}$  in the winter to  $36^{\circ}\text{C}$  peak in summer.

**Viticulturist:** Mark Kirkby

**Growing tips and tricks:** Regular applications of micro-nutrients via foliar sprays are recommended with boron and calcium applied pre flowering. Low nitrogen is recommended to minimise bunch compaction.

**Growing do's and don'ts:** Regular trimming of the shoots post fruit set is required as shoots can reach heights of  $>1.5$  m. Leaf plucking after veraison delivers increased air circulation and even ripening.

**Pruning:** Two-bud spur; 7 spurs/m

**Canopy management:** Leaf size – Small to medium, green, 3-lobed leaf. The leathery leaf can handle hot ripening conditions.

**Growing habit:** Semi erect with strong shoot growth. Leaf plucking is recommended. The variety can handle sun and hot ripening conditions with no sunburn seen.

**Shoot strengths:** Shoots are susceptible to wind damage early in the growing season, however, this is not an issue post flowering. Canopy wires should be moved according to shoot growth to eliminate damage.

**Irrigation:** Predominantly summer rainfall is normally sufficient for this variety. However, 0.3–0.6 m/ha might



Figure 10. Touriga Nacional leaf and bunch morphology.

be needed in dry seasons. Watering is essential at budburst, flowering and veraison to help minimise stress. If there is not sufficient water at flowering, a significant amount of flowers will be aborted.

**Fertiliser:** Magnesium and calcium appear to be the main elements needed periodically throughout the growing season. Low nitrogen will help to reduce berry size, therefore reducing bunch compaction.

**Pest and disease issues:** Powdery mildew and downy mildew need attention with a thorough preventative spray program. I have observed sour rot in wet years (2010, 2011) and botrytis can be an issue late in the season.

**Budburst:** Late September (third week)

**Flowering:** Mid November and coulure has been observed in wet cool years.

**Veraison:** Last week in January to Early February.

**Harvest:** Early–mid April.

**Yield:** 2.5 t/acre

**Winemaker:** Mike Hayes Symphony Hill for Toppers Mountain Wines

**Winemaker notes:** The variety needs to be ripe with Baumé s around 14 preferred. High pH and low titratable acidity (3.78 and 4.92 respectively) are common, allowing acid adjustment. Cold soaking is beneficial with 1–2 weeks the preferred length at  $0^{\circ}\text{C}$ . Care is needed to avoid over extraction of skin tannin that delivers a drying effect on the palate, therefore, no extended maceration post primary ferment is recommended.

**Show results:** The wines have not been shown, however the variety is proving to be very popular with other examples winning gold at various shows throughout Australia.

**Domestic market:** The domestic market has shown considerable interest in the variety as it delivers a style close to the old Shiraz/Cabernet blends of the 1980s: rich, ripe and delicious.

**Market and marketing strategies:** New wave wine drinkers are targeted as the variety has a story to be told. It also makes a style of fortified wine similar to the great vintage Portuguese ports. I believe the variety may in fact take over from Tempranillo as it is easier to grow and the resultant wine more interesting.

## Queensland

### Ballandean

#### Fiano



Figure 11. Angelo Puglisi, viticulturist at Ballandean, is happy with the Fiano bunch exposure.

**Synonyms:** Greco Aromatico and Minutolo.

**Sub region:** Granite Belt.

**Planting date:** 2011

**Rootstock/own roots:** Paulsen 1103

**Area under plant:** 1.5 acres

**Clone:** SAVII01



Figure 12. Fiano bunch and leaf morphology.

**Soil type:** Decomposed granite over a sandy to sandy-loam base. Depth is around 1.2 m.

**Slope:** Southerly

**Elevation:** 830 m

**Climate and weather information:** Predominant summer rainfall region averaging 30 inches or 750 mm/year (70% or above falling in the growing period). Higher than normal humidity with above average hail susceptibility. Temperatures range from  $-7.0^{\circ}\text{C}$  in the winter to a cool  $35^{\circ}\text{C}$  in the summer (highest temperature ever recorded is  $38^{\circ}\text{C}$ ). Best described as a continental climate:  $28.88^{\circ}$  south (latitude);  $151.84^{\circ}$  east (longitude)

**Viticulturist:** Angelo Puglisi.

**Growing tips and tricks:** This variety can over-crop so adequate crop reduction at veraison is required; a cropping level of 2–3 t/acre is preferred. Canopy trimming is required at least once before veraison, and possibly a light trimming is required after veraison.

**Growing do's and don'ts:** In sandy soils, maintain calcium and magnesium in early shoot development.

The variety is suited to little or no nitrogen (N) applications.

**Pruning:** 2-bud spur and cane pruning will achieve cropping levels in respect to vine balance.

**Canopy management:** Leaf size – medium to large with tiny hairs underneath. An open petiole sinus is observed and the leaf is coloured medium green.

**Growing habit:** heliotropic and strong, early shoots growth, therefore early trimming is a priority.

**Shoot strengths:** can be sensitive and brittle early in the season in high wind.

**Irrigation:** Generally only at budburst with minor applications required throughout the hot periods of vine growth. Sandy soils need 0.3–0.6 ML in the growing season. In summer rainfall-dominant regions, no irrigation is required.

**Fertiliser:** Low N and an application of all micro nutrients before flowering is beneficial for berry set. This variety is very tough and the perfect variety to grow. Angelo Puglisi says: 'I really enjoy working with this variety it is easy to grow and the little berries and thick skins are perfect for our growing conditions'.

**Pest and disease issues:** Powdery mildew has been observed and in one wet season I witnessed some downy mildew. Botrytis is not an issue with the tiny berries and very loose bunch.

**Budburst:** Mid September.

**Flowering:** Early–mid November

**Veraison date:** January 26.

**Harvest date:** First week of March.

**Tonnage:** 2–3 t/acre.

**Winemaker:** Dylan Rymer, Ballandean Estate.

**Winemaker notes:** Harvested around 13 Baumé, gives outstanding balance and complexity with hints of honey and jasmine. Green characters appear and destroy the wine if picked too early and therefore attention to physiological ripeness is paramount, 11 Baumé is not ideal for picking and light brown seeds should be observed with white tips on the beak of the seed. No malo influence has been trialled, as I feel it could detract from the textural prowess this variety displays.

**Show results:** Qld Wine Awards Champion Wine of the Show and consistently one of the best alternative white wines in Australia with multiple Gold medals won at various shows.

**Domestic market:** Excellent domestic market sales in southern Queensland has firmly entrenched this variety as one for the future. Consumers appear to love the textural honey flavours and the amazing floral and jasmine aromas.

**Market and marketing strategies:** The market for this variety is exploding with strong interest from fine wine shops, restaurants and, noticeably, cellar door sales are rocketing – the Italian answer for Chardonnay and in many situations more popular.

As an ideal food wine the variety will gain in popularity over the next five years. No wonder the variety is held in high regard in Italy.

## Symphony Hill Wines

### Petit Manseng



Figure 13. Petit Manseng growing in Juranson, southern France. Note Mg deficiency.

**Synonyms:** Spain – Escriberou, Ichiriota Zuria Tipia; France – Manseng Blanc, Miot, Mausec

**Sub region:** Granite Belt

**Planting date:** Grafted in 2011 on to existing Shiraz.

**Rootstock/own roots:** Ruggeri 140

**Area under plant:** 1 acre

**Clone:** 8309

**Soil type:** Sandy decomposed granite over light-textured loam.

**Slope:** north-west

**Elevation:** 760 m

**Climate and weather:** Predominant summer rainfall region averaging 30 inches or 750 mm/year (70% or above during the growing period). Higher than normal humidity with above average hail susceptibility. Temperatures range from  $-7^{\circ}\text{C}$  in the winter to a cool  $35^{\circ}\text{C}$  in the summer (highest temperature ever recorded is  $38^{\circ}\text{C}$ ). Best described as a continental climate:  $28.88^{\circ}$  south (latitude);  $151.84^{\circ}$  east (longitude).

**Viticulturist:** Mike Hayes and John Searle.

**Growing tips and tricks:** Shoots can be fragile throughout early shoot development stages and therefore adequate canopy wires need periodical lifting to limit tips damage. Applying foliar trace elements monthly are beneficial and periodic Seasol® sprays helps to reduce stress, in particular wind and heat.

**Growing do's and don'ts:** Quite an easy variety to grow and as each shoot can carry four bunches, crop thinning is essential. Reduce the fruit load to two bunches per shoot and this will equate to around the 2.5 t/acre.

**Pruning:** 2-bud spur with seven spurs/metre. The variety was trialled for cane pruning, but no significant difference in cropping levels or quality was observed.

**Canopy management:** Leaf size – Small to medium and orbicular in shape with a slightly U-shaped open petiole sinus. Berries are tiny and the bunch is sparse with plenty of natural looseness.

**Growing habit:** Plagiotropic with the shoots showing a propensity to droop early in the season.

**Shoot strengths:** Shoots are relatively strong and can handle quite windy conditions. The tips are more fragile than normal.

**Irrigation:** No extra irrigation is needed, however, in dry times 0.5–0.75 ML/ha throughout the season can be required in sandy soils. Ensure that the soil profile remains damp throughout the critical growing stages, budburst and veraison.

**Fertiliser:** The variety is prone to magnesium and iron deficiency with nitrogen required early in the growing stage for shoot development.



Figure 14. Petit Manseng on the Granite Belt Southern Queensland. Note the loose bunch and small berries.

**Pest and disease issues:** Prone to powdery mildew (easily kept in check with sulfur sprays every 10 days). Downy mildew appears to not being an issue and the bunch, with its sparsity and extra thick skins, practically makes this variety immune to Botrytis.

**Budburst:** Late September.

**Flowering:** The variety appears to be quite resilient around flowering with little or no issues surrounding coulure or millerandage. Observations at flowering include cooler nights and some rain activity with very little loss of fertilised fruit apparent.

**Veraison:** Mid January.

**Harvest:** Late February.

**Yield:** 2–2.5 t/acre.

**Winemaker:** Mike Hayes – Symphony Hill Wines.

**Winemaker notes:** The variety in other years appears to have a ferociously high total acidity, around 11 g/L. This can antagonise some delicate yeast strains. Cold stabilisation results in above average tartrate fall out. The best yeast strain to use is VL3 and three feeds of 30 g/hL of nutrient is recommended throughout the primary ferment with temperatures not exceeding  $13^{\circ}\text{C}$ .

### DO NOT INNOCULATE WITH MALO.

The wine displays exotic floral notes with pronounced textural nuances and firm acidity. It is important to either deacidify the juice or the completed wine to keep the fruit/acid ratio in check.

**Show results:** Silver medals at AAVWS (Australian Alternative Varieties Wine Show) and the ASWS (Australian Small Winemakers Show).

**Domestic market:** Cellar door and Symphony Hill Wine Club. Retail in Brisbane at the Craft Wine Store, a specialist wine shop with alternative varieties and the

consumer visits this store as it has a point of difference. Retail: \$30.00 per bottle.

**Market and marketing strategies:** Phonetically spelling the variety is required and additional consumer education. Repeating the name 3–4 times helps the consumer feel confident in pronunciation. Food suggestions and materialistically painting a scene for the consumer to enjoy is an added advantage, e.g. 'Imagine drinking Petit Manseng with Peking duck

smothered in a coriander and ginger sauce'. Educate your staff about where the variety's origins and how important it is in the culinary world.

The price point is not of concern when you explain the hands-on approach to growing and making the wine. The consumer shows no resistance to purchasing a bottle to try. It was noted that our wine club had return sales and the general comment was that over 95 % of the wine club members really enjoyed the wine.

## Heritage Wine

### Savagnin

**Synonyms:** Clevner, Gentil Blanc, Traminer D'Ore

**Sub region:** Granite Belt

**Planting date:** 2010



Figure 15. Savagnin bunches.

**Rootstock/own roots:** Ruggeri 140.

**Area under plant:** 1 acre

**Clone:** Galicia

**Soil type:** Sandy, decomposed granite over light-textured loam.

**Slope:** Easterly.

**Elevation:** 920 m

**Climate and weather:** See Petit Manseng on page 16.

**Viticulturist:** John Handy

**Growing tips and tricks:** In the early stages the vines have the propensity to droop and therefore canopy wires are required early in shoot development. Be careful not to overcrop and levels of 2–3 t/acre appear to deliver a balanced crop with fruit intensity.

**Growing do's and don'ts:** Do not over irrigate and definitely nitrogen only at the beginning of the season as this variety needs very little.

**Pruning:** Two-bud spur–7 spurs/m.

**Canopy management:** Leaf size –Medium to small with a slightly closed petiole sinus. The leaf is dark green with some hairs on the underside. The bunch is small to medium and compact with thick skins and medium-sized, round berries.

**Growing habit:** Semi upright and attention to VSP. is required after berry set.

**Shoot strengths:** Reasonably strong shoots, however, in high wind, care must be taken to ensure the canopy is firmly in place with additional canopy wires.

**Irrigation:** Required throughout the important stages of early development, budburst, flowering and veraison. Generally speaking 0.5–0.75 ML is required in dry or hot years.

**Fertiliser:** Throughout the flowering stage in sandy soils it is advised to monitor calcium, magnesium and boron levels to ensure berries fill out to their complete size.



Figure 16. Savagnin leaf and bunch morphology.

**Pest and disease issues:** Susceptible to powdery mildew in southern Queensland with great resilience to downy mildew and botrytis as the skins are considerably thicker than other western European varieties.

**Budburst:** Late August

**Flowering:** Early October

**Veraison:** Late December

**Harvest date:** Late February–early March.

**Yield:** 2 t/acre

**Winemaker:** John Handy, Heritage Wine, Granite Belt.

**Winemaker notes:** Flavours appear to be in balance with 12–13 Baumé. The pH is generally around 3.2–3.4 with a titratable acidity between 6 g/L and 7 g/L. Aromatic yeasts are preferred and a cool fermentation phase of around 13–14 °C is ideal. No malo-lactic fermentation has been performed and possibly this could detract from the textural palate often received from this variety.

**Show results:** Heritage Savagnin has had solid success with silver and bronze medals won from reputable

wine shows. The variety was confused with the Spanish Albarino before DNA testing rectified the error.

**Domestic market:** Strong sales at the cellar door with no issues around varietal mix up. As the variety is related to Gewurztraminer, there is a story in itself to be told. Most consumers are surprised by the aromatics and crispness that the variety delivers.

**Market and marketing strategies:** Difficulty in explaining the confusion between Savagnin and Albarino appears to be a mindset within the market place; hand selling is required to explain the story and the variety's background. As the variety appears more frequently in the domestic market, it will become more widely accepted as an alternative variety of repute.

## Golden Grove Estate

### Vermentino

**Synonyms:** Rolle (France), Pigato, Favorita (Italy)

**Sub region:** Granite Belt

**Planting date:** 2008

**Rootstock/own roots:** Kober5BB



Figure 17. Sam Costanzo in front of his Vermentino vineyard. Note the cropping level and the canopy to fruit ratio.

**Area under plant:** 1.5 acres

**Clone:** VC1

**Soil type:** Decomposed granite over a sandy to sandy-loam base.

**Slope:** North easterly

**Elevation:** 750 m

**Climate and weather:** See **Petit Manseng** on page 16

**Growing tips and tricks:** Very easy variety to grow and it has a natural propensity to crop heavily. The best results in wine quality are delivered when the tons per acre are kept low, around 2–4. Watch for sunburn on the western side of the vine.

**Growing do's and don'ts:** Early canopy management and wire movement is advised. Immediately after berry set trimming is advised. Leaf removal is beneficial as the bunch can tighten up after a rainfall event.

**Pruning:** One-bud spur with 7–9 spurs/m.

**Canopy management:** Leaf size – Large 5-lobed with a U-shaped petiole sinus along with closed petiole sinus. Leathery, dark green leaf with a glossy feel.

**Growing habit:** Erect and the tendrils grab onto wires quite early, reducing shoot damage. Viticulturists will need to pay attention to the leaf to fruit balance. Care must be taken as this variety can crop at 10 tonnes to the acre.

**Shoot strengths:** Strong shoots and therefore wind damage is not as an issue as in other varieties. Moving canopy wires early to mid season is recommended to maintain vine integrity.

**Irrigation:** At budburst irrigation is required, however, this variety originates from an extremely hot region in Europe and therefore can handle hot and dry conditions. 0.3–0.6 ML is required in a dry year. In summer, there is sufficient rain to minimise irrigation.

**Fertiliser:** The usual magnesium and calcium foliar applications are needed to supply the quick-growing canopy. I have noticed an iron deficiency in heavier soils. Low nitrogen applications is preferred 2–3 weeks after budburst.

**Pest and disease issues:** Quite resilient variety with Powdery Mildew possibly the only issue, however easily controlled with a preventative spray program. In wet years bunch compaction is observed and occasional botrytis bunches were noticed. I have witnessed Phomopsis in higher humidity climates.

**Budburst:** Mid September (good variety for late frosts).

**Flowering:** Flowering is normally around mid-November with no issues observed. Berry numbers are high and no issues associated with cool nights were noted.

**Veraison:** December 25–29.

**Harvest:** Last week in February and can, in cool years, push into March.

**Yield:** 2–3 t/acre.

**Winemaker:** Ray Costanzo, Golden Grove Estate.

**Winemaker notes:** preferred harvest around 12 Baumé and acidity levels are pH 3.6 and titratable acidity around 5.5–5.9 g/L. Natural yeasts are used with 20% barrel fermentation back blended. This style is very textural and delivers the entire flavour profile in balanced proportions. The estate is also releasing a sparkling Vermentino (bottle fermented) style.

**Show results:** Known as one of Australia's best Vermentinos with Ray Costanzo mastering this wine style. Multiple gold medal winner right across Australia with trophies at AAVWS, Brisbane RNA, ASWS, Queensland Wine Awards and NWSA

**Domestic market:** Over 6,000 bottles produced annually with a huge following locally and interstate. The wine retails for \$26.00 per bottle.

**Market and marketing strategies:** The variety has strong interest from retailers and restaurants combined with the wine being ideally suited to the cellar door. Chefs are matching seafood dishes and light style meals with this variety.

## Symphony Hill Wines

### Lagrein

**Synonyms:** Lagrein

**Sub region:** Granite Belt

**Planting date:** 2008

**Rootstock/own roots:** Own roots

**Area under plant:** 0.5 acre

**Clone:** H9V7 and H9V9

**Soil type:** Decomposed granite over a sandy to sandy-loam base. Depth is around 1.2 m.

**Slope:** Southerly

**Elevation:** 1050 m

**Climate and weather:** See **Petit Manseng** on page 16

**Viticulturist:** Mike Hayes



Figure 18. Lagrein bunches protected under net and close to harvest.



Figure 19. Lagrein leaf and bunch morphology.

**Growing tips and tricks:** Over cropping will deliver a very poor quality wine.

**Growing do's and don'ts:**

**Pruning:** two-bud spur–7 spurs per metre.

**Canopy management:** Leaf size – Medium, 3-lobed with an open petiole sinus or U-shaped. Leaf colour varies from dark green early in the season to pale green at or near harvest.

**Growing habit:** Semi upright and quite vigorous (Shiraz on steroids). Canopy can be messy and early attention to wire movement is needed to keep the vine in check.

**Shoot strengths:** Under certain conditions, shoots will grow rapidly (high humidity and early spring rain) and can be susceptible to wind damage. An extra set of wires might be needed to keep the canopy in check.

**Irrigation:** Early season watering is encouraged to support early season vigour. As usual, it is important to irrigate throughout the growing cycle with attention at flowering and veraison.

**Fertiliser:** Magnesium and calcium early in the season is beneficial and zinc/boron and iron are vital additions pre-flowering. Care needs to be taken with late season nitrogen applications as berry split is almost guaranteed.

**Pest and disease issues:** High vigour and therefore, in some years, fruit set can be an issue. Minor susceptibility to downy mildew and sour rot in extremely wet years.

**Budburst:** Mid September (almost identical to Shiraz).

**Flowering:** Mid November and coulure has been observed in wet years. Clonal variation delivers remarkably different berry counts with the H9V9 delivering a looser bunch.

**Veraison date:** Early January – beginning of the second week.

**Harvest date:** Late March–mid April (this variety can hang without any quality compromise).

**Tonnage:** 2.5 t/acre appears to deliver a balanced crop.

**Winemaker:** Mike Hayes, Symphony Hill Wines.

**Winemaker notes:** We have made wine now from three regions: Granite Belt, Heathcote and the Riverland with the latter proving to produce high quality wine with an explosive rich palate and velvet texture. Low Baumés are recorded and around 12 is common for physiologically ripe grapes. The pH and the titratable acidity are 3.7 and 5.5 respectively and low tannin levels are normal. Making the wine is exciting with cold soak benefiting the colour extraction. Cool ferment around 19 °C is recommended and no extended maceration is required. A delightful variety to make in the winery with little or problems observed.

**Show results:** National Gold Medal at Brisbane RNA with the 2013 achieving top gold. Regular minor medals awarded right across Australia. James Halliday's Companion awards the wine 95 points.

**Domestic market:** The consumer loves this wine and I call it the new charming kid on the block. Very easy to sell and restaurants are very keen to match food with this variety as it delivers low intensity tannins and a softness on the palate that appears to excite everyone.

**Market and marketing strategies:** Currently, this wine is Symphony Hill Wine's flagship with a price of \$95.00 per bottle and selling well. The name is easy to pronounce, therefore no extra work is needed in that department. Once people try the variety, it is commonly stated they prefer it to Shiraz. A great wine for the future of the Australian wine industry.

## Balancing Rock

### Sagrantino

**Synonyms:** Sagrantino Rosso and Sagrantino di Montefalco

**Sub region:** Granite Belt

**Planting date:** 2007

**Rootstock/own roots:** Ruggeri 140

**Area under plant:** 1 acre

**Clone:** MAT1

**Soil type:** Sandy decomposed granite over light-textured loam.

**Slope:** South-westerly

**Elevation:** 940 m



Figure 20. Sagrantino bunches going through veraison.

**Climate and weather:** See Petit Manseng on page 16

**Viticulturist:** Graham Murchie and Mike Hayes

**Growing tips and tricks:** Pruning balance is essential for the crop levels as the vine has the propensity to over crop. Early season leaf analysis is required to check for low levels of boron and zinc as this variety appears to deliver a higher yield every three out of five years.

**Growing do's and don'ts:** Don't let the vine dry out as early leaf fall from water-stressed vines is common. Crop thin to 2.5 t/acre and remove the leaf from the fruiting region after veraison. This variety can have a rather extended period of hang time.



Figure 21. Sagrantino leaf and bunch morphology, bunches pictured going through veraison.

**Pruning:** Two-bud spur with 7 spurs/m.

**Canopy management:** Leaf size – Medium size orbicular with 3–5 lobes common. U-shaped and overlapping petiole sinus is common with a medium green colour.

**Growing habit:** Semi upright with slight plagio-tropic growth observed on over cropped vines. Early shoot damage from high winds is common, however, if the vine is close to flowering this is not an issue.

**Shoot strengths:** Delicate when young and the critical stage is budburst to flowering. Early wire movement is recommended to reduce shoot loss. Tips are also fragile.

**Irrigation:** Early season watering is beneficial for shoot development and the variety appears to suffer in drought with early leaf fall noticeable from under watering. Adequate irrigation is required at budburst, flowering and veraison.

**Fertiliser:** Zinc, boron, iron, magnesium and calcium levels need to be checked at least twice in the growing season as the vine will struggle to ripen all berries with a noticeable amount of unripe fully green berries in a vine that is struggling.

**Pest and disease issues:** Some resilience to powdery mildew with downy mildew a huge concern. Wet conditions deliver an explosion of downy mildew and periodic treatments are crucial up to veraison.

**Budburst:** Mid September

**Flowering:** Late November

**Veraison date:** Late January

**Harvest date:** End of March–early April.

**Yield:** 2.5 t/acre.

**Winemaker:** Mike Hayes, Balancing Rock

**Winemaker notes:** Lower Baumé levels are achieved from this variety and common figures are recorded between 12–12.5. Acidity levels are kept in order and a pH of 3.3–3.4 with a titratable acidity level around 7.5–8 g/L common. Cold soaking for longer than four days will increase bitterness. Recently the first wines made are showing secondary fruit characters of cloves and old spice. Oak is essential to moderate the bitterness levels and 12–14 months minimum is required.

**Show results:** Silver and bronze medal winners consistently across many wine shows. As the vine ages the quality is greatly improving with an exciting quality potential.

**Domestic market:** Sales are solid with a considerable interest in this variety as a food wine. Restaurants are showing a huge interest as the variety displays all of the attributes that Mediterranean food commands. Cellar door sales are strong as it appears to be an alternate to Cabernet Sauvignon and Merlot.

**Market and marketing strategies:** Brisbane wine drinkers are showing a huge interest in Sagrantino with most domestic sales coming from there and the Sunshine Coast. As new chefs accept the challenge and present different food dishes with this variety, its popularity will increase. International markets are showing interest, especially China.

## South Australia

### Pikes

#### Fiano

**Region/sub region:** Clare Valley/Polish Hill River

**Planting date:** Grafted 2010 onto Chardonnay

**Rootstock or own roots:** Chardonnay rootstock

**Area under plant:** 1 ha

**Clone:** SAVII01

**Soil type:** Alluvial clay loam

**Slope:** Flat

**Elevation:** 450 m

**Climate and weather:** Cool temperate, 650 mm rainfall, winter dominant

**Viticulturist:** Andrew Pike (proprietor)

**Growing tips and tricks:** VSP training system works well

**Growing do's and don'ts:**

**Pruning:** Cordon spur pruned 35–40 buds/vine

**Canopy management:** Quite vigorous, upright growth habit, medium leaf size.

**Irrigation:** Quite resilient, doesn't need unusual amounts of water.

**Fertiliser:** Nil. Natural soil nutrient sufficient for balanced vines.

**Pest and disease issues:** Quite resistant to powdery and downy mildew; open bunch structure not conducive to light brown apple moth (LBAM) or Botrytis.

**Budburst:** Mid to late season budburst, no issues.

**Flowering:** Mid to late season flowering, third week in November.

**Veraison date:** Normally early February.

**Harvest date:** Normally late March–early April

**Yield:** Medium size berries; cluster weight 120 g.

**Winemaker:** Neil Pike and Steve Baraglia

**Winemaking notes:** Aim for 12 Baumé, 7.5–8 g/L, 2.7 pH.

**Show results:** Gold medal at 2016 Alternate Varieties Wine Show in Mildura.

**Domestic or export market:** Domestic 100% cellar door/wine club members/local wholesale.

**Markets and marketing:** RRP \$20/bottle, fits into our Luccio range of Italian varietals.

### Hahndorf Hill

#### Gruener Veltliner

**Region/sub region:** Adelaide Hills

**Planting date:** 2008

**Rootstock or own roots:** Own rooted + grafted onto existing vineyard

**Area under plant:** 3 ha

**Clone:** HHW A1–2, HHW A1–3

**Soil type:** Sandy loam topsoil with slate and ironstone intrusions. Clay subsoils

**Slope:** varied

**Elevation:** 350 m

**Climate and weather:** MJT 18.5–19.2 °C

**Viticulturist:** Larry Jacobs

**Growing tips and tricks:** The main issue with this variety is its propensity to over crop – both large bunches and many bunches. This issue was definitely more prevalent in the first couple of years and now seems to have somewhat settled down.

**Growing do's and don'ts:** Need to monitor yields to ensure quality.

**Pruning:** spur pruning

**Canopy management:** Shoot thinning, crop reduction if necessary. VSP system. Strong grower, slight sprawl. Not particularly brittle.

**Irrigation:** Drip system. This variety has no greater irrigation need than any other variety we grow.

**Fertiliser:** Nil

**Pest and disease issues:** The fruit supposed to be less susceptible to botrytis due the berry's thick skin, but I have not been able to confirm this.

**Budburst:** Similar to Chardonnay

**Flowering:** Similar to Chardonnay.

**Veraison date:** Similar to Chardonnay

**Harvest date:** Similar to Chardonnay

**Yield:** Varies from year to year as with other varieties. Can have very large bunches in certain seasons, such as an average bunch size between 200–250 g with some going up to 450 g. I've had one season when the average bunch size was 60 g. This year I'm expecting an average bunch size of 150–160 g with medium to large berry size.

**Winemaker:** Lodestone Winery

**Winemaking notes:** Varies from year to year. Can have good natural acids.

**Show results:** Gold medals locally and abroad; two trophies within Australia; selected to represent Australia at the 2016 Six Nations Wine Challenge where it won double gold; winner of Austria's Falstaff International Gruener Veltliner Tasting 2013.

**Domestic or export market:** Mainly domestic. Small export to UK/China.

**Markets and marketing:** Sold at cellar door, on-premise and off-premise. 2016 production of Gruener Veltliner across all styles was a total of 2000 cases. Our four wine styles of Gruener Veltliner are differentiated by different bottle shapes, corresponding largely to what is found in Austria:

1. Hahndorf Hill GRU Gruener Veltliner \$28/ bottle cellar door price, Hock bottle antique green (AG), classic style.
2. Hahndorf Hill White Mischief Gruener Veltliner \$23 per bottle cellar door price, Claret bottle flint, fruit-driven style.
3. Hahndorf Hill Reserve Gruener \$45 per bottle cellar door price, Burgundy bottle AG, reserve style.
4. Hahndorf Hill Green Angel Late Harvest Gruener Veltliner \$30; flint 375 ml half bottle, late harvest style (due for release mid-2017).



## Kalleske Wines

### Vermentino

**Region/sub region:** Barossa Valley, Koonunga

**Synonym:** Rolle

**Planting date:** 2009

**Rootstock or own roots:** Own roots

**Area under plant:** 0.4 ha

**Clone:** VCR1

**Soil type:** Biscay over red clay/ironstone

**Slope:** West to east downward medium slope

**Elevation:** 290 m

**Climate and weather:** 500 mm rainfall. Warm to hot growing season. Hill exposed to westerly and northerly swirling winds.

**Viticulturist:** John, Barb and Andy Kalleske

**Growing tips and tricks:** Nothing too complicated other than to keep the crop levels under control.

**Growing do's and don'ts:** It loves heat so if you can do a heat dance this could be beneficial. Shoot thinning (breaking out doubles at the very least) most years and bunch thinning in its youth or when over cropped. Catch wire to prevent rolling under the weight of the crop thus reducing bunch exposure to the sun. Keep the canopy happy and healthy during the heat of January/February without any over irrigating.

**Pruning:** Hand pruned single cordon permanent arm. 10 × 2-bud spurs/m. Average of 40 buds/vine.

**Canopy management:** Grows relatively horizontal and especially inclined to roll once the weight of the crop increases. Medium-large, healthy looking dark green leaves, lengthy canopy and strong canes.

**Irrigation:** On average 1 ML/ha/season. Pound for pound requires less irrigation than any of our other varieties. Considering its high crop load, I would consider it quite drought tolerant given we irrigate it about the same as Shiraz.

**Fertiliser:** No fertilisers used.

**Pest and disease issues:** No more susceptible than other varieties from what we've seen so far. Yet to see any disease issues that cause us any concern. Given its early harvest, this decreases the instance of disease pressure in the cooler nights of autumn.

**Budburst:** Typically second or third week of September.

**Flowering:** Typically mid November. No issues at this stage. Have had excellent sets for all the vintages so far.

**Veraison date:** Typically mid-January

**Harvest date:** Typically early March

**Yield:** Very large berry size. Bunch weights heavy (not sure on actual weights but at a guess 250 g+). Bunches have a nice reverse pyramid shape; 4–5 t/acre.

**Winemaker:** Ryan Johns

**Winemaking notes:** Harvest early to retain its natural acidity to make a nice refreshing and balanced wine. Vinified quite simply, fermented in tank, light stirring of the lees and bottled young Aze's Vermentino is all about a nice textural mouth feel, limey citrus and zesty, fresh tangy fruit. Dry and utterly refreshing, this is the perfect wine to drink right through the spring and summer. Pair it with seafood or drink as an aperitif, its 12% alcohol is refreshingly low. 12 Baumé, 3.5 pH, 6.5 titratable acidity, alcohol 12%.

**Show results:** Fruit grown off property won a gold for its class in the 2016 AAVWS.

**Domestic or export market:** Domestic.

**Markets and marketing:** Price point \$22.99. We're still in the experimental stage with our packaging. For the first three vintages we used our existing label (Bordeaux bottle shape and same label used for reds) with a few colour tweaks and a flint (clear glass) bottle. Last vintage we changed to a burgundy bottle and the changed label to a more colourful/contemporary label. This year we are planning to change again to something slightly more feminine as we believe this fresh crisp style is ideally suited to target the female 25–50 year old market. We have also debated the possibility of using the French varietal name Rolle instead of the term Vermentino; there is the possibility that the name Rolle could be more appealing.

## Kimbolton Wines

### Montepulciano

**Region/sub region:** Langhorne Creek

**Planting date:** Grafted 2006, 2010, 2013 and planted 2014

**Rootstock or own roots:** Rootstock (Richter 99)

**Area under plant:** 4 ha

**Clone:** not provided

**Soil type:** Sandy free draining soils

**Slope:** Nil

**Elevation:** 150 m

**Climate and weather:** Variable these days, but normally warm days and cool nights influenced by cooler afternoons due to Lake Alexandrina's close proximity.

**Viticulturist:** Brad (Fabio) Case

**Growing tips and tricks:** Grow on lean or sandy soils, keep it happy and be prepared to shoot thin and bunch thin every year.

**Growing do's and don'ts:** Don't grow on heavy soils or wet sites unless they are really infertile soils; don't prune too hard as it will become excessively vegetative, VSP trellis is needed, hand picking is best.

**Pruning:** Two-bud spurs, 16/vine (2 m spacings by 3 m row spacings).

**Canopy management:** Strong grower, large leaf size, big bunches, brittle if machine harvested due to bunch size and weight, needs wire lifting to manage the canopy.

**Irrigation:** Keep it happy when warm; small amounts more often on sandy soils.

**Fertiliser:** No strong demand for fertiliser, very site and soil-specific.

**Pest and disease issues:** Very similar to other varieties.

**Budburst:** Late bud burst (early October).

**Flowering:** Late flowering (late November)

**Veraison:** Early to late January, depending on the season.

**Harvest:** Early April through to late April in cooler seasons.

**Yield:** 8–10 t/ha (after shoot and bunch thinning), larger bunch and berry size.

**Winemaker:** Sam Berketa (Alpha Box & Dice), Matt Head (Parous), Gill Gordon (Fall From Grace), Sam Scott (Scott), Peter McIntyre (Five Acre), AJ Williams

(Next Crop), Tony Mitolo (V. Mitolo & Son), Joe Evans (Ballycroft), Steve Pannell (SC Pannell), Justin Lane (Kimbolton), John Gilbert (By Jingo).

**Winemaking notes:** Picking varies from 12–14 Baumé depending on the winemaker; retains good acid.

**Show results:** 2016 Langhorne Creek Wine Show Trophy (Next Crop Wines 2015 Montepulciano), generally too small an amount is made for entry into larger shows.

**Domestic or export market:** Domestic

**Markets and marketing:** Pricing varies from \$25 through to \$40 a bottle, from Rosata, lighter dry red to heavier dry red and a sparkling Montepulciano (a world first for this variety).

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## Hither & Yon

### Nero D'Avola

**Region/sub region:** McLaren Vale

**Planting date:** September 2010

**Rootstock or own roots:** Rootstock Richter 110

**Area under plant:** 1.1 ha

**Clone:** MAT1

**Soil type:** Alluvial clay (red) with small sandstone pebbles.

**Slope:** None

**Elevation:** 60 m

**Climate and weather:** Maritime cool to cold winters with average rainfall of 600 mm, and warm to hot summers.

**Viticulturist:** Richard Leask

**Growing tips and tricks:** Keep the vine spacing between 1.5 m and 2 m. One-year-old canes can be susceptible to apical dominance and not burst evenly along the cane, making spur position set up a little difficult. Watch rootstock compatibility, there have been some issues, I have had none with my combination.

**Growing do's and don'ts:** Keep them happy for the first few years (3–4) until they are well established.

**Pruning:** Spur, single cordon

**Canopy management:** It has a drooping growth habit and we use a single pair of movable foliage wires to help keep it upright in a VSP. It has large leaves that can cause a dense canopy if too many shoots are

present. Canes are of moderate strength and can be machine harvested with care! It could be very vigorous on a fertile site. Can be prone to hen and chicken fruit set. Overall canopy seems quite tough and can withstand prolonged heat periods.

**Irrigation:** Less now that they are established. It appears that they will need very little water <0.5 ML/ha assuming an average winter.

**Fertiliser:** Less now that they are well established. No more than typical in the establishment stage.

**Pest and disease issues:** Appears to be very robust to all major fungal diseases.

**Budburst:** Mid season similar to Shiraz.

**Flowering:** Same as above, some hen and chicken appears to be normal.

**Veraison date:** Same as Shiraz.

**Harvest date:** Same as Shiraz.

**Yield:** Water availability plays a large role here. Berries can be very large if there is plenty of freely available water. Can be controlled with deficit irrigation at fruit set. Bunch structure is large therefore usual bunch size of 150 g + is the norm.

**Winemaker:** Richard Leask, Malcolm Leask, Josh Watcher

**Winemaking notes:** See Nero d'Avola on page 30

**Show results:** 2015 Nero D'Avola Australian Alternatives Wine Show: Best Red Wine of Show; Best Italian Red Variety; Best Nero D'Avola; gold medal.

**Domestic or export market:** Domestic

**Markets and marketing:** \$30

## Victoria

### Chalmers Heathcote vineyard

#### Fiano

**Region/sub region:** Heathcote

**Synonyms:** Fiano di Avellino, Fiore Mendillo, Latino

**Planting date:** 2009

**Rootstock or own roots:** Grafted on 110 Richter

**Area under plant:** two Hectares (about to plant another three)

**Clone:** VCR 3

**Soil type:** Rich red Cambrian soil, clay-loam, deep and with excellent water-holding capacity. Slightly acidic at 5.7pH.

**Slope:** 0.08 m gradient (45 m fall over 530 m run)

**Elevation:** 150–195 m above sea level

**Climate and weather:** Heathcote is a long, narrow region and our site is in the northern part of the geographical indicator (GI) which is around 2 °C warmer on average and receives about 5–10 mm less rainfall per month than the south of the district. Average annual rainfall of 515 mm. Rainfall is reasonably evenly spread across the year with slightly more in winter and spring, about a monthly rainfall average of 30–50 mm. The climate is warm and temperate and the site is quite windy. Maximum temperatures average 22 °C a year (January mean max. 30.3 °C, June mean max 14 °C). Summers are hot, only a couple of degrees less than Mildura, but evenings are cool and there is a lot of wind, which is great for reducing disease risk.

**Viticulturist:** Troy McInnes (vineyard manager) and Chalmers family

**Growing tips and tricks:** This variety has traditionally succeeded in soils of volcanic origin and heavy, clay-based soils, but can produce wines with early-drinking appeal off lighter, sandy soils. A late ripener, it is found in warm to hot climates. It is suitable for different training systems; in the limited area of Italy the traditional vertically trained system is used. It is a vigorous variety, which needs controlling. Very forgiving viticulturally. No special tips.

**Growing do's and don'ts:** Very viticulture friendly.

**Pruning:** We grow it at 4545 vines/ha on a unilateral rod pruned system. It's cane pruned to 10 bud canes.

**Canopy management:** Very strong, open canopy. Responds well to VSP. Excellent natural placement of small berried, thick skinned bunches. Growing tip is fully open, cottony, of whitish colour. Leaf is medium of blade, orbicular, 3-lobed or 5-lobed. Has a U- or V-shaped petiolar sinus, lateral sinuses shaped like a closed lyre with lobes slightly overlapped. The profile is flat without hairs on the upper surface, and with very dense hairs on the underside.

**Irrigation:** Irrigation at this site is supplemental because of the water holding capacity of the soil. It is usually only used to apply fertigation or prepare for heat waves, rather than a regular regime. Fiano is average in water use for our vineyard and moderately drought tolerant, but if it dries out too much the foliage will burn or basal leaves will die. It uses a little more water than Shiraz.

**Fertiliser:** 10 m<sup>3</sup>/ha of organic composted cow manure applied every second season (half the rate of the top block). Seaweed extract applied by fertigation at 5 L/ha once or twice a year as required. Two applications of boron from the first sign of flowering.

**Pest and disease issues:** Can be a tiny bit sensitive to powdery mildew early in the season around flowering, but otherwise very hardy and appears to have better resistance to mildews and rot than most varieties. Very thick skins – even in 2011 the Fiano was clean as a whistle.

**Budburst:** No issues. Average.

**Flowering:** Average. You do get a few small berries that don't set. Almost always sets a second crop high in the canopy.

**Veraison:** Average

**Harvest:** Moderately early, comes off about a week before Shiraz.

**Yield:** Bunches are medium-small, of pyramidal form, with one developed wing, medium density. Berries medium size, elliptic; skin coloured gilded yellow with flecks of amber, thick, slightly covered by bloom. Average bunch weight 150 gm. Average yield 8 t/ha.

**Winemaker:** Chalmers (Kooyong Winery)

**Winemaking notes:** Harvest analysis 15 Feb 2012: Baumé 12.8, pH 3.12, titratable acidity 7.9 – Finished wine: Alc/vol 13.7, pH 3.07, titratable acidity 6.4.

Fantastic natural acid, rarely needs acidifying. We even make methode traditional from it without the need for acid additions or dosage. Fiano is a winemaker's grape and can be handled in lots of ways with great results. Squeaky clean, racy and young, oak, skin contact, lees, you name it. It works.

**Show results:** Gold medal Australian Alternative Varieties Wine Show.

**Domestic or export market:** Domestic and UK.

**Markets and marketing:** This is our top white in the Chalmers range at an RRP of \$33. The wine is consistently outstanding and ages really well too. We deliberately sell ours with a couple of years age on it to emphasise its complexity. Consumers love it when they taste it and I think Fiano has the magic combination of viticultural, winemaking and marketing ticks to be a great Australian grape of the future. Our Fiano sells slowly in Australia, perhaps because at that price it's competing with single vineyard chardonnays and the like for wine list space, but is taking off in the UK where it retails for £20.00.

## Garganega

**Region/sub region:** Heathcote

**Synonyms:** Grecanico, Malvasia de Manresa

**Planting date:** 2014

**Rootstock or own roots:** Own roots

**Area under plant:** 0.2 ha

**Clone:** VCR4

**Soil type:** Rich, red Cambrian soil, clay–loam, deep and with excellent water holding capacity. Slightly acidic at 5.7 pH.

**Slope:** 0.08 m gradient (45 m fall over 530 m run), east facing.

**Elevation:** 150–195 m above sea level.

**Climate and weather:** Heathcote is a long, narrow region and our site is in the northern part of the GI, which is around 2 °C warmer on average and receives about 5–10 mm less rainfall a month than the south of the district. Average annual rainfall is 515 mm. Rainfall is reasonably evenly spread across the year, with slightly more in winter and spring – monthly rainfall average of 30–50 mm. The climate is warm and temperate and the site is quite windy. Maximum temperatures average 22 °C a year (January mean max. 30.3 °C; June mean max 14 °C). Summers are hot, only a couple of degrees less than Mildura, but evenings and mornings are cool and there is a lot of wind, which is great for reducing disease risk.

**Viticulturist:** Troy McInnes (vineyard manager) and Chalmers Family.

**Growing tips and tricks:** Garganega in Italy has shown a preference for deep, rich soils. The vines require wide training systems (tendone and pergola) in cooler regions, while in the warmer regions spur pruning can be used. It is considered to be suitable for full mechanisation. The typical bunch is large, long, loose and winged. It is highly productive and its vigour requires careful management. A late ripener, the berry skin can turn a light amber colour when approaching maturity. At Heathcote, it shows very late budburst, up to two weeks after most whites.

**Growing do's and don'ts:** Extremely vigorous, downward growth habit. VSP recommended.

**Pruning:** Currently cane pruned, but needs to go to spur to help control yield. Early pruning might bring forward budburst.

**Canopy management:** Large leaves, long, strong canes. Long internode spacing. Downward growth. VSP required. At least three pairs of lifting wires. Growing tip is half-open, cottony, coloured whitish green with reddish edges. Leaf is medium–large surface area, 3-lobed or 5-lobed. Has a U- or V-shaped petiolar sinus; lateral sinuses shaped like a V with lobes strongly overlapped. The profile is undulating with hairs on the upper surface.

**Irrigation:** Can benefit from less water to restrict vigour, but does show heat stress in extreme conditions.

**Fertiliser:** Typical nutrient requirement.

**Pest and disease issues:** Very loose bunches seem to keep this at bay. Not particularly thick skins though.

**Budburst:** Two weeks later than most whites. In our experience, it is not over productive as it has less bunches. Might benefit from cane pruning to increase productivity.

**Flowering:** Flowering date is a week or two later than the average white.

**Veraison:** Mid–late season. Seems to catch up.

**Harvest:** Early–mid season, can achieve flavour ripeness at lower Baumé – from 10.5 Baumé.

**Yield:** Bunches are very large and elongated, of cylindrical–pyramidal form, with one developed wing, loosely spaced berries. Berries of medium dimensions, round or slightly oblate; thin skin, lightly covered by bloom, yellow with reflexes of amber; juicy pulp with neutral taste. Average bunch weight 200–400 g. Average yield 12 t/ha.

**Winemaker:** Bart van Olphen and Tennille Chalmers (Chalmers Project).

**Winemaking notes:** Maturity at harvest Baumé 10.4, pH 3.53, titratable acidity 5.2. Finished wine 11.4 alc/vol. Again, made in our project winery so made simply. Basket pressed and fermented wild on solids. Clean fresh style, pleasantly low alcohol. Great potential and a relatively un-used grape in Australia so far. Only a couple of wines on the market. Commercially viable and consumer friendly.

**Domestic or export market:** Domestic.

**Markets and marketing:** RRP \$32, mostly sold from the premises to venues with good wine knowledge.

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## Malvasia Istriana

**Region/sub region:** Heathcote

**Synonyms:** Malvazija Istarska, Malvasia del Carso, Malvasia Fruilano, and Polijsakica Drnovk

**Planting date:** 2014

**Rootstock or own roots:** Own roots

**Area under plant:** 0.2 ha

**Clone:** VCR4

**Soil type:** Rich red Cambrian soil, clay–loam, deep and with excellent water-holding capacity. Slightly acidic at 5.7 pH

**Slope:** 0.08 m gradient (45 m fall over 530 m run). East-facing slope

**Elevation:** 150–195 m

**Climate and weather:** Heathcote is a long, narrow region and our site is in the northern part of the GI, which is around 2 °C warmer on average and receives

about 5–10 mm less rainfall a month than the south of the district. Average annual rainfall is 515 mm. Rainfall is reasonably evenly spread across the year, with slightly more in winter and spring – monthly rainfall average of 30–50 mm. The climate is warm and temperate and the site is quite windy. Maximum temperatures average 22 °C a year (January mean max. 30.3 °C; June mean max 14 °C). Summers are hot, only a couple of degrees less than Mildura, but evenings and mornings are cool and there is a lot of wind, which is great for reducing disease risk.

**Viticulturist info:** Troy McInnes (vineyard manager) and Chalmers Family.

**Growing tips and tricks:** This vigorous variety produces good and reliable yields, but loses its aromatic nature if overcropped. It has a preference for well-drained soils and thus flourishes on sand and hillsides on lighter soils rather than clay. It suits wide-spaced vines; Best grown on VSP to keep fruit zone open as it is susceptible to botrytis.

**Growing do's and don'ts:** Avoid overcropping and be aware of botrytis sensitivity. Can be harvested early in warmer areas.

**Pruning:** Established at 4545 vines/ha on east–west rows on unilateral cane pruning. This is only because it's new. Most likely, like many other Italian varieties with a propensity to yield high, we will change it over to spur pruning to control yield.

**Canopy management:** Very uniform, upright growth habit, medium–large leaves, strong, large-diameter canes. Growing tip is wide open, cottony, coloured green with yellowish edges. Leaf is medium–large, pentagonal shape, 3-lobed or entire leaf. Has an open, V-shaped petiolar sinus, lateral superior sinuses are V–U shaped, while inferior are rare. The profile is revolute. The upper and under surface is hairless.

**Irrigation requirement:** Average.

**Fertiliser requirement:** Average. 10 m<sup>3</sup>/ha organic composted cow manure applied every second season (half the rate of the top block). Seaweed extract applied by fertigation at 5 L/ha once or twice a year as required. Two applications of boron from first sign of flowering.

**Pest and disease issues:** Botrytis susceptible. Seaweed helps thicken the slightly thin skins.

**Budburst:** Average.

**Flowering:** In line with most whites – mid season.

**Veraison date:** Mid season.

**Harvest date:** Early.

**Yield:** Cluster is medium sized, cylindrical with one small wing, semi-compact from densely distributed berries to single berries with some visible pedicels. Berry is medium sized, spherical, with waxy bloom, skin is yellowish-green. Average bunch weight 150–250 g. Average yield 8–13 t/ha.

**Winemaker:** Bart van Olphen and Tennille Chalmers (Chalmers Project).

**Winemaking notes:** Maturity at harvest 3/2/2016: Baumé 11.7, pH 3.63, titratable acidity 5.4 – not particularly good acid in hot climate, acid adjustment required. Finished wine: Alc/vol = 12.43. Wine is quite perfumed with scents of honey and straw, has a slippery texture and is moreish. It also has exotic spice flavours too: cardamom and clove. The wine is basket pressed and fermented wild on fine solids.

**Domestic or export market:** Domestic – it is a project wine made in small batches. The Chalmers Project made a small batch of Malvasia Istriana in 2016 that was sold in Melbourne and Sydney – mainly to restaurants.

**Markets and marketing :** RRP \$32, mostly sold from the premises to venues with good wine knowledge. An appealing variety to consumers though, because of its almost aromatic quality.

## Aglianico

**Region/sub region:** Heathcote

**Synonyms:** Aglianica, Agnanico, Aglianico Nero, Aglianicuccia, Aglianichella Aglianico di Castellaneta, Aglianico di Puglia, Agliano, Agliatica, Agliatico, Ellenico, Fiano Rosso, Gagliano, Glianica, Ghiandara, Gnanico, Ghiannara, Olivella di S. Cosmo, Spriema, Cascavoglia, Fresella, Cerasole, Ruopolo, Tringarulo, Uva dei cani, Uva di Castellaneta, Uva Nera.

**Planting date:** 2009

**Rootstock or own roots:** Grafted on 110 Richter

**Area under plant:** 1 ha

**Clones:** Taurasi VCR23

**Soil type:** Volcanic, rocky Cambrian with very little top soil of clay/loam. Green basalt, ironstone, dolerite and jasper, plus infused quartz. Strongly acidic at 5.5 pH.

**Slope:** 0.1 m gradient (30 m fall over 300 m run).

**Elevation:** 190–225 m.

**Climate and weather:** Heathcote is a long, narrow region and our site is in the northern part of the GI, which is around 2 °C warmer on average and receives about 5–10 mm less rainfall a month than the south of the district. Average annual rainfall is 515 mm. Rainfall is reasonably evenly spread across the year, with slightly more in winter and spring – monthly rainfall average of 30–50 mm. The climate is warm and temperate and the site is quite windy. Maximum temperatures average 22 °C a year (January mean max. 30.3 °C; June mean max 14 °C). Summers are hot, only a couple of degrees less than Mildura, but evenings and mornings are cool and there is a lot of wind, which is great for reducing disease risk. Evenings and mornings are usually cool even in the middle of summer.

**Viticulturist:** Troy McInnes (vineyard manager) and Chalmers Family

**Growing tips and tricks:** Budding early and ripening late, Aglianico is best suited to dry, warm climates. For this reason, it has flourished in southern Italy (and now in Australia), particularly in soils of volcanic origin, but in general, this variety can adapt to many types of soil. In Italy, in some viticultural zones (Taurasi DOCG and Aglianico del Vulture DOC), it can grow at 700–900 m altitude, but its late ripening nature and high natural acidity make it unsuitable to cold climates. It can have some problems with extreme heat waves, although we have not observed pronounced adverse effects as long as the vines are hydrated. It has thin canes, low vigour and requires extra nutrition when young to establish strong architecture. At Heathcote, it's planted on our highest, rockiest site in an exposed position and it has taken a long time to establish. Needs good crop level management as while the canopy is low vigour, it throws a lot of fruit.

**Growing do's and don'ts:** Space spur positions out well while setting up. We have grown it on both cane and spur at Heathcote, but went to spur to reduce crop levels. Benefits greatly from crop reduction by shoot thinning and bunch removal. The extreme late ripening (well into April) means that it can be hard to get ripe toward the end, especially if over cropped.

**Pruning:** single wire unilateral cordon at 4545 vines/ha, spur-pruned to 6–7 × 1 clear bud spurs. Over productive when cane pruned.

**Canopy management:** Growing tip is fully open, cottony, coloured green or copper–yellow. Leaf blade is medium–small, pentagonal, 3-lobed or 5-lobed. Has a closed V-shaped petiolar sinus with lobes slightly overlapping, lateral sinuses shaped like a closed U. The profile is flat with a medium blistering of blade in the upper surface. Strong, thin canes, downward growth habit. VSP wires help to keep the canopy open. Canopies are smaller than most. Aglianico requires a bit more water and nutrition than the rest of the block, especially early in the season to push the small canopy early, creating vine balance to drive the fruit through to maturity. This site is low in potassium (K) and Aglianico suffers badly if this is not rectified with regular foliar application of K.

**Irrigation:** In this hard site it needs more irrigation than in a fertile site. However, it needs to be applied carefully as overwatering will produce large, tight bunches. Recommend irrigation from budburst to flowering with regular watering then you can back off. Our Heathcote Aglianico on this site receives almost 50% more irrigation than the lower elevation part of the vineyard, which is on deeper topsoil.

**Fertiliser:** Organic composted cow manure is applied at 20 m<sup>3</sup>/ha every second season (double the rate of the bottom block). Seaweed extract applied by fertigation at 5 L/ha once or twice a year as required. Based on results from petiole analysis, we apply fertigation of mono-potassium phosphate (22.7% phosphate and 28.7% potassium at 25 kg/ha) four times between budburst and Christmas on this block. Two applications of boron from first sign of flowering.

**Pest and disease issues:** The variety shows a high level of resistance to the most common pests and diseases, especially powdery mildew, although it is susceptible to botrytis and other bunch rot issues in humid and wet seasons because of its big tight bunch and potential overcropping.

**Budburst:** We have never seen a budburst problem. Late budburst.

**Flowering date:** Flowering dates are normal with no problems. Shows mild hen and chicken in most seasons.

**Veraison date:** Late. At least two weeks after most varieties. Very extended period of veraison (up to three weeks), with the tails of the bunches veraising much later than the top.

**Harvest:** Very late, last fruit to pick on the vineyard; well into April.

**Yield:** Bunches are medium-sized, conical or cylindrical, with or without wings, medium–tight density. Berry medium-sized, round; skin is uniform blue–black colour, medium to thick and covered by abundant bloom. Bunch weights average 150–200 g. Average yield for Chalmers Heathcote 6–9 t/ha (thinned).

**Winemaker:** Chalmers (Kooyong Winery).

**Winemaking notes:** Generally reaches phenolic ripeness at a low Baumé because it's ripening in the cooler autumn period. Rarely requires acid addition. The 2011 Aglianico fruit intake was 12.2 Baumé, 3.11 pH, 8.4 titratable acidity. Finished wine: Alcohol 12, pH 3.43, titratable acidity 6.

**Domestic or export market:** Domestic and UK.

**Markets and marketing:** RRP is \$45. This is our top wine. We have a lot of faith in the variety for its ability to produce elegant, structured wines that can age beautifully (we have a 2005 wine still on the market as a museum release, which is still drinking beautifully). We also make our Chalmers Rosato from Aglianico RRP is \$24. It's high acid, has pretty fruit and a pleasant tannin that can work really well for a dry, savoury style rose.

## Nero d'Avola

Nero d'Avola is the most widely planted and important red grape in Sicily, Italy. It produces wines of good colour, intensity, full-bodied and savoury flavours with good ageing potential. The Nero in the name obviously refers to the black colour of the grapes; d'Avola refers to the town and region of Avola in the south-eastern part of Sicily where this variety produces some fine wines. There are approximately 19,000 ha of Nero d'Avola planted in Sicily.

This variety is one of several from southern Italy that are of interest to winemakers in warm to hot conditions. As more grapegrowers and winemakers become concerned about climate change, they are increasingly looking for wine varieties from southern Italian regions rather than the cooler north.

Nero d'Avola is favoured in warmer climates for two reasons:

- Firstly as a late ripening variety the critical last month of maturation is more likely to be after the hottest part of summer. It likes heat.
- Secondly, the variety seems to be less susceptible to berry damage during heat waves. It is also vigorous and susceptible to powdery mildew.

Nero D'Avola is suitable for most of the warmer areas of Australia, currently with much focus in the McLaren Vale and Riverland districts in South Australia. It appears to have great potential in areas such as Bendigo, Heathcote, Pyrenees and Rutherglen in Victoria, as well as most of the inland regions of New South Wales. Nero D'Avola was first brought into Australia by Chalmers in 1998.

In terms of recent 2016 wine show success, two Nero D'Avola producers have performed well. Brown Brothers 2015 Cellar Door Release (\$20.90 recommended retail price) won the trophy for best single variety red (Class 57 – 97 points) at the 2016 Royal Melbourne Wine Awards. This wine also won a gold medal at the 2016 AAVWS in the Nero D'Avola category (14.5% alcohol). This vineyard was located in Heathcote, central Victoria, and has unfortunately been removed due to poor cropping and prior performance.

The second Nero D'Avola producer who won a gold medal at the 2016 AAVWS was the Thick as Thieves – The Don 2015 Heathcote Nero D'Avola.

Thick as Thieves is a small Yarra Valley-based winery owned by Syd Bradford. Syd spent 10 years working for notable producers such as Pfeiffer Wine, Coldstream Hills, Rochford, Domaine Chandon and Giant Steps/Innocent Bystander before starting Thick as Thieves in 2009. Thick as Thieves has the freedom to experiment with alternative varieties, such as Nero D'Avola from Heathcote. He sells his wines domestically, but also exports to Japan and Singapore.

The Thick as Thieves Nero D'Avola (The Don) 2015 from Heathcote (\$35 recommended retail price) is Syd's take on the Sicilian stalwart variety, which is often compared with Shiraz in terms of structure and flavour profiles. He added about 3% Viognier to the blend to help caress the brooding red fruits out of their youthful awkwardness. The grapes were picked in late March and chilled before a short, cold soak, it was then de-stemmed to stainless steel open fermenters for an indigenous ferment. Pressed to seasoned Hogsheads and Barriques for eight months elevelage. Natural malo-lactic fermentation. Bottled in December under screw cap.

The Nero D'Avola, two tonnes, was purchased from the Chalmers family vineyard on the Mt Camel range near Colbinabbin in the northern part of the GI region of Heathcote in Victoria. The Chalmers family developed the vineyard from scratch with careful rootstock selection to control vigour and east–west row orientation for even exposure and free flowing air-drainage to reduce disease risk.

The Heathcote vineyard is an east-facing sloped site comprised of the famous red Cambrian soils of the area. The lower vineyard is deep, red clay–loam, while the higher vineyard is a complex rocky terrain of ironstone, dolerite, green basalt and jasper. The first vines were planted in September 2009, and the site holds 24 different varieties already and many vinification experiments are being conducted on the individual characteristics of the soils of different blocks within the site. Parcels of fruit from this vineyard are also sold to other winemakers.

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## Nero d'Avola

**Region/sub region:** Heathcote/Mt Camel Range

**Synonyms:** Nero D'Avola (Calabrese, Calabrese Nero, Calabrese d'Avola, Calabrese Dolce, Calabrese Pizzutello, Calabrese Pizzuto)

**Planting date 2009**

**Rootstock or own roots:** Grafted to 110 Richter and 420A

**Area under plant:** Heathcote vineyards total 25.6 ha, Nero d'Avola – 3.0 ha

**Clone:** MAT 1: selected by Matura Group, Italy

**Soil type:** Red Cambrian soils

**Slope:** East facing

**Elevation:** 180–200 m above sea level

**Climate and weather:** MJT 21.0–22.9 °C zone.

**Viticulturist– Bruce Chalmers**

**Pruning:** Spur-pruned to one bud.

**Growing tips and tricks:** The vineyard is planted at a high density of 4,450 vines/ha and VSP trained, with cordon wire set low at 750 mm above the ground. Originally cane pruned, but are very fruitful, thus now spur pruned to one bud only. Requires attention to shoot thinning through the season. Nero d'Avola has a downward growth habit, and thus needs to be trimmed and foliage lifted to promote bunch exposure. Chalmers is transitioning to an organic production system in Heathcote, so the vineyard only gets copper and sulfur treatments. The production of Nero d'Avola

is good and consistent. This variety typically grows in hot climates, prefers sandy and hilly soils and can give good results in dry and low–medium fertile soils. It is high vigour and produces medium–large bunches. It needs shoot thinning during the growing season to balance the canopy. In some situations, basal bud fruitfulness can be poor, so cane pruning might be preferred, especially in the cooler climates of Australia.

**Irrigation:** If you are wanting to plant something where it's going to get hotter and there's going to be less water, it's a great variety, but it needs a lot of active crop and canopy management. In Heathcote, Nero d'Avola requires little to no water to produce.

**Fertiliser:** not provided

**Pest and disease issues:** Susceptible to powdery mildew and downy mildew; medium resistant to the others pests. On the Heathcote site, no more susceptible to fungal pathogens than other grape varieties. Berries are large and thin skinned.

**Budburst:** Mid season

**Flowering:** Early

**Veraison date:** Mid season

**Harvest date:** Mid season, hard to get to ripen beyond 12.5 Baumé. In Heathcote, mid March harvest typically.

**Yield:** Hand harvested, 8–10 t/ha yields; berries are purplish–black, and small to medium in size.

**Winemaker information:** Syd Bradfield

**Winemaking notes:** 14.2% alcohol – tannins very similar to Heathcote Shiraz. This was Syd's first time making a Nero D'Avola wine.

**Show results:** Gold medal 2016 AAVWS in Nero D'Avola class.

**Domestic or export market:** 120–130 cases all sold domestically.

**Markets and marketing:** \$35 recommended retail price.

## Refosco dal Peduncolo Rosso

**Region/sub region:** Heathcote

**Vareital:** Refosco dal Peduncolo Rosso

**Synonyms:** Rifosc dal Pecol Ross

**Planting date:** 2014

**Rootstock or own roots:** Own roots

**Area under plant:** 0.21 ha

**Clone:** VCR 14

**Soil type:** Rich, red Cambrian soil, clay–loam, deep and with excellent water-holding capacity. Slightly acidic at 5.7 pH.

**Slope:** 0.08 m gradient (45 m fall over 530 m run). East-facing slope.

**Elevation:** 150–195 m above sea level.

**Climate and weather:** Heathcote is a long, narrow region and our site is in the northern part of the GI, which is around 2 °C warmer on average and receives about 5–10 mm less rainfall a month than the south of the district. Average annual rainfall is 515 mm. Rainfall is reasonably evenly spread across the year, with slightly more in winter and spring – monthly rainfall average of 30–50 mm. The climate is warm and temperate and the site is quite windy. Maximum temperatures average 22 °C a year (January mean max. 30.3 °C; June mean max 14 °C). Summers are hot, only a couple of degrees less than Mildura, but evenings and mornings are cool and there is a lot of wind, which is great for reducing disease risk.

**Viticulturist:** Troy McInnes (Vineyard manager) and Chalmers Family.

**Growing tips and tricks:** Refosco dal Peduncolo Rosso tends to do well in hillsides sites in infertile, calcareous–clay soils, but it is relatively adaptable.

It is a vigorous variety that prefers medium or wide training systems. It is thought to not be suited to total mechanisation. It is a late ripener in cooler areas. When it is ripe, the stalks redden, which is where it gets its name from (red peduncle). A very reliable, easy to manage variety. Naturally produces balanced crop levels and has good bunch placement.

**Growing do's and don'ts:** Do not overcrop, as it might be difficult to get it fully ripe.

**Pruning:** Single unilateral cane-pruned VSP with two pairs of foliage wires. Planting density of 4545 vines/ha. Lends itself to VSP as it is an upright growing variety, with thinner than average canes. Currently cane pruned; recent planting so monitoring results.

**Canopy management:** Upright, but requiring lifting wires. Strong, evenly-sized canes. A little smaller than most. Canes can be long, but upright, As with most varieties, trimming at 400 mm above the top wire if required is beneficial to stop the canopy from falling over the top wire. The growing tip is half-open, cottony, coloured whitish–yellow with reddish edges. The leaf blade is large, with a pentagonal or circular shape, 3-lobed. Has a V-shaped petiolar sinus, lateral sinuses are V-shaped with lobes slightly overlapping. The profile is flat with a medium blistering of blade in the upper surface.

**Irrigation:** Average. Naturally well balanced canopy.

**Fertiliser:** Organic composted cow manure applied at 10 m<sup>3</sup>/ha every second season (half the rate of the top block). Seaweed extract applied by fertigation 5 L/ha once or twice a year as required. Two applications of boron from the first sign of flowering.

**Pest and disease issues:** Has not yet exhibited disease.

**Budburst:** Mid season

**Flowering date:** Average flowering timing. Always sets well.



**Veraison date:** Mid season.

**Harvest date:** Mid–late.

**Yield:** Bunch is medium–large, has pyramidal form with one wing, medium density, with red peduncle. Berries are round, medium-sized, with medium thick, uniform blue–black skin, covered by medium bloom; ease of detachment from pedicel. Average bunch weight 150–250 g. Average yield 8–10 t/ha.

**Winemaker:** Bart van Olphen and Tennille Chalmers (Chalmers Project), Pat Underwood (Little Reddie).

**Winemaking notes:** Rosé harvest numbers from 11/2/16: Baumé 12.4, pH 3.32, titratable acidity 10.10. Red wine harvest numbers from 18 February 2016: Baumé 13, pH 3.65, titratable acidity 6.2.

**Domestic or export market:** Chalmers Project made a small batch of Refosco rosé in 2016 that was mainly sold in Melbourne and Sydney restaurants.

**Markets and marketing:** The flavour profile is interesting and the grape has the potential to make serious wines as well as rosé or juicy reds. Interesting for warmer areas, as in cool places it can be herbal.

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## Chalmers Merbein vineyard

Fiano

**Region/sub region:** Murray Darling

**Synonyms:** Fiano di Avellino, Fiore Mendillo, Latino

**Planting date:** 2010

**Rootstock or own roots:** Grafted on 110 Richter

**Area under plant:** 0.5 ha

**Clone:** VCR3

**Soil type:** Red sand and limestone

**Slope:** 0.04 m gradient (13 m fall over 300 m run)

**Elevation:** 60 m

**Climate and weather:** The Mildura Murray–Darling Region has a Mediterranean climate. Annual rainfall total is 290 mm falling evenly across the year (average 20–30 mm/month). The wettest year ever was 2011 at 657 mm; the driest ever was 1982 at 121 mm, 2006 at 123 mm close behind. The general trend is to drier conditions with 11 of the past 15 year being below average rainfall.

Skies are clear on average for 12 days/year; maximum temperatures average 23.6 °C/year (January mean max. 32.3 °C, June mean max 16 °C). Summer is hot with up to 10 days over 40 °C between December and March. The diurnal range is usually very good though, with 15 °C to 20 °C drops at night in summer, (e.g. daytime high 34 °C, night time low 14–19 °C). Winters are mild during the day (around 14 °C), with not too many days under 10 °C maximum. The cold, crisp nights often get below zero in the early hours of the morning.

**Viticulturist:** Chalmers family

**Growing tips and tricks:** It has traditionally succeeded in volcanic soils and heavy, clay-based soils, but can produce wines with early-drinking appeal off lighter, sandy soils. A late ripener, it is found in warm to hot climates. It is suitable for different training systems – in the limited area of Italy where the variety is grown, the traditional vertically trained system is used. It is very vigorous, on R110. Very forgiving viticulturally. No special tips.

**Growing do's and don'ts:** Very viticulture friendly.

**Pruning:** Set up on commercial two wire, bi-lateral spurred cordon trellis with a catch wire. Cordon wires 400 mm apart with catch wire 300 mm above the top

cordon wire. Hand pruned to approximately 20 × 2 clear bud spurs. Internodes are well spaced, so spur positions are easy to up.

**Canopy management:** Growing tip: fully open, cottony, whitish colour. Leaf: medium blade, orbicular, 3-lobed or 5-lobed. Has a U- or V-shaped petiolar sinus, lateral sinuses shaped like a closed lyre with lobes slightly overlapped. The profile is flat without hairs on the upper surface, and with very dense hairs on the underside. Very strong, open canopy. Upward and outward growing so it naturally shades fruit and allows air circulation. Excellent natural placement of small berried, thick skinned, bunches.

**Irrigation:** On the R110, the variety seems to require a little less water than other varieties.

**Fertiliser:** Big canopy, so it might benefit from less nutrient early. We give it the same fertiliser as the rest of the vines.

**Pest and disease issues:** Can be a tiny bit sensitive to powdery mildew early in the season around flowering, but otherwise very hardy and appears to have better resistance to mildews than most varieties. Very thick skins.

**Budburst:** No issues. Budburst a little earlier than most other varieties.

**Flowering date:** Flowering might also be a whisker earlier than other varieties.

**Veraison date:** Median season veraison date.

**Harvest:** Historically around Australia Day weekend. In our other vineyards the Fiano has always been later than Vermentino, but in this planting where it's on R110 and the rest of the vineyard is on 140 Ruggeri, we see it coming off ahead of Vermentino.

**Yield:** Bunch is medium sized, of pyramidal form, with one developed wing, medium density. Small, elliptical berries; skins are gilded yellow with flecks of amber, thick, and slightly covered by bloom. Average bunch weight is 180 gm and average yield is 20 t/ha.

**Winemaker:** Bart van Olphen and Tennille Chalmers (Chalmers Project), Elizabeth Richardson (L'Enologa), Ray Nadeson (Lethbridge), Mike Hayes (Symphony Hill).

**Winemaking notes:** Maturity analysis – 1/3/17: Baumé 12.5, pH 3.45, titratable acidity 6.2. Can even make it from Mildura with no acid additions in the right season.

## Garganega

**Region/sub region:** Murray Darling

**Varietal:** Garganega

**Synonyms Grecanico and Malvasia de Manresa**

**Planting date:** 2010

**Rootstock or own roots:** Grafted on 140 Ruggeri

**Area under plant:** 0.02 ha

**Clone:** VCR4

**Soil type:** Red sand and limestone

**Slope:** 0.04 m gradient (13 m fall over 300 m run). East–west orientation. – east facing.

**Elevation:** 60 m

**Climate and weather:** The Mildura Murray–Darling Region has a Mediterranean climate. Annual rainfall total is 290 mm falling evenly across the year (average 20–30 mm/month). The wettest year ever was 2011 at 657 mm; the driest ever was 1982 at 121 mm, 2006 at 123 mm close behind. The general trend is to drier conditions with 11 of the past 15 years being below average rainfall.

Skies are clear on average for 12 days/year; maximum temperatures average 23.6 °C/year (January mean max. 32.3 °C, June mean max 16 °C). Summer is hot with up to 10 days over 40 °C between December and March. The diurnal range is usually very good though, with 15 °C to 20 °C drops at night in summer, (e.g. daytime high 34 °C, night time low 14–19 °C). Winters are mild during the day (around 14 °C), with not too many days under 10 °C maximum. The cold, crisp nights often get below zero in the early hours of the morning.

**Viticulturist info:** Chalmers Family

**Growing tips and tricks:** Garganega in Italy has shown a preference for deep, rich soils. The vines require wide training systems (tendone and pergola) in cooler regions, while in the warmer regions spur pruning can be used. The variety is considered to be suitable for full mechanisation. The typical bunch is large, long,

loose and winged. It is highly productive and its vigour requires careful management. A late ripener, the berry skin can turn a light amber colour when approaching maturity. Not suited to very low cordon as the bunches can be very long, up to 350 mm. Very late budburst, up to two weeks after most whites. Extremely vigorous, downward growth habit. VSP recommended.

**Growing do's and don'ts:** Detailed above.

**Pruning:** Single wire bi-lateral cordon spur pruned to 11–12 × 2-bud spurs. Early pruning would bring forward budburst.

**Canopy management:** Large leaves, long, strong canes. Long internode spacing. Downward growth. VSP required. Needs at least three pairs of lifting wires.

**Irrigation:** Could benefit from less water to restrict vigour.

**Fertiliser:** Typical nutrient requirement.

**Pest and disease issues:** We have not had any problems with disease. Bunches are very open.

**Budburst:** Two weeks later than most whites. In our experience, it is not over productive as it has fewer bunches. Might benefit from cane pruning to increase productivity.

**Flowering:** Flowering date is a week or two later than the average white.

**Veraison:** Mid–late season.

**Harvest:** Mid–late season. Can achieve flavour ripeness at lower Baumé– from 10.5 Baumé. Relatively good acid retention.

**Yield:** Medium-sized berries, very large bunches, Average bunch weight 200–400 g.

**Average yield 15 t/ha.**

**Winemaker:** No winemaking from this block. See **Chalmers Heathcote notes on page 16.**

## Malvasia Istriana

**Region/sub region:** Murray–Darling

**Synonyms:** (Malvazija Istarska, Malvasia del Carso, Malvasia Fruilano, Polijsakica Drnovk)

**Planting date:** 2010

**Rootstock or own roots:** Grafted on 140 Ruggeri

**Area under plant:** 0.02 ha

**Clone:** VCR 4

**Soil type:** red sand and limestone

**Slope:** 0.04 m gradient (13 m fall over 300 m run)

**Elevation:** 60 m above sea level

**Climate and weather:** The Mildura Murray–Darling Region has a Mediterranean climate. Annual rainfall

total is 290 mm falling evenly across the year (average 20–30 mm/month). The wettest year ever was 2011 at 657 mm; the driest ever was 1982 at 121 mm, 2006 at 123 mm close behind. The general trend is to drier conditions with 11 of the past 15 years being below average rainfall.

Skies are clear on average for 122 days/year; maximum temperatures average 23.6 °C/year (January mean max. 32.3 °C, June mean max 16 °C). Summer is hot with up to 10 days over 40 °C between December and March. The diurnal range is usually very good though, with 15 °C to 20 °C drops at night in summer, (e.g. daytime high 34 °C, night time low 14–19 °C). Winters are mild during the day (around 14 °C), with not too many days under 10 °C maximum. The cold, crisp nights often get below zero in the early hours of the morning.

**Viticulturist:** Chalmers Family

**Growing tips and tricks:** This vigorous variety produces good and reliable yields, but loses its aromatic nature if overcropped. It has a preference for well-drained soils and thus flourishes on river gravels and hillsides on lighter soils rather than clay. It suits wide-spaced vines; VSP can give good results, but only with well-balanced shoot thinning and summer pruning. Best to keep fruit zone open as it is susceptible to botrytis.

**Pruning:** Single wire bi-lateral cordon spur pruned to 11–12 × 2-bud spurs.

**Canopy management:** Growing tip is wide open, cottony, coloured green with yellowish edges. Leaf is medium–large, with pentagonal shape, 3-lobed or entire leaf. Has an open, V-shaped petiolar sinus, lateral superior sinuses are V–U-shaped, while inferior are rare. The profile is revolute. The upper and under surfaces are hairless. Very uniform growth habit, strong, large diameter canes.

**Irrigation:** Average.

**Fertiliser:** Average. As with all our varieties (organic composted cow manure + seaweed). Seaweed

fertigation and foliar application will strengthen resistance to disease.

**Pest and disease issues:** Botrytis susceptible. Seaweed helps thicken the skins, which are a little thin.

**Budburst:** Normal.

**Flowering date:** In line with most whites – mid season.

**Veraison date:** Mid season

**Harvest:** Mid season

**Yield:** Cluster is medium size, of cylindrical form with one small wing, semi-compact (from densely distributed berries to single berries with some visible pedicels). Berries are medium sized, spherical, with a waxy bloom and yellowish–green skin. Average bunch weight 150–250 g. Average yield 15–19 t/ha

**Winemaker:** No winemaking from this block. See **Chalmers Heathcote notes on page 26.**

**Winemaking notes:** Maturity at harvest 3/2/2016: Baumé 12.2, pH 3.79, titratable acidity 4.9 – not particularly good acid in a hot climate.

## Aglianico

**Region/sub region:** Murray Darling, Mildura

**Synonyms:** Aglianica, Agnanico, Aglianico Nero, Aglianuccia, Aglianichella Aglianico di Castellaneta, Aglianico di Puglia, Agliano, Agliatica, Agliatico, Ellenico, Ellanico, Fiano Rosso, Gagliano, Glianica, Ghiandara, Gnanico, Ghiannara, Ghiandara, Olivella di S. Cosmo, Spriema, Cascavoglia, Fresella, Cerasole, Ruopolo, Tringarulo, Uva dei cani, Uva di Castellaneta, Uva Nera

**Planting date:** 2010

**Rootstock or own roots:** Grafted on 140 Ruggeri

**Area under plant:** 0.15 ha

**Clones:** Taurasi VCR23, Vulture VCR11, Vulture MAT2, Taurasi MAT3

**Soil type:** red sand and limestone

**Slope:** 0.04 m gradient (13 m fall over 300 m run).

**Elevation:** 60 m

**Climate and weather:** The Mildura–Murray Darling Region has a Mediterranean climate. Annual rainfall total is 290 mm falling evenly across the year (average 20–30 mm/month).

The wettest year ever 2011 was 657 mm; the driest ever was 1982 with 121 mm; 2006 close behind at 123 mm.

The general trend is towards drier conditions with 11 of the last 15 years receiving below average rainfall. Skies are clear on average 122 days/year; maximum temperatures average 23.6 °C/year. (January mean max. 32.3 °C; June mean max 16 °C). Summer is hot

with up to 10 days over 40 °C between December and March. The diurnal range is usually very good throughout with 15–20 °C drops at night in summer. (e.g. daytime high 34 °C, night time low 14–19 °C). Winters are mild during the day (around 14 °C), not too many days under 10 °C maximum, and with cold, crisp nights where it often gets below zero in the early hours of the morning.

**Viticulturist:** Chalmers Family.

**Growing tips and tricks:** Budding early and ripening late, Aglianico is best suited to dry, warm climates. For this reason, it has flourished in southern Italy (and now in Australia), particularly in soils of volcanic origin but, in general, this variety can adapt to many types of soil. In Italy, in some viticultural zones (Taurasi DOCG and Aglianico del Vulture DOC), it can grow at 700–900 m altitude, but its late ripening nature and high natural acidity make it unsuitable to cold climates. It can have some problems with extreme high temperature heat waves, although we have not observed pronounced adverse effects as long as the vines are hydrated. It can be difficult to establish with thin canes, low vigour and needing extra nutrition when young to establish a strong architecture.

**Growing do's and don'ts:** Space spur positions out well while setting up. Set up with bi-lateral cordons. The variety benefits greatly from crop reduction through shoot thinning and bunch removal.

**Pruning:** single wire bi-lateral cordon at 1.5 m vine spacing, spur-pruned to 11–12 × 2-clear-bud spurs. Over productive when cane pruned.

**Canopy management:** Strong thin canes, downward growth habit. Medium leaf size. VSP wires help with keeping canopy open. Canopies are smaller than most.

**Irrigation:** Because it has low vigour and is very productive it will manage on a little less water than other varieties. Overwatering will produce large, tight bunches.

**Fertiliser:** Less in general, as it is naturally productive.

**Pest and disease issues:** The variety shows a high level of resistance to the most common pests and diseases, especially powdery mildew, although it is susceptible to botrytis and other bunch rot issues in humid and wet seasons.

**Budburst:** We have never seen a budburst problem. Budburst is normally in the last week of August or early September.

**Flowering:** Flowering dates are normal with no problems. Can be prone to hen and chicken, some clones more than others.

**Veraison:** Late. At least two weeks after most varieties. Extended period of veraison, with the tails of the bunches veraising much later.

**Harvest:** Very late, last fruit to pick on the vineyard. Usually late March to late April.

**Yield:** Medium berry size. Bunch weights average 220–280 g. Average yield for Chalmers Merbein 13–17 t/ha (thinned).

**Winemaker:** Bart van Olphen and Tennille Chalmers

(Chalmers Project) and we also sell grapes from this block to Ray Nadeson (Lethbridge Wines, Geelong), Elizabeth Richardson (L'Enologa, Mildura).

**Winemaking notes:** In 2016 Chalmers Project made individual vinifications of each clone. It was a particularly hot and early season where the Aglianico accumulated sugar and drop acidity, which was unusual. However, it is interesting to see the inter-clone comparison:

**VCR23:** 7/3/16: Baumé 13.6, pH 3.84, TA 5.3

**VCR11:** 7/3/16: Baumé 13.7, pH 3.83, TA 5.3

**MAT2:** : 7/3/16: Baumé 13.8, pH 3.83, TA 5.4

**MAT3:** : 7/3/16: Baumé 13.8, pH 3.83, TA 5.6

**Domestic or export market:** Chalmers Project is very small batch and sold mostly to on-premise accounts in Melbourne and Sydney, wine bars and food venues with good wine staff on the floor.

**Markets and marketing:** Chalmers Project is a range that takes the results of in-house experimentation with the many Chalmers varieties and makes them publicly available. It is super small batch, with only 50 dozen made across the four clones. Savvy sommeliers are interested to see the difference a clone makes, so these wines were well received. Their RRP is \$32.

## Refosco dal Peduncolo Rosso

**Region/sub region:** Murray–Darling

**Vareital Refosco dal Peduncolo Rosso**

**Synonyms Rifosc dal Pecol Ross**

**Planting date:** 2010

**Rootstock or own roots:** Grafted on 140 Ruggeri

**Area under plant:** 0.04 ha

**Clones:** VCR14

**Soil type:** Red sand and limestone

**Slope:** 0.04 m gradient (13 m fall over 300 m run).

**Elevation:** 60 m above sea level.

**Climate and weather:** The Mildura Murray–Darling Region has a Mediterranean climate. Annual rainfall total is 290 mm falling evenly across the year (average 20–30 mm per month). The wettest year ever 2011 was at 657 mm, the driest ever was 1982 at 121 mm, and 2006 was close behind at 123 mm. The general trend is to drier conditions with 11 of the past 15 years recording below average rainfall. Skies are clear on average for 122 days a year. The maximum temperatures average 23.6 °C/year (January mean max. 32.3 °C, June mean max 16 °C). Summer is hot with up to 10 days over 40 °C between December and March. The diurnal range is usually very good, with 15–20 °C drops at night in summer (e.g. daytime high 34 °C, night time low 14–19 °C). Winters are mild during the day (around 14 °C),

with not too many days with a maximum under 10 °C, and with cold, crisp nights where it often gets below zero in the early hours of the morning.

**Viticulturist:** Chalmers Family.

**Growing tips and tricks:** Refosco dal Peduncolo Rosso tends to do well in hillsides sites in infertile, calcareous–clay soils but it is relatively adaptable. It is a vigorous variety that prefers medium or wide training systems. It is thought to not be suited to total mechanisation. It is a late ripener in cooler areas. When it is ripe, the stalks redden, which is where it gets its name from (red peduncle). A very reliable, easy to manage variety.

**Growing do's and don'ts:** Do not overcrop it, as it can be difficult to finish it off.

**Pruning:** Single wire bi-lateral cordon spur pruned to 11–12 × 2-bud spurs. Lends itself to VSP as it is an upright-growing variety, with thinner than average canes.

**Canopy management:** Upright, but requiring lifting wires. Strong, evenly sized canes. The canopy is a little smaller than most. Canes can be long, but upright. As with most varieties, trimming at 400 mm above the top wire is beneficial to stop the canopy from falling over.

**Irrigation:** Average water requirement on our site, for a naturally well-balanced canopy.

**Fertiliser:** Typical. We have fertilised all mother blocks the same, for reasons of comparison. We use an annual

application of organic composted cow manure applied post harvest at 25 m<sup>3</sup>/ha to supply all gross nutrients. Throughout the year, soil conditioners (such as seaweed products) can also be applied by fertigation to increase carbon.

**Pest and disease issues:** No specific experience with disease.

**Budburst:** Mid-late.

**Flowering date:** Mid. Always sets well.

**Veraison date:** Average for reds, at our site. First or second week of January. Varies with the years.

**Harvest date:** Considered a late ripener in its native Friuli where it's cooler. It's earlier in our hot climate. One of the first reds ripening alongside the late whites.

**Yield:** Medium sized berries with average bunch weight 250–300 g, Average yield 13–15t/ha.

**Winemaker:** Dave Bowley from Vinteloper has made wine from this block.

**Winemaking notes:** No wine made except small experiments, but this is an example of maturity at harvest from 12 February 2015: Baumé 13.6, pH 3.63, titratable acidity 6.2

## Tahbilk Wines

### Marsanne

Marsanne is a traditional variety originating in the Northern Rhone and Hermitage regions of France. It is one of eight grape varieties permitted in the Cotes de Rhone appellation. It is grown in only four other countries outside France: Australia (200 ha), America (mostly California/Washington State – 38 ha), Italy (50 ha) and Switzerland (47 ha).

In the Rhone, Marsanne is often blended with Roussanne and occasionally Viognier. Tahbilk Wines holds the largest and oldest single holding of the variety in the world. Tahbilk's history with Marsanne can be traced back to the 1860s with the sourcing of White Hermitage cuttings from the St Hubert's Vineyard in Victoria's Yarra Valley. The grape was Marsanne and although none of these original plantings have survived, Tahbilk still produces Marsanne from plantings dating back to 1927.

Until 1998 the fruit from these 1927 vines formed part of the whole of Estate Marsanne blend. Tahbilk made a decision in 1998 to release the 1927 vine Marsanne separately and to pick them early to retain their higher natural acidity, with a view to produce a wine that would only begin to reveal its true self after six to seven years in the bottle. The 1998 vintage had its

inaugural release in 2006, which has since garnered an enviable reputation from performances in wine shows and from wine writers.

Tahbilk Marsanne has a dedicated worldwide following due to its marvellous character and complexity and ability to team wonderfully with food at all stages of development. When young, the nose and palate exhibit intense aromas and flavours of lemon, peach and tropical fruits with a dry mineral raciness; whilst with bottle age, these will become more complex and develop into the familiar honeysuckle fragrance and character traditionally associated with Marsanne.

Tahbilk Wines has really been the benchmark producer of Marsanne in Australia, regularly winning wine show awards across the country for this lovely white Rhone varietal. Since 1987, Tahbilk Wines Marsanne has won 155 gold medals in national and international wine shows. In 2016, Tahbilk Marsanne received a gold medal at the Sydney Royal Wine Show in CLASS: 15 Other White varietal wines (vintage 2015) for their 2015 Marsanne (95 points), a gold medal at the Sydney Royal Wine Show in CLASS: 18 White blends and/or other varietal wines, 2014 and older, for their 2010 1927 vines Marsanne (97 points), and a gold medal and trophy (Best Commercial Volume Wine) at the Australian Alternative Varieties Wine Show (AAVWS) for their 2016 Marsanne.

### Marsanne

**Region/sub region:** Goulburn Valley/Nagambie Lakes

**Synonyms:** Avilleran, Ermitage, Valais (Switzerland), Grosse Roussette, Marsanne Blanche and Roussette de Saint-Peray (Robinson et al. 2012). It is commonly mistaken for Roussanne.

**Planting date:** Old block is planted in 1927, other blocks were planted in 1980, 1986, 1988 and 1996.

**Rootstock or own roots:** 1927 block is own roots, later plantings are on rootstock.

**Area under vines:** total under Marsanne is 26 ha, 1927 block is 6.7 ha.

**Clone:** Unknown – old.

**Soil type:** Sandy loam duplex soil (DR2.2 – soil classification).

**Slope:** On flat ground on old course of Goulburn River.

**Elevation:** 140 m above sea level.

**Climate and weather:** 600 mm rainfall from July to June in the year(s) of harvest – MJT 21.0–22.9o °C zone.

**Viticulturist:** Neil Larson (Production Manager).

**Growing tips and tricks:** Easy variety to grow, older vines have a great natural canopy balance. Vines seem to self-regulate well. Younger vines do have more vigour. Canopies are left to sprawl. Spur-pruned vines tend to produce a nice natural balance.

**Pruning:** Cane pruned for some time, now all spur pruned.

**Canopy management:** Spur pruned, sprawling canopy, little work on canopy management as vines have nice balance between vegetative growth and fruit yield. Robinson et al. (2012) state that Marsanne is vigorous, fertile and productive. Best pruned short and suited to poor, stony soils.

**Irrigation:** Drip irrigated.

**Fertiliser:** Petiole tests conducted annually and nutrition adjusted accordingly. Using own compost made from grape marc from winery and working well.

**Pest and disease issues:** no real issues from Tahbilk perspective, but Robinson et al. (2012) state that Marsanne is susceptible to powdery mildew, mites and botrytis bunch rots. Large bunches, but small berries.

**Budburst:** Mid season bud burst (Robinson et al. 2012 say that it is late-budding).

**Harvest date:** Mid-season ripening, typically harvested in early March, but will be mid-late March in 2017.

**Yield:** averages around 10 t/ha production across Tahbilk's 26 ha.

Tahbilk start picking the 1927 block at approximately 10.5 Baumé (8.3 g/L titratable acidity and pH 3.28), and use it also for a sparkling Marsanne at this early stage. Marsanne is picked over four different picking dates between 10.5–12.5 Baumé. Marsanne doesn't appear to change too much in flavour characteristics over this range of Baumés. When it is around 12–12.5 Baumé, they are adding typically 1.0–1.5 g/L tartaric acid. Each of the four harvests are fermented separately and then blended back to produce the required Estate blend.

**Winemaker:** Alan George and Neil Larson.

**Winemaking notes:** Picked over four harvest dates due to logistics of harvesting total 26 ha. Unwooded and bottled early.

**Show results:** 155 gold medals since 1987.

**Domestic or export market:** Mostly domestic sales, but serious exports to UK, USA and Sweden, and growing in China, in particular for Tahbilk Marsanne.

**Markets and marketing:** In 2016, 500 cases of 1927 vines Marsanne was made (recommended retail price \$45/bottle) and 18,000 cases of the standard estate Marsanne was produced (recommended retail price \$16.95/bottle).

## Fighting Gully Road

### Aglianico

**Region/sub region:** Alpine valleys

**Planting date:** winter 2009

**Rootstock or own roots:** R99 and R110

**Area under plant:** 1.1 ha

**Clone:** Vulture and Taurasi

**Soil type:** deep alluvial gravelly clay loam. Limed to pH 6.5.

**Slope:** negligible

**Elevation:** 230 m

**Climate and weather:** av rainfall 825 mm

**Viticulturist:** Mark Walpole

**Growing tips and tricks:** Staked bush vines on a 2.75 m quincunx system. Un-irrigated.

**Growing do's and don'ts:** Surprisingly sensitive to wind damage and sunburn. Blows to pieces in spring when shoots are approx. 45–60 cm long.

**Pruning:** Head trained to about 4–5 × 2 bud spurs. Considering 2 × 5 bud rods and replacement spurs.

**Canopy management:** Pendulous, brittle shoots. Should be supported in this sort of environment. Drooping shoots create laterals and small secondary bunches which need to be removed. Large number of (large) laterals makes pruning more expensive. Considering installing trellis to support shoots and open fruit to morning sun.

**Irrigation requirement:** Not sure. Current system of zero irrigation has been okay.

**Fertiliser requirement:** Only foliar P applied. Some foliar N early in the season. All other base nutrients applied pre-planting. Clover dominant sward is present.

**Pest and disease issues:** Seems sensitive to downy mildew. Very tight bunches sensitive to botrytis.

**Budburst date:** Mid to late season. I've had no frost problems.

**Flowering dates:** Flowering is late but seems to go through in a couple of days.

**Veraison date:** First week of February.

**Harvest date:** Late April (late March in 2016)

**Yield and tonnage info:** About 1 kg/vine on average. Bunches large – probably 250 g+. Thinned to one bunch per shoot.

**Winemaker:** Mark Walpole and Adrian Rodda

**Winemaking notes:** Baumé 13+ if we can; 3.4 pH; about 7.5–8.0 TA. Cool fermentation. Very gentle handling to avoid extraction of hard tannins. Lone elevage in thick-staved barrels.

**Show results if any:** Gold and trophy at 2016 AAVWS

**Domestic or export market:** Domestic sales only at this stage.

**Markets and marketing:** On premise and selected specialist retail outlets. Packed in imported Italian-made six-bottle wooden boxes.

## De Bortoli King Valley

### Sangiovese

Sangiovese is the most commonly grown red wine variety in Italy. It is best known as the variety behind Chianti, Tuscany's flagship wine. It is also grown throughout Central and Southern Italy. Sangiovese is a very large family; in fact this grapevine is characterised by a high intravarietal phenotypical variability that confirms the variety's multiclonal origin.

Sangiovese is very adaptable to different climates, but having an early budburst, it can be susceptible to spring frosts. It prefers less fertile soils and low-vigour sites. It is a relatively high yielding variety.

Summer pruning and bunches thinning is advisable in some years to avoid possible attacks of botrytis and to improve the quality. Vigorous and susceptible to powdery mildew and botrytis bunch rot. It is also susceptible to attacks of mites.

While soils with low fertility are ideal and help to control some of the variety's vigour, for the best quality, yields need to be kept in check as the vine is notably vigorous and prone to overproduction. Wine made from high-yielding vines tends to produce wines with light colour,

high acidity, and less alcohol, which are likely to oxidise prematurely due to a lower concentration of tannins and anthocyanins in this variety.

In 2016, at the Australian Alternative Varieties Wine Show (AAVWS) two Sangiovese wines won gold medals: the 2014 Fighting Gully Road Sangiovese from Beechworth and the 2014 DeBortoli Bella Riva Sangiovese from the King Valley. I wanted to highlight the DeBortoli Bella Riva Sangiovese from the King Valley here in this article because the King Valley region has been producing award winning Sangiovese and other varieties for many years.

The King Valley has a wonderful Italian heritage and produces several rustic Mediterranean wines, including Sangiovese, Pinot Grigio and Nebbiolo. The De Bortoli vineyard in King Valley covers more than 420 hectares, nestled along the cool, clear riverbank at the base of the Victorian snowfields. It was initially planted in 1994, but the 15.4 ha of Sangiovese wasn't planted until 1998 and 1999. Sangiovese is very well suited to the King Valley as well as more maritime climates. The vineyard was planted on sandstone and shale deposits washed down the river over time.

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### Sangiovese

**Region/sub region:** King Valley (2 km south of Moyhu)

**Synonyms:** Nielluccio, Sangiovese, Sangiovese Grosso, Sangiovese Piccolo, Brunello, Prugnolo Gentile, Morellino.

**Planting date:** 1998 and 1999

**Rootstock or own roots:** on rootstock

**Area under plant:** 15.4 ha

**Clone:** H6V9 and MAT 7

**Soil type:** sandy to clay loam soils

**Slope:** Flat vineyards

**Elevation:** 172 m above sea level

**Climate and weather:** MJT 19.0–20.9 °C zone.

**Viticulturist:** David Thwaites

**Pruning:** Cane pruned to two canes and arched.

**Canopy management:** East–west row orientation, with ballerina trellis to the northern side.

**Irrigation:** Drip irrigated.

**Fertiliser:** Petiole tested annually and fertiliser adjusted accordingly.

**Pest and disease issues:** Nothing different to other varieties in the King Valley.

**Budburst:** Earliest of red varieties in the King Valley.

**Harvest date:** Harvest is typically mid–late March in the King Valley.

**Yield:** 7–8 t/ha

**Winemaker:** Steve Webber (Yarra Valley).

**Winemaking notes:** Fruit is picked and fermented in 7 tonne and 15 tonne fermenters for 10–12 days. The wine is then pressed, settled and matured in used French oak casks for 12 months before bottling. Wine analysis: Alc 14.0%, pH 3.51, titratable acidity 6.4

**Show results:** Gold at 2016 AAVWS (2014 Sangiovese).

**Domestic or export market:** Around 9,000 case production, marketed both to domestic and international markets.

**Markets and marketing:** \$14.99 recommended retail price

## Fighting Gully Road

### Tempranillo

Tempranillo is a variety grown in many Spanish wine regions. It is grown in Portugal under the name Tinta Roriz or Aragonez (in Alentejo). In Spain, the Tempranillo wine grape variety is the backbone of the wines of the Rioja and the Ribera del Duero regions in northern and central Spain. In these regions, it is often blended with varieties such as Graciano and Grenache. In the 2000–2010 decade, Tempranillo planting increased worldwide by 140,000 hectares – the largest increase of any other grape variety (Anderson & Nanda, 2013).

The area of Australian vineyards planted to Tempranillo is increasing steadily. In 2000 only 41 hectares were planted, but by 2010 the area had grown to 476 hectares and over 300 producers (<http://www.vinodiversity.com/tempranillo-on-rise.html>). Tempranillo wine is being made in many Australian wine regions from the Granite Belt in Queensland to Beechworth in Victoria, to McLaren Vale and the Barossa in South Australia to Geographe and Margaret River in Western Australia.

Its name is the diminutive of the Spanish temprano, a reference to the fact that it ripens several weeks earlier than most Spanish red grapes. In Australia, it tends to produce thick skinned, medium–large sized bunches and berries. Yields can be highly variable from season to season, but ripens early. Tempranillo is sensitive to powdery mildew, eutypa dieback and rust mites. It is also a high vigour variety, with large leaves and needs to be matched with a low vigour potential site. Tempranillo is sensitive to wind and extreme drought. In 2016, at the Australian Alternative Varieties Wine Show (AAVWS) two Tempranillo wines won gold medals: the 2013 Fighting Gully Road Tempranillo from Beechworth, and the 2015 Mayford Wines Tempranillo from the Alpine Valleys.

I wanted to highlight the Fighting Gully Road Tempranillo here in this article because it has been a solid performer over the years at the AAVWS, and the owner, Mark Walpole, a real leader in trialling and adopting alternative varieties in Australia.



Figure 22. Mark Walpole.

Mark planted the first vines at the Fighting Gully Road vineyard site in 1997. The site rises up to the top of the Beechworth plateau escarpment above the Murrumbidgee Basin, to the south of Beechworth. The north- and west-facing lower slopes were planted to the red Bordeaux varieties; while the upper and east-facing slopes were planted to Pinot Noir. Over subsequent years, small areas have been re-worked to Tempranillo, Shiraz and Sangiovese. The Tempranillo was top worked to some Pinot Noir vines in 2008. The Tempranillo clone is unknown; cuttings were collected from Denman Estate in the Hunter Valley 1988, but not much is known about the history before that.

The Fighting Gully Road site is planted at elevations between 530 m and 580 m above sea level. The heat degree day summation averages around 1600; and it receives around 850 mm of rainfall a year. The vineyard is characterised by prevailing winds from the north-west. During the growing season these breezes have lower levels of humidity and ensure that the vines have restrained vegetative growth and remain disease free. Days are cool, but the slopes surrounding the vineyard ensure cold night air drains away, so only the very lowest reaches of the vineyard are susceptible to spring frost.

The Fighting Gully Road vineyard is located on the extreme southern edge of the Beechworth region on decomposed shales and mudstone. The soils are extremely well drained, allowing vineyard machinery access to under almost any circumstances.

The 2013 Tempranillo is a hand-picked and sorted, de-stemmed, lightly crushed, wild open ferment, 28 days on skins, matured in French oak (50% new) for 18 months. The wine shows a spicy, cherry bouquet that leads as straight as an arrow to the medium-bodied palate. Mark makes a Tempranillo style more traditionally reserve in style, thus he only releases after two years in the bottle.

Reference: Anderson, Kym & Nanda Aryal, 2013. *Which winegrape varieties are grown where?* Evidence from a new database, December 2013. Downloaded on 30 May 2017 (<https://www.adelaide.edu.au/wine-econ/databases/winegrapes-front-1213.pdf>).



## Tempranillo

**Region/sub region:** Beechworth

**Synonyms:** Aragonez, Cencibel, Tinto Fino, Tinto Madrid, Grenache de Logrono, Tinto de la Rioja, Tinto de toro, Jacivera, Tempranilla, Ull de Llebre, Tinta Roriz, Tinto de Santiago

**Planting date:** 1998

**Rootstock or own roots:** Mixture of 5C Teleki, 1103 Paulsen and SO4

**Area under plant:** 0.4 ha

**Clone:** Cuttings collected from Hunter Valley in 1988 from Denman Estate, which was removing this vineyard.

**Soil type:** Red sedimentary mudstone on the edge of the escarpment – with metamorphic granite

**Elevation:** 575 m

**Climate and weather information:** The heat degree day summation averages around 1600; and it receives around 850 mm rainfall a year. MJT 19.0–20.9 °C zone.

**Viticulturist:** Mark Walpole (aka alternative varieties guru).

**Growing tips and tricks:** An extremely vigorous variety with large leaves. Variable producer from year to year. The first node is often unproductive and thus more variable under spur pruning. Perhaps better suited to cane or arched cane pruning. Mark typically leaves two canes. Best suited to low potential site, with big bunches and big berries. Mark likes to leaf pluck the bunch zone on the eastern side of the canopy after flowering. Mark's row spacings are 2.75 × 1.8 m vine spacings in row.

**Pruning:** Cane pruned

**Canopy management:** See Growing tips and tricks.

**Irrigation:** Drip irrigated. Tempranillo is sensitive to water stress, maybe due to large leaves and total vine leaf area.

**Fertiliser:** Mark typically provides a foliar urea spray, but the vines don't appear to suffer any nutritional problems on his site.

**Pest and disease issues:** Tempranillo is very sensitive to powdery mildew and also to rust mites. Rust mites can cause young leaves to fall off. Mark notes that kangaroos love eating his fruit, maybe due to the higher pH and lower acidity, relative to other grape varieties on his property.

**Budburst:** Late bud burst on his site – late September to early October.

**Harvest date:** Variable harvest date based on variations in seasonal crop loads. Mark typically picks his Tempranillo on the same date as his Chardonnay.

**Yield:** Highly variable season to season. At the Beechworth site it can range from 2.5 t/ha to 9 t/ha, and on his Whorouly site 2.5 t/ha to 7.5 t/ha.

**Winemaker:** Mark Walpole

**Winemaking notes:** Typically pick at between 13.5–13.8 Baumé, pH can be very high >4, with very low acid (typically 3.5 g/L). Mark typically adds 4–5 g/L of tartaric acid at the crusher and another 4–5 g/L (yes up to 10 g/L total) to bring the pH back to around 3.7. Mark likes to make more of a Ribera style, in 50% new oak, barrel aged for 18 months, and two years in bottle before releasing.

**Show results:** Won several gold and silver medals – predominantly at the AAVWS.

**Domestic or export market:** All sold pretty quickly through the domestic market.

**Markets and marketing:** Price point is \$32/bottle; only 200 cases and all sells very quickly.

## Acknowledgements (Mark Krstic)

I just want to acknowledge the producers of these alternative varieties for the time and generosity at such a busy time at the commencement of vintage 2017.

- Mark Walpole, Fighting Gully Road – discussed his Tempranillo vineyard on 1/3/2017
- Neil Larson, Tahbilk Wines – discussed production of Marsanne on 1/3/2017
- Peter Dry, Viticulture Consultant AWRI – comments and discussion on Nero d'Avola 2/3/2017.
- David Thwaites (Vineyard Manager – DeBortoli King Valley) for discussion on 2/3/2017.
- Syd Bradford and Bruce Chalmers for discussion on Heathcote Nero d'Avola production on 2/3/2017 and 3/3/2017 respectively.

## References

Jancis Robinson, Julia Harding & José Vouillamoz (2012). Wine grapes : A complete guide to 1,368 vine varieties, including their origins and flavours.

Winetitles (2016) The Australian and New Zealand wine industry directory.

<http://www.vinodiversity.com/> website for much information about the varieties discussed in this paper.

<http://www.chalmersnurseries.com/> for some technical data on the viticulture of each of these varieties discussed.

Peter Dry (2012). Nero d'Avola. Wine and Viticulture Journal, November/December 2012, 68–69.

Dry, P.R. & Coombe, B.G. (Eds), (2005). Viticulture: Volume 1 – resources (2nd Edition). Winetitles.

## Western Australia

### 52 Stones

#### Arneis

**Region/sub region:** Geographe/Ferguson Valley

**Planting date:** 2012

**Rootstock or own roots:** Own roots

**Area under plant:** 1 ha

**Clone:** CVT CN 15

**Soil type:** Fairly fertile. Deep, fine, sandy loam over a clay loam. Clay-loam layer starts at about 0.5 m depth.

**Slope:** 10%, south-easterly aspect, with rows running east to west.

**Elevation:** Approximately 200 m.

**Climate and weather information:** Mediterranean. The elevation of the vineyard, plus its south-easterly aspect results in marked diurnal differences with quite cool night time temperatures and daytime summer temperatures 20 °C cooler than the coastal city of Bunbury to the west.

**Viticulturist info:** Jim Campbell Clause.

**Growing tips and tricks:** Keep fruit well protected from the sun, and keep well watered.

**Pruning:** Spur pruned and bilateral cordon, with 30 buds/vine.

**Canopy management:** VSP trained, hedge once in December. Vigorous growth habit, generally fairly uniform and upright. It bears well and shoot thinning is used to manage crop level rather than bunch thinning.

**Irrigation requirement:** Irrigated regularly throughout the growing season, and often, giving vines a little extra water rather than less.

**Fertiliser requirement:** Fairly standard fertiliser regime.

**Pest and disease issues:** Fairly disease free and seems

to have less problems with powdery mildew or botrytis than other white varieties.

**Budburst:** Early to middle September.

**Flowering:** No issues with flowering, sets well

**Veraison date:** Mid January

**Harvest date:** Mid to late February

**Yield :** Yield 10 t/ha; bunch number/vine 29.9; bunch weight 230 g. Note : The vines are still young, second crop and 2017 was an unusually year late and heavy. The first crop was 3.2 t/ha and bunch weight 200 g.

**Winemaker:** Paul Nelson.

**Winemaking:** Baumé 12.4, pH 3.25. The fruit is hand picked, whole-bunch pressed to stainless and also direct to barrel. In 2017, we made two styles. One is cold fermented (11–12 °C) in tank and the other is fermented in 1–3-year-old oak barrels. The tank portion is floated and clarified before inoculating with cultured yeasts and fermented to a residual sugar level of 5 g/L. The barrel-fermented portion is wild fermented to 4–5 Baumé, then inoculated with cultured yeasts to finish ferment through to dryness. Both batches will be left on lees for four months. The tank portion will have a minimal SO<sub>2</sub> addition and no stirring. One third of the barrel-fermented portion will be lees stirred with no SO<sub>2</sub> additions. The wine will be released in August 2017.

**Show results:** In 2016 Arneis was awarded silver at the regional Geographe wine show.

**Domestic or export market:** Domestic sales to Perth and Melbourne.

**Markets and marketing:** RRP is \$28.00. The wine is sold under the Paul Nelson label which is our alternative wine range and currently consists of the Arneis and a Grenache Mourvedre Tempranillo. It is bottled in the Saverglass Epic bottle and sold in six-packs. It is one of our most popular wines in the cellar door and sells very well in Perth in the on-premise environment, particularly by the glass.

### Vineyard 28

#### Arneis

**Region/sub region:** Geographe/Harvey

**Planting date:** 2008

**Rootstock or own roots:** Own roots

**Area under plant:** 0.6 ha

**Clone:** CVT CN 15

**Soil type:** Bassendean sand overlying sandstone. Sandstone at about 2 m depth, loamy clay layer overlying sandstone, with water table at about 2.5 m depth.

**Slope:** Minimal, change in slope from highest point to lowest is 2–3 m.

**Elevation:** 10–20 m.

**Climate and weather information:** Mediterranean. Warm days generally in high 20 °Cs during summer with a westerly seabreeze. Approximately 5–6 k from the coast. Night time temperatures do cool down.

Experiences daytime temperatures during summer approximately 20 °C cooler than Perth.

**Viticulturist:** Mark Cumbers.

**Growing tips and tricks:** Not hard to grow, and loves sandy soil, conditions similar to its native Roero region in Italy. Trying to slow down Baumé increase when growing on sandy soils is a challenge, but is very important.

**Growing do's and don'ts:** Spur, not cane pruning; water consistently and often on sandy soils.

**Pruning:** Prefers spur to cane pruning. Have experimented with cane pruning with end results being erratic bud burst and strong apical dominance. Often sets two bunches per shoot.

**Canopy management:** Trellis height is 2.5 m. VSP trained, hedge once in December just before nets go on. Vigorous growth habit, generally fairly uniform growth. Shoot thin to manage crop load, and only drop damaged, sunburnt bunches. Canopy has a good even

spread, with leaf size not too big. Good strong canes, not as brittle as Nebbiolo.

**Irrigation:** Irrigated regularly throughout the growing season, 2–3 times a week, regime is 2.2 L/hr for two hours. Have found that if we ease off on irrigation, Baumé rapidly increases due to berry dehydration.

**Fertiliser:** Following budburst, Arnies does have a yellowy–green leaf colour for the first 2–3 weeks that disappears once the shoots lengthen. Fairly standard fertiliser regime, adding compost under vine due to sandy soils.

**Pest and disease issues:** Due to tight bunches, it does have a tendency to pop berries out of bunches following rain events post veraison. Otherwise, fairly disease free and seems to have less problems with powdery mildew and botrytis when compared with Sauvignon Blanc or Semillon.

**Budburst date:** Early to mid September

**Flowering dates:** Mid November

**Veraison date:** Early January

**Harvest date:** End of February

**Yield:** Bunch weights generally 150–200 g; 4–6 t/ha.

**Winemaker:** Mark Cumbers.

**Winemaking:** (Baumé, pH, titratable acidity and alcohol) – Baumé 12.5–13.0; pH 3.15–3.30; titratable acidity 7.0, alcohol 13%. A wine with texture and mouthfeel, and with aging potential.

**Show results:** Consistently does well at regional wine shows and WA wine shows with gold and silver medals.

**Domestic or export market:** Domestic only at present.

**Markets and marketing:** Use a standard-shaped bottle, with same label style as other wines in the Vineyard 28 range. The Arneis provides a point of difference in cellar door.

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## Tanglefoot

### Vermentino

**Region/sub region:** Peel/Wandering

**Planting date:** 2010

**Rootstock or own roots:** Own roots

**Area under plant:** 0.3 hectares

**Clone:** H62–1LN

**Soil type:** Grey–red loam over gravel of variable depth.

**Slope:** Fairly flat.

**Elevation:** Approximately 297 m, on the edge of the Darling Range.

**Climate and weather information:** Mediterranean, hot, dry summers, with very cold winters.

**Viticulturist:** Rueben Steer

**Growing tips and tricks:** Spur prune and keep VSP trained. Prune reasonably hard. Vermentino can handle hot and dry conditions.

**Pruning:** Spur pruned.

**Canopy management:** VSP trained. Vigorous growth habit, generally fairly uniform and upright. Fairly strong shoots, certainly not brittle. An non-irrigated vineyard controls canopy vigour. Shoot thin to manage crop rather than using bunch thinning.

**Irrigation requirement:** Non-irrigated

**Fertiliser requirement:** Fairly standard fertiliser regime.

**Pest and disease issues:** Fairly disease free and seems to have less problems with powdery and botrytis than other white varieties.

**Budburst:** end of October

**Flowering dates:** Quite late, mid December

**Veraison date:** Early February

**Harvest date:** Mid February

**Yield and tonnage info:** Bunches are large, similar in size to Zinfandel and Muscat with big shoulders and long. Bunches also tightly packed. Typical yield of approximately 5 t/ha.

**Winemaker:** Rueben Steer

**Winemaking notes:** Baumé 11.0–12.0, typically being picked around 11.5; pH 3.2–3.3; Alcohol 12.5–13.0%.

**Show results if any:** Consistently wins bronze medals at local regional shows.

**Domestic or export market:** Domestic only.

**Market and marketing strategies:** Do nothing special in regards to packaging and promoting Vermentino.

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## Hopping Stones

### Vermentino

**Region/sub region:** Margaret River/Yallingup

**Planting date:** 2006

**Rootstock or own roots:** Majority on own roots, some on Schwarzmann

**Area under plant:** 0.54 hectares.

**Clone:** H62–1LN

**Soil type:** Gravelly ironstone loam of variable depth.

**Slope:** Slightly undulating, on top of a hill. N–S row orientation.

**Elevation:** Approximately 150 m

**Climate and weather information:** Mediterranean. Fairly exposed and windy. Wind from the south to south-easterly, with cool nights during summer.

**Viticulturist:** Lynette and Phil Foster.

**Growing tips and tricks:** Cane prune. Use minimal water, and apply water as needed. Crop levels can be high. Generally don't fruit thin, apart from thinning out greener bunches. Manage canopy and fruit exposure by having a mix of shaded and exposed bunches.

**Pruning:** Cane pruned, with 18–20 buds per vine

**Canopy management:** VSP trained, hedge once in December. Vigorous growth habit, generally fairly uniform and upright. Fairly strong shoots, certainly not brittle.

**Irrigation requirement:** Irrigate less during growing season compared with other varieties, as too much water results in high vigour.

**Fertiliser requirement:** Fairly standard fertiliser regime.

**Pest and disease issues:** Fairly disease free and seems to have less problems with powdery mildew and botrytis than other white varieties.

Budburst date (are there any issues at budburst) – mid

September

**Flowering dates:** Third week of November.

**Veraison date:** Early February

**Harvest date:** End of February

**Yield and tonnage info:** Typical yield of 12–18 t/ha. Large bunches.

**Winemaker info:** Mark Warren

**Winemaking notes:** Baumé 9.9, pH 3.10, titratable acidity 7.3 at harvest. At bottling, alcohol 10.1% and titratable acidity 6.3g/L. All stainless steel fermented.

**Show results:** Don't generally enter shows.

**Domestic or export market:** Domestic only (cellar door, Perth, Sydney and Melbourne).

**Market and marketing information:** Labelled under the Marq Wines brand. The price point \$25.00, and bottled into a Riesling bottle as the style made is reminiscent of Riesling.

## Ferngrove Estate

### Malbec

**Region/sub region:** Great Southern/Frankland River

**Planting date:** 1998

**Rootstock or own roots:** Own roots

**Area under plant:** 3.56 hectares

**Clones:** Unknown

**Soil type:** Shallow gravel over red, friable clay.

**Slope:** Row orientation is north–south

**Elevation:** Approximately 230 m

**Climate and weather information:** Mediterranean in terms of dominant winter–spring rainfall, but with greater continentality. Cool climate. 610 mm average annual rainfall; 215 mm average Oct–April. Hot summers, cool nights.

**Viticulturist:** Chris Zur

**Growing tips and tricks:** Seems to be a very adaptable variety that performs in both warm and cool seasons. Don't start irrigating too late, as canopy size can suffer.

**Pruning:** Spur

**Canopy management:** VSP trained. Produces a moderately vigorous canopy.

**Irrigation requirement:** Typical irrigation requirements, but don't delay irrigation.

**Fertiliser requirement:** Fairly standard fertiliser regime. We petiole test annually and use these results as a reference for our nutritional requirements.

**Pest and disease issues:** Fairly disease free. Wildlife love it. Net it if you have bird or kangaroo pressure.

**Budburst date:** Late September

**Flowering dates:** Mid–late November. Can be susceptible to poor fruit set.

**Veraison date:** Mid January

**Harvest date:** Early to mid April.

**Yield and tonnage:** Long-term average 7.5 t/ha; average bunch weights approximately 110 g.

**Winemaker:** Marco Pinares and Marelize Russouw

**Winemaking notes:** Baumé 14 ; pH 3.45–3.55; titratable acidity 5.8–6.0.

**Show results:** Consistent 94 points and above from wine writers.

**Domestic or export market:** Both

**Markets and marketing:** Versatility of the variety. Products made include a sparkling Malbec, a Malbec Cabernet Rose, and premium and super-premium straight varietal wines.



Figure 23. A bee sitting on Malbec bunches. Picture courtesy of Ferngrove 2017<sup>®</sup>.

## Aravina Estate

### Tempranillo

**Region/sub region:** Margaret River/Yallingup

**Planting date:** 2014

**Rootstock or own roots:** Own roots

**Area under plant:** 1.0 hectares

**Clones:** Block is a mix of five clones: Pingus Clone 261 (Tinta del Pais CL-261); Pingus 306 (Tinta de Toro CL-306m); Pingus Clone 98 (Tinta del Pais CL-98); Pingus Clone 32 (Tinta del Pais CL-320); and Pingus Clone 326 (Tinta de Toro CL-326).

**Soil type:** Gravelly ironstone loam of variable depth, over clay. Clay at depth of 1–1.5 m. Free-draining soil on top of a ridge.

**Slope:** Sloping block at highest point in vineyard.

**Elevation:** Approximately 140 m

**Climate and weather information:** Mediterranean. Wind from the south to south-east, with cool nights during summer.

**Viticulturist:** Ryan Gibbs

**Growing tips and tricks:** Control vigour early, and be mindful of bud numbers left at pruning. Needs constant water to keep canopy happy and vibrant. Water frequently, using small drinks and often.

**Pruning:** All spur pruned at the moment, but might cane prune one or more clones depending on the wine style being made.

**Canopy management:** VSP trained. Each clone has a different growth habit, generally fairly uniform and upright and vigorous growers. All have a tendency to drop basal leaves if water stressed. Berry size, bunch structure and bunch size varies from clone to clone. We do some bunch thinning pre veraison of 'ratty', elongated and small bunches, followed up by some bunch thinning post veraison of green bunches.

**Irrigation:** Water often to maintain canopy health.

**Fertiliser requirement:** Fairly standard fertiliser regime.

**Pest and disease issues:** Fairly disease free.

**Budburst date:** Mid September

**Flowering dates:** Early December

**Veraison date:** Mid January

**Harvest date:** Varies. For rosés – mid March. For table wines – early April.

**Yield and tonnage:** Typical yield of 10–12 t/ha.

**Winemaker:** Ryan Agiss

**Winemaking notes:** For rosés – Baumé 12–12.5; pH 3.5–3.8; titratable acidity 7–8. Table Wines – Baumé 14–14.5; p 3.6–3.8; titratable acidity 5–6.5.

**Markets and marketing:** New products



Figure 24. Tempranillo clones from left to right are: 326 del Toro, medium vigour and yield; 32 del Pais, higher vigour and moderate yields; 98 del Pais, medium yield and vigour; 261 del Toro, high vigour and medium yield; 306 del Toro, lower yield higher vigour. Picture courtesy of Ryan Agiss, Aravina Estate.

## References

Peel MC, Finlayson BL & McMahon TA (2007). Updated world map of the Köppen-Geiger climate classification. *Hydrology and Earth Systems Sciences* 11:1633–1644.