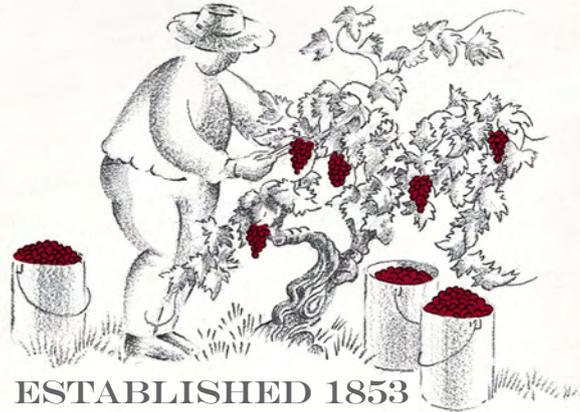


1853

# Kalleske

BAROSSA VALLEY



ESTABLISHED 1853

## *Our Story // Organics & Biodynamics*



BAROSSA



## ORGANICS/BIODYNAMICS

For over 150 years our Kalleske family has been living and working on our Greenock farm. Throughout this time each generation has been vigilant in looking after the property for the next generation by not only preserving but enhancing the natural environment. Today, genuine sustainability and careful environmental practices continue to be at the core of our Kalleske farming, grapegrowing and winemaking. Certified organic and biodynamic practices in the vineyard and winery ensure the soil, air and waterways are not polluted with synthetic chemicals and fertilisers. Organic/biodynamic farming is not only good for the environment but it ensures the grapes produced are more wholesome with vitality and integrity that reflect their origins of our Kalleske vineyard. Farming the vineyard organically and biodynamically is the truly natural way of farming ensuring ultimate sustainability, authenticity and quality.

## WHAT IS ORGANIC?

Organic viticulture requires the complete cessation of synthetic chemicals and artificial fertilisers in the vineyard - this is the basic legal definition of organics. However, at Kalleske we are pro-actively organic whereby we not only don't use chemicals but we actively promote a healthy soil and healthy vines in a truly sustainable system.

## WHAT IS BIODYNAMIC?

Biodynamics is an organic holistic method of farming based on the work of Austrian philosopher Rudolf Steiner. 'Biodynamic' or 'biologically dynamic' is a farming system where the health of the soil is of utmost importance, principally high in biological activity, rich in humus and well structured. In addition to good organic practices such as composting, biodynamic farming relies on special plant, animal and mineral preparations and the rhythmic influences of the sun, moon, planets and stars.

Ultimately biodynamics is about two main principles: promoting the health of the soil and enhancing the link between plant growth and the rhythms of the cosmos.

***“For over 150 years our Kalleske family has been living and working on our Greenock farm”***

## HOW IS VINEYARD FARMED ORGANICALLY & BIODYNAMICALLY?

In practical terms, farming organically and biodynamically means:

- » Controlling weeds mechanically (instead of with herbicides).
- » Vines gain their nutrition naturally (and not with chemical fertilisers): 'Green-manure' covercrops are grown mid row and ploughed into the soil to build up organic matter and provide nutrients for the vines and soil micro-flora.
- » Composts and natural fertilisers (e.g. kelp, rock dust) are applied to the soil.
- » Biodynamic preparations are applied to the soil and the vines.

Vines are protected from insects and diseases through their naturally stronger immune system or via natural sprays such as worm tea (instead of via insecticides or fungicides).

A healthy soil with high organic matter and high micro flora is able to better capture natural rainfall and vines with strong healthy roots are better able to utilise this natural moisture. Bird pest problems (e.g. starlings) are mitigated by planting adequate native vegetation which they prefer and this also encourages predatory birds (e.g. hawks).



**ORGANICS & BIODYNAMICS IN THE WINERY**

By definition, organic winemaking is practically the same as conventional winemaking. The main difference is that with organic wine you are only permitted to add a maximum of 125ppm sulphur dioxide compared to 250ppm. You are also not permitted to use any synthetic additives such as PVPP.

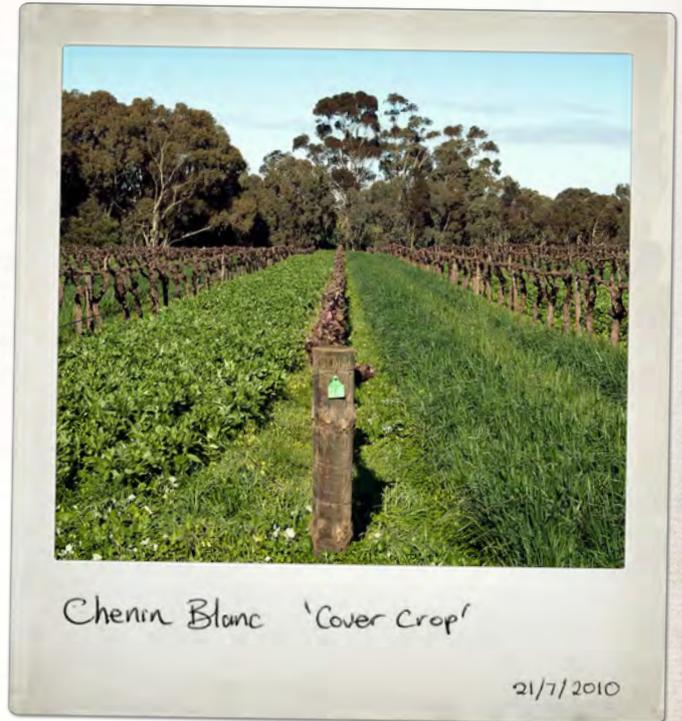
At Kalleske we continue the natural organic and biodynamic theme from the vineyard into the winery. Our practices include relying on natural yeasts to undertake the primary fermentation and natural malolactic bacteria to perform the malolactic fermentation. We do not use added tannins or fining agents and the wines are naturally clarified through gravity (racking) without filtration.

We also follow the phases of the moon and where possible time operations such as harvest and racking when they are most favourable.

The biodynamic philosophy sees the farm in a holistic sense whereby it should be as self-sufficient as possible. Thus, solar electricity is installed which generates enough electricity to run the entire winery. Excess electricity is then used by other buildings on the farm or fed back into the grid, ensuing a little less coal is burnt. The solar installation was a major project and we acknowledge the assistance of AusIndustry through the 'Retooling for Climate Change' project.

The winery is also self sufficient with water. A 250,000 litre rainwater tank captures valuable water from the winery and farm sheds. Capturing our own water means more of this precious resource can stay where it's needed In the River Murray.

***“At Kalleske we continue the natural organic and biodynamic theme from the vineyard into the winery”***



**THE WINES?**

We believe that farming naturally does make better wine. Healthy soil, as attained by organic and biodynamic methods is the prime basis for healthy vines, expressive grapes and quality wines. We believe that farming the vineyard organically and biodynamically results in more genuine and individualistic wines that are truer to their site.

Organic and biodynamic viticulture is all about balance and harmony - to have the soil, vine, and microclimate all working together to produce wholesome grapes with authentic flavour, depth and structure.

We believe that every vineyard location is unique. The relationship between soil and climate has the potential to produce a different result at every location. For the vines to capture these unique characteristics of their site with their roots and their leaves, the soil must be alive and healthy and the leaves must be free of synthetic chemicals. We believe organic/biodynamic grapes are a true, original and authentic expression of their site resulting in genuine and flavoursome wines.

With quality organic grapes the winemaking process is relatively straight-forward and traditional. We simply crush, ferment, press and barrel mature the wines before bottling without 'tampering' with them. We see ourselves as guiding the grapes into the bottle with the aim of capturing the true essence of the vineyard in the finished wine.





**THE BENEFITS OF ORGANIC GRAPE GROWING AND ORGANIC WINES**

There are many benefits in growing grapes organically and biodynamically:

- » Environmental – no chemical runoff into waterways or groundwater and more biodiversity – spiders, fungi, bacteria, ladybirds, etc.
- » Less pollution – more carbon is retained in the soil instead of being lost to the atmosphere.
- » Healthier soil – more porous, more nutrient availability, more microbes.
- » Healthy environment for vineyard workers.
- » Healthier wines to drink – no residual chemicals.
- » Better wines – more naturally balanced, of inherent quality and reflective of their origin.

**CERTIFICATION**

At Kalleske our vineyard and winery is 100% certified organic and biodynamic by Australian Certified Organic (ACO). The Kalleske vineyard has been certified since 1998 and is the oldest certified organic/biodynamic vineyard and winery in the Barossa.

Being certified is valuable to the consumer as it's their guarantee that they're getting a genuine organic product. The organic certification process requires good record keeping, annual and random audits and inspections of the vineyard and winery.



**SUMMARY**

Organic and biodynamic farming is a truly sustainable production system with the health of the soil at its core. Healthy plants and quality produce then naturally flows from this.

Our view is that organic/biodynamic production is nothing out of the ordinary but simply the way nature intended.

© Kalleske Wines

**“We believe that farming naturally does make better wine”**



### **MORE DETAIL ON BIODYNAMICS**

Being a holistic farming method, biodynamics emphasizes the importance of the whole and the interdependence of its parts, so it not only considers the role and importance of the soil and the immediate environment of the plant (in this case the vine), but also the influences of the cosmos.

At the core of biodynamics are two main principles:

- » Recognition of the importance of soil health and promotion of such.
- » Recognition and enhancement of the link between plant growth and the rhythms of the cosmos.

Soil health (and thus vine health, strength and vitality) is achieved through having a 'biologically dynamic' soil. A properly functioning soil must have healthy populations of soil life – fungi, bacteria and earthworms. A biologically active soil is important for nutrient cycling and ensuring that minerals are in a plant usable form. There is a strong symbiosis between the plant and the microbes in the soil. The plant will give off exudates (e.g. carbon from photosynthesis) to the microbes that attach or associate themselves to the plant and in return these microbes will seek out minerals, essential nutrients and moisture for the plant. A living soil also ensures the soil is porous and permeable. This allows for easy movement of the vines roots through the soil and for maximum rainfall penetration. The enlivening of the soil through the increase of the living organisms in the soil is the most important aspect of biodynamics.

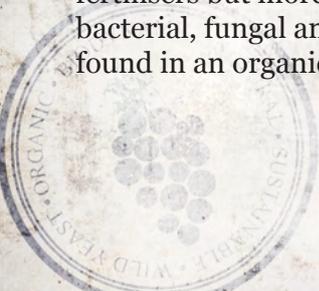
Organically a healthy, biologically active soil is achieved through green-manure cover-crops, composts and natural fertilisers such as kelp and rock dust. These are also important elements in biodynamic farming, but biodynamics takes organic viticulture a step further and especially prepared biodynamic (BD) preparations are applied to the plant and to the soil. The BD preps are highly concentrated inoculums that contain high concentrations of micro-organisms and trace elements. Essentially these BD preps are not fertilisers but more a catalyst to enhance the bacterial, fungal and mineral processes that are found in an organic farming system.

The BD preparations are made from numerous plant, mineral and animal substances. The most commonly known preparation is BD500, cow horn manure preparation. BD500 is used to vitalise the soil, increasing the microbes and availability of nutrients and trace elements. BD500 enhances and strengthens plant root growth and develops humus formation and thus soil structure and water retention. BD500 is made by burying cow manure in a cow horn over the winter months. During these cooler months, life breathes into the soil and the soil has the tendency to be full of growth energies and these energies are absorbed into the manure through the receptive nature of the horn. The preparation, when ready after 4 months, has turned into dark humus and is sweet smelling. It is then mixed with water and sprayed at the descending phase of the moon in late afternoon in Spring and Autumn.

BD501 is the next most common prep and is made of finely ground quartz crystals. The crystals are buried in a similar manner to BD500, but they are buried in the cow's horn during the hot months over Summer. BD501 is applied early morning during the growing season and this spray enhances the photosynthesis of the leaf, and also strengthens the plants against fungal attacks. It is complimentary to the activity of the preparation BD500, which works mostly in the root zone of the plant.

There are other BD preps, BD502-507. These are the compost preps and are made from medicinal herbs. They are humus-like, rich in beneficial bacterial life and minerals. They are added to a compost heap and they radiate influences throughout the compost heap aiding the transformation of compost material into humus.

***“Healthy soil, as attained by organic and biodynamic methods is the prime basis for healthy vines, expressive grapes and quality wines”***



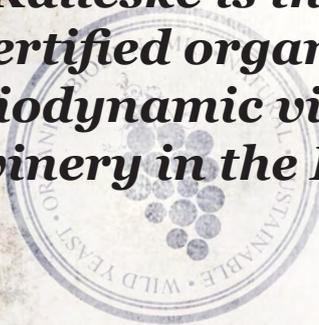


**MORE DETAIL ON BIODYNAMICS**

The BD preps are applied to the vineyard at specific times of the day, year, and growing stage of the plant and are applied in regard to the phase of the moon and other planets. For example, 500 is applied to the soil when the moon is descending or in opposition to Saturn. Applying the BD preparations at specific times is based on the same principles of moon gardening that has been practiced for centuries. Independent research demonstrates a correspondence between the moon's position in the real, or International Astronomical Union Zodiac, and plant growth. The moon cycle controls tidal effects which involve not only large bodies of water, but also the surface tension of liquids, so works on all fluid elements in soil and plants as well. So plants that are rooted in the earth, pump water from the soil into the air and that consist largely of liquid are affected by the moon cycle. The lunar cycle is said to favour above-ground processes when the moon is waxing and light increases, while as the moon is waning, below-ground processes are favoured.

This biodynamic element relating to the rhythmic energies of the Moon and planets is perhaps the most difficult aspect of biodynamics to understand. However, the daily and yearly rhythms of the Sun are a given in our lives, so it should not be a big leap to also accept the influence of the moon and planets. As biodynamic grape growers we widen our observations and rhythmic practices and learn to accept, include and work with these astronomical influences in our farming. It is important to note that this is working with astronomy, the physical stars and planets in the sky (and not astrology). These extra terrestrial influences are in existence and are not dependant on us accepting or believing in them, they are real. By having the willingness to work with the rhythms of the Sun, Moon and planets you can understand the variations in growth patterns and can optimise your farming outcomes.

***“Kalleske is the oldest certified organic / biodynamic vineyard & winery in the Barossa”***



Kalleske Vineyards (Autumn)

3/5/2011



Troy & Tony Kalleske

★★★★★ “Outstanding winery... regularly producing wines of exemplary quality and typicity”.  
5 star rating for the previous 5 years // “One of the Best wineries of the region” (Barossa Valley)  
**James Halliday, Australian Wine Companion, 2013 Edition**

“Kalleske is a model for the future of the Barossa: there is a deep respect for the seven generations of history, but it is combined with a willingness to try new things”  
**Max Allen, The Future Makers 2010**

**Trophy - Biodynamic Wine of the Year - 2011 Clarry's GSM**  
**London International Wine Competition 2012**

Troy Kalleske – **Barossa Winemaker of the Year 2008**  
**Barons of Barossa, February 2008**

Troy Kalleske, named “Australia's Young Gun of Wine”.  
**Young Gun of Wine Awards, Melbourne, Australia, 2007**

**Trophy - 'Best Wine of Show' - 2010 Moppa Shiraz**  
**Shanghai International Wine Challenge 2011**

“The future in wine... top drops and winemaker to watch in 2007... expect big things of the Barossa's Troy Kalleske at Kalleske.”  
**Huon Hooke, Max Allen, PeterForrestal, GourmetTraveller Wine, Feb-Mar 2007**

### **Australia's Top 25 Vineyards**

“The Kalleske vineyard is a ripsnorter... What does get trumpeted is the sheer bright force of the red grapes that come off it, though it's not the Kalleskes who do the trumpeting, it's the wines themselves. That Troy Kalleske has also quickly become known as a winemaking gun hasn't hurt the cause – though the quality of the vineyard here should not be underestimated. Before the Kalleske name became well known in wine-drinking circles, the grapes here had long since found their way into Penfolds' top labels. Taste the wines and taste the fruit quality.”  
**Australian Sommelier Magazine, Autumn 2006**

“One of the Barossa's top growers... in the highly renowned Greenock region. This is clearly an up and coming superstar estate that merits considerable attention.”  
**Robert Parker Jr., The Wine Advocate, October 31 2005**

“The northern Barossa... is prime red wine territory... so it's not surprising to find a number of 'cult' wines come from here, wines like Torbreck, Greenock Creek, Rockford and more recently, Kalleske.”  
**Rob Geddes MW, Australian Wine Selector, Vintage 2005**

**Trophy - 'Best Wine of Show' - 2009 Clarry's GSM**  
**Australia/New Zealand Organic Wine Awards 2010**

“One of the greatest revelations of my Australian tastings this year was Kalleske... turning out magnificently concentrated, full throttle reds that are indigenous to the top echelon of Southern Australian producers. In fact there is nothing like these wines anywhere else in the world. Readers should make every effort to get in on the ground floor as I predict fame and fortune for Kalleske.”  
**Robert Parker Jr., The Wine Advocate, October 2004**

“Most exciting new brand from the Barossa in 20 years – since the arrival of Rockford ... compulsory buying for Barossan red lovers.”  
**Campbell Mattinson, Winefront Monthly, March 2004**

**GRAND Gold Medal/s - 2009 Johann Georg Shiraz, 2009 Eduard Shiraz (only 8 awarded)**  
**Mundus Vini Biofach 2012 International Organic Wine Awards, Germany**

## ELECTRICITY

Benchmark for electricity use in an Australian winery of size 500-1500t crush ranges from 0.75 to 2.0 kWh/L of wine made [GWRDC: Winery Energy Management Project]. Using the low figure of this range, this means an Australian winery crushing 500t of red grapes (doing everything on-site except for bottling) will use 230,000 kWh of electricity per annum.

At \$0.35/kWh this equates to \$80,000.

At Kalleske our electricity bill is \$0.

## WHY?

- » We have a 15kW solar system. This produces about 25,000 kWh of power per year or about a \$9,000 saving. This is enough for us to be self-sufficient with power.
- » Refrigeration is typically the largest consumer of electricity in Australian wineries, accounting for 50-70% of total electricity usage.
- » At Kalleske our cooling bill is virtually \$0.
- » This is because we use evaporative cooling instead of refrigerated cooling.
- » Fact: "Warmer brine temperatures generally lead to more efficient chiller operation"; i.e. it is best (most energy efficient) to have the brine (cooling fluid) as warm as possible to do the cooling job required. Many wineries run unnecessarily cold brine.
- » So, for red ferments that would typically need cooling from 30-35C down to 20-25C, there is no need to have brine at 5, 0, -5 or -10C. Brine or water at 15C will easily do the job.
- » Hence using evaporative cooling via the cooling tower, the water is typically around 12-15C, simply by using the "free" power of evaporation.
- » Often, the cooling fan is not even turned on as the natural breeze passing through the water as it falls is adequate.

- » We also use product heat exchange. Whereby, we may have some fermenters just crushed and after night harvest may only be 10C, whereas others at peak of fermentation will be at 30C, so water will pass through the jacket of the 'hot' fermenter, picking up heat which it exchanges at the 'cold' fermenter (warming the must) which cools the water again to then go back to the 'hot' fermenter; i.e. will somewhat homogenise the temperatures of the hot and cold fermenters so they are both at 20C, with no cooling/heating electricity used.

*(The only negative with an evaporative cooling tower is that it doesn't cool that well during humid weather, hence we have a backup refrigerated chiller that we may use for 1-2 days every year.)*

*(Also, for the small amount of white we do we have a small refrigerated chiller as evaporative cooling tower does not get cool enough for white juice/ferment.)*

Regarding barrel storage and bulk wine tank storage... We have Iron + Insulation + Air Cavity + Iron (double skin insulated). This is adequate to maintain cool cellar temperature and no additional cooling required.



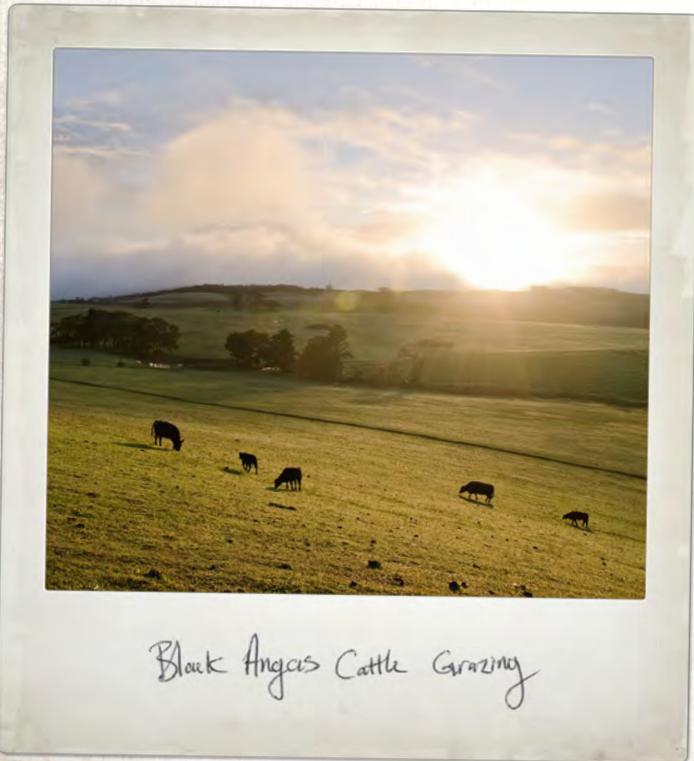
## WATER

Benchmark for water use in an Australian winery without a bottling line is: 1.9L/L of wine made [GWRDC: Case Study Discharge to Sewer].

This means for a 500t crush, the typical non-bottling winery will use 665,000L of water per year.

At Kalleske we typically use 350,000L of water per annum or 1L/L of wine made or only 53% of benchmark figure. And typically this water is entirely sourced on site, with off-site mains water only used in drought situations.

We have a 250,000L rain water tank capturing water from 6 sheds of combined roof area of 2000 m<sup>2</sup>. This means with every inch (25mm) of rain we capture 50,000L of water. So 5 inches (125mm) of rain will fill the tank. (annual average rainfall is 500mm).



## HOW DO WE USE SUCH LITTLE WATER?

- » Use it wisely
- » Use pressure (pressure cleaners) instead of volume.
- » Dry clean (broom and shovel) wherever possible.
- » When emptying must lines, empty into slotted bin to capture berries/solids, hence less washdown/cleanup.
- » Tanks are assessed and only cleaned as required, i.e. not unnecessarily spray-balled.
- » Moved from caustic/citric to cleanskin (peroxyalkaline, effervescing detergent) that doesn't require citric rinse (water only).

