

Moderating impacts on final wine parameters for 'water addition' treated *Vitis vinifera* Shiraz musts with the Accentuated Cut Edges (ACE) vinification approach

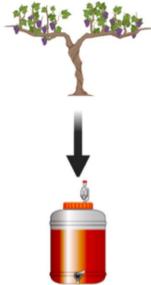
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Wine Making Approaches (Dookie, Goulburn Valley, Victoria)

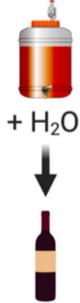
Harvest Shiraz
21 March 2022



Shiraz Grape Must
21 March 2022



Water Addition to Shiraz Must
21 March 2022



Implementing ACE
21 March 2022



Fermentation (on skins)
21- 26 March 2022



AIMS

To identify any changes in the chemical composition and sensory profiles for *Vitis vinifera* Shiraz late harvest wines, whose must were subjected to water addition treatment (15.5 °Be to 13.5 °Be adding 4.07L water to a 50kg ferment) and Accentuated Cut Edges (ACE) vinification approach at three grape skin fragmentation levels, when compared to the 15.5 °Be late harvest wine (control).

MATERIALS

Shiraz Grapes, sourced from Tallis Winery, Dookie, Goulburn Valley, Victoria, March 2022.

METHODOLOGY

Shiraz wine must at a sugar concentration of 15.5 °Be was diluted to 13.5°Be (+ 4.07L water) as well as subject to four different treatments: LOW ACE (10 Sec) , MED ACE (20 Sec), HIGH ACE (40 Sec) and no ACE (Control). Treatments occurred in triplicate.

What Is Accentuated Cut Edges (ACE)?

ACE is the process in which the grape skins are mechanically cut into smaller fragments, where its aim is to assist the extraction of phenolic components from the grape skin of the floating pomace cap in the early stages of fermentation. During early fermentation the extraction of phenolic compounds from the grape skins is greater due to more broken edges achieved through ACE. ACE also can minimize seed damage, therefore limiting extraction of associated bitter compounds. ACE has been shown to have a significant positive impact on the phenolic composition of the final wine (Sparrow et al, 2016a).

Results

For the PhD 2020 winemaking vintage, chemical analysis utilising spectroscopic analysis based on the methods of Somers and Evans (1974) indicated significant statistical chemical properties differences between water addition treated wines from 15.5 °Be to a 13.5 °Be level, when compared to the late harvest control wine at 15.5 °Be for: Colour Density (a.u.), Free Anthocyanins (mg/L), Pigmented Tannin (a.u.), Total phenolics (a.u.), Total pigment (a.u.), and Total tannin (%).

Following the results of this, the research study in 2022 extended to combine water addition treatment with the ACE techniques at 3 ACE levels to address the changes in wine chemical composition observed.

Hypothesis to be tested

ACE can significantly increase wine colour, aroma and tannin in a wine produced using water addition treatment to lower alcohol.

