


SOUTH AFRICAN ASSOCIATION FOR
FOOD SCIENCE & TECHNOLOGY
**CONGRESS
2021**

Welcome to SAAFoST's
24th Biennial International
Virtual Congress

20 - 22 September 2021



Mystery of Delayed Winemaking Strategies on South African White Wine Sensory and Chemical Profiles

Francois van Jaarsveld¹, Valmary van Breda¹, Jessy van Wyk², Francois October¹, Rodney Hart¹

¹ARC Infruitec-Nietvoorbij, Stellenbosch, South Africa. ²CPUT, Bellville, South Africa

Abstract

White wines are commonly fermented during harvest in summer months. However, wines from Sauvignon Blanc grape must be frozen for 4 months and fermented during winter months, reportedly have higher thiol levels, yielding superior tropical character, and are winning several accolades. This then prompted questions and keen interest in understanding the observed differences in aroma profiles and the obtained superior quality of winter wine fermentations, which is the focus of this study. Machine and hand-harvested Sauvignon Blanc grapes from three cellars, representing different winegrowing districts/regions, were divided into different treatments. Treatments included no chilling/freezing (controls), and chilling (-4°C)/freezing (-20°C) of whole berries, macerated grapes, turbid musts, and clear juice for different periods of time, i.e., 0 months (immediate freezing/ chilling) and 4 months, before further processing/ vinification. Small-scale wine production (20 L volumes) was carried out over 15 days. Results, illustrated by means of Principle Component- (PCA) and Discriminant (DA) Analysis, show that, for both ageing periods, treatments such as the stage of winemaking/ production and temperature (chilling or freezing) had an impact on the aroma and taste attributes, and general quality of wines, as well as on wine chemical profiles. Optimal treatments also show promise as winemaking strategies for delaying aging of wines more prone to ageing. In conclusion, delayed winemaking strategies show potential for the improvement of white wine quality. Findings of this study can provide cellars with practical guidelines for the improvement of white wine quality through delayed winemaking strategies. Delayed winemaking strategies can also be used for the production of a new style of Sauvignon blanc with more intense aromas. By applying delayed winemaking strategies, a major advantage will be that winemakers can spread harvest-time activities to less busier times during the year in the cellar (winter), as well as enabling producers to have fresher wines in the marketplace during Christmas time. Year two of this study include the production of small-scale wines using Chenin Blanc as cultivar, subjected to the same treatments; future prospects will possibly also include red grape cultivars.

Biography: Francois van Jaarsveld

Dr van Jaarsveld is a Senior Researcher in the Post-harvest and Agroprocessing Technologies (PHATs) Division at ARC Infruitec-Nietvoorbij in Stellenbosch. Current and previous areas of expertise and research include wine, Brandy, Port and Cap Classique research, Protein Chemistry, Enzymology, and Wastewater Bioremediation, with a number of articles published in the various fields. Dr van Jaarsveld was coordinator of the South African leg of a four-year international project (1 April 2002 to 31 December 2005), "The Establishment of a Databank for Analytical Parameters for Wines from Third World Countries" (G6RD-CT-

2001-00646-WINE-DB), funded by the European Community under the "Competitive and Sustainable Growth" Programme. In November 2006 Dr van Jaarsveld received the SASEV price worth R30000 for best yearly publication in the South African Journal of Enology and Viticulture. Dr. van Jaarsveld have mentored/supervised PhD and MSc students, Post-Doctoral Fellows, WIL students, and NRF and overseas interns.