



31 July 2022

POSTGRADUATE OPPORTUNITY AVAILABLE AT THE SOUTH AFRICAN GRAPE AND WINE RESEARCH INSTITUTE (SAGWRI) FOR 2023

The following project is available for an PhD/MSc-level study from 2023, for a suitable student with a horticulture/botany/viticulture background.

Project Title: Adaptability and resilience of grapevine scions/rootstocks to water stress

Project description:

The current outlook is that the grapevine and wine industries of the world will be strongly affected by climate change impacts. The South African Grape and Wine Industries are important contributors to income for the country and directly and indirectly provide many jobs across different sectors. It is therefore imperative that strategies are developed to ensure that these industries can continue to play their important roles despite potential negative climate change impacts. In South Africa, consistent and more extreme droughts is one of the major changes predicted and grapevine production could be significantly affected, specifically since most vineyards are dependent on irrigation. This leads to an important question: To what extent would it be possible to sustainably produce good quality grapes from our current scion scion-rootstocks when water availability consistently becomes limited due to climate change impacts? From latest research it is known that the scion-rootstocks can adapt to stressful conditions, but whether this will be sufficient in the short to medium term while more long-term solutions are sought, and how to manage the cultivars best towards this acquired resilience are not known. To answer these questions, it is important to (i) evaluate the scion-rootstocks for their ability to adapt to water limitation and their levels of resilience to water stress; (ii) consider irrigation regimes that start with the premise that water availability for irrigation to the current best practices will not always be available; and (iii) implement technologies to more accurately monitor the water status of the soils and plants in vineyards to optimise intelligence-based irrigation practices.

This study, therefore, aims to evaluate and compare the adaptability and resilience of current commercial scion-rootstock combinations to scenarios of (severe) water limitation over the lifetime of the plants using a holistic approach and novel techniques to accurately monitor water availability and water stress. The study forms part of a wine-industry water stress flagship programme funded by Winetech and the Water Research Commission and will make use of an important resource to the study, namely a model, "fit-for-purpose" vineyard that has been established to particularly perform grapevine- water stress research (thus the "fit-for-purpose" identifier).

Contact persons for the project:

Prof M.A. Vivier (mav@sun.ac.za) or Prof Carlos Poblete (cpe@sun.ac.za)

Please send a CV, as well as a cover letter to Prof M.A. Vivier (mav@sun.ac.za) to indicate your interest in this opportunity.

General contacts for SAGWRI:

Prof MA Vivier: Interim Director of SAGWRI

mav@sun.ac.za

Ms Lorette de Villiers: Postgraduate Admin officer

lorette@sun.ac.za