



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 genetics/molecular biology/plant biotechnology background.

Project Title: CRISPR mediated genome -editing for waterwise grapevine

Project description:

Grapevine is typically cultivated in regions with a Mediterranean climate, which are increasingly affected by severe water shortages and droughts due to changes in land use, regulation and/or regional climate change. Water scarcity in these regions lead to reductions in crop yield, quality, and overall productivity. An understanding of the molecular and physiological responses of grapevine to its environment can facilitate sensible genetic strategies to aid in the improvement of grapevine responses to water deficit. Genome editing allows the introduction of beneficial traits to grapevine in a targeted and precise manner.

This project will require a candidate with an interest in a multidisciplinary project and will include the design and construction of CRISPR/Cas9 constructs for genome editing, sequencing and sequence analysis, plant tissue culture (*Agrobacterium*-mediated plant transformations and generation and maintenance of in vitro plants), genotyping and phenotyping (physiological measurements and/or metabolite analysis via analytical chemistry) of transgenic/genome-edited plant populations.

The ultimate aim of the project will be the generation and evaluation of CRISPR/Cas9 edited grapevine populations for their performance under water deficit conditions.

Contact persons for the project:

Prof M. A. Vivier (mav@sun.ac.za) or Dr P. R. Young (pryoung@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

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Ms Lorette de Villiers: Postgraduate Admin officer

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