



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/genetics/viticulture background.

Project Title: New Breeding technologies to increase the clonal diversity of Pinotage

Project description:

The grapevine industries (wine and distillates, table grapes and raisins) contribute significantly to the country's economy and earn important international revenue through exports. Although South Africa is richly diverse in plant species, grapevines are not indigenous. The commercial grapevine cultivars mostly belong to the European grapevine species *Vitis vinifera*. The cultivar profile of the South African wine industry includes mostly international cultivars with Cabernet Sauvignon, Shiraz, Pinotage and Merlot being the four most planted red varieties.

Pinotage is a cross between Pinot noir and Cinsaut and the first commercial release of Pinotage as a single varietal commercial wine occurred in 1961. Pinotage is being promoted as a variety that can compete with other varietals in the world that produce wines of superior quality and is considered the flag-ship red wine of the South African wine industry. Its recent successes on international wine-shows confirm that this cultivar is interesting, promising and worthwhile to invest further in, both from a viticultural and oenological perspective.

Only three clones of Pinotage are commercially available and all three are described with very similar characteristics and it is generally accepted that there is significant scope to increase the clonal diversity of Pinotage. Clones (and sometimes new cultivars) normally arise through natural mutations and there are numerous examples, especially in very old cultivars that were widely grown in diverse conditions. Obvious pronounced differences (i.e. berry colour and different leaf shape) are usually regarded as new cultivars, while more subtle variations in traits (i.e. looser clusters or earlier ripening) are regarded as clones.

The objective of the study is to use induced mutations to generate more diverse Pinotage clones. One of the methods available to induce genetic mutations is gamma irradiance where tissues are subjected to sub-lethal doses of radiation. This method has been used extensively on a wide variety of crop species and is regarded as safe and products that are generated with this technique is not considered harmful.

The three clones of Pinotage were previously subjected to this gamma irradiation process. A substantial number of plants were generated and are currently planted in a field trial to evaluate the full impact/success of the irradiance to induce variation. The successful applying student will perform a number of morphometric, viticultural, and oenological analyses to identify novel clones that would then be subjected to deeper analyses to identify the basis of the mutations.

Contact persons for the project:

Prof M.A. Vivier (mav@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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