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South African Grape and Wine Research Institute  
Suid-Afrikaanse Wingerd-en-Wyn  
Navorsingsinstituut

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

The following project is available for a MSc/PhD-level study from 2022, for a suitable student with microbiology background.

**Project Title:** Extracting valuable compounds from wine yeasts to improve sustainability of the wine industry

**Project description:** Beyond the conversion of grape sugars to alcohol, yeasts produce thousands of aroma compounds as well as other molecules (e.g. extracellular hydrolytic enzymes, polysaccharides) indirectly contributing to the wine's bouquet, mouthfeel and stability. The contributions of yeasts to these properties are in most cases ill-characterised. In winemaking, yeast cell wall mannoproteins (i.e. extracellular proteins to which long chains of polysaccharides are attached) may contribute positively to wine mouthfeel and to the finesse of bubbles in sparkling wines. Those of the main wine yeast *Saccharomyces cerevisiae* have been partially characterised, but a wide variety of yeast species occur in grape juice and the so-called non-*Saccharomyces* yeasts are likely to have a different cell wall composition and/or structure than *S. cerevisiae* thereby resulting in different mannoproteins/polysaccharides being liberated into the wine, subsequently conferring different properties that could be exploited by winemakers to reduce external inputs and enhance wine quality. The aim of this project is therefore to determine the potential of mannoprotein fractions originating from various wine yeast species or that of these yeasts themselves to improve specific wine properties, including mouthfeel and stability, as microbiological alternatives to external fining agents, such as bentonite and animal-derived proteins.

**Contact person for the project:** Prof Benoit Divol, [divol@sun.ac.za](mailto:divol@sun.ac.za)

### General contacts for SAGWRI:

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