

Complexity, concentration and colour:



The Department of Viticulture and Oenology (DVO) and Institute for Wine Biotechnology (IWBT) strive to be a nationally and internationally competitive centre of excellence in wine sciences that, by means of visionary training and innovative research, provides the South African grapevine and wine industry with well-trained human resources; cutting-edge technology; expert knowledge; and environmentally friendly products and practices.

DVO: www.sun.ac.za/viti_oenol

IWBT: www.sun.ac.za/wine_biotechnology

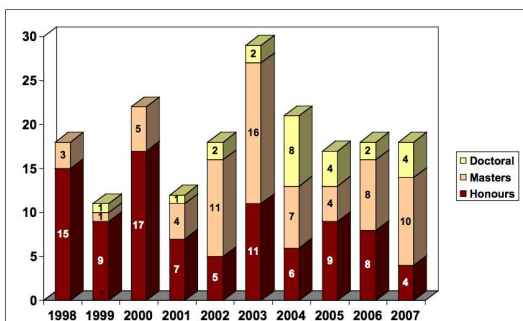
Strengthening the South African wine industry

The importance of the wine industry to the South African economy is well established. In the Western Cape alone, the wine industry contributes around 8% of gross geographic product and creates employment for more than 250 000 people. In particular, the industry is recognized for its potential to act as a multiplier of economic benefits, an example of which is the wine tourism industry that has developed in the past years. In addition, the wine industry plays an important ambassadorial role for "brand South Africa".

The future sustainability of the wine industry is therefore of significant importance to the broader SA economy. As a rural industry that covers all aspects from primary agricultural production to high-tech agro-processing and sophisticated marketing, the industry naturally stretches the divide between first and second economy. The wine industry therefore offers unique opportunities to build bridges between rural populations and the first economy. The skills needs of the SA wine industry are necessarily diverse, with interventions required at the different industry levels.

Stellenbosch University is *the* address for wine sciences and wine education in South Africa

We are the only university in Africa offering students the opportunity to obtain degrees in Viticulture, Oenology and Wine Biotechnology. In the last 10 years, the DVO/IWBT has delivered more than 500 graduates with basic viticulture/oenology degrees, as well as 92 honours, 72 masters and 25 doctoral students. Many of the postgraduate degrees were awarded in Wine and Grapevine Biotechnology by the IWBT. This postgraduate Institute was established in 1995 through a pioneering partnership between the South African Wine Industry, Stellenbosch University and Government.



Postgraduate graduandi in Viticulture, Oenology, and Wine and Grapevine Biotechnology from the DVO-IWBT.

Wine culture is changing...

The wine industry and our student profiles are changing, with particular increases in black and female students. The results of a recent survey by Bindon and Lebowitz, Stellenbosch University, indicate that black students in the field are motivated by independence, personal vision, creativity and experimentation. The students may have had to overcome social and family prejudices, and are strongly motivated and driven by curiosity. They see themselves as entrepreneurs, paving the way forward into unknown territory full of opportunity. But this excitement comes at a price - language and social adjustment have been identified as challenges, and our environment has responded by developing internal support mechanisms to bridge this gap.

We encourage our students to drive the change in wine culture that will enhance the image of wine in the broader South African communities. One of our initiatives in this regard is the Ifumuka project, driven by students and involving the mentoring of juniors by seniors. Activities include tastings and events, visits to wineries and support in learning. As Khayelihle Ngubane of Ifumuka says, "We see our mission as supporting students who previously may not have been exposed to wine, showing them that wine deserves to be enjoyed and appreciated, and helping them in any way they need."



Members from the dynamic Ifumuka group (from left to right): Khayelihle Ngubane, Bongani Bikani en Philani Shongwe.

We attract, educate and support the next generation of wine industry leaders

It remains difficult to present agriculture as an attractive career to black students. The SA Wine Industry - individual cellars, co-operatives, estate owners and wine businesses - is offering bursaries and mentoring opportunities for black students. There are currently more of these opportunities than there are black students in the system!

We tackle the challenge of transforming the industry with enthusiasm and believe that successful role-models are arguably the most effective way to illustrate career opportunities. In this regard we have trained 50 black undergraduate and postgraduate students over the last 10 years, and have developed a young crop of graduates who have become prominent role-players in industry and academia.

Elements of a great wine ... and our vision for wine sciences



Tariro Masayiti
(BScAgric in Viticulture and Oenology, 2002)
is currently wine maker at Nederburg, one of
the most iconic wine estates in SA.

Erna Witbooi
(MScAgric in Viticulture, 2008) currently
enrolled for a PhD in Viticulture, pursues an
academic career and is a Junior Lecturer in
the DVO.



Margaret Fundira
(MSc in Wine Biotechnology, 2001) started as
a Sensory Specialist at KWV and is since 2004
a Technical Consultant at Anchor
Biotechnology.



We learn with our communities

We, as an academic environment, focus on providing the industry with people of high-level technical capabilities in viticulture, oenology and product development. However, our teaching and training is also directed at equipping graduates with life skills that are essential for a successful career - the ability to think critically, to work independently, to present public talks or to discuss wine. It is therefore no surprise that many of our graduates today hold senior managerial positions. The postgraduate biotechnology program provides students that have acquired a general scientific or engineering background, but who are without any particular knowledge of wine sciences, with an opportunity to enter this exciting industry without having to attend undergraduate courses. This program has been particularly successful in attracting black students.

Our environment is also committed to assisting less privileged communities to achieve their dreams. In this regard, we support community programmes such as the Elgin Learning Foundation (ELF) by "teaching the teachers". The role of ELF is community upliftment, with a particular interest in developing rural agriculture.



Wine-making at Elgin Learning Foundation.

A leading global Wine Research programme

Our ambitious research vision is to holistically investigate the entire wine-making process by using the latest cutting-edge scientific tools available for this purpose. More specifically, we aim at understanding each individual component that impacts on the quality of the final product by exploring the complex interactions between the environment and the various organisms, grapevine, yeast and bacteria, involved in the conversion of grape juice to wine. The keywords that define our program are "omics" (the holistic analysis of the different layers of biological information transfer), metrics (the statistical and multivariate data analysis tools required for the analysis of large data sets) and model systems (model vineyards, model musts, model organisms). This world-leading research program is supported by our extensive network of international collaborators that provides access to scientific tools and information not available in SA.

DVO: www.sun.ac.za/viti_oenol/research

IWBT: www.sun.ac.za/wine_biotechnology/research

Finding markets for our technologies

We are actively pursuing opportunities for our innovative technologies through a dedicated spin-off company. Driven by appropriately skilled staff, the company establishes partnerships that match our novel technologies with current and future market needs. The company capitalizes on the research and development expertise as well as intellectual property and know-how available at the IWBT and DVO, and combines this with active business development to establish a successful, University-based spin-off company, the first of its kind in this sector. The company generates employment for research scientists to undertake technology development, thereby building specialist innovation skills, and contributing toward economic growth and enhancing competitiveness in the industry.

For more information on this initiative, visit the SunBio page on the IWBT web site at www.sun.ac.za/wine_biotechnology.

SunBio lab



TCA lab



Dedicated staff have been employed to undertake product development, routine analysis and business development to commercialize our technologies.