

RESUMÉ

Prof Maret du Toit (*Associate Professor in Oenology*)

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Vision statement: The South African wine industry needs to be in the fore-front with research to ensure high wine quality. Wine quality is dependent on the types of microbes involved during the winemaking process. My research is focused on lactic acid bacteria and their influence on wine quality (wine aroma, unwanted compounds, biopreservation). With the latest omics-technologies developed for LAB, I would like to be one of the world-leaders in the generation of fundamental knowledge on wine LAB. This will lead to a better understanding of malolactic fermentation and potential generation of new MLF starter cultures. The knowledge generated will be an integral part of teaching and ensuring that the students can use this knowledge to implement the latest technologies in the industry. The other passion of mine is microbial wine spoilage and the control of the microbes. The industry is in dire need of a wine microbiology focused service laboratory and through SunBio I would like to life-out this dream of assisting the winemakers with spoilage problems.



PERSONAL INFORMATION

40 years
Single

QUALIFICATIONS

- BSc (Microbiology and Genetics), Stellenbosch University, 1988.
- HonsBSc (Microbiology), Stellenbosch University, 1989.
- MSc (Microbiology), *cum laude*, Stellenbosch University, 1992. "Taxonomy of the subgenera *Thermobacterium* and *Streptobacterium* of the genus *Lactobacillus*".
- PhD (Microbiology), Stellenbosch University, 1998. "Isolation, identification and characterisation of lactic acid bacteria with potential probiotic characteristics".

NRF RATING

- Y2, 2003.

WORKING EXPERIENCE

Academic experience: ca. 16 years

- Research Assistant, Department of Microbiology, Stellenbosch University, 1991.
- Temporary Lecturer, Department of Microbiology, SU, Jan – Jun 1992.
- Scientist, Federal Research Centre for Nutrition Institute of Hygiene and Toxicology, Karlsruhe, Germany, Sep – Dec 1995.
- Research Assistant, Department of Microbiology, SU, Feb – Jul 1996.
- Temporary Lecturer, Department of Microbiology, SU, Mar – Dec 1996.
- Research Assistant, Department of Microbiology, SU, Feb – Dec 1997.
- Postdoctoral Fellow, Institute for Wine Biotechnology, SU, Apr 1998 – Mar 2001.
- Temporary Research Assistant, Department of Microbiology, SU, Feb – Jun 1999.
- Temporary Lecturer, Department of Microbiology, SU, Jul – Dec 1998, Feb – Jun 2000.
- Senior Lecturer, Department of Viticulture and Oenology, SU, 2001 - 2007.
- Associate Professor, Department of Viticulture and Oenology, SU, since Nov 2007.
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TRAINING COURSES ATTENDED

- Workshop on the use of the statistical program SAS version 6.08, Bundesforschungsanstalt für Ernährung (BFE) Stuttgart, Germany, May 1994.
- The workshop on fingerprinting techniques for classification and identification of bacteria, University of Gent Belgium, Belgium, Sep 1994.
- Workshop on the ELISA technique BFE Karlsruhe, Germany, Sep 1995.
- Workshop on "Electrodriven Separation Methods" at the Department of Chemistry, Stellenbosch University, Jan 1999.
- Seminar on Malolactic Fermentation Starter Cultures, organized by Christian Hansen Denmark, Cape Town, Apr 2000.
- Gentechnik in Ernährung, Landwirtschaft, Wein- und Gartenbau - Stand und Perspektiven (Einladung des Hessischen Ministeriums für Umwelt, Landwirtschaft und Forsten), Germany, Oct 2000.
- Third Seminar by the "Deutsche Gesellschaft für Hygiene und Mikrobiologie" on Food Microbiology and Hygiene at the Bundesforschungsanstalt für Ernährung, Karlsruhe, Germany, Nov 2000.
- Orientation Course for New Lecturing Staff, SOL, Stellenbosch University, 2002.
- WebVista, SU, 2005.

AWARDS AND BURSARIES/SCHOLARSHIPS

- Foundation for Research Development (FRD) bursary, 1989 – 1991.
- Stellenbosch 2000 bursary, 1992.
- FRD bursary, 1993 - 1994.
- Harry Crossley stipendium, 1993 - 1994.
- Deutsche Akademische Austausch Dienst (DAAD) Scholarship, 1993 - 1994.
- FRD bursary, 1995.
- Harry Crossley stipendium, 1995.
- Harry Crossley stipendium, 1996.
- Stellenbosch 2000 bursary, 1996
- Harry Crossley stipendium, 1997.
- National Research Foundation (NRF) bursary, 1999.
- Stellenbosch 2000 bursary, 1999.
- National Research Foundation bursary, 2000.
- Stellenbosch 2000 bursary, 2000.

TEACHING

Undergraduate teaching courses

- Introductory microbiology
- Wine microbiology, especially malolactic fermentation and microbial spoilage
- Yeast biochemistry and the production of flavour compounds

Postgraduate teaching courses

- Food microbiology
- Molecular biology techniques
- Biotechnology of lactic acid bacteria
- Advanced malolactic fermentation

Postgraduate supervision

- Graduates: 20
 - Supervisor for D-degrees 1
 - Co-supervisor for D-degrees 1
 - Supervisor for M-degrees 13
 - Co-supervisor for M-degrees 5
- Registered students: 10
 - Supervisor for D-students 2
 - Co-supervisor for D-students 2
 - Supervisor for M-students 3
 - Co-supervisor for M-students 3

RESEARCH

Research programme

- Established research programme with the focus on lactic acid bacteria, malolactic fermentation and microbial spoilage, and with 7 running projects for the wine industry.
- Part of Wine Science Research Niche Area of the NRF.

Research collaborators

- NRF-Germany, Bundesforschungsanstalt für Ernährung, Karlsruhe, Germany (Prof Holzapfel). Bilateral agreement, 2002 - 2004.
- Bordeaux University (Prof A. Lonvaud). Student exchange, since 2005.
- Spanish collaborative agreement - complementary Action MEC, AGL2004-0394-E (Dr Morena-Arribas). Dec 2005 – Nov 2007.
- Dept. of Food Science, SU (Prof Witthuhn). Shared research project and co-supervision of M students.

Research grants

- Establishment grant from the University of Stellenbosch, 2002.
- Stipend for Promising Young Scientist, Stellenbosch University, 2003.
- NRF Thuthuka, 2002-2003.
- Research grants for projects funded by Winetech, and THRIP, 1998 – 2007.
- Research grants for industry projects funded by Lallemand Inc., Thales, Christian Hansen/Lake International, Agrifutur, Pinotage Association.
- Research grant from NRF Research Niche Area (RNA) on Wine Science, 2006.

Research outputs (since 1991)

- Papers in refereed scientific journals 25
- Chapters in books 1
- Popular scientific articles 11
- Published conference proceedings 1
- Abstracts of papers at conferences .. 117
 - international 81
 - national 36

- Invited lectures at research seminars25
 - international 3
 - national 22

SERVICES

Managerial services for DVO and IWBT management teams

- Member, DVO and IWBT Management Committees, since 2004.
- Principal Investigator in SunBio, a pre-startup biotechnology company of the IWBT, since 2005.
- Chair, DVO/IWBT Training Committee Meetings, since 2006.
- Undergraduate coordinator for Viticulture and Oenology.
- Postgraduate coordinator for Grapevine and Wine Biotechnology.
- Project leader of LAB biotechnology research group.
- Supervisor for 1 technical staff member.

Membership of SU's committees/boards

- Member, Faculty Board for AgriSciences, since 2001.
- Member, Editorial Board of the Faculty of AgriSciences year book, since 2002.

Membership of professional societies and committees

- Member, South African Society of Microbiology, since 1990.
- Member, Winetech Industry Committee for Biotechnology and Technology transfer, since 2004.
- Member, BOWWUS (association for Viticulture and Oenology alumni), since 2003.
- Member, Organising committee, Vth International Terroir and Zoning Symposium, 2004.
- Member, Organising committee, International Conference on Health and Wine, 2005.
- Member, Executive Committee, South African Society for Enology and Viticulture, since 2000, President, since 2006.
- Member, South African Association of Food Science and Technology, since 2005.
- Research coordinator, Pinotage Association Executive Committee, since 2006.
- Member, Organising committee, 15th Meeting of the International Council for the Study of Virus and Virus-like Diseases of the Grapevine, 2006.
- Chair of Organising committee, 3rd International Enology & Viticulture Conference, 2006.

Other professional services

- Internal examiner, 7 M-theses, Stellenbosch University.
- External examiner, 1 dissertations from other an international university.
- Regular reviewer for the following international journals, since 2005: *American Journal for Enology and Viticulture*, *Journal of Food Science*, *International Journal of Food Science and Technology*, *Journal of Agricultural and Food Chemistry*, *Journal of Applied Microbiology*, *International Journal of Food Microbiology*, and *FEMS Yeast Research*.
- Reviewer for research proposals for the National Research Foudation (NRF), continuous.
- Member, Editorial Board of the *South African Journal for Enology and Viticulture*, which is published by SASEV, specifically for Microbiology articles.

Presenter of short courses and lectures at research workshops

- Co-presenter, Seminar on Wine bacteria: Winemakers friend or enemy? Department of Viticulture and Oenology, Stellenbosch, 2001.
- Course presenter, Wine making techniques, Elgin Learning Foundation as part of community interaction project, 2005.
- Presenter on LAB Biotechnology at WINETECH/VINPRO road shows in 2006.

Updated: 2007 Nov