



Curriculum Vitae
Marena Manley

Professor
Department of Food Science
Stellenbosch University
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Curriculum Vitae - Marena Manley

Academic Qualifications

University Education

→ October 1995 PhD (Near Infrared Spectroscopy), University of Plymouth, UK
PhD Dissertation

Wheat hardness by near infrared spectroscopy: new insights

Promoters: Prof AEJ McGill (UK); Dr BG Osborne (UK)

→ April 1990 MSc Agric (Food Science), University of Pretoria

MSc Agric (Food Science) Thesis

The prediction of breadmaking quality of South African wheat cultivars by SDS-PAGE analysis of HMW glutenin subunits

Study leaders: Prof AEJ McGill (SA); Dr PG Randall (SA)

→ November 1987 BSc Agric (Honours)(Food Science), University of Pretoria

BSc Agric (Hons)(Food Science) Project

Determination of wheat germ in the flour streams of two commercial flour mills

Study leaders: Prof AEJ McGill (SA); Dr PG Randall (SA)

→ December 1984 BSc in Food Science, Stellenbosch University

School Education

December 1979

Subjects passed

Matric, Prieska High School, Prieska

Afrikaans first Language (HG), English second Language (HG), German (HG), Biology (HG), Science (HG), Mathematics (HG)

Career History

March 2010-present

Professor, Department of Food Science, AgriSciences, Stellenbosch University

January 1999-February 2010

Senior Lecturer, Department of Food Science, AgriSciences, Stellenbosch University

April 1997-Des 1998

Lecturer, Department of Food Science, AgriSciences, Stellenbosch University

August 1995-March 1997

Chemometrics Development Engineer, Foss Electric Development (UK) Ltd. (FE-DVT), York, UK

October 1992-July 1995

Full-time PhD student, University of Plymouth, Seale-Hayne Faculty, Department of Agriculture and Food Studies, Newton Abbot, UK

January 1990-September 1992

Senior Technical Officer, Wheat Board, Pretoria

April 1988-December 1989

Technical Officer, Wheat Board, Pretoria and part-time MSc Agric (Food Science) student, University of Pretoria, Pretoria

December 1987-March 1988

Assistant Researcher, Small-Grain Centre, Bethlehem

February 1987-November 1987

Full-time BSc Agric (Hons)(Food Science) student, University of Pretoria, Pretoria (unpaid leave)

February 1985-March 1988

Research Technician, Small-Grain Centre, Bethlehem.

Professional and Scientific Committees

2016-present: Past-Chair: Cereal Science Technology – South Africa (CST-SA)

2013-2015: Chair-elect: International Council of Near Infrared Spectroscopy (ICNIRS)

2013-2015: Chair: Cereal Science Technology – South Africa (CST-SA)

- 2012-present:** Committee Member: South African Spectroscopy Society (SASS)
- 2012-present:** Editorial Board, Acta Alimentaria: An International Journal of Food Science, Akadémiai Kiadó, Hungary.
- 2012-2015:** Member of the Eastern Analytical Symposium (EAS, New Jersey, USA) Near Infrared Spectroscopy Award Jury
- 2012-present:** Chair: Committee for Evaluation of Wheat Breeding Lines, South Africa
- 2011-2014:** Associate Editor, Journal of the Science of Food and Agriculture, Wiley, UK.
- 2011-2014:** Associate Editor, Journal of Plant and Soil, South Africa.
- 2011- 2012:** Conference Chair: Afrodata 2012: Second African-European Conference on Chemometrics, 19-23 November 2012, Stellenbosch, South Africa
- 2011- 2012:** Scientific Committee, Afrodata 2012: Second African-European Conference on Chemometrics, 19-23 November 2012, Stellenbosch, South Africa
- 2009-2011:** Conference and Scientific Committee Chair: NIR 2011, 15th International Conference on Near Infrared Spectroscopy (15th ICNIRS), Cape Town, South Africa, 13-20 May 2011
- 2010:** Scientific Committee: Afrodata 2010, First African-European Conference on Chemometrics, Data Modelling in Biological Sciences and Industrial Processing, Rabat, Morocco, 20-26 September 2010
- 2010:** Scientific Committee (Chair sub-committee on Food Chemistry and Analysis): 15th World Congress of Food Science and Technology, Cape Town, South Africa, 22-26 August 2010
- 2009:** Scientific Committee: CST-SA – ICC International Grains Symposium, Quality and Safety of Grain Crops and Foods, 3-5 February 2010, Pretoria.
- 2007-2013:** Member of Jury: Büchi Young Scientist NIR Award, awarded by Büchi Labortechnik AG, Flawil Switzerland
- 2007-2013:** Judge: Institute of Packaging South Africa (IPSA) Student Gold Pack Award
- 2007-2009:** Scientific Committee: 14th International Conference on Near Infrared Spectroscopy, Bangkok, Thailand, 11-17 November 2009
- 2005-2013:** Honorary Secretary: International Council of Near Infrared Spectroscopy (ICNIRS)
- 2005-2013:** Web correspondent: International Council of Near Infrared Spectroscopy (ICNIRS)
- 2004-2009:** Editor-Africa: The NIR Spectrum, Newsletter of the Council of Near infrared Spectroscopy (CNIRS, USA)
- 2003-2015:** Editorial advisory Board: Journal of NIR Spectroscopy (JNIRS)
- 2001-2005:** International Council of Near Infrared Spectroscopy (ICNIRS) Chairman's Advisory Committee

Awards

1. **2015:** Rector's Award for General Performance, Stellenbosch University.
2. **2014:** South African Academy of Science and Arts, Medal of Honour of the Faculty of Natural Sciences and Technology.
3. **2014:** Rector's Award for General Performance, Stellenbosch University.
4. **2010:** Cereal Science Technology-SA (CST-SA) Prize for Sustained Excellence in Cereal Science and Technology Research and Development.
5. **2010:** Rector's Award for Research Excellence, Stellenbosch University.
6. **2010:** Best poster award (1st prize for best student poster): Near infrared hyperspectral imaging for evaluation of endosperm texture of white maize hybrids by Williams PJ, Manley M & Geladi P. CST-SA – ICC International Grains Symposium, Quality and Safety of Grain Crops and Foods, February 2010, Pretoria.
7. **2005:** Best poster award (Ginsberg Award): Use of NIR in quality control of green rooibos tea by Botha M, Manley M & Joubert E. 18th Biennial International SAAFoST Congress, September 2005, Stellenbosch.

8. **2004:** Best poster award: Chemometrics can improve your calibrations: glycerol in wine as model system by Nieuwoudt HH, Prior BA, Pretorius IS, Manley M & Bauer FF. 28th Viticulture and Enology Congress, November 2004, Somerset West.
9. **2003:** Bruker Optics poster award for the Most Innovative Application of NIR Technology: classification of three-year old, unblended South African brandy with NIRS by Manley M, De Bruyn N & Downey, G. 11th International Conference on Near Infrared Spectroscopy (NIR 2003), April 2003, Cordoba, Spain.

Courses, Workshops and Conferences attended

International

1. **2013:** Multiway Analysis (presented by Rasmus Bro, Department of Food Science, Faculty of Life Sciences, University of Copenhagen) (presented at Department of Chemistry, University of Modena, Italy)
2. **2013:** Introduction to Multivariate Image Analysis (MIA) (presented by Barry M Wise, Eigenvector Research, Inc. USA) (pre-conference course – 16th ICNIRS Conference; June 2013)
3. **2012:** Multivariate classification methods (Afrodata 2012, Stellenbosch, South Africa (presented by Beata Walczak, University of Silesia, Katowice, Poland and Federico Marini, University of Rome “La Sapienza”, Rome, Italy) (pre-conference course; November 2012)
4. **2010:** Spectroscopy for Real Applications, 14th ANISG Conference, Adelaide, South Australia (presented by Woody Barton and Jim de Haseth) (pre-conference course)
5. **2008:** Chemical Imaging, IDRC 2008, Chambersburg, USA (presented by Curtis Marcott) (pre-conference course)
6. **2007:** Introduction to NIR Chemical Imaging Analysis, Vaasa, Finland (presented by Prof Paul Geladi and James Burger) (pre-conference course)
7. **2005:** NIR Classification and Discrimination Chemometric Techniques, Auckland, New Zealand (presented by Prof Tom Fearn) (pre-conference course)
8. **2004:** Büchi Software Workshop, Büchi Labortechnik AG, Flawil, Switzerland (invited)
9. **2003:** Büchi Software Workshop, Büchi Labortechnik AG, Flawil, Switzerland (invited)
10. **2002:** 7th International Conference on Public Communication of Science and Technology, Cape Town
11. **1998:** FT-NIR Training, Perkin Elmer, Beaconsfield, UK
12. **1996:** MS Excel Version 5 Advanced Course, Phoenix Software, York, UK; MS Excel Version 5
13. **1996:** Introduction to Chemometrics Course, Phoenix Software, York, UK; Genstat for Windows Version 5.3.2
14. **1996:** Introductory Chemometrics Course, IACR-Rothhamsted, Hertfordshire, UK
15. **1994:** Multivariate Statistics, Chambersburg, PA, USA (pre-conference course)
16. **1993:** Quantitative Analysis, University of Plymouth, Newton Abbot, UK

National

18. **2014:** NIR spectroscopy Course (presented by dr Pierre Dardenne and dr Juan-Antonia Fernandez Pierna (Walloon Agricultural Research Centre, Gembloux, Belgium) at Stellenbosch University, 16th to 20th September), Stellenbosch
19. **2009:** 15th Annual Creativity Conference, Bela-Bela.
20. **2009:** Workshop on NIR Hyperspectral Imaging and Data Analysis (presented by Prof Paul Geladi, Swedish University of Agricultural Sciences, Umeå, Sweden and Dr David Nilsson, UmBio AB, Umeå, Sweden), Stellenbosch
21. **2008:** Experimental Design Workshop (presented by Prof Paul Geladi, Swedish University of Agricultural Sciences, Umeå, Sweden), Stellenbosch
22. **2008:** IIR's Excellence in Food Safety and Quality Assurance Conference, Johannesburg
23. **2007:** NIR Spectroscopy User's Workshop (presented by Dr Phil Williams, Canada), Stellenbosch
24. **2007:** MATLAB, PLS_Toolbox and SOLO workshop (presented by Prof Paul Geladi, Sweden and Tom Lillhonga, Finland), Stellenbosch

25. **2007:** Pastry Technology Course, Cape Town (Presented by CCFRA, Campden, UK)
26. **2007:** HEQC: Accreditation of New Programmes: Evaluator Preparation Workshop: Food Technology, Boksburg
27. **2006:** NIR Spectroscopy User's Workshop (presented by Dr Phil Williams, Canada), Stellenbosch
28. **2004:** Büchi NIRCal 4.21 Training Workshop (presented by Eszter Trenka, Büchi Labortechnik AG, Flawil, Switzerland), Stellenbosch
29. **2003:** Workshop in Innovation and Team Skills, Cape Town; Büchi NIRCal 4.20 Training (presented by Eszter Trenka, Büchi Labortechnik AG, Flawil, Switzerland), Johannesburg
30. **2002:** Premier Technology, Foss NIR Workshop, Cape Town
31. **1999:** Food-Processing Partnership Initiative hosted by the Industrial Development and Marketing Division of the Department of Economic Affairs, Agriculture and Tourism (PACW), Kirstenbosch, Cape Town
32. **1997:** ISO 9000 Course, Cape Town
33. **1997:** Alveograph Workshop, LabWorld, Paarl
34. **1997:** Communication Skills Workshop, Foundation of Research Development (FRD), Cape Town
35. **1992:** Junior Management, Wheat Board, Pretoria
36. **1988:** HPLC, University of Pretoria, Pretoria

Stellenbosch University In-House Courses and Workshops

37. **2013:** Mentor training Workshop (follow-up)
38. **2012:** Interviewing skills Workshop
39. **2012:** Mentor training Workshop
40. **2011:** Employment Law Workshop (presented by Randall van Voore & Ebrahiem Abrahams, Bowman Gilfillan Attorneys)
41. **2009:** Workshop on Document Design (presented by Elmarie Constandius), Language Centre
42. **2006:** Web-CT Training, SOL
43. **2002:** Web-CT Mini-Conference, Uni-Ed
44. **2002:** Assessment in Educational Context, Uni-Ed
45. **2002:** Writing of learning outcomes, Uni-Ed
46. **2002:** Seminar on Programme Development, Uni-Ed
47. **2002:** Introduction to writing skills of students, Writing Centre
48. **2002:** Web-CT Training, Uni-Ed
49. **2001:** Certificate in Dutch reading and listening skills, Stellenbosch
50. **2001:** Scientific Writing Skills, Writing Centre
51. **2001:** Writing of Module Frameworks and Study Guides, Uni-Ed
52. **2001:** Web-CT Training Course, Uni-Ed
53. **2001:** PowerPoint Training, Uni-Ed
54. **1999:** Supervising Postgraduate students, Uni-Ed
55. **1998:** Orientation Seminar for New Lecturers, Uni-Ed
56. **1998:** Interactive Learning Workshop, Uni-Ed
57. **1998:** People Skills, Human Resources
58. **1997:** PowerPoint Presentation Development, IT

Professional Academic Experience

Curriculum development and teaching at Department of Food Science

- 2014-present** Food Packaging (4th year), Cereal Science (3rd year),
- 2006-2014:** Introduction to Food Science (1st year)
- 2001-2014:** Food Packaging (4th year), Cereal Science (3rd year), Quality and Food Safety Management Systems (4th year)
- 2001-2002:** Statistical Process Control (4th year)
- 1997-2000:** Food Analysis; Advanced Food Analysis (4th year)

Research Focus and Expertise

Between 1985 and 1992 my research focuses mainly on development and application of various methods to predict wheat quality, i.e. analytical, rheological and SDS-PAGE electrophoresis. Due to lack of near infrared (NIR) spectroscopy expertise in South Africa and the extensive application possibilities of this technique, I spend three years at the University of Plymouth (PhD studies) in the UK and 18 months at Foss Electric Development (York, UK) as chemometrics development engineer to further my knowledge and expertise in this field.

Since 1992, my research focuses mainly on various applications of NIR spectroscopy in areas of agriculture, food, wine, brandy and indigenous plants. I train postgraduate students and give them the opportunity to gain experience in various NIR research applications using filter instruments, monochromators, Fourier transform interferometers as well as diode array spectrophotometers. This is made possible due to my collaboration with the main NIR equipment suppliers, i.e. Perkin Elmer, Rhine Rhur (Foss), LabWorld (Perten) and Labotec (Büchi) in addition to the eighteen month period spend at Foss Electric Development. Recently collaborations extended to Buchi Labortechnik AG, Flawil Switzerland as well as Bruker (SA).

I have extensive experience in the use of chemometrics techniques and have working knowledge of various chemometrics software packages. Different chemometrics techniques have been investigated on a regular basis in collaboration with Prof Paul Geladi (Swedish University of Agricultural Sciences (SLU), Umeå, Sweden). I collaborated on a regular basis with international NIR researchers and experts, i.e. Dr Phil Williams (Canada), Prof Gerald Downey (Ireland), Prof Brian Osborne (Australia), Prof Tom Fearn (UK) and Dr Hartwig Schulz (Germany). In 2006 I extended my NIR research applications to also include the application of a cutting-edge technique, i.e. NIR hyperspectral imaging and hyperspectral image analysis in collaboration with Prof Paul Geladi, SLU. Since 2011 I also investigate X-ray microcomputed technology as a novel analysis technique for food and agricultural applications in collaboration with Dr Anton du Plessis (Central Analytical Facility, Stellenbosch University). As my original research interest was cereal science I have now extended my research programme to also include various cereal science research projects.

Initiation and Application of New Fields of Research, Methods and Techniques

I initiated and implemented research using and applying near infrared (NIR) spectroscopy at the Department of Food Science. This was the first time that NIR research has been performed at Stellenbosch University and the NIR research laboratory at the Department of Food Science is still one of the main laboratories where NIR research is performed at the University. I also initiated the application of a cutting-edge technique, i.e. NIR hyperspectral imaging. This research, resulted in Stellenbosch University being the first institute in South Africa using this novel application in the fields of food and agriculture. Subsequently I played a key role in a joint application together with Tshwane University of Technology in obtaining funding from the NRF to obtain a NIR hyperspectral imaging system. In 2011 we started using X-ray micro computed tomography to investigate microstructure of maize kernels. Endosperm texture, effect of pregermination and that of fungal infection is being investigated. This work is done in collaboration with Dr A du Plessis (CAF, SU). In collaboration with Dr Anton du Plessis we recently obtained funding from the NRF to obtain a submicron (nano) X-ray micro-computed tomography instrument.

- *NIR spectroscopy applications and areas of research completed and currently being performed (collaborators indicated in brackets)*
1. Moisture, protein and hardness of whole grain and ground wheat (Prof Brian Osborne, BRI, Australia)
 2. Analytical parameters of wine, rebate and base wines (Dr EEH Wolf, Distell)
 3. Classification of brandy styles (Dr Gerry Downey, Teagasc, Ireland; Prof MG Lambrecht, Distell);
 4. Oxidation stability of olive oil, macadamia nut oil and mango kernel butter
 5. Determination of harpagoside content of devil's claw (Prof E Joubert, ARC Infruitec-Nietvoorbij; Prof Hartwig Schulz, Germany)
 6. Predicting storage potential of whole fresh clingstone peaches and apricots (Prof E Joubert, ARC Infruitec-Nietvoorbij)

7. Identification of wine fermentation yeasts (Prof Marius Lambrecht, Distell)
8. Quality control of green rooibos and honeybush (Prof E Joubert, ARC Infruitec-Nietvoorbij; Dr B Weinreich, Raps, Germany)
9. Quality control of indigenous herbal plants (Prof E Joubert, ARC Infruitec-Nietvoorbij; Prof Hartwig Schulz, Germany)
10. Sulphur dioxide content of golden sultanas (Prof E Joubert, ARC Infruitec-Nietvoorbij)
11. Estimation of grain (wheat, triticale, maize) quality (Dr Glen Fox, Australia)
12. Use of NIR in barley breeding programmes (Dr Idelet Meijering, SABM)
 - *NIR hyperspectral imaging spectroscopy applications and areas of research completed and currently being performed (collaborators indicated in brackets)*
13. Detection of fungal infection in maize (Prof Paul Geladi, SLU, Sweden; Prof Altus Viljoen, SU; Prof Trevor Britz, SU)
14. Distribution of intramuscular fat in biltong (Prof Paul Geladi, SLU, Sweden)
15. Evaluation of wheat and maize hardness (Prof Paul Geladi, SLU, Sweden)
16. Detection of pre-germination in barley and wheat (Prof Paul Geladi, SLU, Sweden; Dr Idelet Meijering, SABM)
17. Detection of adulteration in spices (Prof Paul Geladi, SLU, Sweden)
18. Investigating the diffusion of conditioning water in wheat over time (Prof Paul Geladi, SLU, Sweden)
19. Investigating the mechanism of bread staling using NIR hyperspectral imaging (Prof Paul Geladi, SLU, Sweden)
20. Wheat hardness prediction (Prof Paul Geladi, SLU, Sweden)
21. Effect of pregermination on maize endosperm (Prof Paul Geladi, SLU Sweden)
 - *Cereal science research projects completed and currently being performed (collaborators indicated in brackets)*
22. Evaluation of hectoliter mass equipment for wheat and maize application (Dr Phil Williams, Canada; Mr Arie Wessels, Sasko)
23. Evaluation of the structural and functional composition of South African triticale cultivars (Ms Nina Muller, US; Mr Willem Botes, Department of Genetics, US; Dr Glen Fox, Australia)
24. Evaluation of enzymes to improve baking quality of wheat baked products (Ms Nina Muller, US; Dr Shuanita Rose, US)
25. Analysis of zein in maize kernels of different hardness (Dr Glen Fox, Australia)
26. Characterisation of nitrogenous sources important for brewing yeast nutrition in South African worts produced from different barley cultivars (Prof Marina Rautenbach, Department of Biochemistry, US; Dr Idelet Meijering, SABM)
27. Evaluation of the Rapid ViscoAnalyser (RVA) as an efficient and rapid method to identify high quality malting barleys (Dr Glen Fox, Australia; Dr Idelet Meijering, SABM)
28. Evaluation of hectoliter mass equipment for oat application (Dr Phil Williams, Canada)
29. Characterisation of malting barley cultivars in terms of microbial activity and lipid transfer proteins (Prof Marina Rautenbach, Department of Biochemistry, US)
30. Genotyping South African wheat germplasm for hardness alleles (Dr Glen Fox, Australia)
31. Effect of forced convection roasting on physico-chemical characteristics and safety of whole maize (*Zea mays* L.) varieties (Dr Deon de Beer, Animalzone, Paarl)
32. Genotyping South African barley cultivars for starch synthesis alleles (Dr Glen Fox, Australia)
 - *X-ray research projects completed and currently being performed (collaborators indicated in brackets)*
33. Detection of fungal infection in maize kernels (Dr Frikkie de Beer, Necsa)
34. Investigation of maize kernel hardness (Dr Anton du Plessis, CAF, SU)
35. Effect of pregermination on maize kernel hardness (Dr Anton du Plessis, CAF, SU)
36. Effect of *Fusarium* on maize kernel texture (Dr Paul Williams, Dr Anton du Plessis, CAF, SU)

Review of Research Funding Applications and Peer-Reviewed Publications

Evaluation of NRF funding and rating applications

From 2002-2016 I evaluated 19 NRF funding and rating applications.

Peer-reviewer for the following journals

Journal of Plant and Soil (Associate Editor)

Journal of the Science of Food and Agriculture (Associate Editor)

Journal of Near Infrared Spectroscopy (Advisory Editorial Board; Guest Editor for special issue on imaging)

Acta Alimentaria (Member of Editorial Board)

Journal of Agricultural and Food Chemistry

Food and Bioprocess Technology: An International Journal

South African Journal of Enology and Viticulture

Infrared Physics and Technology

HortTechnology

Food Research International

Journal of Cereal Science

Food Control

Sensor Letters

Talanta

Biosystems Engineering

Journal of Microbiology

Journal of the Science of Food and Agriculture

Chemometrics and Intelligent Laboratory Systems

Examination of Advanced Degrees

From 1998-2015 I acted as examiner of 34 MSc theses/PhD dissertations for the following Universities:

Stellenbosch University (16)

Faculty: Sciences, Engineering & Health, Central Queensland University, Rockhampton, Australia (1)

Department of Plant Breeding, Faculty of Agriculture, University of the Free State, Bloemfontein (3)

Department of Food Science, Faculty of Natural and Agricultural Sciences, University of Pretoria (8)

Department of Food Technology, Faculty of Health Sciences, Technikon Witwatersrand (1)

Department of Chemistry, Faculty of Natural Sciences, University of Cape Town (1)

Department of Microbiology, Faculty of Natural Sciences, University of Western Cape (1)

Department of Consumer Science: Food and Nutrition, Faculty of Applied Science, Cape Peninsula

University of Technology (1)

Faculty of Science and Agriculture, University of Kwazulu Natal (1)

Department of Food Science, University of Copenhagen (1)

Postdoctoral Fellowships

2015: Dr Anina Guelpa (Evaluation of NIR and X-ray micro-computed tomography for food authenticity and microstructure)

2012-2013: Dr Cristian Serea (Evaluation of antioxidant potential of South African cereal grains).

2012: Dr Wasseela Verachia (Near infrared (NIR) hyperspectral imaging in maximising food potential and security)

2009-2011: Dr Cushla McGoverin (Investigation of vibrational spectroscopy techniques for cereal quality and food authentication).

2008-2009: Dr Glen Fox (Development of Particle Size Index technique for measuring maize hardness). Dr Fox also collaborated on various other projects within my laboratory.

Visiting Scientists

- 2016:** Dr Federico Marini and Ms Marta Bevilacqua, Department of Chemistry, University of Rome “La Sapienza”, Rome, Italy (22 January – 6 February)
- 2014:** Dr Federico Marini and Ms Marta Bevilacqua, Department of Chemistry, University of Rome “La Sapienza”, Rome, Italy (27 January – 7 February)
- 2006-2013:** Prof Paul Geladi (6 weeks per year). Collaborator on South Africa-Sweden Bilateral Collaboration programme.
- 2009-2010:** Mette Holve (September 2009-January 2010). PhD student, Copenhagen University, Denmark from the research Group of Prof Søren Balling Engelsen.
- 2009-2010:** Prof Thomas Skov (September 2009-January 2010). Chemometrician, Copenhagen University, Denmark from the research Group of Prof Rasmus Bro.
- 2009:** Allison Burgers (February to April). MSc student, IOWA State University, USA from the group of Dr Charles Hurburgh.

Research Opportunity (1 July 2013 – 30 June 2014)

- 2014:** Perform research at the Flanders Centre of Postharvest Technology, KULeuven, Belgium (Host: Prof Bart Nicolai; March – May 2014).
- 2013:** Perform research at the Department of Chemistry, University of Rome “La Sapienza” Italy, (Dr Federico Marini; November 2013)

Training of Students for Advanced Degrees

Promoter for PhD degrees

- 2014-present:** Letitia Schoeman (Characterisation and quantification of microstructure and functional properties of oven and forced convection continuous tumble roasted cereal grains)
- 2013-present:** Gerida de Groot (Genotyping South African wheat germplasm for hardness alleles)
- 2013-present:** Irene Orina (Monitoring of *Aspergillus* contamination in Kenyan maize varieties with nano (nanoCT) computed tomography and associated multivariate data and texture analysis)
- 2013-2015:** Shuaibu Bala (Effect of forced convection roasting on physicochemical and antioxidant properties of whole grain maize (*Zea mays* L.) and optimisation of roasting conditions)
- 2012-2015:** Anina Guelpa (Maize endosperm texture characterisation using the Rapid Visco Analyser (RVA), X-ray microcomputed tomography (μ CT) and micro-near infrared (microNIR) spectroscopy)
- 2010-present:** Suné Henning (Myofibrillation of the musculature of marine fish species)
- 2009-2013:** Paul Williams (NIR hyperspectral imaging for detection and characterisation of fungal infection in maize)

Co-promoter for PhD degrees

- 2013-present:** Roya Minnis-Ndimba (Evaluation of transgenic sorghum)
- 2011-2014:** Melanie Nieuwoudt (Optimising the isolation and quantification of LTP1 in barley and monitoring the effect of different LTP1 concentrations on beer quality)
- 2011-2013:** Oluwafemi Caleb (Modified atmosphere packaging of pomegranate arils)
- 2006-2012:** Debora van der Merwe (Chronic exposure of polyphenol enriched extracts of rooibos (*Aspalathus linearis*) and honeybush (*Cyclopia* spp.) in rats and perspectives on in vitro liver metabolism of the major polyphenolic compounds)
- 2002-2006:** Dalene de Beer (Antioxidant capacity of Pinotage wine as affected by viticultural and oenological practices)

Study leader for MSc degrees

1. **2016-present:** Megan Kleyn (Quantitative and qualitative characterisation of waxy wheats)
2. **2015-present:** Kate Sendin (Non-destructive grading of maize using NIR hyperspectral imaging)
3. **2014-2015:** Jason Zhang (Determination of antioxidants in South African wheat cultivars)
4. **2013-2015:** Sandra Balet (Genotyping South African barley cultivars for starch synthesis alleles)
5. **2012-2015:** Tshepiso Mokhoro (Determining effect of pregermination on maize hardness using NIR hyperspectral imaging and X-ray micro-computed tomography)
6. **2012-2014:** Desré Slogrove (Development of quality prediction model for parboiled rice)
7. **2010-2011:** Sakeus Emvula (Assessment of variance in hectolitre mass of oats using equipment of different countries)
8. **2009-2010:** Kim O'Kennedy (Characterisation of zein from South African maize of varying endosperm texture) (*cum laude*)
9. **2009-2010:** Paulina Engelbrecht (NIR hyperspectral imaging as detection method for pre-germination in whole wheat, barley and sorghum grains) (*cum laude*)
10. **2009-2010:** Jana Visser (Evaluation of malted barley with different degrees of fermentability using the Rapid Visco Analyser (RVA))
11. **2009-2010:** Evette Roux (Near infrared (NIR) spectroscopy for selection of malting barley in South African breeding programmes)
12. **2009-2010:** Danwille September (Detection of spice adulteration by NIR hyperspectral imaging)
13. **2008-2009:** Gerida du Toit (Near infrared (NIR) hyperspectral imaging and chemometrics for exploration and classification of whole wheat kernels)
14. **2007-2008:** Franci du Pisani (Evaluation of the structural and functional composition of South African triticale cultivars (*X Triticosecale* Wittmack))
15. **2007-2008:** Carien Roets (née Van Zyl) (Effect of endoxylanases, endoglucanases and their combination on wheat flour bread quality) (*cum laude*)
16. **2007-2008:** Paul Williams (Near infrared (NIR) hyperspectral imaging for evaluation of whole maize kernels: chemometrics for exploration and classification) (*cum laude*)
17. **2006-2007:** Mandy Engelbrecht (née Geyer) (Assessment of variance in measurement of hectolitre mass of wheat and maize, using equipment from different grain producing and exporting countries)
18. **2005-2007:** Christina Maicu (Optimisation of retention of mangiferin in *Cyclopia subternata* during preparation for drying and storage of green honeybush and development of NIRS calibration models for rapid quantification of mangiferin and hesperidin contents)
19. **2004-2005:** Mariza Botha (Use of near infrared spectroscopy (NIRS) and spectrophotometric methods in quality control of green rooibos (*Aspalathus linearis*) and honeybush (*Cyclopia genistoides*) (*cum laude*))
20. **2004-2005:** Kerstin Eberle (Development of Fourier transform near infrared (FT-NIR) spectroscopy calibration models for South African extra virgin olive oil using two spectrophotometers and different resolutions) (*cum laude*)
21. **2003-2008:** Sox Tsanigab (Evaluating Namibian macrophytic algae as dietary source for South African abalone (*Haliotis midae*))
22. **2002-2003:** Lindie Myburgh (Development of a procedure to identify clingstone peaches with a good storage potential for the canning fruit industry) (*cum laude*)
23. **2001-2002:** Natasha de Bruyn (Future applications of near infrared (NIR) spectroscopy in the South African brandy and distilling industry)
24. **2001-2002:** Mathilda Elizabeth Schoeman (Mango (*Mangifera indica* L.) kernel fat: fatty acid profile, oxidative stability and development of Fourier transform near infrared (FT-NIR) spectroscopy calibration models) (*cum laude*)
25. **1999-2000:** Anina van Zyl (The application of Fourier transform near infrared (FT-NIR) spectroscopy in the wine, fruit and dried fruit industries of South Africa) (*cum laude*)
26. **1998-1999:** Louise van Zyl (Prediction of hardness of South African wheats by means of near infrared (NIR) spectroscopy)

Co-study leader for MSc degrees

27. **2015-present:** Terri-Lee Kammiess (Differentiation between food-born pathogenic bacteria using NIR hyperspectral imaging)
28. **2013-2014:** Amarachi Uchechukwu (nee Udugwu) (Effects of packaging and storage conditions on the functional properties and quality of cassava flour)
29. **2013-2014:** Zaharan Hussein (Effect of perforation-mediated modified atmosphere packaging (PM-MAP) on extension of shelf life of pomegranate fruit arils (cv. 'Acco'))
30. **2013-2014:** Adebajji Olasupo Oluwole (Effect of modified atmosphere packaging and absorbent pad on the quality of fresh Cape hake (*Merluccius capensis*) fish fillets)
20. **2011-2014:** Rorisang Valashiya (Evaluation of the potential malting, brewing and antiyeast characteristics of selected Zambian sorghum cultivars)
21. **2012-2013:** Wilhelmina Aindongo (Modified atmosphere packaging of minimally processed pomegranate aril-sac)
22. **2012-2013:** Alex Schulze (Similarity analysis of aqueous extracts from *Cyclopia subternata* (honeybush) seedlings using chromatographic fingerprints) (*cum laude*)
31. **2007-2008:** Melvi Viljoen (née Todd) (Stability of aspalathin and mangiferin in various food matrices) (*cum laude*)
32. **2003-2004:** DJ van der Merwe (Antimutagenicity of honeybush (*Cyclopia* species), rooibos (*Aspalathus linearis*) and green tea (*Camellia sinensis*) against aflatoxin B1 and possible mechanism involved in antimutagenic activity in general) (*cum laude*)
33. **2002-2003:** Mariska Kroucamp (Determination and quantification of factors that influence the meat quality of springbok (*Antidorcas marcipialis*))
34. **2001-2003:** Craig Roelf (Categorisation and the nutritional value of fish waste)
35. **2001-2002:** Elizabeth Sian Richards (Comparison of the antioxidant and antimutagenic activities of *Cyclopia* species and activity guided fractionation of *C. intermedia*) (*cum laude*)
36. **2001-2002:** Marisa Joubert (Manipulation of ostrich meat composition, quality and shelf life)
37. **2001-2002:** Brian Robert Gray (Optimisation of the harpagoside content in dried *Harpagophytum procumbens* (Devil's Claw) root through controlled drying and the application of Fourier transform near infrared (FT-NIR) spectroscopy as a rapid method of determination) (*cum laude*)
38. **2000-2001:** Dalene de Beer (Antioxidant activities of South African red and white wines as affected by cultivar and in-bottle ageing) (*cum laude*)
39. **1999-2003:** Christo Muller (Identification of wine fermentation yeasts)
40. **1998-1999:** Anine Schoevers (Mass cultivation and activity of kefir grains)
41. **1997-1998:** Lauren Standley (Natural bio-antimutagenic activity of rooibos tea (*Aspalathus linearis*) as expressed by the Ames, Toxi-Chromo and SOS-Chromo tests)
42. **1997-1998:** Martli Nel (End-use quality of spring wheat cultivars produced in the Western and Southern Cape)

Professional Membership

Member of the South African Academy of Science and Arts (M.Akad.SA.)
International Council of Near infrared Spectroscopy (ICNIRS)
South African Spectroscopy Society (SASS)
South African Association of Food Science and Technology (SAAFoST)
South African Society of Crop Production (SACP)
Cereal Science Technology - South Africa (CST-SA)
Institute of Packaging South Africa (IPSA)

Stellenbosch University, Faculty of AgriSciences and other Obligations

2013-present: Act as Mentor for lecturer in Faculty of AgriSciences
2012-2015: Committee of Teaching and Learning (Sub-committee of the Senate) (Representing the Senate)

2012-2015:	Senate Research Ethics Committee (Representing the Senate)
2012-present:	Programme Advisory Committee (Sub-committee of the ABK)
2012-2014:	Appointments committee (Faculty of AgriSciences)
2009-2014:	Academic Programmes Committee (Faculty AgriSciences)
2002-2004:	Academic Guardian for Serruria Ladies' Residence
2003-2004, 2007:	Judge at Maties Expo for young scientists
2002:	Web-CT Committee; Academic Program Committee (ad hoc member); Prescribed Book Committee
2000-2001:	Editorial Committee for Faculty of Agricultural Sciences Annual report
1999:	Sub-Committee for Academic Programmes Committee: Programme Development
1998-1999:	Advisor for first-years
1998-2011:	Registration of first-year and senior students

Research Grants Received

2014	NRF Equipment related Travel and Training Grant (in collaboration with Dr Anton du Plessis, CAF, SU)	(R50 000)
2014	KIC travel grant for PhD student (Anina Guelpa)	(R20 000)
2014	Subcommittee B (Stellenbosch University) Equipment Grant (in collaboration with Dr Anton du Plessis, CAF, SU; Raman Microscope)	(R140 000)
2014	NRF Infrastructure funding instruments (NEP/NNEP) (in collaboration with Dr Anton du Plessis, CAF, SU; nanoCT scanner)	(R6.77 mil)
2013	EDULINK II (in collaboration with Makerere, Uganda; JKUAT Kenya)	(R6 mil)
2014	Winter Cereal Trust	(R107 980)
2014	Winter Cereal Trust	(R78 500)
2014	Winter Cereal Trust	(R133 750)
2014	THRIP	(R335 492)
2013	THRIP	(R592 337)
2013	Winter Cereal Trust	(R140 780)
2013	Winter Cereal Trust	(R81 500)
2013	Winter Cereal Trust	(R163 000)
2011-2016:	NRF Incentive Funding for Rated Researchers	(R40 000 per annum)
2011:	Winter Cereal Trust	(R220 791, including MSc grant of R52 000)
2010:	NRF Incentive Funding for Rated Researchers	(R40 000)
2010:	Sorghum Trust	(R42 500)
2010:	Winter Cereal Trust	(R449 172, including MSc grants of R156 000)
2010:	Maize Trust	(R229 000, including PhD and MSc grants of R119 000)
2009:	Winter Cereal Trust	(R255 850, including MSc grants of R156 000)
2009:	Maize Trust	(R152 000, including PhD and MSc grants of R119 000)
2009:	South African Breweries Maltings	(R100 400)
2008-2009:	Alize Malan Trust	(R68 000)
2008:	Winter Cereal Trust	(R179 000, including 3 MSc grants of R49 000 each)
2008:	Maize Trust	(R190 000, including MSc grant of R49 000, post-doc grant of R75 000 and refund of capital outlay R30 000)
2007-2009:	NRF Economic Growth and International Competitiveness Programme	(R240 460)
2007-2009:	NRF Economic Growth and International Competitiveness Programme	(R285 048)
2007-2009:	South Africa-Sweden Bilateral agreement	(R298 800)
2007-2008:	Alize Malan Trust	(R60 000)
2007:	Winter Cereal Trust	(R132 000 including 2 MSc grants of R47 000 each)
2006:	NRF Economic Growth and International Competitiveness Programme	(R111 025)
2006:	Winter Cereal Trust	(R55 452)
2006:	Maize Trust	(R101 650 including MSc grant of R45 000)

2006:	ARC Infruitec-Nietvoorbij, Stellenbosch	(R10 000)	
2005:	NRF Economic Growth and International Competitiveness Programme		(R111 025)
2005:	ARC Infruitec-Nietvoorbij, Stellenbosch	(R16 000)	
2004:	Sub-Committee B, University of Stellenbosch	(R28 000)	
2004:	ARC Infruitec-Nietvoorbij, Stellenbosch	(R46 000)	
2003:	Sub-Committee B, University of Stellenbosch	(R28 000)	
2003:	ARC Infruitec-Nietvoorbij, Stellenbosch	(R35 000)	
2002:	Sub-Committee B, University of Stellenbosch	(R18 000)	
2002:	ARC Infruitec-Nietvoorbij, Stellenbosch	(R17 000)	
2001:	Sub-Committee B, University of Stellenbosch	(R18 000)	
2001:	Thrip	(R60 000)	
2001:	Specialised Oils cc	(R40 000)	
2001:	ARC Infruitec-Nietvoorbij, Stellenbosch	(R17 000)	
2000:	Winter Cereal Trust	(R80 000)	
2000:	Sub-Committee B, University of Stellenbosch	(R17 000)	
2000:	ARC Infruitec-Nietvoorbij, Stellenbosch	(R48 800)	
1999:	Winter Cereal Trust	(R70 000)	
1999:	Sub-Committee B, University of Stellenbosch	(R17 000)	
1997:	Establishment Fund, Stellenbosch University	(R28 933)	

Evaluation status as a scientist

2011-2016: National Research Foundation (NRF) C1-rated scientist
18/01/2016: H-index: 21 (Web of Science)
H-index: 26 (Google Scholar)
H-index: 22 (Scopus)

Other

1. Organiser of the following workshops:
 - **2014:** NIR spectroscopy (presented by Dr Pierre Dardenne and Dr Juan-Antonia Fernandez Pierna, Walloon Agricultural Research Centre, Gembloux, Belgium), Stellenbosch
 - **2009:** Workshop on NIR Hyperspectral Imaging and Data Analysis (presented by Prof Paul Geladi, Swedish University of Agricultural Sciences, Umeå, Sweden and Dr David Nilsson, UmBio AB, Umeå, Sweden), Stellenbosch
 - **2008:** Experimental design workshop (presented by Prof Paul Geladi, Swedish University of Agricultural Sciences, Umeå, Sweden), Stellenbosch
 - **2007:** NIR spectroscopy User's Workshop (presented by Dr Phil Williams, Canada Stellenbosch)
 - **2007:** MATLAB, PLS Toolbox and SOLO workshop (presented by Prof Paul Geladi, Sweden and Tom Lillhonga, Finland), Stellenbosch
 - **2006:** NIR spectroscopy User's Workshop (presented by Dr Phil Williams, Canada), Stellenbosch
2. Receive two NIR instruments from Büchi Labortechnik AG, Flawil, Switzerland based on research outputs (NIRFlex N-500 worth ca. R500 000 (on loan for two years) and NIRLab N-200 worth approximately R300 000 (donation)).
3. Receive a NIR Cropscan from NIR Technology, Australia worth approximately R140 000 based on research outputs (2007).
4. Co-applicant of successful application for a NIR Hyperspectral Imaging System at NRF worth approximately R2,3 million (2009).
5. Negotiate donation of Rapid Visco Analyser and laboratory mill from Pioneer (Pty) Ltd (worth approximately R500 000) (2012)
6. Negotiate equipment sponsored by Pioneer Foods trading as Sasko (2012)

Publications and Conference Presentations (2016-1987)

Publications Published in Peer-reviewed Journals

(*Corresponding author) (TC=times cited) (IF=impact factor)

1. Guelpa A, Du Plessis A & Manley M* (2016) A high-throughput X-ray micro-computed tomography (μ CT) approach for measuring single kernel maize (*Zea mays* L.) volumes and densities. *Journal of Cereal Science*, submitted (IF:2.094).
2. Schoeman L, Williams PJ, Du Plessis A & Manley M* (2016) X-ray micro-computed tomography (μ CT) for non-destructive characterisation of food microstructure. *Trends in Food Science and Technology*, 47, 10-24. <http://dx.doi.org/10.1016/j.tifs.2015.10.016> (IF:4.651).
3. Schulze AE, De Beer D, Mazibuko SE, Muller CJF, Roux, Willenburg EL, Nyunaï N, Louw J, Manley M & Joubert* (2016) Assessing similarity analysis of chromatographic fingerprints of *Cyclopia subternata* extracts as potential screening tool for in vitro glucose utilization. *Analytical and Bioanalytical Chemistry*, 408, 639-649. DOI 10.1007/s00216-015-9147-7 (IF:3.436)
4. Hussein Z, Caleb OJ, Jacobs K, Manley, M, and Opara, UL* (2015). Effect of perforation-mediated modified atmosphere packaging (PM-MAP) and storage duration on physicochemical properties and microbial quality of fresh minimally processed 'Acco' pomegranate arils. *LWT-Food Science and Technology*, 64, 911-918. DOI: 10.1016/j.lwt.2015.06.040 (IF:2.468)
5. Uchechukwu-Agua AD, Caleb OJ, Manley & Opara UL* (2015) Effects of storage conditions and duration on physicochemical and microbial quality of the flour of two cassava cultivars (TME 419 and UMUCASS 36), *CyTA - Journal of Food*, DOI: 10.1080/19476337.2015.1029524 (IF:0.824)
6. Guelpa A, Du Plessis A, Kidd M & Manley M* (2015) Non-destructive estimation of maize (*Zea mays* L.) kernel hardness by means of an X-ray micro-computed tomography (μ CT) density calibration. *Food and Bioprocess Technology*, 8, 1419-1429. DOI 10.1007/s11947-015-1502-3 (TC:1) (IF:2.961)
7. Guelpa A, Bevilacqua M, Marini F & Manley M* (2015). Application of Rapid Visco Analyser (RVA) and chemometrics for maize hardness characterisation. *Food Chemistry*, 173, 1220-1227. DOI: 10.1016/j.foodchem.2014.10.149 (IF:3.334)
8. Roets C, Rose SH, Muller N & Manley M* (2015) Laboratory and commercial-scale evaluation of the effect of pure and commercial endoxylanases and endoglucanases on wheat flour bread quality. *Acta Alimentaria*, 44 (2), 276–288. DOI: 10.1556/066.2015.44.0005 (IF:0.427)
9. Schulze A, De Beer D*, De Villiers A, Manley M, Joubert E (2014). Chemometric Analysis of Chromatographic Fingerprints Shows Potential of *Cyclopia maculata* (Andrews) Kies for Production of Standardized Extracts with High Xanthone Content, *Journal of Agricultural and Food Chemistry*, 62, 10542-10551 (IF: 3.107, TC:1)
10. Aindongo WV, Caleb OJ, Mahajan PV, Manley M & Opara UL* (2014) Modelling the effects of storage temperature on the respiration rate of pomegranate whole fruit and fractions. *South African Journal of Plant and Soil*, 31(4), 227-231. DOI: 10.1080/02571862.2014.944230 (IF:2.024)
11. Manley M* (2014) Near-infrared spectroscopy and hyperspectral imaging: non-destructive analysis of biological materials. *Chemical Society Reviews*, 43, 8200-8214. DOI: 10.1039/C4CS00062E, Tutorial Review. (TC:2)(IF: 33.383)
12. Fox GP, Visser J, Skov T, Meijering I & Manley M*. (2014) Effect of different analysis conditions on Rapid Visco Analyser malt viscograms in relation to malt of varying fermentability. *Journal of the Institute of Brewing*, 120, 183-192. DOI 10.1002/jib.137. (IF:0.88)
13. Serea C, Barna O*, Manley M & Kidd M (2014) Effect of storage temperature on the ascorbic acid content, total phenolic content and antioxidant activity in lettuce (*Lactuca sativa* L). *The Journal of Animal and Plant Sciences*, 24(4), 1173-1177. (IF:0.549)
14. Aindongo WV, Caleb OJ, Mahajan PV, Manley M & Opara UL* (2014) Effects of storage conditions on transpiration rate of pomegranate aril-sac and arils. *South African Journal of Plant and Soil*, 31(1), 7-11. DOI: 10.1080/02571862.2014.868049
15. Fox G* & Manley M (2014) Applications of single kernel conventional and hyperspectral imaging near infrared spectroscopy in cereals. *Journal of the Science of Food and Agriculture*, 94, 174–179. DOI: 10.1002/jsfa.6367. (TC:5)(IF:1.879)
16. Caleb OJ, Mahajan PV, Manley M & Opara UL* (2013) Evaluation of parameters affecting modified atmosphere packaging engineering design for pomegranate arils. *International Journal of Food Science and Technology*, 48, 2315–2323. doi:10.1111/ijfs.12220 (TC:6)
17. Henning S*, Hoffmann L & Manley M (2013) A review of *Kudoa thyrsites* and *K. paniformis* induced myoliquefaction of marine fish species in South Africa and other countries. *South African Journal of Science*, 109(11/12), 5 pages. doi.org/10.1590/sajs.2013/20120003. (TC:3)

18. Manley M*, McGoverin C, Snyders F, Fox G, Muller M & Botes W (2013) Prediction of triticale quality properties, based on both chemical and indirectly measured reference methods, using near infrared spectroscopy, *Cereal Chemistry*, 90(6), 540-545. doi.org/10.1094/CCHEM-02-13-0021-R. (IF:1.231)
19. Caleb OJ, Opara UL*, Mahajan PV, Manley M & Mokwenad, L & Tredoux AGJ (2013) Effect of modified atmosphere packaging and storage temperature on volatile composition and postharvest life of minimally-processed pomegranate arils (cvs. 'Acco' and 'Herskawitz'). *Postharvest Biology and Technology*, 79, 54-61. doi.org/10.1016/j.postharvbio.2013.01.006. (TC:14)
20. Manley M* and Downey G (2012) Guest editorial: Enhancing near infrared spectroscopy with an added spatial dimension. *Journal of Near Infrared Spectroscopy*, 20, 0-0 (TC:1)(IF2010:1.424). doi: 10.1255/jnirs.1020
21. McGoverin CM & Manley M* (2012) Classification of maize kernel hardness using near infrared hyperspectral imaging. *Journal of Near Infrared Spectroscopy* (special issue), 20, 529–535 doi: 10.1255/jnirs.1018 (TC:6)(IF2010:1.570)
22. Joubert E, Botha M, Maicu C, De Beer D & Manley M* (2012) Rapid screening methods for estimation of mangiferin and xanthone contents of *Cyclopia subternata* plant material. *South African Journal of Botany* (special issue), 82, 113-122. DOI: http://dx.doi.org/10.1016/j.sajb.2012.07.019 (TC:5)
23. Williams, PJ, Geladi P, Britz TJ & Manley M* (2012) Growth characteristics of three *Fusarium* species evaluated by near-infrared hyperspectral imaging and multivariate image analysis. *Applied Microbiology and Biotechnology*, 96(3), 803-813 (DOI 10.1007/s00253-012-4380-x) (TC:7)(IF2011: 3.337).
24. Williams, PJ, Geladi P, Britz TJ & Manley M* (2012) Near-infrared (NIR) hyperspectral imaging and multivariate image analysis to study growth characteristics and differences between species and strains of members of the genus *Fusarium*. *Analytical and Bioanalytical Chemistry*, 404(6-7), 1759-1769. DOI 10.1007/s00216-012-6313-z (TC:13)(IF2010:3.436)
25. Williams, PJ, Geladi P, Britz TJ & Manley M* (2012) Investigation of fungal evolution in maize kernels using NIR hyperspectral imaging and multivariate data analysis. *Journal of Cereal Science*, 55, 272-278. doi:10.1016/j.jcs.2011.12.003 (TC:29)(IF:2.094)
26. McGoverin CM, September DJF, Geladi P & Manley M* (2012) Near infrared (NIR) and mid-infrared (MIR) spectroscopy for the quantification of adulterants in ground black pepper. *Journal of Near Infrared Spectroscopy* (special issue), 20, 521–528 doi: 10.1255/jnirs.1008 (TC:4)(IF2010:1.570)
27. Van der Merwe JD, Joubert E, Manley M, De Beer D, Malherbe CJ, Gelderblom WCA (2012) Mangiferin glucuronidation: a major route for hepatic metabolism modulating antioxidant activity. *Food and Chemical Toxicology*, 50, 808-815. doi:10.1016/j.fct.2011.11.018 (TC:5)(IF2010:2.602)
28. Manley M*, McGoverin C, Engelbrecht P & Geladi P (2012) Influence of grain topography on near infrared hyperspectral images. *Talanta*, 89, 223-230. doi:10.1016/j.talanta.2011.11.086 (TC:8)(IF2010:3.722)
29. Manley M*, Snyders F, McGoverin C, Fox G, Kidd M & Botes W (2011) Evaluation of the compositional and functional quality of South African triticale (x *Triticosecale Wittmack*) cultivars. *Journal of Plant and Soil*, 28(3), 201-210.
30. McGoverin C, Engelbrecht P, Geladi P & Manley M* (2011) Characterisation of non-viable whole barley, wheat and sorghum grains using near-infrared hyperspectral data and chemometrics, *Analytical and Bioanalytical Chemistry*, 401(7), 2283-2289. DOI 10.1007/s00216-011-5291-x (TC:16)(IF2010:3.841)
31. De Beer, D, Joubert E, Viljoen M & Manley M (2011) Enhancing aspalathin stability in rooibos (*Aspalathus linearis*) ready-to-drink iced teas during storage: the role of nano-emulsification and beverage ingredients, citric and ascorbic acids. *Journal of the Science of Food and Agriculture*, 92, 272-282. DOI 10.1002/jsfa.4571 (TC:3)(IF2010: 1.360)
32. Ntsame Affane A, Fox GP, Sigge GO, Manley M & Britz TJ (2011) Simultaneous prediction of acidity parameters (pH and titratable acidity) in Kefir using near infrared reflectance spectroscopy. *International Dairy Journal*, 21, 896-900. 10.1016/j.idairyj.2011.04.016 (TC:5)(IF2010: 2.181)
33. Thomas, DB, McGoverin, CM, Chinsamya A & Manley M (2011) Near infrared analysis of fossil bone from the Western Cape of South Africa, *Journal of Near Infrared Spectroscopy*, 19, 151-159. (TC:4)(IF2010:1.570)
34. McGoverin CM, Snyders F, Muller M, Botes W, Fox G & Manley M* (2011) A review of triticale uses and the effect of growth environment on grain quality. *Journal of the Science of Food and Agriculture*, 91, 1155-1165. doi: 10.1002/jsfa.4338 (TC:21)(IF2010: 1.360)
35. Manley M*, Du Toit, G & Geladi P (2011) Tracking diffusion of conditioning water in single wheat kernels of different hardness by near infrared hyperspectral imaging. *Analytica Chimica Acta*, 686, 64-75. (TC:22)(IF2010:4.310)
36. Joubert E, Viljoen, M, De Beer D, Malherbe CJ, Brand, DC & Manley M (2010) Use of green rooibos (*Aspalathus linearis*) extract and water-soluble nanomicelles of green rooibos extract encapsulated with ascorbic acid for enhanced aspalathin content in ready-to-drink iced teas. *Journal of Agricultural and Food Chemistry*, 58, 10965-10971. doi: 10.1021/jf103552f (TC:4)(IF2009:2.469)

37. McGoverin CM, Weeranantanaphan J, Downey G & Manley* (2010) Application of near infrared spectroscopy to the measurement of bioactive compounds in food commodities – a review. *Journal of Near Infrared Spectroscopy*, 18, 87-111. (lead article) (TC:24)(IF2009:1.822)
38. Van der Merwe JD, Joubert E, Manley M, De Beer D, Malherbe CJ, Gelderblom WCA (2010) In vitro hepatic biotransformation of aspalathin and nothofagin, dihydrochalcones of Rooibos (*Aspalathus linearis*), and assessment of metabolite antioxidant activity. *Journal of Agricultural and Food Chemistry*, 58, 2214-2220. doi: 10.1021/jf903917a (TC:10)(IF2009:2.469)
39. Williams P, Manley M*, Fox G & Geladi P (2010) Indirect detection of *Fusarium verticillioides* in maize (*Zea mays* L.) kernels by NIR hyperspectral imaging. *Journal of Near Infrared Spectroscopy*. 18, 49-58. doi: 10.1255/jnirs.858 (TC:25)(IF2009:1.822)
40. Joubert E, Manley M, Maicu C & De Beer (2010) Effect of pre-drying treatments and storage on the color and composition of green honeybush (*Cyclopia subternata*) herbal tea. *Journal of Agricultural and Food Chemistry*, 58, 338-344. doi:10.1021/jf902754b (TC:8)(IF2009:2.469)
41. Ntsame Affane A, Fox GP, Sigge GO, Manley M & Britz TJ (2009) Quantitative analysis of DL-lactic acid and acetic acid in Kefir using near infrared reflectance spectroscopy. *Journal of Near Infrared Spectroscopy*, 17(5), 255-264. doi:10.1255/jnirs.853 (TC:2)(IF2009:1.822)
42. Williams P, Geladi P, Fox G & Manley M* (2009) Maize kernel hardness classification by near infrared (NIR) hyperspectral imaging and multivariate data analysis. *Analytica Chimica Acta*, 653, 121-130. DOI:10.1016/j.aca.2009.09.005. (TC:74)(IF2009:3.186)
43. Manley M*, Joubert E, Myburgh L, Lotz E & Kidd M (2009) Prediction of post-storage quality of intact clingstone peaches using pre-storage near infrared spectra. *South African Journal of Plant and Soil*, 26(3),133-140. (TC:1)(No IF)
44. Manley M*, Williams P, Nilsson D & Geladi P (2009) Near infrared hyperspectral imaging for the evaluation of endosperm texture in whole yellow maize (*Zea mays* L.) kernels. *Journal of Agricultural and Food Chemistry*, 57(19), 8761-8769. DOI:10.1021/jf9018323. (TC:29)(IF2009:2.532)
45. Fox G & Manley M* (2009) Hardness methods for testing maize kernels: a review. *Journal of Agricultural and Food Chemistry*, 57, 5647-5657. (DOI: 10.1021/jf900623w). (TC:25)(IF2009:2.532)
46. Joubert E, Viljoen M, De Beer D & Manley M (2009) Effect of heat on aspalathin, iso-orientin and orientin content and color of fermented rooibos (*Aspalathus linearis*) iced tea. *Journal of Agricultural and Food Chemistry*, 57 (10), 4204-4211. DOI:10.1021/jf9005033 (TC:16)(IF2009:2.532)
47. Manley M*, Engelbrecht ML, Williams PC & Kidd M (2009) Assessment of variance in measurement of hectolitre mass of wheat, using equipment from different grain producing and exporting countries, *Biosystems Engineering*, 103(2), 176-186. doi:10.1016/j.biosystemseng.2009.02.018 (TC:1)(IF:0.917)
48. De Beer D, Joubert E, Marais J, Du Toit W, Fourie B & Manley M (2008) Characterisation of Pinotage Wine During Maturation on Different Oak. *South African Journal of Enology and Viticulture*, 29(1), 39-49. (TC:6)(IF2009:0.421)
49. De Beer D, Joubert E, Marais J & Manley M (2008) Effect of oxygenation during maturation on phenolic composition, total antioxidant capacity, colour and sensory quality of Pinotage wine. *South African Journal of Enology and Viticulture*, 29(1), 13-25. (TC:15)(IF2009:0.421)
50. Joubert E, Manley M* & Botha M (2008) Evaluation of spectrophotometric methods for screening of green rooibos (*Aspalathus linearis*) and green honeybush (*Cyclopia genistoides*) extracts for high levels of bioactive compounds. *Phytochemical Analysis*, 19, 169-178. DOI: 10.1002/pca.1033 (TC:21)(IF2009:1.524)
51. Joubert E, Richards ES, Van der Merwe JD, De Beer D, Manley M & Gelderblom WCA (2008) Effect of species variation and processing on phenolic composition and in vitro antioxidant activity of aqueous extracts of *Cyclopia* spp. (honeybush tea). *Journal of Agricultural and Food Chemistry*, 56, 954-963. (TC:42)(IF2009:2.532)
52. Geladi P & Manley M (2008) Three-way data analysis of a wheat growing experiment using near infrared spectral data. *Journal of Chemometrics*, 22, 247-251. doi:10.1002/cem.1125 (TC:3) (IF2009:1.367)
53. Manley M*, Joubert E, Myburgh L, Lotz E & Kidd M (2007) Prediction of soluble solids content and post-storage internal quality of Bulida apricots using near infrared spectroscopy (NIRS) with PLS, MARS and SIMCA as chemometric regression and classification techniques. *Journal of Near Infrared Spectroscopy*, 15(3), 179-188. doi: 10.1255/jnirs.725 (TC:17)(IF2009:1.822)
54. Hoffman LC, Kroucamp M & Manley M (2007) Meat quality characteristics of springbok (*Antidorcas marsupialis*). 4. Sensory meat evaluation as influenced by age, gender and production region. *Meat Science*, 76, 774-778. (TC:19)(IF2009:2.183)
55. Hoffman LC, Kroucamp M & Manley M (2007) Meat quality characteristics of springbok (*Antidorcas marsupialis*). 3. Fatty acid composition as influenced by age, gender and production region. *Meat Science* 76, 768-773. (TC:16)(IF2009:2.183)

56. Hoffman LC, Kroucamp M & Manley M (2007) Meat quality characteristics of springbok (*Antidorcas marsupialis*). 2. Chemical composition of springbok meat as influenced by age, gender and production region. *Meat Science* 76, 762-767. (TC:18)(IF2009:2.183)
57. Hoffman LC, Kroucamp M & Manley M (2007) Meat quality characteristics of the springbok (*Antidorcas marsupialis*). 1. Physical meat attributes as influenced by age, gender and production region. *Meat Science* 76, 755-761. (TC:20)(IF2009:2.183)
58. De Beer D, Joubert E, Marais J & Manley M (2006) Climatic region and vine structure: Effect on Pinotage wine phenolic composition, total antioxidant capacity and colour. *South African Journal of Enology and Viticulture* 27, 151-166. (IF2007:0.219)
59. De Beer D, Joubert E, Marais J & Manley M (2006) Maceration before and during fermentation: effect on Pinotage wine phenolic composition, total antioxidant capacity and objective colour parameters. *South African Journal of Enology and Viticulture* 27, 137-150. (IF2007:0.219)
60. Baranska M, Schulz H, Joubert E & Manley M (2006) In situ flavonoid analysis by FT-Raman spectroscopy: identification, distribution and quantification of aspalathin in green rooibos (*Aspalathus linearis*). *Analytical Chemistry*, 78(22), 7716-7721. (TC:20)(IF2007:5.286)
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Books and Chapters in Books

1. Geladi P, Grahn H & Manley M (2010) Data analysis and chemometrics in hyperspectral imaging. In: Raman, Infrared and Near Infrared Chemical Imaging (edited by S Sasic & Y Ozaki), pp. 93-107, John Wiley & Sons, New York, NY. (TC:8)
2. Geladi P & Manley M (2010) Near infrared hyperspectral imaging in food research. In: Raman, Infrared and Near Infrared Chemical Imaging (edited by S Sasic & Y Ozaki), John Wiley & Sons, pp. 243-260, New York, NY. (TC:2)
3. Manley M, Downey G & Baeten V (2008) Spectroscopic Technique: Near Infrared (NIR) Spectroscopy. In: Modern Techniques for Food Authentication (edited by Da-Wen Sun), Elsevier, Oxford UK, pp. 65-115.
4. Baeten V, Manley M & Fernández Pierna JA, Downey G & Dardenne P (2008) Spectroscopic Technique: Fourier Transform Near Infrared (FT-NIR) Spectroscopy and Microscopy (NIRM). In: Modern Techniques for Food Authentication (edited by Da-Wen Sun), Elsevier Inc., Oxford UK, pp. 117-147.

Research Publications Published as Proceedings (not peer-reviewed)

1. E. Roux, C. McGoverin, G. Fox and M. Manley (2012). Near infrared spectroscopy for selection of malting barley in South African breeding programmes, in: Proceedings of the 15th International Conference on Near Infrared Spectroscopy, Edited by M. Manley, C.M. McGoverin, D.B. Thomas and G. Downey, Cape Town, South Africa, pp. 368-371.
2. Williams PJ, Manley M, Geladi P and Britz, TJ (2012). Detection of fungal contaminated maize kernels by NIR hyperspectral imaging and multivariate data analysis, in: Proceedings of the 15th International Conference on Near Infrared Spectroscopy, Edited by M. Manley, C.M. McGoverin, D.B. Thomas and G. Downey, Cape Town, South Africa, pp. 65-67.
3. Williams PJ, Du Toit G, Manley M & Geladi P (2011) Tracking of deionised water and deuterated water in wheat by NIR hyperspectral imaging. Proceedings of the 14th International Conference on Near Infrared Spectroscopy (edited by S Saranwong, S Kasemsumran, W Thanapase & P Williams), pp. 927-930. Chichester, UK: NIR Publications, ISBN: 978-1-906715-03-8.

4. Engelbrecht P, Manley M, Williams PJ, Du Toit G & Geladi P (2011) Pre-germination in barley using NIR hyperspectral imaging. Proceedings of the 14th International Conference on Near Infrared Spectroscopy (edited by S Saranwong, S Kasemsumran, W Thanapase & P Williams), pp.1003-1006. Chichester, UK: NIR Publications, ISBN: 978-1-906715-03-8.
5. September DJF, Geladi P, Nilsson D & Manley M (2011) Detection of buckwheat (*Fagopyrum esculentum*) adulterant in black pepper (*Piper nigrum* L.) by NIR reflectance spectroscopy and imaging. Proceedings of the 14th International Conference on Near Infrared Spectroscopy (edited by S Saranwong, S Kasemsumran, W Thanapase & P Williams), pp. 1017-1021. Chichester, UK: NIR Publications, ISBN: 978-1-906715-03-8.
6. Manley M, Geladi P, Williams PJ & Du Toit G (2010) Near infrared hyperspectral imaging for cereal quality and safety. In: Proceedings of the CST-SA – ICC International Grains Symposium, Quality and Safety of Grain Crops and Foods (edited by M Labuschagne & KG Duodu), pp. 96-101, ISBN: 978 0 86886.
7. Cilliers J & Manley M (2010) Conditioning of soft and hard South African wheats for optimal flour extraction. In: Proceedings of the CST-SA – ICC International Grains Symposium, Quality and Safety of Grain Crops and Foods (edited by M Labuschagne & KG Duodu), pp. 80-86, ISBN: 978 0 86886.
8. Ng'andwe C, Rautenbach M & Manley M (2010) Characterization of worts for beer brewing. In: Proceedings of the CST-SA – ICC International Grains Symposium, Quality and Safety of Grain Crops and Foods (edited by M Labuschagne & KG Duodu), pp. 290-293, ISBN: 978 0 86886.
9. Williams PJ, Geladi P & Manley M (2010) Near infrared hyperspectral imaging for evaluation of endosperm texture of white maize hybrids. In: Proceedings of the CST-SA – ICC International Grains Symposium, Quality and Safety of Grain Crops and Foods (edited by M Labuschagne & KG Duodu), pp. 141-145, ISBN: 978 0 86886.
10. Visser J, Fox GP & Manley M (2010) Optimization of the Rapid Visco-Analyser (RVA) for malt quality determination. In: Proceedings of the CST-SA – ICC International Grains Symposium, Quality and Safety of Grain Crops and Foods (edited by M Labuschagne & KG Duodu), pp. 132-136, ISBN: 978 0 86886.
11. Roux E, McGoverin & Manley M (2010) Complementing barley breeding with near infrared spectroscopy. In: Proceedings of the CST-SA – ICC International Grains Symposium, Quality and Safety of Grain Crops and Foods (edited by M Labuschagne & KG Duodu), pp. 34-38, ISBN: 978 0 86886.
12. Engelbrecht P, Manley M, Williams PJ, Du Toit G & Geladi P (2010) Pre-germination detected in whole cereal grains using near infrared hyperspectral imaging. In: Proceedings of the CST-SA – ICC International Grains Symposium, Quality and Safety of Grain Crops and Foods (edited by M Labuschagne & KG Duodu), pp. 123-127, ISBN: 978 0 86886.
13. O'Kennedy K & Manley M. (2010) Zein characterisation with MalDI-ToF MS. In: Proceedings of the CST-SA – ICC International Grains Symposium, Quality and Safety of Grain Crops and Foods (edited by M Labuschagne & KG Duodu), pp. 137-140, ISBN: 978 0 86886.
14. Du Toit G, Williams PJ, Geladi P & Manley M (2010) Diffusion of conditioning water in wheat using NIR hyperspectral imaging. In: Proceedings of the CST-SA – ICC International Grains Symposium, Quality and Safety of Grain Crops and Foods (edited by M Labuschagne & KG Duodu), pp. 128-131, ISBN: 978 0 86886.
15. Botha M, Manley M & Joubert M (2007) Use of Near Infrared Spectroscopy (NIRS) in Quality Control of Green Rooibos Tea. In: Near Infrared Spectroscopy: Proceedings of the 12th International Conference (edited by GR Burling-Claridge, SE Holroyd & RMW Sumner), Pp. 333-337, Auckland, New Zealand: New Zealand Near Infrared Spectroscopy Society Incorporated.
16. Eberle K & Manley M (2007) Rapid quality control of South African extra virgin olive oil by NIRS: Comparison of prediction models built from spectra collected on two spectrophotometers at different resolutions and path lengths. In: Near Infrared Spectroscopy: Proceedings of the 12th International Conference (edited by GR Burling-Claridge, SE Holroyd & RMW Sumner), Pp. 412-417, Auckland, New Zealand: New Zealand Near Infrared Spectroscopy Society Incorporated.
17. Muller CA, Manley M, Lambrechts M, Pretorius IS & Nieuwoudt HH (2007) Identification of wine yeast strains with FT-NIRS and effect of spectral variation due to sample preparation and repeated analyses. In: Near Infrared Spectroscopy: Proceedings of the 12th International Conference (edited by GR Burling-Claridge, SE Holroyd & RMW Sumner), Pp. 765-769, Auckland, New Zealand: New Zealand Near Infrared Spectroscopy Society Incorporated.
18. Nieuwoudt HH, Prior BA, Pretorius IS, Manley M & Bauer FF (2007) Evaluation of principal component analysis as a tool to design calibration sets for glycerol quantification in wine with Fourier transform infrared spectroscopy. In: Near Infrared Spectroscopy: Proceedings of the 12th International Conference (edited by GR Burling-Claridge, SE Holroyd & RMW Sumner), Pp. 234-238, Auckland, New Zealand: New Zealand Near Infrared Spectroscopy Society Incorporated.

19. Manley, M (2004) Near infrared spectroscopy (NIRS): an invaluable tool for feed quality control. Proceedings for Animal Feed Manufacturers Association (AFMA) Forum 2004: Recent developments in animal feeds and feeding, Sun City, South Africa.
20. Manley M, Gray BG, Joubert E & Schulz H (2004) NIRS: an invaluable tool for the quality control of Devil's Claw (*Harpagophytum procumbens*). In: Near Infrared Spectroscopy: Proceedings of the 11th International Conference (edited by A Garrido-Varo & AMC Davies), Pp. 879-882, Chichester, UK: NIR Publications.
21. Manley M, De Bruyn N & Downey G (2004) Classification of three-year old, unblended South African brandy with near infrared spectroscopy. In: Near Infrared Spectroscopy: Proceedings of the 11th International Conference (edited by A Garrido-Varo & AMC Davies), Pp. 563-567, Chichester, UK: NIR Publications.
22. Myburgh L, Manley M, Joubert E & Lotz E (2004) Non-destructive evaluation of storage potential of clingstone peaches by NIRS using PCA and SIMCA. In: Near Infrared Spectroscopy: Proceedings of the 11th International Conference (edited by A Garrido-Varo & AMC Davies), 367-372, Chichester, UK: NIR Publications.
23. Van Zyl A, Manley M & Wolf EEH (2002) The application of near infrared (NIR) spectrophotometry in the South African wine industry. In: Near infrared spectroscopy: Proceedings of the 10th International Conference (edited by RC Cho & AMC Davies), Pp. 466-470. Chichester, UK: NIR Publications.
24. Manley M, McGill AEJ & Osborne BG (1996) Whole wheat grain hardness by near infrared spectroscopy. In: Near infrared spectroscopy: The Future Waves (edited by AMC Davies & PC Williams), Pp. 466-470. Chichester, UK: NIR Publications.

Popular Publications (not peer-reviewed)

1. Manley, M, Engelbrecht, P & Geladi, P (2010). NIR hyperspectral imaging at Stellenbosch University: detection of pre-germination in whole sorghum grains. NIR news, 21(7), 11-13. doi: 10.1255/nim.1207.
2. Manley M, Joubert M & Botha M (2007) Monitoring of bio-active compounds in honeybush (*Cyclopia*), an indigenous South African fynbos plant. NIR news, 18(2), 4-6.
3. Manley M, Joubert M & Botha M (2006) Use of near infrared spectroscopy in quality control of green rooibos and honeybush. Best@Büchi, 41.
4. Manley M, De Bruyn N & Downey G (2003) Classification of three-year old, unblended South African brandy with near infrared spectroscopy. NIR news, 14(5), 8-9, 11.
5. Joubert E, Manley M, Van Zyl A & Lotz E, 2001. NIR maak besluitneming makliker: Toepassing van NIR in inmaak- en droëvrugtebedrywe. Sagtevrugteboer, 51(7), 15.

Presentations at Conferences and Symposia

Invited Speaker

1. Manley M (2015) Near infrared (NIR) spectroscopy for reliable measurements. Test and Measurement International Conference 2015 (T&M 2015), Somerset-West, South Africa, 12-14 October 2015 (Plenary lecture).
2. Manley M (2014) Near infrared spectroscopy: current status and future prospects. "II Workshop de espectroscopia do infravermelho próximo na agropecuária", Universidade Estadual Paulista, Faculdade de Ciências Agrárias e Veterinárias (UNESP-FCAV). Jaboticabal, São Paulo, Brazil, 17th to 20th November 2014 (Opening lecture).
3. Manley M (2014) Applications of NIR spectroscopy and NIR hyperspectral imaging in cereal grains. Italian National Conference of the Italian Society for Near Infrared Spectroscopy (SISNIR), Modena, 28-30 May 2014 (Plenary lecture)
4. Manley M (2013) Non-destructive characterisation of cereal grains with near infrared hyperspectral imaging and micro X-ray computed tomography. 12th International Chemistry Conference Africa, Pretoria, South Africa, 8-12 July 2013 (Plenary lecture).
5. Manley M (2013) Novel, non-destructive cereal quality analysis: potential for triticale". 8th International Triticale Symposium, Ghent, Belgium, 10-14 June 2013 (Keynote lecture)
6. Manley M (2012) Advances in NIR spectroscopy. South African Spectroscopy Society Symposium 'Then and Now', Pretoria, South Africa, 11 October 2012.
7. Manley M (2012) Multivariate data analysis and NIR hyperspectral imaging for characterisation of biological material. 2nd South African Chemometrics Conference, Pretoria, South Africa, 9-11 May 2012.
8. Manley M (2011) NIR hyperspectral imaging for barley characterisation. 15th Australian Barley Technical Symposium, Adelaide, Australia, 16-19 October 2011.
9. Manley M (2010) NIR hyperspectral imaging: making the invisible visible. 2nd Asian NIR Symposium, Shanghai, China, 15-18 October 2010.

10. Manley M (2010) Visualisation of diffusion of conditioning water in wheat by NIR hyperspectral imaging. 15th IUFoST World Congress of Food Science and Technology, Cape Town, South Africa. 22-26 August 2010.
11. Manley M (2010) NIR hyperspectral imaging: thousands of spectra for exploring heterogeneous products. 14th Australian NIR Conference, NIR in action: it makes economic sense, Adelaide, Australia, 18-21 April 2010.
12. Manley M (2010) Near infrared hyperspectral imaging for cereal quality and safety. CST-SA – ICC International Grains Symposium, Quality and Safety of Grain Crops and Foods, Pretoria, South Africa, 3-5 February 2010.
13. Manley M & Geladi P (2008) Hyperspectral image analysis: all the better to 'see' with. 1st Symposium of the South African Chemometrics Society (SACS), Stellenbosch, South Africa, 1-5 December 2008.
14. Manley M (2008) Near infrared spectroscopy analysis of essential oils produced from indigenous South African aromatic plants. 39th International Symposium on Essential Oils, Quedlinburg, Germany, 7-10 September 2008 (Plenary lecture).
15. Manley M (2007) NIRFlex N-500 in Africa. Büchi Session, 13th International Conference on Near Infrared Spectroscopy, Umeå, Sweden, 17-21 June 2007.
16. Manley M (2006) Application of NIRS in quality control of food products. AnalyticaChina 2006, 3rd International Trade Fair for Analysis, Biotechnology, Diagnostics and Laboratory Technology with AnalyticaChina Conference, Exhibitor Forum, Shanghai, China, 19-21 September 2006.
17. Manley M (2005) Near infrared spectroscopy: Defining the Boundaries. Büchi Workshop, 12th International Conference on Near Infrared Spectroscopy, Auckland, New Zealand, 10-15 April 2005.
18. Manley M & Joubert E (2004) Near infrared spectroscopy (NIRS): The solution for rapid quality control. 4th SANCRA Symposium, 5-8 September 2004, Eisenburg.
19. Manley M (2004) Near infrared spectroscopy (NIRS): Cost-effective analyses for feed quality control. Animal Feed Manufacturers Association (AFMA) Student Symposium: The Animal Feed Industry, Stellenbosch, 29 April 2004.
20. Manley M (2004) Near infrared spectroscopy (NIRS): an invaluable tool for feed quality control. Animal Feed Manufacturers Association (AFMA) Forum 2004: Recent developments in animal feeds and feeding, Sun City, South Africa, 10-12 March 2004.
21. Manley M, Dardenne P & Martin P (2003) Training Workshop on Scanning NIR techniques and applications. 8th International Symposium on Soil and Plant Analysis, Somerset West, South Africa, 13-17 January 2003.
22. Manley M (2001) Application of conventional and subjective reference methods in SIMCA models. 3rd NIR Nord NIR Conference: NIR in Food, Feed and Food Packaging, Umeå, Sweden, 17-19 September 2001.

Presentations at Conferences and Symposia

International Meetings (presenter underlined)

1. Schoeman L & Manley M (2015) X-ray micro-computed tomography (μ CT) to non-destructively determine the effect of oven and forced convection roasting on the microstructure of whole maize kernels. 29th European Federation of Food Science & Technology (EFFoST) International Conference, Athens, Greece, 10-12 November 2015 (poster).
2. Schoeman L & Manley M (2015) Scanning electron microscopy (SEM) to monitor the microstructural changes of whole maize kernels induced by oven and forced convection roasting. 29th European Federation of Food Science & Technology (EFFoST) International Conference, Athens, Greece, 10-12 November 2015 (poster).
3. Bala SM, Opara UL, Kidd M & Manley M (2015) Effect of forced convection roasting on physicochemical and antioxidants properties and optimisation of roasting conditions of South African maize (*Zea mays* L.) hybrids for the production of whole grain flour. 29th European Federation of Food Science & Technology (EFFoST) International Conference, Athens, Greece, 10-12 November 2015 (poster).
4. Bala SM, Opara UL, Kidd M & Manley M (2015) Optimisation and effects of forced convection roasting on physicochemical and antioxidants properties of Nigerian maize. American Association for Cereal Chemists International (AACCI) Centennial Meeting, Minneapolis, Minnesota, USA, 18-21 October 2015 (poster).
5. Guelpa A & Manley M (2015) Milling quality prediction from single maize (*Zea Mays* L.) kernels using the MicroNIR spectrophotometer. 17th International Conference on Near Infrared Spectroscopy (NIR 2015), Foz do Iguassu, Brazil, 18-23 October, 2015 (poster).
6. Erasmus S, Manley M, Hoffman L and Muller M (2015) MicroNIR spectroscopy: a potential analytical tool for the classification of origin and prediction of $\Delta^{13}C$ and $\Delta^{15}N$ values of lamb meat. 17th International Conference on Near Infrared Spectroscopy (NIR 2015), Foz do Iguassu, Brazil, 18-23 October, 2015 (poster).
7. Kammies T-L, Manley M, Gouws P, Williams P (2015) Differentiation of foodborne bacteria using NIR hyperspectral imaging. 17th International Conference on Near Infrared Spectroscopy (NIR 2015), Foz do Iguassu, Brazil, 18-23 October, 2015 (poster).

8. Sendin K, Williams P & Manley M (2015) Non-Destructive identification of *Fusarium* infected white maize kernels using NIR hyperspectral imaging and multivariate data analysis. 17th International Conference on Near Infrared Spectroscopy (NIR 2015), Foz do Iguassu, Brazil, 18-23 October, 2015 (poster).
9. Guelpa A, Bevilacqua M, Marini F, O'Kennedy K, Geladi P & Manley M (2014). Characterising maize hardness using rapid visco analyser (RVA) viscograms and locally weighted partial least squares (LW-PLS) regression models. American Association for Cereal Chemists International (AACCI) Annual Meeting, Providence, USA, October 5–8, 2014 (poster).
10. Guelpa A, Du Plessis A, Kidd M & Manley M (2014). Utilisation of an X-ray micro-computed tomography (μ CT) density calibration to estimate whole maize kernel density for hardness classification. American Association for Cereal Chemists International (AACCI) Annual Meeting, Providence, USA, October 5–8, 2014 (lecture).
11. Guelpa A, Geladi P & Manley M (2014). Quantification of maize endosperm types using near infrared (NIR) hyperspectral imaging. 17th International Diffuse Reflectance Conference (IDRC), Chambersburg, USA, 2-8 August 2014 (poster).
12. Manley M, Guelpa A, Mokhoro T & Du Plessis (2014) Maize kernel density measurements with X-ray micro computed tomography (μ CT), 3rd European Conference on Process Analytics and Control Technology (EuroPACT 2014), Barcelona, Spain, 6-9 May 2014 (lecture)
13. Manley M, Williams P, Britz TJ & Geladi P (2013) Characterisation of growth kinetics of *Fusarium* spp. with near infrared hyperspectral imaging. 16th International Conference on Near Infrared Spectroscopy, La Grande Motte, France, 2-7 June 2013 (lecture).
14. Guelpa A, Geladi P, Du Plessis A & Manley M (2013). Utilising near infrared (NIR) hyperspectral imaging to quantify vitreous endosperm in whole maize kernels. 12th International Chemistry Conference Africa, Pretoria, South Africa, 8-12 July 2013 (poster).
15. Mokhoro T, Du Plessis A, Geladi P, Fox P & Manley M (2013) X-ray micro computed tomography: non-destructive evaluation of sprouted maize kernels. 12th International Chemistry Conference Africa, Pretoria, South Africa, 8-12 July 2013 (poster).
16. Manley M (2012) Evaluation of chemical changes in NIR hyperspectral images of cereals using 'classification gradients. IASIM-2012, Jurmala, Latvia, 13-14 September 2012 (lecture).
17. Williams PJ, Geladi P, Britz TJ & Manley M (2012) Near infrared hyperspectral imaging and multivariate image analysis to characterise *Fusarium* species on growth media. IASIM 2012, Jurmala, Latvia, 13-14 September 2012 (lecture).
18. McGoverin CM & Manley M (2011) Influence of kernel orientation on NIR hyperspectral images for whole maize kernel characterisation. 15th International Conference on Near Infrared Spectroscopy, Cape Town, South Africa 13-20 May 2011 (lecture).
19. Williams PJ, Britz TJ, Geladi P & Manley M (2011) Detection of fungal contaminated maize kernels by NIR hyperspectral imaging and multivariate data analysis. 15th International Conference on Near Infrared Spectroscopy, Cape Town, South Africa 13-20 May 2011 (poster).
20. Geladi P, Engelbrecht P, McGoverin C & Manley M (2011) Visualisation of physical variation in grain NIR images using classification gradients. 15th International Conference on Near Infrared Spectroscopy, Cape Town, South Africa 13-20 May 2011 (poster).
21. Roux E, McGoverin CM, Fox G & Manley M (2011) NIR spectroscopy for selection of malting barley in South African breeding programmes (2011) 15th International Conference on Near Infrared Spectroscopy, Cape Town, South Africa 13-20 May 2011 (poster).
22. Manley M & Geladi P (2010) Importance of higher order principal components in NIR hyperspectral image analysis. 1st African-European Conference on Chemometrics (Afrodata), Rabat, Morocco, 20-26 September 2010 (lecture).
23. Engelbrecht P, Geladi P & Manley M (2010) Near infrared hyperspectral imaging for the detection of pre-germination in cereal grains. 15th IUFoST World Congress of Food Science and Technology, Cape Town, South Africa, 22-26 August 2010 (poster).
24. Ng'andwe C, Rautenbach M & Manley M (2010) Elucidation of the optimal organic nitrogen profile for yeast in barley wort fermentation. 15th IUFoST World Congress of Food Science and Technology, Cape Town, South Africa, 22-26 August 2010 (poster).
25. O'Kennedy K, Fox G & Manley M. (2010) Investigation of extraction parameters on analysis of zein with MALDI-TOF MS. 15th IUFoST World Congress of Food Science and Technology, Cape Town, South Africa, 22-26 August 2010 (poster).
26. Roux E, McGoverin & Manley M (2010) Prediction of barley and malting quality with NIR spectroscopy. 15th IUFoST World Congress of Food Science and Technology, Cape Town, South Africa, 22-26 August 2010 (poster).

27. September DJF, Williams PJ, Geladi P & Manley M (2010) Investigating black pepper adulteration by NIR hyperspectral imaging. 15th IUFoST World Congress of Food Science and Technology, Cape Town, South Africa, 22-26 August 2010 (poster).
28. Visser J, Fox GP & Manley M (2010) Optimisation of the Rapid Visco Analyser (RVA) Kilned Malt method to discriminate between degrees of malt fermentability. 15th IUFoST World Congress of Food Science and Technology, Cape Town, South Africa, 22-26 August 2010 (poster).
29. McGoverin & Manley M (2010) Maize hardness classification by NIR spectroscopy. 15th International Diffuse Reflectance Conference, Chambersburg, PA, USA, 1-6 August 2010 (poster).
30. Williams PJ, Du Toit G, Manley M & Geladi P (2009) Tracking of deionised water and deuterated water in wheat by NIR hyperspectral imaging. 14th International Conference on Near Infrared Spectroscopy, Bangkok, Thailand, 8-12 November 2009 (lecture).
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34. Joubert E, De Beer D & Manley M (2008) Variation in major polyphenols of rooibos (*Aspalathus linearis*) and honeybush (*Cyclopia subternata*). 4th World Congress on Medicinal and Aromatic Plants (WOCMAP) – Using Plants to Benefit People, Cape Town, South Africa, 9-14 November 2008.
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42. Manley M, Williams P & Geladi P (2008) Can maize kernel hardness be seen by an InGaAs camera? 14th International Diffuse Reflectance Conference, Chambersburg, PA, USA, 3-8 August 2008.
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47. Manley M & Joubert E (2007) Quantification of active compounds in buchu (*Agathosma betulina*) oil by FT-NIRS. 13th International Conference on Near Infrared Spectroscopy, Umeå, Sweden, 17-21 June 2007.
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62. Manley M, De Bruyn N & Downey G (2003) Classification of three-year old, unblended South African brandy with near infrared spectroscopy. 11th International Conference on Near Infrared Spectroscopy, Córdoba, Spain, April 2003.
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Presentations at Conferences and Symposia

National Meetings

1. Manley M (2015) Near infrared spectroscopy in food production and research: current status and future prospects. 21st SAAFoST Biennial International Congress and Exhibition, Durban, 6-9 September 2015 (lecture).
2. Manley M (2015) Non-destructive characterisation of intact cereal grains with near infrared hyperspectral imaging and X-ray micro- computed tomography. 21st SAAFoST Biennial International Congress and Exhibition, Durban, 6-9 September 2015 (lecture).
3. Orina I, Williams P & Manley M (2015) Monitoring *Fusarium* verticillioides contamination in Kenyan maize with X-ray nano-computed tomography and associated multivariate data. National Conference on Imaging with Radiation (IMGRAD 2015), Stellenbosch, 10-11 September 2015 (lecture).
4. Schoeman L & Manley M (2015) Non-destructive quantification and characterisation of the effect of roasting on the microstructure of whole maize kernels using X-ray micro-computed tomography (μ CT). 21st SAAFoST Biennial International Congress and Exhibition, Durban, 6-9 September 2015 (lecture).
5. Guelpa A, Du Plessis A & Manley M (2015) Prediction of kernel density of single maize (*Zea mays* L.) kernels using a miniature near infrared (NIR) spectrophotometer. 21st SAAFoST Biennial International Congress and Exhibition, Durban, 6-9 September 2015 (lecture).
6. Orina I, Williams P & Manley M (2015) Monitoring *Fusarium* contamination in Kenyan maize with X-ray micro (μ CT) computed tomography and associated multivariate data and texture analysis. 21st SAAFoST Biennial International Congress and Exhibition, Durban, 6-9 September 2015 (lecture).
7. Zhang S & Manley M (2015) Effect of forced convection continuous tumble roasting (FCCTR) on antioxidant properties of whole wheat grain. 21st SAAFoST Biennial International Congress and Exhibition, Durban, 6-9 September 2015 (lecture).
8. Bala SM, Opara UL, Kidd M & Manley M (2015) Effects of forced convection roasting on the physicochemical and antioxidant properties of Nigerian maize (*Zea mays* L.). 21st SAAFoST Biennial International Congress and Exhibition, Durban, 6-9 September 2015 (poster).

9. Kammies T-L, Manley M, Gouws P, Williams P (2015) NIR hyperspectral imaging and multivariate data analysis for the differentiation of foodborne pathogenic bacteria. 21st SAAFoST Biennial International Congress and Exhibition, Durban, 6-9 September 2015 (poster).
10. Sendin K, Manley M & Williams P (2015) Rapid non-destructive evaluation of white maize kernel quality and safety using NIR hyperspectral imaging and multivariate data analysis. 21st SAAFoST Biennial International Congress and Exhibition, Durban, 6-9 September 2015 (poster).
11. Guelpa A, Geladi P, Du Plessis A & Manley M (2013) Non-destructive quantification of vitreous endosperm of whole maize kernels with micro X-ray computed tomography and near infrared hyperspectral imaging. 20th Biennial International Congress and Exhibition, Pretoria, 7-9 October 2013 (poster).
12. Mokhoro T, Du Plessis A, Geladi P, Fox P & Manley M (2013) X-ray micro computed tomography: non-destructive evaluation of effect of induced germination on whole maize endosperm. 20th Biennial International Congress and Exhibition, Pretoria, 7-9 October 2013 (poster).
13. Guelpa A, Geladi P, Du Plessis A & Manley M (2013) Maize endosperm density measurement with X-ray micro-computed tomography (μ CT). Imaging with Radiation: 1st South African Conference and Workshop, Pelindaba, South Africa, 23-27 September 2013 (lecture).
14. Mokhoro T, Du Plessis A, Geladi P, Fox P & Manley M (2013) X-ray micro computed tomography for whole maize characterisation. Imaging with Radiation: 1st South African Conference and Workshop, Pelindaba, South Africa, 23-27 September 2013 (lecture).
15. Cilliers J & Manley M (2010) Conditioning of soft and hard South African wheats for optimal flour extraction. CST-SA – ICC International Grains Symposium, Quality and Safety of Grain Crops and Foods, Pretoria, South Africa, 3-5 February 2010 (lecture).
16. Ng'andwe C, Rautenbach M & Manley M (2010) Characterization of worts for beer brewing. CST-SA – ICC International Grains Symposium, Quality and Safety of Grain Crops and Foods, Pretoria, South Africa, 3-5 February 2010 (poster).
17. Williams PJ, Geladi P & Manley M (2010) Near infrared hyperspectral imaging for evaluation of endosperm texture of white maize hybrids. CST-SA – ICC International Grains Symposium, Quality and Safety of Grain Crops and Foods, Pretoria, South Africa, 3-5 February 2010 (poster).
18. Visser J, Fox GP & Manley M (2010) Optimization of the Rapid Visco-Analyser (RVA) for malt quality determination. CST-SA – ICC International Grains Symposium, Quality and Safety of Grain Crops and Foods, Pretoria, South Africa, 3-5 February 2010 (poster).
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21. O'Kennedy K & Manley M. (2010) Zein Characterisation with Maldi-Tof MS. CST-SA – ICC International Grains Symposium, Quality and Safety of Grain Crops and Foods, Pretoria, South Africa, 3-5 February 2010 (poster).
22. Du Toit G, Williams PJ, Geladi P & Manley M (2010) Diffusion of conditioning water in wheat using NIR hyperspectral imaging. CST-SA – ICC International Grains Symposium, Quality and Safety of Grain Crops and Foods, Pretoria, South Africa, 3-5 February 2010 (poster).
23. Fox GP, Manley M, Kidd M & Prinsloo T (2009) Genotype and environmental effects on hardness in maize (*Zea mays*) grown in South Africa. Combined Congress: South African Society of Crop Production; Soil Science Society of South Africa; Southern African Society for Horticultural Sciences; Southern African Weed Science Society, Stellenbosch, South Africa, 19-22 January 2009 (lecture).
24. Du Pisani F, Fox GP & Manley M (2009) Near infrared calibration models for South African Triticale (*Triticosecale Wittmack*) cultivars. Combined Congress: South African Society of Crop Production; Soil Science Society of South Africa; Southern African Society for Horticultural Sciences; Southern African Weed Science Society, Stellenbosch, South Africa, 19-22 January 2009 (poster).
25. Williams P, Geladi P & Manley M (2009) Maize kernel hardness: can we see it? Combined Congress: South African Society of Crop Production; Soil Science Society of South Africa; Southern African Society for Horticultural Sciences; Southern African Weed Science Society, Stellenbosch, South Africa, 19-22 January 2009 (lecture).
26. Williams P, Geladi P & Manley M (2009) Indirect detection of *Fusarium* in maize by NIR hyperspectral imaging. Combined Congress: South African Society of Crop Production; Soil Science Society of South Africa; Southern African Society for Horticultural Sciences; Southern African Weed Science Society, Stellenbosch, South Africa, 19-22 January 2009 (poster).

27. Du Toit G, Geladi P & Manley M (2009) Diffusion of conditioning water in single wheat kernels: experimental design and evaluation by NIR hyperspectral imaging. Combined Congress: South African Society of Crop Production; Soil Science Society of South Africa; Southern African Society for Horticultural Sciences; Southern African Weed Science Society, Stellenbosch, South Africa, 19-22 January 2009 (poster).
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29. Du Toit G, Geladi P & Manley M (2008) Evaluation of conditioning water diffusion in single wheat kernels using NIR hyperspectral imaging and PCA. 1st Symposium of the South African Chemometrics Society (SACS), Stellenbosch, South Africa, 1-5 December 2008 (poster).
30. Du Toit G, Geladi P & Manley M (2008) PCA and PLS-DA for exploring wheat kernel hardness chemical image data. 1st Symposium of the South African Chemometrics Society (SACS), Stellenbosch, South Africa, 1-5 December 2008 (lecture).
31. Williams P, Geladi P & Manley M (2008) Detection of fungal infection: NIR hyperspectral imaging, PCA and PLS-DA. 1st Symposium of the South African Chemometrics Society (SACS), Stellenbosch, South Africa, 1-5 December 2008 (poster).
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33. Williams P, Manley M & Geladi P (2007) Determining the distribution of intramuscular fat in biltong using NIR hyperspectral chemical imaging. Chemrawn, Stellenbosch, 2-5 December 2007 (lecture).
34. Van der Merwe DJ, Joubert E, Gelderblom WCA & Manley M (2007) Liver metabolism of mangiferin, a major phenolic compound in honeybush tea: implications for its bioactivity. 19th Biennial International SAAFoST Congress, Durban, 3-5 September 2007 (lecture).
35. Eberle K & Manley M (2005) Rapid quality control of South African extra virgin olive oil by near infrared spectroscopy. 18th Biennial International SAAFoST Congress, Stellenbosch, 5-7 September 2005.
36. Botha, M, Manley M & Joubert E (2005) Use of near infrared spectroscopy (NIRS) in quality control of green rooibos tea. 18th Biennial International SAAFoST Congress, Stellenbosch, 5-7 September 2005.
37. De Beer D, Joubert E, Marais J & Manley M (2005) Contribution of phenolic compounds to the Total Antioxidant Capacity of Pinotage wine. 18th Biennial International SAAFoST Congress, Stellenbosch, 5-7 September 2005.
38. Nieuwoudt HH, Prior BA, Pretorius IS, Manley M & Bauer FF (2004) Chemometrics can improve your calibrations: glycerol in wine as model system. 28th Viticulture and Enology Congress, 15-19 November 2004, Somerset West, South Africa.
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41. Joubert E, Manley M, Gray BR & Schulz H (2004) Drying of medicinal plants: Devil's Claw – A case study. 4th SANCRA Symposium, 5-8 September 2004, Elsenburg.
42. Botha, M, Manley M, Joubert E, Otto F, Grüner S & Wienreich B (2004) Use of near infrared spectroscopy (NIRS) in quality control of honeybush tea. 4th SANCRA Symposium, 5-8 September 2004, Elsenburg.
43. Van der Merwe JD, Joubert E, Gelderblom WCA, Snijman PS & Manley M (2004) Antimutagenic activity of rooibos and honeybush teas: Possible mechanisms involved. IPUF, 5-8 July 2004, Clanwilliam (lecture).
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45. De Beer D, Fourie B, Joubert E, Du Toit W, Marais J & Manley M (2003) Wood maturation of Pinotage using barrels and alternative wood products: Effect on phenolic composition and antioxidant capacity. 27th Annual Viticulture and Enology Congress, 5-7 November 2003, Somerset West.
46. De Beer D, Joubert E, Van Schalkwyk D, Marais J & Manley M (2003) Effect of climate and vine management systems on the phenolic composition and antioxidant capacity of Pinotage wines: preliminary results. 27th Annual Viticulture and Enology Congress, 5-7 November 2003, Somerset West.
47. De Beer D, Waterhouse ALW, Joubert E & Manley M (2003) Standardisation of wine analysis: sample management to prevent loss of phenolic compounds. 27th Annual Viticulture and Enology Congress, 5-7 November 2003, Somerset West.

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50. De Beer D, Joubert E, Gelderblom WCA & Manley M (2003) In-bottle maturation of red and white wines: changes in phenolic composition and antioxidant activity. 17th Biennial International SAAFoST Congress , Pretoria, 1-4 September 2003.
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53. Manley M, De Bruyn N & Downey G (2003) Classification of three-year old, unblended South African brandy with near infrared spectroscopy. 17th Biennial International SAAFoST Congress, Pretoria, 1-4 September 2003.
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56. Gray BR, Joubert E, Manley M & Schulz H (2002) Application of FT-NIRS as a rapid method for the determination of harpagoside and moisture contents of dried powdered *Harpagophytum procumbens* (Devil's claw) root. Indigenous Plant Use Forum, Pine Lodge, George, 9-12 July 2002.
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59. De Beer D, Joubert E, Gelderblom WCA & Manley M (2001) Antioxidant activity of South African red and white wines: Inhibition of microsomal lipid peroxidation. South African Society for Enology and Viticulture Congress, Somerset West, November 2001.
60. Richards ES, Joubert E, Gelderblom WCA & Manley M (2001) Relative antioxidant potencies of the aqueous extracts of hoenybush (*Cyclopia* species), rooibos (*Aspalathus linearis*) and *Camellia sinensis* teas. IUBMB/SASBMB Special meeting on: The Biochemical and Molecular Basis of Disease, Cape Town, 19-23 November 2001.
61. Richards ES, Joubert E, Gelderblom WCA & Manley M (2001) A comparative study on the antioxidant activity of honeybush (*Cyclopia* species), rooibos (*Aspalathus linearis*) and *Camellia sinensis* teas. 16th Biennial International SAAFoST Congress , Durban, 10-12 September 2001.
62. Van Zyl A, Manley M & Wolf EEH (1999) The application of near infrared (NIR) spectrophotometry in the South African wine industry. 23rd Congress of the South African Society for Enology and Viticulture, Somerset West, November 1999.
63. Van Zyl A, Theron L, Manley M & Joubert E (1999) The determination of internal quality of clingstone peaches using Fourier transform near infrared (FT-NIR) spectroscopy. 15th Biennial International Congress and Exhibition of the South African Association for Food Science and Technology in association with the Institute of Packaging, Cape Town, August 1999.
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65. Manley M & Randall PG (1991) Prediction of breadmaking quality of wheat using high molecular weight glutenin subunits. Conference of the South African Association for Grain Crops Production, Stellenbosch, January 1991.
66. Randall PG, Manley M & McGill AEJ (1989) A "15 mg" baking test. Conference of the South African Association for Food Science and Technology, 1991. Pretoria, Republic of South Africa. Conference of the South African Association for Food Science and Technology, Durban, August 1991.

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68. Manley M & Joubert GD (1987) Die invloed van kultivar, lokaliteit en planttyd op proteïeninhoud van koring. Conference of the South African Association for Grain Crops Production, Stellenbosch, January 1987 (lecture)