

CURRICULUM VITAE

PERSONAL INFORMATION:

Surname: Carmichael
Names: Patricia Cassie
Nationality: Liswati
Place of Birth: Siteki, Swaziland
Date of Birth: 22 August 1982
Contact Address: Ministry of Agriculture
Department of Agricultural Research and Specialist Services
P.O. Box 4
Malkerns M204
Eswatini
Cell: (+268) 7640-9931
Office: (+268) 2527-4071 (Ext. 2022)
Fax: (+268) 2527-4070
Email: ptcarmic@yahoo.com
Valid driver's licence (Light Motor Vehicle) – 18/11/2005

ACADEMIC RECORD:

University of Pretoria

Programme of Study: Ph.D. in Plant Pathology (Postharvest)

Years of Study: 2015-2018

Ph.D. Field of Research:

Thesis title: *Botrytis cinerea Pers. presence and microbiomes of table grapes (Vitis vinifera L.) during production and postharvest storage*

The study assessed the prevalence of *Botrytis cinerea* and the diversity of table grape microbiome at different phenological stages of berry development. The next generation sequencing techniques was applied and these included droplet digital polymerase chain reaction (ddPCR) and Illumina sequencing technology. Furthermore, the effect of maturity of table grape harvest and storage regimes was evaluated.

Stellenbosch University

Programme of Study: MSc Agric (Horticultural Science)

Years of Study: 2010-2011 (Masters after honours)

MSc. Field of Research:

Thesis title: *Effect of fruit maturation and ripening potential for optimum eating quality of 'Forelle' pears*

The objective of the study was to use various maturity indices (ethylene production, ground colour, firmness, total soluble solids, titratable acidity, and starch breakdown) to identify parameters that were stable over the growing season and could be used reliably in a prediction model for optimum harvest maturity of 'Forelle' pears. The ripening potential of the fruit harvested at different maturities was assessed to determine optimum eating quality (neither mealy nor astringent fruit) after storage and ripening.

Programme of Study: BScHons Agric. (Horticultural Science)

Years of Study: 2009

University of Swaziland

Programme of Study: BSc Agric. (Horticulture)
Years of Study: 2004-2005
Thesis Title: *Effect of mulching materials and irrigation regimes on radish yield and quality*

Programme of Study: Diploma in Agriculture
Years of Study: 2000-2003

EMPLOYMENT RECORD:

Place of employment: **University of Eswatini**
Period: January 2020 – Present (part-time)
Position: Lecturer (Horticulture)
Conduct university courses for undergraduate and graduate students in the Faculty of Agriculture.

Place of employment: **Ministry of Agriculture, Department of Agricultural Research and Specialist Services**
Period: September 2006 – Present
Position: Researcher, (Horticulture)
Administrative head of section; Supervise and coordinate national research activities in horticultural specialties, such as fruit trees, vegetables and mushrooms. Identify national research needs on horticultural crops in Eswatini, and develop research programmes; Conduct experiments and write research reports. Liaise with the extension unit in the Ministry of Agriculture, identify and coordinate trainings for farmers on horticultural crops. Manage donor funds under the horticulture section. Prepare reports and write proposals for external funding.

Place of employment: **University of Swaziland**
Period: May 2013 – 2015 (part-time)
Position: Part-time Research Associate Fellow at the Swaziland Institute of Research in Medicinal and Indigenous Food Plants
Conducted independent scientific research in indigenous vegetables. Analysed and evaluated collected ethno-botanical statistical data to prepare written reports and studies for use by professional workers in the area of agronomy, concentrating in medicinal and indigenous food plants.

Place of employment: **SwaziCan Citrus** – a Rhodes Group of Companies (Citrus estate specializing in all Citrus crops and processing tomatoes)
Period: August 2005 – August 2006
Position: Field Supervisor/Manager, Tomato Farming for Processing
Supervised and coordinated activities of workers engaged in planting, cultivating, and harvesting tomatoes for processing.

Place of employment: **Vickery Seedlings Nursery** (A Nursery specializing in vegetables, fruits and ornamental plants)
Period: June 2005 – August 2005
Position: Volunteer in the propagation unit

Place of work: **Khubuta Mellowood Farm** (A farm specializing in fruit crops: banana, mangoes, pawpaw, litchis, peanuts, and macadamia nuts)
Period: May 2004 – August 2004
Position: Trainee

Place of employment: **Swaziland Fruit Cannery** (A company under the Rhodes Food Group specialising in canning of mainly citrus fruits, jam making, and juice making)

Period: May 2003 – August 2003
Position: Supervisor and Quality-Control Technician in sorting and grading of fruits for canning
Supervised and coordinated activities of workers engaged in mixing, packaging, and/or canning fruit and nuts. Inspected raw materials and finished products, and tested and adjusted packaging or canning equipment during processing of fruit and nuts.

Place of employment: **Luvivane Estates** (Crop production Farm specializing in baby vegetables for export, roses, sugar cane and other field crops)

Period: May 2002 – August 2002
Position: Trainee

INVOLVEMENT AND LEADERSHIP:

- *Project coordinator:* Ministry of Agriculture, Seed Potato and Fruit Tree Projects funded by the Taiwan Government, 2015 – Present
 - *Training of communities on vegetable and fruit tree production and management:* Done every year with development partners, such as World Vision, Red Cross and others
 - *Research Assistant:* University of Pretoria, Plant Pathology laboratories, 2015-2018
 - *Supervision of final year student research:* Three students – University of Pretoria, 2016-2017
 - *Graduate Assistant:* University of Pretoria, Botany and Plant Pathology modules, 2015-2017
-

SKILLS:

- Good interpersonal and team interaction skills.
- Apply principles of logical or scientific thinking to a wide range of intellectual and practical problems, through analysing, examining, and evaluating data, as well as present alternative actions in relation to the evaluation.
- Data analysis using SAS and research data interpretation.
- Advanced computer literacy in MS word, Excel and Power point.
- Instruct and teach agricultural principles, or training others through explanation, demonstration, and supervised practice; or making recommendations where needed.
- Write academic articles, speeches, farmer's manuals.
- Conversant in the theory, principles, and methods of effective and persuasive speaking, and discussion, in order to convey or exchange information, which includes giving assignments and/or directions team members.
- Lead, influence, and supervise through determining or interpreting work procedures for a group of workers, assigning specific duties to them, maintaining harmonious relations among them, and promoting efficiency.
- Take instructions or help through attending to the precision working assignment instructions or orders of supervisor, where ultimate responsibility for the attainment of standards occurs and selection of appropriate tools, objects, or materials, and the adjustment of the tool to the task require the exercise of considerable judgment.
- Ability to work under pressure with minimum or no supervision

PUBLICATIONS:

- Jongman, M., Carmichael, P.C., & Bill, M. (2020). Technological Advances in Phytopathogen Detection and Metagenome Profiling Techniques. *Current Microbiology*, 1-7.
- Carmichael, P.C., Siyoum, N., Chidamba, L., & Korsten, L. (2019). Exploring the microbial communities associated with *Botrytis cinerea* during berry development in table grape with emphasis on potential biocontrol yeasts. *European Journal of Plant Pathology*, 1-12.
- Carmichael, P.C., Siyoum, N., Jongman, M., & Korsten, L. (2018). Prevalence of *Botrytis cinerea* at different phenological stages of table grapes grown in the northern region of South Africa. *Scientia Horticulturae*, **239**, 57-63.
- Carmichael, P.C., Siyoum, N., Chidamba, L., & Korsten, L. (2017). Characterization of fungal communities of developmental stages in table grape grown in the northern region of South Africa. *Journal of Applied Microbiology*, **123**, 1251-1262.

- Carmichael, P.C., Shongwe, V.D., Masarirambi, M.T., & Manyatsi, A.M. (2012). Effect of mulch and irrigation on growth, yield, and quality of radish (*Raphanus sativus* L) in a Semiarid Subtropical environment. *Asian Journal of Agricultural Sciences*, 183-187.
- Carmichael, P.C. (2011). *Effect on Fruit Maturation and Ripening Potential for Optimum Eating Quality of 'Forelle' Pears* (MSc Agric. Thesis). University of Stellenbosch, Department of Horticultural Science, Stellenbosch, South Africa.
- Carmichael, P.C. (2011). *Evaluation of maturity indices and their rates of change to predict optimum harvest maturity of 'Forelle' pears* [Conference presentation]. Combined Congress, Pretoria, South Africa.
- Mavuso, B., Carmichael, P.C., & Dlamini, P. (2008). Effect of air-layering time on rooting rates of air-layered litchies. In the Ministry of Agriculture, Department of Agricultural Research and Specialist Services, *Annual Report*. Swaziland.
- Carmichael, P.C., Mavuso, B., & Dlamini, P. (2008). Evaluation of tomato varieties for drought tolerance in Swaziland. In the Ministry of Agriculture, Department of Agricultural Research and Specialist Services, *Annual Report*. Swaziland.
- Carmichael, P.C., Sibande, B., & Dlamini, P. (2007). Evaluation of mushroom substrates for yield and quality. In the Ministry of Agriculture, Department of Agricultural Research and Specialist Services, *Annual Report*. Swaziland.
- Carmichael, P.C. (2005). *Effect of Mulching Materials and Irrigation Regimes on Radish Yield and Quality* (BSc. Agric. Thesis). University of Swaziland, Faculty of Agriculture, Luyengo, Swaziland.
-

PROFESSIONAL ORGANIZATION:

- Agricultural Science Technology Indicators' Forum (focal person in Eswatini), 2012 – Present
 - HORTIVAR (focal person in Eswatini), 2012 – Present
 - South African Society of Horticultural Science, 2009-2015
-

ACHIEVEMENTS AND AWARDS:

- Best Overall Poster Presentation. **Influence of Harvest Maturity Stages on Nutrient Properties of Selected Indigenous Leafy Vegetables**. Swaziland Health Research Conference, 2014
 - Winning project proposals for external funding
 - *Establishment of a Health Seed Potato System for Eswatini*. Funded by TaiwanICDF, 2013-2019
 - *Fruit Tree Production and Marketing*. Funded by TaiwanICDF, 2015-2019.
-

CONFERENCE AND WORKSHOPS ATTENDED:

- Carmichael, P.C. (2019). *Satisfying Eswatini's potato deficit: Enhancing seed availability* [Conference presentation]. Cold Chain Summit, National Marketing Board.
- Workshop on Healthy Seed Production and Management (2018), Taiwan.
- Carmichael, P.C., Siyoum, N., Jongman, M., & Korsten, L. (2017, May 28 – June 3). *Detection and quantification of Botrytis cinerea on table grapes at preharvest using ddPCR* [Conference presentation]. IV International Symposium on Postharvest Pathology (Abstract No. 95), Skukuza National Park, South Africa. http://www.postharvest2017.co.za/content/global/forms/Postharvest_programme.pdf?v=1559357.
- Carmichael, P.C., Siyoum, N., Chidamba, L., & Korsten, L. (2018, July 29 – August 3). *Fungal diversity of developmental stages in table grapes grown in South Africa* [Conference presentation]. International Congress of Plant Pathology (Abstract No. 7615), Boston, USA. <https://apsnet.confex.com/apsnet/ICPP2018/meetingapp.cgi/Program/1075>.
- Carmichael, P.C. (2017). *Why and where good grapes go bad* [Conference presentation]. The Fresh Produce Exporters' Forum. *Postharvest Initiative (PHI) Innovates Magazine*, 146-148. <https://www.fpef.co.za/wp-content/uploads/2017/06/PHI-Innovate-2017-WEB-Singles.pdf>.
- Plant Tissue Culture Propagation and Plant Health Techniques (2014), Taiwan.
- Workshop on Project Cycle-Design and Monitoring Framework (2013), Taiwan.

- Carmichael, P.C., Lotze, E, Cronche, E., & Theron, K.I. (2011). *Evaluation of maturity indices of Forelle pears* [Conference presentation]. Combine Congress for Crop Science, Pretoria, South Africa.
 - Laboratory and Safety Workshop (2009), Stellenbosch University, South Africa.
 - African Indigenous Vegetable Production and Research (2008), Arusha, Tanzania.
-

REFERENCES:**Dr. C. Tfwala**

Ministry of Agriculture
Department of Agricultural Research and Specialist Services
P.O. Box 4
M204
Malkerns
Office No: (+268)25274071
Cell: +2687613 7025
Email: cinisanitfwala@yahoo.co.uk

Dr. M. Jongman

Department of Plant Sciences
University of Pretoria
South Africa
Cell: +26 771816986
Email: sixjongs@yahoo.com

Asst. Prof. Theodore E. Davis, Jr., Fulbright Scholar

Co-Founding Director/President, Universal Mission of Understanding of Swati Advancement (UMUSA)
Vice President/Chief Administrative Officer, J.B. and Associates
470 Vernon Avenue
Glencoe, Illinois, USA 60022-1821
WhatsApp Cell: +1 (847) 868-6648
Email: tedavisjr@hotmail.com