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# **SA Plant Pathologist**

Newsletter of the Southern African Society for Plant Pathology

## **Editorial**

As one approaches the culmination of a career with retirement on the horizon, it is only natural to engage in a period of reflection encompassing both successes and failures. One subject that has long perplexed me, though undeniably sensitive, is the manner in which we interact with and support one another in our professional journeys. Drawing from my experiences with the NRF rating and grant application panels, manuscript reviews, and in some cases, thesis/dissertation examinations, it has become apparent that South Africans, as a collective, tend to focus disproportionately on the shortcomings of their colleagues and students, often overlooking their accomplishments. Regrettably, they also infrequently nominate their peers for prestigious awards. This predilection for criticism has been a recurring theme, with numerous individuals suggesting that securing fair evaluations necessitates the involvement of international reviewers. Criticism, of course, holds an essential place within the scientific process. However, it is imperative that this critique be constructive, with a focus on the quality of the research and presented ideas, rather than veering into the personal domain. Yet it is disheartening to acknowledge that unjust and excessively harsh criticism from South African colleagues, whether directed at one's research, career trajectory, or opportunities, pervades not just our field but extends across all disciplines. This leads me to ponder- WHY?

The scientific community in South Africa is characterised by its relatively modest size, a reality mirrored in various fields such as ours in Plant Pathology, numbering around 400. In this small pond, akin to a microbiome ecosystem, the instinct to outshine our contemporaries seems to be deeply engrained. However, it is worth contemplating whether such competition is really necessary. Could our actions be partly fueled by natural emotions such as envy and professional jealousy, which are to some extent, inherent in the competitive and high-pressure domain of scientific research? These emotions are a complex interplay of factors including competition, recognition, resource availability and career aspirations. At it's core, we all share a common goal to attain recognition and success. Achieving this requires us to navigate a landscape where our evaluators are also vying for the same laurels. Ideally, we should centre our focus on our own research, fostering collaborations, seeking support, and embracing mentorship opportunities. A supportive and collegial scientific community is indispensable for the advancement of knowledge and the progression of science as a whole. Shifting our mindset to acknowledge and even celebrate the accomplishments of our peers is an imperative step forward. In this spirit, I challenge you, the readers of this newsletter, to consider the list of SASPP awards I have provided. Take a moment to nominate your competitors and advisors. In doing so, partake in their success. After all, by uplifting one another, we collectively elevate the field of science and specifically in our case, South African plant pathology.

Teresa Coutinho, University of Pretoria

teresa.coutinho@up.ac.za

### **ICPP 2023**

I, together with 48 of my fellow South African plant pathologists, had the privilege of attending an exceptionally successful and inspiring 12<sup>th</sup> International Congress of Plant Pathology (ICPP) 2023 conference held in Lyon, France at the end of August. The theme of the conference was ONE HEALTH for all plants, crops and trees. It was well attended with over 2 400 delegates. The highlights included the following:

- 1. Prior to the Congress a number of workshops and field excursions took place. These interactive sessions allowed attendees to focus on specific topics, gain practical skills, and engage in meaningful discussions.
- An impressive group of plenary and keynote speakers shared their expertise, insights, and experiences, providing a well-rounded perspective on the challenges and opportunities within our field. These speakers included, for example, Dr Cindy Morris (INRA, France), Justin Pita (Université Félix Houphouët-Boigny, Abidjan, Ivory Coast), Hernán Burbano (University College London, UK), David Hodson (CMMYT, Mexico).
- 3. A total of 63 concurrent sessions were held making it difficult on any one day to decide which session to attend.
- 4. In excessive of number of posters were displayed (over 1 500). A couple were chosen for 5 minute "flash talk".
- 5. Every night round table discussions took place and including diverse topics such as "Getting rights right: a round table exploration of indigenous rights and participation in plant pathology" to "The impacts of discoveries in plant health".
- One of the most valuable aspects of the conference was the opportunity to network with like-minded professionals and experts in the field. The networking sessions facilitated valuable connections and potential collaborations.

ICPP 2023 was a resounding success, leaving a lasting impact on all attendees. It served as a platform for learning, networking, and inspiration. See you at ICPP 2028 which will be held at the Gold Coast, Australia.

Teresa Coutinho, University of Pretoria

## Mike Wingfield elected a fellow of the International Society of Plant Pathology (ISPP)

Professor Mike Wingfield, the founding director of the Forestry and Agricultural Biotechnology Institute (FABI) at the University of Pretoria in South Africa, has made substantial contributions to the field of plant pathology. His research interests encompass various disciplines, including mycology, plant pathology, and entomology, with a focus on forest tree health and the impact of fungi and insects. Wingfield is particularly recognized for his expertise in studying fungi associated with insects and their presence on trees and wood.



His research efforts have spanned the globe, collaborating on projects related to tree health and the identification of disease-causing agents and their pathways. Professor Wingfield strongly advocates for a comprehensive understanding of the biology and genetics of pathogens and pests to effectively mitigate their impact. To achieve this, he has conducted rigorous basic research programs utilizing cutting-edge biotechnological tools, all while emphasizing the importance of science education and research excellence. In addition to his research, Wingfield has held significant leadership roles. He served as the President of the International Union of Forestry Research Organizations and the President of the Southern African Society for Plant Pathology, as well as being a Vice President of the International Society for Plant Pathology. His outstanding research contributions have been recognized with inclusion on the Clarivate list of highly cited scientists and prestigious awards, such as the Kwame Nkrumah Science Award from the African Union, and honorary doctorates from renowned institutions.

Taken from the ISPP newsletter, September 2023

## **SASPP 2024**

**For noting:** the 53<sup>rd</sup>Biennial SASPP Congress will be held at the Golden Gate National Park, Free State, from 22-25 January 2024.

## **ISPP World directory of Plant Pathologists**

The World Directory was the brainchild of US plant pathologist, Dr Frances Fisher. The first edition was published as "Fisher, FE (1973) World directory of plant pathologists. Edited by FE Fisher. Lake Alfred, Fla., vi, 140p.". The second edition was published in 1980 and can be downloaded in pdf format from the ISPP website (www.isppweb.org). The current searchable database can also be found on the web or the QR code can be used. You can also add your information to the directory using this code.

Join the Worldwide Directory of Plant Pathologists



## **Promotion: Professor Augustine Gubba**

Following the retirement of Professor Mark Laing after a distinguished career at the University of KwaZulu-Natal, the position of Professor of Plant Pathology fell vacant. The post was advertised and following the interviews, Associate Professor Augustine Gubba was promoted to Full Professor in the Discipline of Plant Pathology, College of Agriculture, Engineering and Science, University of KwaZulu-Natal (UKZN), Pietermaritzburg, South Africa.



Professor Gubba received a BSc (Honors) Crop Science Degree from the University of Zimbabwe, in 1984. In 1987, he received a British Council Scholarship to study for an MSc Applied Plant Sciences at Wye College, University of London.

The degree was awarded in 1988. In 1994 he was awarded a Rockefeller Foundation Scholarship to study for a PhD in Plant Pathology at Cornell University. The degree was awarded in 2000. Before embarking on his PhD studies, Professor Gubba first worked for the Agricultural Extension Services as a Curriculum Development Officer (1985-1986) and later as a Research Officer in the Department of Research and Specialist Services (1986-1994) both under the Ministry of Agriculture in Zimbabwe.

Professor Gubba joined the Discipline of Plant Pathology at the then University of Natal at the end of 2000 as a Senior Lecturer. He was promoted to Associate Professor in 2017 and ascended to the position of Full Professor in 2023.

Professor Gubba research area is Plant Virology. The main thrust of his research is the identification and characterization of viruses infecting important food crops with the aim of devising effective and sustainable strategies to the control/manage the diseases they cause. He has successfully completed the supervision of eight Doctoral (PhD) and 15 Master (MSc) students. Professor Gubba has published over 60 research articles in Scopus and ISI indexed journals published by Springer, Taylor and Francis, Elsevier among others. Hehas also contributed chapters in three books. He is currently supervising two Doctoral (PhD) students. Professor Gubba is responsible for teaching three exit level modules, two at third year level and one at fourth year level. The modules are Introduction to Viruses, Biotechnology for Plant Pathologists and Advanced Topics in Virology.

Professor Gubba has examined a number of MSc and PhD theses from several universities including, the University of Witwatersrand, Stellenbosch University, University of the West Indies and North West University. He has reviewed research papers for publication in a number of journals in his area of expertise. Professor Gubba has reviewed research projects for funding by the USA National Science Foundation and the National Research Foundation (NRF) of South Africa.

Professor Gubba is a NRF, C2 rated scientist since 2017. He was a recipient of the Distinguished Teacher Award in the School of Agricultural, Earth and Environmental Sciences in 2014. From March to November 2023, Professor Gubba was a Fulbright Visiting Research Fellow working jointly with United States Department of Agriculture (USDA) Vegetable Research Laboratory and Clemson University's Coastal Research and Education Center based in Charleston, South Carolina. The fellowship gave Professor Gubba an opportunity to hone his skills on the CRISPR/Cas technology, a technology which will be part of his research thrust going forward.

Professor Gubba is a committee member of the International Committee of Plant Virus Epidemiology (ICPVE) and is one of the two African representatives on that committee. His expertise has led to him being appointed as a Genetically Modified Organisms (GMO) Officer for the Department of Agriculture, Forestry and Fisheries and is responsible for reviewing applications for GMO product registrations and research facility registrations. He is also a technical specialist for the South African National Accreditation System (SANAS) assessing laboratories seeking accreditation for various techniques in molecular biology and plant pathology research. He was vice president of the Southern African Society for Plant Pathology (SASPP) from 2015-2019. Professor Gubba has been an expert witness in plant virology court cases.

Provided by Professor Gubba

## Western Cape Branch Branch Meeting

#### Bacterial diseases of stone fruit

On the 16<sup>th</sup> of August 2023, the SASPP Western Cape Branch hosted the first of its monthly lunchtime seminars at the Olive Grove Auditorium situated at the Agricultural Research Council Infruitec campus in Helshoogte Road, Stellenbosch. We had the great honour of hosting Ferdi van Zyl (Pro Agri Services [Pty] Ltd) who presented a wonderful talk titled: Bacterial diseases of stone fruit in the Western Cape.

The speaker, Ferdi, kicked off the session by letting everyone in the room introduce themselves and had everyone state where they came from. From this, it became evident that this meeting was a great opportunity for attendees from academia and industry to talk and share ideas in a relaxed and casual setting. The meeting turned 'just another Wednesday lunch' into a fun and interesting afternoon where everyone learned a bit more about a topic not so often discussed.

The September lunchtime meeting will occur on the 13<sup>th</sup> of September 2023 at the Lombardi Building on the Stellenbosch campus in lecture room 3001 from 12:00 to 13:00. We hope to see some familiar and new faces there. Should you like to keep up with the Western Cape branch and all its activities, you can go have a look at our Instagram page under the handle @saspp\_wc. This month we also launched a new initiative to showcase scientific articles published by our members. If you would like to showcase your article please email a photograph (unpublished) from your study and the title of your manuscript to juliam@sun.ac.za.

Stefni van der Walt (SASPP Western Cape branch Social Media Manager)



Ferdi van Zyl (speaker) presented his talk at the August lunchtime seminar



**Ferdi van Zyl** (speaker) and **Dr Julia Meitz-Hopkins** (SASPP Western Cape Branch Chairperson) at the August Lunchtime seminar

Attendees of the August lunchtime seminar enjoying refreshments after the presentation

## **Special Issues of Journals**

Many of us are often requested to edit or co-edit special issues of journals on a topic linked to our area of expertise. Finding contributors can be challenging and it is for this reason that I believe this newsletter can assist with this task. If you have accepted the role as an editor or co-editor of a special issue, please send me details and I will include the information in the next newsletter.

## Call for papers for a special issue of Crop Protection: Detection, epidemiology and management of plant disease complexes

Plant diseases where more than one pathogen is involved in the infection process are commonly known as "complexes" since their diagnosis and subsequent management are more complicated compared to the disease caused by only one pathogen (Lamichhane and Venturi, 2015). Such complex diseases occur as a result of co-infections, either simultaneous or sequential, affecting a single host (Dutt et al., 2022). The severity of complex diseases may depend on the type of interactions that occur between the microbial pathogens associated with the disease. Such interactions could be synergistic or antagonistic that lead to increased or decreased disease severity, respectively. A precise detection and an accurate identification of the microbial pathogens as well as an in-depth knowledge about the underlying mechanisms of such interactions are of crucial importance to foster our knowledge about the epidemiology of such disease complexes, which is a first step towards the development of effective disease control strategies.

Culture-based classical isolation techniques on selected or semi-selected media may yield no or only partial isolation of the causal agents. However, recent technological advances in plant disease diagnostics allow for a rapid and an effective selection and identification of most of the microbes (both pathogenic and non-pathogenic) associated with disease complexes. Thanks to these culture-independent techniques (e.g. next-generation sequencing and metagenomic approaches), the number of studies focusing on plant disease complexes has increased in the literature in the last decade. These studies report examples of plant disease complexes caused by coinfections of different pathogens not only at intra- and inter-species level but also at intra- and inter-kingdom, level. Examples are disease complexes caused by coinfections of bacteria-bacteria, fungi-fungi, oomycetes-oomycetes, viruses-viruses, nematodes-nematodes or even fungi-bacteria, nematodes-bacteria, nematodes-fungi, bacteria-viruses, etc (reviewed by Dutt et al., 2022; Lamichhane and Venturi, 2015).

Besides several advantages, there are also some limitations in using these novel OMICs methods with respect to studying the role of microbial consortia in plant disease complexes. Although these technologies will help to better characterize complex diseases they will not necessarily allow us to determine which microbe is the dominant factor in the disease process. This increases the difficulty in the development of disease control strategies, which are currently based on only one microbial pathogen. Targeted chemical control strategies currently used against only one pathogen will become ineffective in controlling disease complexes. It is therefore important to re-design cropping systems that are resilient to disease complexes based on an integrated disease management. This special issue provides an overview of the progress made so far in detection, identification and management of plant disease complexes caused by different plant pathogens.

Authors working on this topic are strongly encouraged to submit their research (original research, short communication, perspectives, and reviews) for consideration in this special issue.

Submission Period: 1st October 2023 - 28th February 2024

Guest editor: Prof Teresa Coutinho, University of Pretoria, Pretoria, South Africa

#### Manuscript submission information:

To submit your manuscript please go to:

<u>https://www.editorialmanager.com/cropro/default2.aspx</u> and follow the procedures for manuscript submission. When prompted for 'Enter Manuscript Information' you can select **'VSI: Disease complexes**' from the dropdown menu.

Author Guidelines for Manuscript Submission can be found at: https://www.elsevier.com/journals/crop-protection/0261-2194/guide-for-authors

To prepare your future manuscripts, and before submitting them to Crop Protection we encourage you to consult the "manuscript preparation tips" that can be found on the following URL of the journal: <a href="https://www.sciencedirect.com/journal/crop-protection/about/news#manuscript-preparation-tips-crop-protection">https://www.sciencedirect.com/journal/crop-protection/about/news#manuscript-preparation-tips-crop-protection</a>. These tips are very useful to prepare a given manuscript as required for the journal and they provide you an idea as to whether your manuscript meets key standard criteria required for publication in Crop Protection.

Please feel free to contact the Guest Editor (<u>teresa.coutinho@up.ac.za</u>) or Editor-in-Chief (<u>jay-ram.lamichhane@inrae.fr</u>) if you have any questions.

#### Deadlines for the special issue:

**31**<sup>st</sup> **September 2023:** Last deadline to confirm your interest in the special issue.

1<sup>st</sup> October 2023: Submission open for the special issue. Please choose « VSI: Disease complexes » while submitting your manuscripts to Crop Protection. In addition, do not forget to mention in your cover letter that you are submitting your manuscript to this special issue.

28<sup>th</sup> February 2024: the last deadline for manuscript submission.

**31<sup>st</sup> July 2024:** completion of the revision process and final decisions on the manuscripts

**September 2024:** Compilation of the special issue articles with an Editorial and its publication.

Please note that individual papers will be appeared online as soon as they are accepted. Only their compilation will be made afterward.

### Call for papers for a special issue of Frontiers in Horticulture: Novel and existing management practices for bacterial disease outbreaks in vegetable crops

Bacterial diseases of vegetable crops are caused by numerous pathogens. These include species of the genera Xanthomonas, Pseudomonas, Ralstonia, Clavibacter, Pantoea and Pectobacterium. The symptoms range from spots and blights to wilt. Significant losses of the infected crops can occur. Prevention and control of these diseases involve good cultural practices such as crop rotation, use of disease-free seed and appropriate irrigation practices. In some cases, chemical treatments such as the application of antibiotics and chemical pesticides may be necessary but should be used with caution as the pathogens tend to develop resistance to them if they are overused. Novel approaches to manage these diseases may include the use of precision agriculture.

Bacterial diseases of vegetable crops cause yield losses, reduce the quality of the crop and in some cases render the crop unsuitable for consumption. The management of these diseases is challenging and if not controlled they can spread rapidly and cause significant damage. Novel and existing practices for bacterial disease control include crop rotation, sanitation, biocontrol, plant breeding and the use of antibiotics or copper pesticides. In the case of the latter two options, the overuse of both have led to the development of resistance. The use of precision agriculture which involves using technology to monitor and manage crops effectively is increasing in importance as an effective tool. This approach can help to identify and manage diseases early before they become a major problem. The use of integrated pest management, a holistic approach, involves using a combination of practices to combat diseases and includes cultural practices to prevent outbreaks and using pesticides only when necessary. All management measures mentioned can assist with the reduction of the impact of bacterial diseases and ensure the quality and safety of vegetable crops.

Frontiers in Horticulture is seeking articles that deals with novel and existing practices in reducing bacterial disease outbreaks in vegetable crops. The topic can be multifaceted ranging from host-resistance to biological and chemical management or modification of cultural practices or integrated disease management in vegetable crops. Topics like use of microbiome or soil health or foliar health on reducing bacterial populations with demonstrated benefits can also be included. We do not encourage any description of novel bacterial taxa or species or sub-species/pathovar description in this topic and will be considered out of scope.

Guest editors: Prof Bhabesh Dutta (UGA), Prof Teresa Coutinho (UP) and Dr Khumbuzile Bophela (UP)

Manuscript Submission Deadline: 05 March 2024

Guidelines for manuscript submission are available at: https://www.frontiersin.org/research-topics/56645/novel-and-existing-managementpractices-for-bacterial-disease-outbreaks-in-vegetable-crops

## Profile of a Plant Pathologist: Dr Lindy Rose

**Current position**: Senior Lecturer in the Dept of Plant Pathology, Stellenbosch University

#### 1. Tell me about your research

My research focusses on understanding the interactions between mycotoxigenic fungi and small grain crops, most notably maize and wheat. With this in mind, my initial efforts identified resistance in maize and wheat that could be used to understand plant resistance mechanisms. My research includes



looking at all aspects of plant resistance (structural, biochemical and genetic) as well as cultural practises (crop rotation, tillage practises and chemical control) to provide integrated disease and mycotoxin management. With an MSc in Genetics, the improvement of plant resistance to toxigenic fungi by conventional and unconventional approaches has always been of significant interest to me.

#### 2. Why is your research important?

The infection of grain crops with mycotoxigenic fungi can significantly reduce grain yield, grain quality and further compromises grain quality as the fungi produce metabolites known as mycotoxins that are harmful to humans and animals. These fungi present significant food safety and food security concerns in staple grain crops and so managing them to below acceptable limits is really important.

#### 3. What is your favourite aspect of your research?

I enjoy a good balance of field-based and laboratory-based research but my absolute favourite aspect is being able to use a wide range of techniques and approaches, from different sciences, in order to progress in my research area. Balancing sound, fundamental skills with complementary new science approaches keeps research constantly interesting, and me always learning.

#### 4. What excites you about your research?

There are always more questions than answers – its an eternal puzzle and I love puzzles.

#### 5. Tell me about what you like to do when you aren't working

I enjoy spending time with my kids – they are becoming interesting human beings. I have always loved being out in nature, so walks outside, anywhere (luckily spoiltfor choice in Cape Town) and any opportunity to go camping (in a tent  $\cong$ ).

## SASPP Awards

The nomination forms can be downloaded from the website.

#### J.E. Vanderplank Award

This award is for an outstanding "young" plant pathologist based on evaluation of his/her research. Nominees must have received their doctoral (PhD) degree within a ten (10) year period immediately preceding January 1st of the year in which the award is bestowed.

#### Criteria:

A nominee must:

- Be a member of the SASPP society for at least five years.
- Have published original research of high quality, as judged by normal international standards.
- Guidelines include ISI metrics such as the H-index.
- Nominations should come from senior members of the SASPP society.
- The award consists of a plaque and is presented at the biennial conference.

#### **Applied Plant Pathology Award**

This award specifically recognises the contributions of plant pathologists who have made significant contributions specifically in applied aspects of plant pathology. Under exceptional circumstances, this award can be bestowed on persons who are not members of the SASPP society.

#### Criteria:

A nominee must:

- Have made a substantial contribution towards resolving plant disease problems.
- The award comprises a Certificate of Recognition.

#### **Publicity Award**

This award is to recognise a member's recent contributions towards promoting general public awareness of Plant Pathology.

#### Criteria:

A nominee must:

- Be a subscribed SASPP member.
- Have made exceptionally contributions to promoting Plant Pathology.
- The award may be bestowed on the same person more than once.
- The award comprises a Certificate of Recognition.

#### **Fellows**

Any member of the SASPP society may be elected as a Fellow in recognition for outstanding accomplishments in Plant Pathology as well as support for and service to the SASPP society and to Plant Pathology in southern Africa.

#### Criteria:

A nominee must:

- Have at least ten (10) years uninterrupted membership of the SASPP.
- Have served and promoted the interests of the SASPP society.
- Have made significant contributions to Plant Pathology in research, teaching, or extension services.

#### **Honorary Membership**

Honorary Membership is awarded to members, who have served the SASPP society for extended periods of time, usually throughout their careers. Honorary Membership is typically awarded to members at the end of their careers and at retirement. Although not mandatory, a guideline for this award is that it is made to leaders of the SASPP society, past office holders and recipients of major awards.

#### Criteria:

A nominee must:

- Have at least ten (10) years of uninterrupted membership.
- Have served and promoted the interests of the SASPP society.
- Have made significant contributions to Plant Pathology in research, teaching, or extension services.
- Any member of the SASPP society may nominate a candidate for the award.

#### The John and Petakin Mildenhall Best PhD Award

PhD students in Plant Pathology that graduated at a South African University can now apply for the John and Petakin Mildenhall PhD Award. The SASPP council facilitates the process and applications that meet the set criteria will be handed for judgement to a selected panel that include academic and industry members. The recipient will be

#### Criteria:

A nominee must:

- Be a subscribed SASPP member.
- Have obtained a PhD between 1st January and 31st December of the two years preceding the biennial conference.
- The award comprises a certificate, issued by the SASPP council, and a substantial cash imbursement towards further career development in Plant Pathology.

#### **Grace Waterhouse Fellowship**

The Grace Waterhouse Fellowship has been set up to encourage links between the SASPP and the British Society for Plant Pathology (BSPP), with a particular focus on plant pathologists in the early stages of their careers.

The fellowship will be awarded competitively no more than once a year to a junior plant pathologist with high potential.

Members of the SASPP in the early stages of their career, studying in a southern African country, may apply for the Grace Waterhouse Fellowship to support a working visit of between one and three months to a laboratory in the UK. The aim is to encourage collaboration and interdisciplinary research, to enable students to acquire new techniques, and to make new contacts.

#### Criteria:

- Any applicant must have been a member of SASPP for at least one year and must be registered for an MSc by research or PhD at the time the Fellowship award is taken up.
- No member may be awarded a Grace Waterhouse Fellowship more than once. The host must have been a member of the BSPP for at least two years.
- The Grace Waterhouse fellowship is intended to support

   (a) travel, accommodation and other personal costs that are not covered by the student's stipend and
  - (b) a contribution to any consumables which are essential for the applicant's proposed research in the host laboratory. In view of the travel costs and the UK being a relatively expensive country to live in, the maximum value of any award would be £5000, although members are encouraged to be economical.

The closing date each year for the fellowship will be the 31st October, and it is expected that the placement will take place during the following year.

Applications cannot be submitted for both the BSPP travel fund and for a fellowship in the same year.