SOUTHERN AFRICAN SOCIETY FOR PLANT PATHOLOGY

SA Plant Pathologist

Newsletter of the Southern African Society for Plant Pathology

November 2026

Vol. 9

In this edition:

Editorial

Message from the President

Congratulations: Shannon Fugareu

Profile of a plant pathologist: Wilmarie Kriel

Editorial

Plant pathology is a discipline built on accumulated knowledge, experience and the ability to recognise, interpret and understand plant diseases. Yet, as our scientific environment changes, an important question deserves greater attention: are we doing enough to ensure that the specialist expertise on which our discipline depends will be there for the next generation?

Over the years, plant pathology has undergone considerable transformation. Advances in molecular biology, genomics, bioinformatics and high-throughput sequencing have fundamentally changed how we detect, identify and study plant pathogens. These technologies have opened exciting opportunities and expanded our understanding of plant–pathogen interactions. However, technological progress also brings a risk that we should not ignore: the gradual erosion of specialist knowledge and experience.

Plant pathology is not simply about identifying a pathogen through sequencing or assigning an organism to a particular taxonomic group. It requires an understanding of disease development, pathogen biology, host responses, epidemiology and the complex interactions between plants, microorganisms and their environments. It also requires the ability to recognise unusual symptoms, interpret unexpected results and distinguish between association and causation. Much of this expertise is developed over many years, through exposure to diverse plant diseases, field observations, laboratory investigations and, importantly, experience shared by those who have worked in the discipline for decades.

The concern is that specialist expertise is not always being replaced as experienced scientists retire or move away from research. In some areas, particularly those requiring detailed taxonomic, diagnostic or biological knowledge, the pool of expertise is becoming increasingly limited. This is not necessarily because younger scientists lack interest or ability, but because the academic environment has changed. Research pressures, short-term contracts, funding constraints and the emphasis on measurable outputs can make it difficult to develop and sustain specialised expertise. Furthermore, students are increasingly encouraged to acquire broad, transferable skills, sometimes at the expense of developing the depth of knowledge that defines a specialist.

This raises an important question about postgraduate training. Are we equipping students not only with the technologies and analytical skills needed to conduct modern research, but also with the fundamental biological knowledge and critical thinking required to become independent specialists? Technology can assist with pathogen identification, but it cannot replace the experience needed to interpret findings in a biological and epidemiological context. Nor can it substitute for the judgement developed through years of working with pathogens, hosts and disease systems.

The responsibility for addressing this challenge cannot rest with universities alone. It requires a collective commitment from established researchers, academic institutions, research organisations and scientific societies. Experienced scientists need to actively share their knowledge, involve younger colleagues in research and diagnostic activities, and create opportunities for meaningful mentorship. Institutions, in turn, need to recognise that developing specialist expertise takes time and requires sustained investment. It cannot be achieved through short-term projects or postgraduate training alone.

This is where I believe the SASPP has an important role to play. Beyond providing opportunities for scientific exchange and networking, our society can help preserve and strengthen specialist knowledge. They can facilitate mentorship, encourage interactions between established and early-career researchers, promote specialist training and create platforms through which

expertise is transferred between generations. Importantly, younger members should not simply be regarded as the future of our society; they need to be actively involved in shaping its present and future direction.

As experienced plant pathologists, we should also reflect on our own responsibility. It is not enough to publish our research, supervise students or serve on committees. We need to ask whether we are actively developing people who can continue the work we have spent our careers building. Have we shared our knowledge? Have we encouraged students to develop a particular area of expertise? Have we created opportunities for younger scientists to take ownership, make decisions and establish themselves as independent researchers?

Plant pathology will undoubtedly continue to evolve, and it should. New technologies, new approaches and new ways of thinking are essential to the discipline's future. But progress should not come at the cost of losing the fundamental expertise that gives our science its depth and relevance.

Ultimately, the question is not whether the next generation will do things differently. They certainly will, and they should. The question is whether we are giving them the knowledge, experience and opportunities to do so with confidence**.** A discipline cannot sustain itself on new technologies and publications alone; it needs people with the expertise to understand the science, recognise its challenges and carry it forward.

Teresa Coutinho, University of Pretoria; teresa.coutinho@up.ac.za

Message from the President: Dr Cheryl Lennox

Plant Pathology/Plant Health: An Essential Pillar of the One Health Concept

Traditionally, One Health has been largely associated with the interconnectedness of human, animal and environmental health, with considerable emphasis on zoonotic diseases, antimicrobial resistance and emerging infectious diseases. However, I would argue that plant health, vis-à-vis plant pathology, should be recognized as an equally important component of this interrelated system. After all, healthy plants underpin food security, environmental sustainability, ecosystem functioning and, ultimately, human and animal well-being.

Plant diseases are not simply agricultural problems. Their consequences extend far beyond crop losses and economic damage. Globally, plant pathogens threaten food production, compromise food quality and safety, disrupt agricultural livelihoods and contribute to food insecurity. Fungal pathogens pose additional challenges by producing mycotoxins that contaminate food and feed and pose considerable risks to human and animal health. Furthermore, plant diseases can influence the availability and nutritional quality of food, with potentially extensive consequences for vulnerable communities. These realities demonstrate that plant health is inseparable from human and animal health.

I see plant pathology as a discipline that provides essential knowledge, expertise and technologies to address these interconnected challenges. Understanding plant pathogens, their biology, epidemiology, evolution, and interactions with their hosts and environments is fundamental to developing sustainable disease management strategies. Equally important is plant pathologists' ability to detect emerging pathogens, anticipate disease outbreaks, understand changing pathogen populations, and develop innovative approaches to disease prevention and control. In an era of climate change, global trade and increasing movement of biological material, these capabilities are becoming increasingly important.

A further vital contribution of plant pathology to One Health is its role in promoting sustainable agricultural practices. Excessive or inappropriate dependence upon chemical pesticides can have unintended consequences for environmental health, biodiversity, beneficial microorganisms and potentially human and animal health. Plant pathologists are therefore central to developing integrated disease management approaches that incorporate biological control, host resistance, cultural practices, biological products and precision technologies. Such approaches support agricultural productivity while reducing environmental impacts and safeguarding ecosystems.

I also believe that the discipline needs to embrace a wider, more collaborative identity. Plant pathologists cannot work in isolation. Stronger partnerships with medical and veterinary scientists, microbiologists, ecologists, environmental scientists, food scientists and agricultural economists are essential. Through interdisciplinary research, shared surveillance systems and integrated disease risk assessment, we can better understand the complex relationships between plant, animal, human and environmental health.

Ultimately, I believe that One Health cannot be fully realised without One Plant Health. Plants are the foundation of terrestrial ecosystems and food systems, and their health directly or indirectly influences every other component of the One Health framework. Plant pathology must therefore be recognised not as a supporting agricultural discipline, but as a fundamental scientific pillar of One Health.

Congratulations

Shannon Fugareu



At the annual Starke Ayres Awards Ceremony the prestigious "Future award – given to an individual who has proven themselves in their role, and shows remarkable potential to shape the future of the research team" was awarded to Shannon Fugareu. Shannon joined Starke Ayres on 1 June 2017, under the AGRI_SETA graduate placement program. She started her career assisting in pathology quality control, but with changes in personnel, Shannon became part of the research segment of the team. It quickly became clear that no task was too big or too small for her and her support for the Pathology Team has been immeasurable. With no formal background in Plant Pathology, Shannon took on the challenge of upskilling herself by completing the undergraduate courses required by the University of Pretoria, followed by her BSc Hons at the end of 2019 and her MSc in Plant Pathology at the end of 2022. When the position of QC pathologist became available, Shannon jumped at the opportunity to grow into this role and her hard work, diligence and determination soon made her rise to the top. She reveled in the responsibility of the position and continues to play an important role at ISHI-Veg and various international technical work groups she is involved in. She has grown the use of molecular techniques in our seed health testing including qPCR testing. Shannon was promoted to QC Lead in April 2023 but has since also outgrown this position. She is in addition taking the lead on several key research projects to breeders and the future growth of our Company as a market leader. Shannon is a competitive Team player and has improved several existing disease screening protocols and is working hard to improve several others.

Profile of a Plant Pathologist: Wilmarie Kriel



Current position: R&D Plant Pathology Manager, Plennegy (Pty) Ltd (Research)

Tell me about your research:

I have worked on many different crops and pathogens over the years. Since I am now with a vegetable seed company, the focus is on different aspects of vegetable diseases. This includes:

- **Diagnostics**: we provide this service to farmers planting our seed, through our sales representatives. They will bring us "patients", or the "patients" will arrive in a box dropped off by our favourite Courier company, acting as an "ambulance". We will

perform targeted sample analyses to determine the cause of symptoms that is troubling the farmer and provide reports and factsheets on the disease identified.

- **Disease resistance screening**: We work with breeding teams each dedicated to a specific breeding program to assist in breeding- and screening for disease resistance. The crops include tomatoes, peppers, pumpkins, squashes, sweetcorn, onions and green beans, although we will also work with product managers in crops without breeding programmes, like brassicas, carrots, lettuce and other cucurbit crops to evaluate trials under local conditions.
- **Seed health QC**: All seed produced by our company must go through rigorous quality control tests, to ensure seed health and prevent possible epidemics caused by seed transmissible pathogens.
- **Phytosanitary matters**: Import permits and Phytosanitary requirements for export also require a lot of research to keep up to date with changes in pathogen dynamics (Pest lists) and facilitate the international movement of seed.

Why is your research important?
One of the most important aspects to consider when farmers choose a cultivar to plant, will lie in the disease resistance package of the material, applicable to their specific production area. Breeding and screening for disease resistance forms a critical part of our work. As a South African breeding company it also enables us to breed for resistance to pathogen strains prevalent in our country, where imported material might fail.

Although marker assisted selection (MAS) forms an integral part of modern breeding programmes, old-school screening has proven an invaluable tool in the search for resistance, especially when no markers are available, or to develop markers to aid in the selection process.

What is your favourite aspect of your research?
The diversity! Each day offer new challenges on the wide variety of crops and pathogens we must deal with, from viruses, fungi and bacteria to nematodes and sometimes insects, or at least the vectors of our pathogens.

What excites you about your research?
To be able to identify the cause of a problem and find a solution. Not only the “who” and the “what”, but the “why” is important to me. I want to contribute, to make a difference for a farmer.

Although most people hate me for it (especially farmers!), seeing the result of all the puzzle pieces of a Disease Triangle culminating in a beautiful disease symptom, makes my heartbeat faster.

Tell me about what you like to do when you aren’t working.
Oh, my goodness! How much space do you have?
I sing in the Rheinberger Chamber Choir.
I love nature and camping and birdwatching and exploring our amazingly beautiful country and see microorganisms in action out there, whether it is a lichen, mycorrhiza, decomposer or a plant pathogen, I revel in the intricate beauty of God’s Creation. The pathologist in me never sleeps.
As far as possible we try to trap, sterilise and release feral cats and share a concern for any animal in distress.
I love to spend time with family and friends and care deeply for my loved ones.