

**CURRICULUM VITAE**  
**WILLEM HP BOSHOFF**



## PERSONAL

**Surname:** Boshoff  
**First Names:** Willem Hendrik Petrus  
**Work Address:** Department of Plant Sciences  
University of the Free State  
P.O. Box 339  
Bloemfontein, 9300, South Africa (SA)

## EDUCATIONAL QUALIFICATIONS

### Primary Education:

- Herbertsdale Primary School (1978-1984)

### Secondary Education:

- Point High School (1985-1989)

### Tertiary Education:

- University of the Free State, Bloemfontein, SA.

### Degrees Obtained:

- BSc. Agric *cum laude* (Plant Pathology, 1994);
- BSc. Agric Honours *cum laude* (Plant Pathology, 1995);
- MSc Agric *cum laude* (Plant Pathology, 1997); Thesis: Characterisation of *Fusarium graminearum* and *Fusarium crookwellense* associated with head blight of wheat in South Africa (supervisor: Prof Z.A. Pretorius; co-supervisor: Prof W.J. Swart);
- Ph.D. Agric (Plant Pathology, 2001); Thesis: Control of foliar rusts of wheat in South Africa with special emphasis on *Puccinia striiformis* f. sp. *tritici* (promotor: Prof Z.A. Pretorius).

## EMPLOYMENT HISTORY

### Present Position:

- Associate Professor and Division Head  
Department of Plant Sciences (Plant Pathology)  
University of the Free State  
Bloemfontein, 9300, SA.

### Previous Positions:

- Senior Lecturer  
Department of Plant Sciences (Plant Pathology)  
University of the Free State  
Bloemfontein, 9300, SA.
- PANNAR SEED (PTY) LTD  
Lead Wheat Breeding (April 2006- December 2016);  
Senior Wheat Breeder (April 2003 – March 2006).
- ARC-Small Grain  
Plant Breeder (October 2001 – March 2003);  
Plant Pathologist (January 1996 – September 2001).
- Department of Plant Pathology, University of the Free State  
Second Year Plant Pathology Demonstrator (1994-1995);  
Part Time Project Assistant (1994);  
Assistance with field trials at Sabie (1994).

## **PROFESSIONAL EXPERIENCE**

### **Personal Profile Summary:**

After completion of my BSc Agric and BSc Agric Hons degrees in Plant Pathology at the University of the Free State (UFS) in 1995, I was appointed by the Agricultural Research Council – Small Grain (ARC-SG) to conduct rust surveillance and pre-breeding in wheat. I obtained both my MSc and PhD degrees in Plant Pathology. For my PhD, I researched the control of foliar rusts of wheat with emphasis on stripe rust. This study was inevitable after stripe rust outbreaks, first observed in South Africa (SA) during 1996, resulted in severe epidemics. Four scientific papers arose from my PhD of which two reported on the impact of stripe- and leaf rust on spring wheat, a third reported on the resistance in South African and foreign cultivars to stripe rust pathotypes 6E16A- and 6E22A- and the fourth on the establishment, distribution, and pathogenicity of the stripe rust pathogen in SA. The varieties Kariega and Cappelle-Desprez with stripe rust resistance, identified as part of my PhD studies and expressing worthwhile adult plant resistance, became the focus of many postgraduate studies in the years to follow. During my employment at ARC-SG (1996-2003) I contributed to 18 scientific papers - seven were in either Plant Pathology or Plant Disease, 12 with myself as first author and received three awards for outstanding research, two best researcher awards as well as the Dow Agro Sciences award for the best article in the SA Journal of Plant and Soil (2002).

From 2001 to 2016 I worked as a wheat breeder, firstly at the ARC-SG (2001-2003) in their spring irrigation wheat programme and thereafter at PANNAR SEED (Pty) Ltd. (2003-2016) as their winter wheat breeder where I served as the breeding lead (2006-2016). During this time, I directly contributed to the development and release of 25 spring and winter wheat cultivars which resulted in a threefold growth in market share for the company. Through my initiative's marker-assisted selection was successfully implemented in the programme which resulted in the release of cultivars having combined resistance to Russian wheat aphid, the rusts and with aluminium tolerance. My time at PANNAR was dedicated to grow their wheat seed market share with no incentives placed on other scientific outputs. During this time, I represented the South-African Plant Breeders Association as an elected Member on the Research Technical Committee for wheat (2005-2016) with the responsibility to review new funding applications, annual project reports and to determine research priorities that could benefit and grow the local industry. I served as a committee member for the Southern African Plant Breeders Association (2004-2006) and as vice-president (2006-2008).

After 13 years in private industry, I was appointed as Senior Lecturer by the UFS from 1<sup>st</sup> January 2017 in the field of rust pathology to continue and expand research on rust diseases of field crops. I did take full responsibility for the UFS rust program when my predecessor retired in October 2017. Since my appointment at UFS, I studied and published extensively on the pathogenic variation of rust pathogens. I initiated and collaborated on projects involving the identification, characterisation, and genetic analysis of existing and new sources of genetic resistance to the rusts. I am tasked with the

responsibility to determine the reaction of South African wheat cultivars to the rusts on an annual base involving extensive seedling- and field evaluation. The data is made available annually to producers in the respective ARC-SG wheat production guides and in popular media. I am currently acting as the Plant Pathology division head at UFS, completed a four-year term as vice-president of the Southern African Society for Plant Pathology (SASPP2019-2023) and act as vice-chair in the organising committee for the 2024 SASPP congress.

Since my appointment at UFS, five PhD students and seven MSc students graduated with myself as supervisor/co-supervisor. I currently have seven postgraduate students including five PhD's and two MSc's studying under my supervision or co-supervision. I also supervised/co-supervised 10 BSc Agric final year and nine BSc Hons students in their literature review and research modules. Since January 2018 I have contributed towards 44 peer-reviewed papers, 21 international and 43 local conference papers and 23 publications in the popular media on the control of rust diseases. One of my first author abstracts titled "Vulnerability of United Kingdom wheat varieties to wheat stem rust" has been selected as an oral plenary presentation by the organisers of the 2020 BGRI Technical Workshop before cancellation due to the Covid19 outbreak. International collaboration with researchers at the Chinese Academy of Sciences, China (wheat stem- and leaf rust), Kingdom of Saudi Arabia (wheat stripe rust), John Innes Centre, UK (wheat stripe- and stem rust), the University of Minnesota (barley stem rust), ARS-USDA (wheat- and oat rust and powdery mildew), and the University of Sydney, Australia (wheat- and oat rust) resulted in peer reviewed papers. Nationally and regionally, I have collaborated with researchers at CenGen, ARC-SG, Syngenta (Sensako), Corteva Agriscience (PANNAR SED), Stark Ayres, Agricol as well as companies in the Limagrain Zaad (K<sub>2</sub>, Link Seed, and Seed Co). The scope of my research programme led me to act as a referee for research papers in several Scientific Journals (including European Journal of Plant Pathology, Crop and Pasture Science, Canadian Journal of Plant Pathology, Plant Disease, Crop Protection and SA Journal of Science) as well as an internal and external examiner of MSc and PhD dissertations. My H-indices on Web of Science, Scopus, ResearchGate and Google Scholar are currently 9 (41 papers indexed), 13 (65 listed), 14 (78 research items), and 15 (83 articles), respectively. I was promoted to Associate Professor from January 2022 and during the same time received a C2 rating from the National Research Foundation.

## **RESEARCH**

**Research Field:** Control of rust diseases in field crops.

### **Summary of Achievements and Competencies:**

- Characterisation of pathogenic variation in the wheat stem rust fungus in South Africa (1996 – 2000).
- Characterisation of the establishment, epidemiology, and pathogenic variation in the wheat stripe rust fungus in South Africa (1997 – 2001).
- Determining the efficiency of chemical control against wheat leaf- and stripe rust, including foliar sprays, timing of applications, and seed treatment (1998 – 2000).

- Identification of wheat germplasm with effective field resistance to local stem-, leaf- and stripe rust pathotypes and establishment of breeding, evaluation, and selection protocols (1996 – 2001).
- Development of adapted stem- and stripe rust resistant wheat breeding lines for use in breeding programmes (1996 – 2018).
- Contributed to the release of 25 spring and winter wheat cultivars of which most have been successfully commercialised (2002 – 2016).
- Successful implementation of a MAS wheat breeding program at Pannar Seed Funded by SAWCIT - (2011 – 2016).
- Development of adapted breeding lines and cultivars with combined resistance to new Russian wheat aphid biotypes and wheat rusts (1996 – 2016).
- Phenotype and genotype selected wheat germplasm sources for rust resistance. Project Funded by the Winter Cereal Trust. Funding Period 2017 – 2018. Project PI WHP Boshoff (In collaboration with Dr R. Prins, Me E. Wessels, and Prof Z.A. Pretorius).
- Determine the reaction of South African wheat cultivars to rust disease on an annual base and make the data available to producers through publishing in the respective ARC-SG production guidelines. Project Funded by the Winter Cereal Trust (2017 – 2020). Project PI WHP Boshoff. (In collaboration with Dr C.M. Bender).
- Using latest genomic advancements to understand durable disease resistance in wheat and barley (GenomicsForResistance). Competitive Research Grants (CRG) Program 2018-2021, Kaust University, Saudi Arabia. Project PI Prof. SG Krattinger. (In collaboration with Dr R. Prins, Prof Z.A. Pretorius, Dr. R. Niks). Funding Period 2019 – 2022.
- Study and extensively report on the number of rust races occurring on cereal and grain crops, their virulence profiles and impact on cultivar response (2017 – current). (In collaboration with mainly Prof. Botma Visser, Prof Z.A. Pretorius, Dr T. Terefe). Funding mainly through SARChI Chair (UID 84647): “Disease Resistance and Quality in Field Crops”.
- Collaborator on a NRF Research Grant: Thuthuka (TTK190405427696) held by Dr Ansori Marè (Lecturer Plant Breeding, 2019-2023, UFS).
- Funded by WCT/SAWCIT - Development of stem rust resistant malting barley varieties. I was a collaborator with the PI Dr R. Prins (CenGen, 2018 - 2023).
- QTL mapping of rust resistance loci in Paramount and the SABBI malt barley breeding line 02-045-03 (CG/B/2023/02). I am a collaborator with the PI Dr R. Prins (CenGen, 2023 - ongoing).
- Funded by SAWCIT - Characterise the source(s) of adult plant stem rust resistance in wheat line SRNS 6223 (CG/W/2023/02). I am a collaborator with the PI Dr R. Prins (CenGen, 2023 - ongoing).
- Funded by SAWCIT - Screening South African stem and stripe rust race isolates for fungicide insensitivity using MARPLE diagnostics. I am a collaborator with the PI Prof. Botma Visser (UFS, 2023 - ongoing).
- Funded by SAWCIT - Expanding the repertoire of disease resistance genes and associated DNA markers available to the South African malt barley industry to include adult plant resistance to barley leaf rust. I am a collaborator with the PI Dr R. Prins (CenGen, 2022 – 2024).
- Funded by SAWCIT – Wheat cultivar resistance to the rusts (2021 – ongoing).
- Maize Trust Funded - Maize rust - joined project with the FABI Institute (2021-2024).

**Impact:**

Contributed directly and significantly towards increased wheat yield stability and production in South Africa through the release of new high yielding cultivars. Through extensive publication in the popular media and farmer's days played a significant role in transferring knowledge to where it is applied at farm level. Published research on rust fungi is in strong support of local breeders and in close collaboration with local researchers and international co-workers and contributes to the control of rust diseases. Have contributed at undergraduate and post-graduate level to training of young researchers.

**National Research Foundation Rating 2022:**

C2 (Achieved based on 2018 – 2021 Research Outputs)

**H-Index:**

Scopus Profile: <https://www.scopus.com/authid/detail.uri?authorId=57204320722>

Web of Science Profile: <https://publons.com/researcher/3153993/willem-boshoff/publications/>

Google Scholar Profile:

[https://scholar.google.com/citations?view\\_op=list\\_works&hl=en&hl=en&tzom=-120&user=hhhMD\\_8AAAAJ&sortby=pubdate](https://scholar.google.com/citations?view_op=list_works&hl=en&hl=en&tzom=-120&user=hhhMD_8AAAAJ&sortby=pubdate)

ResearchGate: [https://www.researchgate.net/profile/Willem\\_Boshoff5](https://www.researchgate.net/profile/Willem_Boshoff5)

**TRAINING AND ACADEMY**

**Ad Hoc Mentor Functions:**

- Mr Khaya Ntushelo, 1998. Acted as mentor with head blight research. PDP-program 1 November 1998- 31 October 1999.
- Mr Louis Guinoiseau, 2000. French student spent 3 months at Plant Protection, ARC-SG, learning wheat rust research methodology. (15 May to 12 August 2000).
- Dr Ansori Maré, Plant Breeding (2020-2023). Co-supervised students at 4th year, MSc, and PhD level. Assisted her with research project initiation and collaborator on successful WCT (WCT/W/2020/07); NRF (TTK190405427696 Grant No: 128380); SAWCIT and UFS (CRF) funding applications.
- Ms Karabo Khiba, 2021. MSc student plant breeding at UFS. She did rust phenotyping under my supervision for her study.
- Mr Naledi Mkhize. PhD student from University of Johannesburg conducting gene silencing trials under my guidance in our rust laboratory. (15 April 2024 to 17 May 2024).

**Internal Co-Promotor:**

- Ansori Maré 2017. Development of wheat lines with complex resistance to rust and Fusarium head blight. PhD Agric. Department of Plant Sciences, UFS, Co-Promoter (Awarded the best PhD student in Plant Breeding). (Three peer reviewed papers published).
- Martin Chemonges 2020. Wheat stem rust – genetic analyses of resistance in SA winter wheat cultivars. PhD Agric. Department of Plant Sciences, UFS, Co-Promoter. (Two peer reviewed papers published).
- Cornel Bender 2020. Stem rust resistance in South African wheat and triticale cultivars. PhD Agric. Department of Plant Sciences, UFS, Co-Promoter. (Two peer papers published).
- Wilku Meyer 2020. Phenotypic and genotypic variation of *Puccinia helianthi* in South Africa. MSc Botany. Department of Plant Sciences, UFS, Co-Supervisor (Passed

- with Distinction). Co-awarded the Junior Kaptein Scott Memorial Medal for the best MSc in Plant Sciences at a South African University by the South African Academy for Science and Art). Awarded E.M. van Zinderen Bakker prize for outstanding MSc in Botany. (Peer reviewed paper published, popular paper published).
- Kholosa Maqolo 2020. Characterizing a new source of wheat stem rust resistance. MSc Plant Breeding. Department of Plant Sciences, UFS, Co-Supervisor. (Passed with Distinction)
  - Zizipho Spelman 2021. MSc Plant Pathology. Occurrence, pathogenicity, and genetic variation of *Puccinia hordei* in South Africa. Supervisor (Passed with Distinction). (Peer reviewed paper published, popular paper published)
  - Ridokunda Sivhada 2022. MSc Plant breeding - Influence of stripe rust resistance genes on yield and gluten protein composition in bread wheat genotypes. Co-Supervisor (Final mark 73%).
  - Huzaifa Bilal 2023. PhD Botany - Priming effect of leaf rust and salicylic acid in Russian wheat aphid resistance. Co-Promoter. (Peer reviewed paper drafted).
  - Nyasha Chiuraise 2023. PhD Plant Pathology - Pathogen variation and genetic control of *Puccinia triticina* in Zimbabwe. Promoter. (Peer reviewed paper published).
  - Isabella du Toit 2023. MSc Botany - Triazole fungicide sensitivity among South African *Puccinia graminis* f. sp. *tritici* isolates. Co-supervisor. (Passed with Distinction). (Peer reviewed paper submitted).
  - Emily Tsoetsi 2023. MSc Botany - Functional analysis of *AvrSr35* and *AvrSr50* avirulence genes in South African *Puccinia graminis* f. sp. *tritici* isolates. Co-supervisor. (Passed with Distinction). (Peer reviewed paper drafted).
  - L. Maphobole 2024. MSc Plant Pathology - Phenotypic and genotypic characterisation of *Puccinia sorghi* isolates from South Africa. Supervisor. (Passed with Distinction – awarded for exceptional MSc by NAS). (Peer reviewed paper drafted).

### **Registered Students:**

- K. Venter - PhD Plant Pathology - Rust resistance in a diverse wheat germplasm collection. Promoter.
- W. Meyer - PhD Botany - Virulence and genotype assessment of *Puccinia helianthi*. Co-supervisor.
- R. Dembe - MSc Botany - Genetic diversity of *Puccinia coronate* from grasses and cultivated oat in South Africa. Co-supervisor.
- I. du Toit – PhD Botany - Improved wheat rust surveillance in South Africa using MARPLE diagnostics. Co-promoter.
- K. Mhelembe – PhD Plant Breeding – Comparison of methods used to identify new leaf rust resistance loci in wheat. Co-promoter.
- T. van Rooyen - PhD Plant Breeding Characterisation of South African sweetcorn germplasm for *Puccinia sorghi* resistance. Co-promoter.
- A. Coetzer – MSc Plant Pathology – Characterisation of *Puccinia striiformis* f. sp. *tritici* and wheat resistance in South Africa. Supervisor.
- N.A. Ntjabane *Puccinia triticina* holocellulolytic enzymes: production and comprehensive characterisation of the recombinant xylanases and cellulases. Co-supervisor.

**Undergraduate (final year) and Post Graduate Honours Students Mentored:**

- E. Semu (2015215771) 2017. The global threat of wheat rust. Literature review. BSc Hons Plant Pathology.
- N. Yekelo (2013094996) 2017. A comparative study of virulence and growth rate between rye and wheat leaf rust. Final year research project BSc Agric. Plant Pathology.
- K. Kemp (2014135871) 2018. Characterisation and transfer of wheat leaf rust genes to South African cultivars. Literature review. BSc Agric. Plant Breeding. (Best presentation – Plant Sciences).
- K. Kemp (2014135871) 2018. Breeding for durable leaf rust resistance: Past, present, and future. Final year research project BSc Agric. Plant Breeding.
- T.B. Masisi (2014058628) 2018. Comparative virulence of stripe rust pathotype 6E22A+ and field isolate GWK2015\_56. Final year project BSc Agric. Plant Pathology.
- P.P. Myburgh (2015011279) 2019. Challenges in breeding for stem rust resistance in wheat. Literature review BSc Agric. Plant Breeding.
- P.P. Myburgh (2015011279) 2019. Phenotypic and genotypic characterisation of South African winter wheat cultivars for stem rust resistance. Final year research project BSc Agric. Plant Breeding.
- Z. Spelman (2015104728) 2019. Control of barley leaf rust. Literature review. Final year BSc Agric. Plant Pathology.
- Z. Spelman (2015104728) 2019. Occurrence, pathogenicity, and genetic variation of *Puccinia hordei* in South Africa. Final year research project BSc Agric. Plant Pathology. (Best presentation – Plant Sciences).
- I. du Toit (2016042547) 2020. An overview of fungicide resistance in modern agriculture. Literature review BSc Hons. Botany.
- I. du Toit (2016042547) 2020. Correlation analysis of fungicide resistance and the *CYP51* gene sequence in four South African wheat stem rust races. Research project BSc Hons Botany. Awarded best BSc Hons student in Botany. (Best presentation – Plant Sciences).
- A.A. Smit (2016027142) 2020. Cloning of plant disease resistance and avirulence genes. Literature review. BSc Agric. Plant Breeding.
- A.A. Smit (2016027142) 2020. Phenotypic and genotypic characterisation of wheat varieties with potential new sources of rust resistance. Final year research project BSc Agric. Plant Breeding.
- M.E. Tsotetsi (2016244697) 2020. Determination and characterization of the sequence variation in the *AvrSr35* gene in South African wheat stem rust races. Research project BSc Hons Botany.
- S. Mpanza (2013062498) 2020. Crown rust – the most devastating disease of oat. Literature review. BSc Agric. Plant Pathology.
- S. Mpanza (2013062498) 2020. Characterising a new race of *Puccinia coronata* Corda var. *avenae* f. sp. *avenae*. Final year research project BSc Agric. Plant Pathology.
- L. Maphobole (2017154440) 2021. Common rust of maize caused by *Puccinia sorghi*. Literature review BSc Agric. Plant Pathology.
- L. Maphobole (2017154440) 2021. Characterising isolates of *Puccinia sorghi*. Final year research project BSc Agric. Plant Pathology.



- R. Dembe (2016181378) 2021. Genetic mechanisms whereby rust fungi convert from avirulence to virulence. Literature review BSc Hons Botany.
- R. Dembe (2016181378) 2021. Identification of eggplant (*Solanum melongena*) rust as *Puccinia penicillariae*. Research project BSc Hons Botany.
- S.I. Hlongwa (2020722753) 2022. Bean production in South Africa and the control of rust. Literature review. BSc Hons Plant Pathology.
- S.I. Hlongwa (2020722753) 2022. Phenotypic characterisation of *Uromyces appendiculatus* isolates. Research project BSc Hons Plant Pathology.
- T. Makhetha (2017272184) 2022. Global Positioning System (GPS) mapping for leaf rust resistance in the wheat genome. Literature review. Final year project BSc Agric. Plant Breeding. (Best presentation – Plant Sciences).
- T. Makhetha (2017272184) 2022. The phenotypic and genotypic validation of leaf rust resistance in wheat varieties. Final year project BSc Agric. Plant Breeding.
- A. Coetzer (2019023965) 2023. Control of stripe rust on wheat. Literature review. BSc Hons Plant Pathology. (Best presentation – Plant Sciences).
- A. Coetzer (2019023965) 2023. Detection of race 142E30A+ of *Puccinia striiformis* f. sp. *tritici* presents a threat to local wheat production. Research project BSc Hons Plant Pathology. (Best presentation – Plant Sciences).
- K. Pule (2016423275) 2023. Wheat cultivar development. Literature review. BSc Hons Plant Breeding. (2<sup>nd</sup> Best presentation – Plant Sciences).
- K. Pule (2016423275) 2023. Phenotypic and genotypic evaluation of wheat plants developed for combined rust and Fusarium head blight resistance. BSc Hons Plant Breeding. (2<sup>nd</sup> Best presentation – Plant Sciences).
- N.A. Ntjabane (2017095908) 2023. A sweet plant defence response against pathogens: Rust-grain crops interaction case study. Literature review. BSc Hons Botany.
- N.A. Ntjabane (2017095908) 2023. Unravelling functions of the modified cell wall in Thatcher and ThatcherLr9 wheat infected by *Puccinia triticina*. BSc Hons Botany.
- A.Z. Magwaba (2019330568) 2024. Rust diseases of barley. Literature review. BSc Agric. Plant Pathology. (Best presentation – Plant Sciences).
- J. du Plooy (2019264437) 2024. Fungal effectors: Their role in plant-pathogen interactions. Literature review. BSc Hons Botany.
- A.Z. Magwaba (2019330568) 2024. Phenotyping of resistance sources to *Puccinia graminis* f. sp. *tritici* in barley. Final year project BSc Agric. Plant Pathology.
- J. du Plooy (2019264437) 2024. Identification of putative virulence effector genes from *Puccinia graminis* f. sp. *tritici*. Research Project. BSc Hons Botany.

**Post-graduate Thesis Examination External:**

- MSc Agric (2000, 2001, 2004, 2008, 2008, 2009, 2017) (University Free State);
- MSc Agric (2009); 2x 2021 (University Stellenbosch);
- PhD Agric (2017), 2024 (University Stellenbosch);
- MSc Agric (2019, 2023) (University of South Africa);
- PhD 2021 (University of Sydney).

**Post-graduate Thesis Examination Internal:**

- MSc Agric (2017, 2018, 2021);
- PhD Agric (2018);
- PhD Plant Breeding (2019, 2020).

**Referee for Journal Articles:**

- Agriculture (2022 1x)
- Australasian Plant Disease Notes (2024 1x)
- SA Journal of Plant and Soil (2002 3x, 2007 3x, 2008 3x, 2009 1x, 2010 1x, 2021 1x)
- Crop & Pasture Science (2018 1x)
- European Journal of Plant Pathology (2018 1x, 2022 1x)
- Canadian Journal of Plant Pathology (2019 1x, 2020 1x, 2x 2021 1x, 2022 1x, 2024 1x)
- Plant Disease (2019 1x, 2020 1x, 2023 1x, 2024 1x)
- South African Journal of Science (2020 1x)
- Crop Protection (2020 1x, 2021 1x)
- Journal of Phytopathology (2021 1x, 2024 1x)
- PhytoFrontiers (2023 1x)
- Physiological and Molecular Plant Pathology (2022 1x, 2024 1x)
- Journal of Plant Pathology (2022 1x)

**Referee for Projects Submitted:**

- Technical Committee Winter Cereal Trust (2017 2x projects; 2018 2x projects; 2019 1x project)
- SAWCIT 2021 (Convenor for 14 Crop Protection related projects)
- Maize Trust (2020 1x project; 2021 1x project; 2022 1x project)

**Awards Received:**

- Small Grain Institute Directors Award for outstanding Research Performance for three consecutive years 1997, 1998, and 1999.
- Small Grain Institute Directors Award for Best Researcher – period 1999-2000.
- Small Grain Institute Directors Award for Best Academic Performance – 2002.
- Dow Agro Sciences Prize for the best article published in the South African Journal of Plant and Soil during 2002.
- Co-author: Best poster award at BGRI Technical Workshop, Marrakech, Morocco, 2018.
- Co-author: Best poster award at 15<sup>th</sup> ICRPMC. 23 – 27 September 2018. Kruger National Park, South Africa.
- Co-author: Best poster award at SANSOR Conference. SANSOR Annual Conference. 21-24 May 2019. Umlazi, KwaZulu-Natal.
- First author of five “Best in edition paper awards” for popular articles in Wheat Focus since 2017 to 2022.

**PROFESSIONAL DEVELOPMENT**

**Courses Completed:**

- Programme in Project Management (26 January 1996)
- Supervision course (2 February 1996)
- Effective presentation techniques (26 March 1997)

- Marketing course (17 & 18 February 1998)
- Labour relations June 2004
- Occupational Health and Safety Act – 27 January 2004
- Performance appraisals 2 & 3 August 2006
- OSHA Global training February 2009. OSHA ACT and HASCHEM
- Basic Fire Training – May 2014
- Basic Fire and evacuation training – September 2018
- Attended #UFSTeachOn webinars – April 2020

### **Membership of Professional Societies:**

- The Southern African Society for Plant Pathology (SASPP 1995 to date):
  - Representative of the SASPP in the Free State 1996,
  - Vice-President of the SASPP – from April 2019 – March 2023,
  - Vice-chair COC September 2022 – January 2024.
- The Southern African Plant Breeders Association (SAPBA 1998 to date):
  - Session chair: 2012, 2016,
  - Committee member of the SAPBA - from April 2004 – March 2006,
  - Vice-President of the SAPBA – from April 2006 – March 2008.

### **Professional Registration:**

- Registered as a professional agricultural scientist (Pr. Sci. Nat) with the South African Council for Natural Scientific Professions (SACNASP 2017 to date).
- SA Akademie vir Wetenskap en Kuns

### **Review Boards / Panels / Evaluation Committees:**

- Evaluation of annual research proposals and reports submitted to the Technical Committee of the Winter Cereal Trust (2005 – 2016).
- Review of research proposals to the Maize Trust (2020 - ongoing).
- Review research proposal to the Winter Cereal Trust (2017 – 2020).
- Convenor rust consortium project applications to Winter Cereal Trust (2018 – 2020).
- Convenor of Wheat Crop Protection Consortium SAWCIT (2021- ongoing).
- Member, National Small Grain Cultivar Advisory Committee (1996-ongoing).
- Member of ARC-SG annual planning committee meeting (2017 to 2019).
- Review NRF-rating applications (2022 2x, 2023 2x - ongoing).
- MMed students project proposal (2022 ongoing):
  - TH Gama “In vitro Differentiation of Embryonic Carcinoma Stem (P19 EC) into Insulin Producing Cells by Extracts of *Carpobrotus edulis* and *Sclerocarya birrea*” 21 July 2022.
  - B Baloyi “Investigation of the Antidiabetic and Antihypertensive Potential of *Tephrosia capensis* (Jacq.) Pers. var. *capensis* Crude Extracts and Isolated Fractions” 17 November 2022.
  - J Kobo “In vitro cannabis sativa, its major cannabinoids and schotia brachyptala extracts effects for potential development of AD drugs” 8 December 2022.
  - L Nene “Ischemic cardiomyopathy modelling by selected differentiation of ventricular-like human induced pluripotent stem cell-cardiomyocytes” 16 May 2024.
  - KR Mabusela “An in vitro mechanistic study of Cannabis sativa L. extracts towards mitigating anti-aggregation effects of amyloid beta protein in Alzheimer’s disease” 28 May 2024.

- PV Ncume “In vitro investigations of Cannabis Sativa L extract for possible Neuroprotective Effects – Mechanistic studies towards Mitigating Some Symptoms of Alzheimer’s Disease” 8 July 2024.

### **Workshops Attended:**

- Workshops on Wheat Rust Pathology (1-day each) (UFS, 2009 and 2010).
- Marker assisted breeding 6 & 7 November 2006.
- Pannar workshop on strategies for breeding towards pest and disease resistance 19 & 21 September 2007.
- Workshop on Bioinformatics and Wheat Genomics by Rob Davey and Bukhard Steuernagel (26 & 27 June 2017, Worcester SA).
- Agbiz Grain Wheat Indaba. CSIR convention centre, Pretoria, 17<sup>th</sup> February 2017.
- Workshop on Grant Writing Skills by Henriette van den Berg 27 & 28 June 2017, Worcester, SA.
- SANSOR organised event on student capacity development. CSIR convention centre, Pretoria, 4<sup>th</sup> September 2017.
- UFS post-graduate school researcher development programme. Roles and responsibilities of the supervisor, supervisor agreement, and delivering effective research outputs, 22 January 2018.
- NAS Curriculum Transformation and Innovation Discussion Workshops – July to September 2017.
- Wheat Breeding Technology Workshop, BGRI Marrakech, Morocco, 13 & 14 April 2018.
- UFS Teaching Portfolio Workshop. 20 & 21 July 2022.
- SANSOR organised event on “Bridging the gap between science and policy”. Future Africa, University of Pretoria, 23<sup>rd</sup> January 2023.

### **Committees:**

- Member of the stripe rust task team from 18 November 1996 to March 1998.
- SAPBA elected Member of the Research Technical Committee for wheat from January 2005 – December 2016.
- ICRPMC organising 2018.
- Plant Sciences asset committee – PPLG representative 2017 to date.
- UFS greenhouse committee 2017 – Chair from 2019 to date.
- Plant Sciences ExCom committee 2020 to date.
- Plant Sciences research committee January 2021 to date.
- SA-Grain reduction committee – January 2021 to date.

### **Directorships:**

- SANSOR elected representative on the Board of Directors for the South African Grain Laboratory from 1<sup>st</sup> January 2010 - 2016.

### **Community Service:**

- Involved on a continual basis in diagnostic services, extension and sharing expertise regarding identification, occurrence, and control of wheat diseases.
- Regular advice to GSA employees on production threats involving diseases and research to be considered.
- Taking research results to farm level through regular papers in the popular media.

- Career Profile in support of SAPBA Food for Mzansi program to promote agricultural research and plant pathology under prospect students, 2020 (<https://agricareers.co.za/2020/10/28/yes-plant-breeding-is-actually-a-thing/>)

### International Visits:

- CIMMYT wheat breeding program in Mexico for two weeks during August 1991 including.
- Long Reach and AGT wheat breeding programs as well as scientists at the University of Adelaide in Australia during 2008. Attended the IWGS in Brisbane Australia 2008.
- PHI wheat breeding programs at Windfall and Lincoln respectively as well as the wheat breeding program at the University Kansas State. 7<sup>th</sup> to 19<sup>th</sup> June 2014.
- Attended the 13<sup>th</sup> IWGS in Tulln Austria, 23-28 April 2017.
- Beijing, China, Institute of Genetics and Developmental Biology, Chinese Academy of Sciences. March 30 to April 5, 2018.
- Attended the 9<sup>th</sup> BGRI in Marrakech-Morocco, 14-18 April 2018.
- Attended the 1<sup>st</sup> WGS in Saskatoon, Canada, 21-26 July 2019.

### International Scientist Hosted:

- Zhang, J. 2017. Visited the UFS from 28 October to 24 November characterising stem rust resistant lines for PhD studies. Supervise during visit. Plant Breeding Institute (Cobbitty), School of Life and Environmental Sciences, The University of Sydney, 107 Cobbitty Road, Cobbitty, NSW 2570, Australia.
- Li, H. 2017. Visited the UFS from 26 to 30 November 2017. Held discussions on current collaboration and progress as well as areas of future collaboration. Give a presentation on the status of rust research in South Africa. Tour the Eastern Free State wheat growing area and visit the seed company Sensako. Institute of Genetics and Developmental Biology, Chinese Academy of Sciences, Beijing, China.
- Prof. Simon Krattinger and Dr Jan Bettgenhaeuser from Kaust University visited the UFS on the 16<sup>th</sup> of September 2019. They had a tour of our greenhouse and rust lab facilities followed by a field trip to trials planted outside Greytown, KwaZulu-Natal.
- Prof. Robert Park from the University of Sydney, Australia, Faculty of Science, School of Life & Environmental Sciences visited the Department on the 9<sup>th</sup> of October 2019 to discuss collaborative research opportunities.
- Dr Renjie Chen, postdoc at KAUST University visited the UFS from 23 April 2023 to 20 May 2023 to conduct stem rust evaluations. He was trained in our stem rust assessment protocols.
- Prof. Diane Saunders from John Innes Centre, United Kingdom from 19 – 27 January 2024. Keynote address at the 53<sup>rd</sup> SASPP, Golden Gate.

### Technology Transfer

#### Refereed Journal Articles:

- 1) W.H.P. Boshoff, W.J. Swart, Z.A. Pretorius, M.M. Liebenberg & P.W. Crous 1995. Genetic variation among isolates of *Phaeoisariopsis griseola* in Southern Africa. [Phytopathology 85: (692)]: 1200.
- 2) W.H.P. Boshoff, W.J. Swart, Z.A. Pretorius, M.M. Liebenberg & P.W. Crous 1996. Isozyme variability among isolates of *Phaeoisariopsis griseola* in Southern Africa. Plant Pathology 45: 344-349. <https://doi.org/10.1046/j.1365-3059.1996.d01-115.x>
- 3) W.H.P. Boshoff, Z.A. Pretorius & W.J. Swart 1996. A comparison of scab development in wheat infected by *Fusarium graminearum* and *Fusarium*

- crookwellense*. [Phytopathology 86: (498(A)). 58.
- 4) Z.A. Pretorius, W.H.P. Boshoff & G.H.J. Kema 1997. First report of *Puccinia striiformis* f. sp. *tritici* on wheat in South Africa. Plant Disease 81: 424. <https://doi.org/10.1094/PDIS.1997.81.4.424D>
  - 5) W.H.P. Boshoff, Z.A. Pretorius & W.J. Swart 1998. *Fusarium* species in wheat grown from head blight infected seed. South African Journal of Plant and Soil 15 (1): 46-47. <https://doi.org/10.1080/02571862.1998.10635114>
  - 6) W.H.P. Boshoff, Z.A. Pretorius & W.J. Swart 1999. In Vitro differences in fungicide sensitivity between *Fusarium graminearum* and *Fusarium crookwellense*. African Plant Protection 5 (1): 65-71. [https://hdl.handle.net/10520/AJA10233121\\_135](https://hdl.handle.net/10520/AJA10233121_135)
  - 7) W.H.P. Boshoff, Z.A. Pretorius & W.J. Swart 1999. A comparison of head infection and blight development caused by *Fusarium graminearum* and *Fusarium crookwellense* in wheat. South African Journal of Plant and Soil 16 (2): 79-84. <https://doi.org/10.1080/02571862.1999.10634851>
  - 8) W.H.P. Boshoff & Z.A. Pretorius 1999. A new pathotype of *Puccinia striiformis* f. sp. *tritici* on wheat in South Africa. Plant Disease 83 (6): 591. <https://dx.doi.org/10.1094/PDIS.1999.83.6.591C>
  - 9) W.H.P. Boshoff, W.J. Swart & Z.A. Pretorius 1999. Isozyme characterisation of *Fusarium graminearum* isolates associated with head blight of irrigated wheat in South Africa. South African Journal of Botany 65 (4): 281-286. [https://doi.org/10.1016/S0254-6299\(15\)30995-9](https://doi.org/10.1016/S0254-6299(15)30995-9)
  - 10) W.H.P. Boshoff, B.D. van Niekerk & Z.A. Pretorius 1999. Pathotypes of *Puccinia graminis* f. sp. *tritici* detected in South Africa during 1991-1997. South African Journal of Plant and Soil 17(2): 60-62. <https://doi.org/10.1080/02571862.2000.10634868>
  - 11) B.D. van Niekerk, Z.A. Pretorius & W.H.P. Boshoff 2001. Variability of *Puccinia coronata* f. sp. *avenae* and *P. graminis* f. sp. *avenae* on Oat in South Africa. Plant Disease 85 (10), 1085-1090. <http://dx.doi.org/10.1094/PDIS.2001.85.10.1085>
  - 12) B.D. van Niekerk, Z. A. Pretorius & W.H.P. Boshoff 2001. Potential yield losses caused by barley leaf rust and stem rust to South African barley and oat cultivars. South African Journal of Plant and Soil 18 (3), 108-113. <https://doi.org/10.1080/02571862.2001.10634413>
  - 13) B.D. van Niekerk, Z.A. Pretorius & W.H. P. Boshoff 2001. Occurrence and Pathogenicity of *Puccinia hordei* on Barley in South Africa. Plant Disease 85, 713-717. <http://dx.doi.org/10.1094/PDIS.2001.85.7.713>
  - 14) W.H.P. Boshoff, Z.A. Pretorius & B.D. van Niekerk 2002. Resistance in South African and foreign wheat cultivars to pathotypes 6E16A- and 6E22A- of *Puccinia striiformis* f. sp. *tritici*. South African Journal of Plant and Soil 19 (1), 27-36. <https://doi.org/10.1080/02571862.2002.10634433>
  - 15) W.H.P. Boshoff, Z.A. Pretorius & B.D. van Niekerk 2002. Establishment, Distribution and Pathogenicity of *Puccinia striiformis* f. sp. *tritici* in South Africa. Plant Disease 86 (5), 485-492. <http://dx.doi.org/10.1094/PDIS.2002.86.5.485>
  - 16) W.H.P. Boshoff, Z.A. Pretorius & B.D. van Niekerk 2002. The impact of leaf rust on spring wheat in the winter rainfall region of South Africa. South African Journal of Plant and Soil 19 (2), 84-88. <https://doi.org/10.1080/02571862.2002.10634443>
  - 17) K. Ntushelo & W.H.P. Boshoff 2002. Reaction of South African spring wheat cultivars to head blight caused by *Fusarium graminearum*. South African Journal of Plant and Soil 19 (1), 50-51. <https://doi.org/10.1080/02571862.2002.10634438>
  - 18) K. Ntushelo & W.H.P. Boshoff 2002. Initial studies on fungicide evaluation for

- efficacy in the management of *Fusarium* head blight in wheat. South African Journal of Plant and Soil 19 (4), 211-212. <https://doi.org/10.1080/02571862.2002.10634468>
- 19) W.H.P. Boshoff, Z.A. Pretorius, B.D. Van Niekerk & J.S. Komen. 2002. First report of Virulence in *Puccinia graminis* f. sp. *tritici* to Wheat Stem Rust Resistance Genes Sr8b and Sr38 in South Africa. Plant Disease 86 (8), 922. <https://doi.org/10.1094/PDIS.2002.86.8.922B>
  - 20) W.H.P. Boshoff, Z.A. Pretorius & B.D. van Niekerk 2003. Fungicide efficacy and the impact of stripe rust on spring and winter wheat in South Africa. South African Journal of Plant and Soil 20 (1), 11-17. <https://doi.org/10.1080/02571862.2003.10634898>
  - 21) V.P. Ramburan, Z.A. Pretorius, J.H. Louw, L.A. Boyd, P.H. Smith, W.H.P. Boshoff, & R. Prins 2004. A genetic analysis of adult plant resistance to stripe rust in the wheat cultivar Kariega. Theoretical and Applied Genetics 108: 1426-1433. <https://dx.doi.org/10.1007/s00122-003-1567-7>
  - 22) R. Prins, V.P. Ramburan, Z.A. Pretorius, L.A. Boyd, W.H.P. Boshoff, P.H. Smith, & J.H. Louw 2005. Development of a doubled haploid mapping population and linkage map for the bread wheat cross Kariega X Avocet S. South African Journal of Plant and Soil 22 (1), 1-8. <https://dx.doi.org/10.1080/02571862.2005.10634672>
  - 23) F. Marais, W.H.P. Boshoff, & F. du Toit 2007. Effect of segregation distortion on genetic mapping of a PI294994 derived Russian wheat aphid resistance gene. South African Journal of Plant and Soil 24,178-180. <https://doi.org/10.1080/02571862.2007.10634804>
  - 24) Z.A. Pretorius, L.J. Szabo, W.H.P. Boshoff, L. Herselman, & B. Visser 2012. First report of a new TTKSF race of wheat stem rust (*Puccinia graminis* f. sp. *tritici*) in South Africa and Zimbabwe. Plant Disease 96: 590. <https://doi.org/10.1094/PDIS-12-11-1027-PDN>
  - 25) V.L. Tolmay, S.L. Sydenham, W.H.P. Boshoff, W. du Toit, B.S. Wentzel & C.W. Miles 2016. Registration of five South African Spring Wheat Germplasm Lines Resistant to Russian Wheat Aphid; Stem-, Leaf- and Stripe Rust. Journal of Plant Registrations 10(1), 80-86. <https://doi.org/10.3198/jpr2015.03.0013crg> Q2: IF 0.4
  - 26) W.H.P. Boshoff, R. Labuschagne, T. Terefe, Z. A. Pretorius & B. Visser 2018. New *Puccinia triticina* races on wheat in South Africa. Australasian Plant Pathology 47, 325-334. <https://doi.org/10.1007/s13313-018-0560-1>. Q2: IF 1.4
  - 27) W.H.P. Boshoff, Z. A. Pretorius, T. Terefe, C.M. Bender, L. Herselman, G.J. Maree & B. Visser 2018. Phenotypic and genotypic description of *Puccinia graminis* f. sp. *tritici* race 2SA55 in South Africa. European Journal of Plant Pathology 152(3), 783-789. <https://doi.org/10.1007/s10658-018-1527-3> Q1: IF 1.7
  - 28) W.H.P. Boshoff, C.M. Bender & Z.A. Pretorius. 2019. Reaction of South African rye, triticale, and barley forage cultivars to stem and leaf rust. SA Journal of Plant and Soil 36 (2), 77-82. <https://doi.org/10.1080/02571862.2018.1522381> Q3: IF 0.4
  - 29) W.H.P. Boshoff, R. Prins, C. de Klerk, S.G. Krattinger, C.M. Bender, G.J. Maree, L. Rothmann & Z.A. Pretorius. 2019. Point inoculation method for measuring adult plant response of wheat to stripe rust infection. Plant Disease 103 (6), 1228-1233. <https://doi.org/10.1094/PDIS-08-18-1312-RE> Q2: IF 3.6
  - 30) G.J. Maree, R. Prins, C.M. Bender, W.H.P. Boshoff, T.G. Negussie & Z. A. Pretorius. 2019. Phenotyping Kariega x Avocet S doubled haploid lines containing individual and combined adult plant stripe rust resistance loci. Plant Pathology 68 (4), 659-668. <https://doi.org/10.1111/ppa.12985> Q1: IF 2.6
  - 31) T. Terefe, Z.A. Pretorius, B. Visser, & W.H.P. Boshoff. 2019. First Report of *Puccinia*

- graminis* f. sp. *tritici* Race PTKSK, a Variant of Wheat Stem Rust Race Ug99 in South Africa. *Plant Disease* 103 (6), 1421. <http://dx.doi.org/10.1094/PDIS-11-18-1911-PDN> Q2: IF 3.6
- 32) G.J. Maree, R. Prins, L.A. Boyd, H.D. Castelyn, C.M. Bender, W.H.P. Boshoff & Z.A. Pretorius 2019. Assessing the individual and combined effects of QTL for adult plant stripe rust resistance derived from Cappelle-Desprez. *Agronomy* 154 (9), article 154, 13pp. <http://dx.doi.org/10.3390/agronomy9030154> Q1: IF 2.6
- 33) E. Wessels, R. Prins, W.H.P. Boshoff, J.D. Zurn, M. Acevedo & Z.A. Pretorius 2019. Mapping a Resistance Gene to *Puccinia graminis* f. sp. *tritici* in the Bread Wheat Cultivar Matlabas. *Plant Disease* 103 (9), 2337-2344. <https://doi.org/10.1094/PDIS-10-18-1731-RE> Q2: IF 3.6
- 34) W.H.P. Boshoff, C.M. Bender & Z.A. Pretorius 2019. The value of field ratings of differential lines for pathotyping *Puccinia graminis* f. sp. *tritici*. *European Journal of Plant Pathology* 155(1), 349-352. <https://doi.org/10.1007/s10658-019-01754-7> Q1: IF 1.7
- 35) Z.A. Pretorius, G.J. Booyesen, W.H.P. Boshoff, J.H. Joubert, G.J. Maree & J. Els 2019. Additive Manufacturing of Devices used for Collection and Application of Cereal Rust Urediniospores. *Frontiers in Plant Science* 10, article 639. <https://doi.org/10.3389/fpls.2019.00639> Q1: IF 4.3
- 36) N. Yekelo, L. Rothmann, C.M. Bender, Z.A. Pretorius & W.H.P. Boshoff 2019. Response of an international triticale collection to *Puccinia triticina* and *Puccinia recondita* and assessment of temperature sensitivity in leaf rust isolates. *Cereal Research Communications* 47 (3), 496–505. <https://doi.org/10.1556/0806.47.2019.23> Q3: IF 0.7
- 37) H. Li, W.H.P. Boshoff, Z.A. Pretorius, Q. Zheng, B. Li & Z. Li 2019. Establishment of wheat-*Thinopyrum ponticum* translocation lines with resistance to *Puccinia graminis* f. sp. *tritici* Ug99. *Journal of Genetics and Genomics* 46, 406-407. <https://doi.org/10.1016/j.jgg.2019.07.005> Q1: IF 4.7
- 38) W.H.P. Boshoff, B. Visser, T. Terefe, Z.A. Pretorius 2019. Diversity in *Puccinia graminis* f. sp. *avenae* and its impact on oat cultivar response in South Africa. *European Journal of Plant Pathology* 155, 1165-1177. <https://doi.org/10.1007/s10658-019-01845-5> Q1: IF 1.7
- 39) W.H.P. Boshoff, B. Visser, C.M. Lewis, T.M. Adams, D.G.O. Saunders, T. Terefe, T. Soko, N. Chiuraise and Z.A. Pretorius. 2020. First Report of *Puccinia striiformis* on wheat in Zimbabwe. *Plant Disease* 104 (1), 290. <https://doi.org/10.1094/PDIS-07-19-1395-PDN> Q2: IF 3.6
- 40) W.H.P. Boshoff, Z.A. Pretorius, T. Terefe, B. and Visser. 2020. Occurrence and pathogenicity of *Puccinia coronata avenae* f. sp. *avenae* on oat in South Africa. *Crop Protection* 133, 105144 <https://doi.org/10.1016/j.cropro.2020.105144>. Q1: IF 2.2
- 41) G.J. Maree, H.D. Castelyn, C.M. Bender, W.H.P. Boshoff and Z.A. Pretorius. 2020. Comparing infection and colonisation of *Puccinia graminis* in barley and wheat. *Australasian Journal of Plant Pathology* 49, 431-445. <https://doi.org/10.1007/s13313-020-00715-7> Q2: IF 1.4
- 42) Z.A. Pretorius, E. Wessels, R. Prins, C.M. Bender, B. Visser and W.H.P. Boshoff. 2020. Accomplishments in wheat rust research in South Africa. *South African Journal of Science* 116 (11/12), Art. #7688. <https://doi.org/10.17159/sajs.2020/7688> Q2: IF 1.4
- 43) A. Marè, W.H.P. Boshoff, L. Herselman 2020. Molecular breeding of wheat lines for multiple rust and Fusarium head blight resistance. *Euphytica* 216, 163.



- <https://doi.org/10.1007/s10681-020-02697-5> Q1: IF 1.6
- 44) R. Prins, B.J. Steffenson, A.J. Case, W.H.P. Boshoff, G.M. Agenbag, Z.A. Pretorius 2020. Assessments and perspectives on stem rust resistance in South African malting barley. *Australasian Plant Pathology* 49, 679–690. <https://doi.org/10.1007/s13313-020-00744-2> Q2: IF 1.4
- 45) W.B. Meyer, W.H.P. Boshoff, A. Minnaar-Ontong, A. Young, G. Kong, S. Thompson, Z.A. Pretorius and B. Visser 2021. Phenotypic and genotypic variation of *Puccinia helianthi* in South Africa. *Plant Disease* 105 (5), 1482–1489. <https://doi.org/10.1094/PDIS-09-20-1903-RE> Q2: IF 3.6
- 46) R. Labuschagne, E. Venter, W.H.P. Boshoff, Z.A. Pretorius, T. Terefe and B. Visser 2021. Historical development of the *Puccinia triticina* population in South Africa. *Plant Disease* 105 (9), 2445–2452. <https://doi.org/10.1094/PDIS-10-20-2301-RE> Q2: IF 3.6
- 47) G. Yang, W.H.P. Boshoff, H. Li, Z.A. Pretorius, Q. Luo, B. Li, Z. Li, Q. Zheng 2021. Chromosomal composition analysis and molecular marker development for the novel Ug99-resistant wheat–*Thinopyrum ponticum* translocation line WTT34. *Theoretical and Applied Genetics* 134, 1587–1599. <https://doi.org/10.1007/s00122-021-03796-0> Q1: IF 4.4
- 48) A. Marè, W.H.P. Boshoff, L. Herselman 2021. Molecular and phenotypic evaluation of wheat containing different combinations of rust resistance genes. *Plant Breeding* 140(3): 419–431. <http://doi.org/10.1111/pbr.12913> Q2: IF 1.7
- 49) C.M. Bender, W.H.P. Boshoff, Z.A. Pretorius 2021. Infection and colonization of triticale by *Puccinia graminis* f. sp. *tritici*. *Canadian Journal of Plant Pathology* 43 (sup2), S198–S210. <https://doi.org/10.1080/07060661.2021.1931453> Q2: IF 1.9
- 50) J. Zhang, T. Hewitt, W.H.P. Boshoff, I. Dundas, N. Upadhyaya, J. Li, M. Patpour, S. Chandramohan, Z.A. Pretorius, M. Hovmøller, W. Schnippenkoetter, R. Park, R. Mago, S. Periyannan, D. Bhatt, S. Hoxha, S. Chakraborty, M. Luo, P. Dodds, B. Steuernagel, B. Wulff, M. Ayliffe, R. McIntosh, P. Zhang, E. Lagudah 2021. A recombined *Sr26* and *Sr61* disease resistance gene stack in wheat encodes unrelated NLR genes. *Nature Communications* 12, 3378 <https://doi.org/10.1038/s41467-021-23738-0> Q1: IF 13.78
- 51) H.J. van Schalkwyk, T. Adams, A. Persoons, W.H.P. Boshoff, R. Wanyera, M. Hovmøller, C. Uauy, L. Boyd, Z.A. Pretorius, R. Prins, D.G.O. Saunders. 2022. Pathogenomic analyses of *Puccinia striiformis* f. sp. *tritici* supports a close genetic relationship between South and East Africa. *Phytopathology* 71, 279–288. <http://doi.org/10.1111/ppa.13468> Q1: IF 3.6
- 52) N. Athiyannan, M. Abrouk, W.H.P. Boshoff, S. Cauet, N. Rodde, D. Kudrna, N. Mohammed, J. Bettgenhaeuser, K. Botha, S. Derman, R.A. Wing, R. Prins, S.G. Krattinger. 2022. Long-read genome sequencing of bread wheat facilitates disease resistance gene cloning. *Nature Genetics* 54, 227–231. <https://doi.org/10.1038/s41588-022-01022-1> Q1: IF 38.3
- 53) W.H.P. Boshoff, A.R. Wood, B. Visser, C.M. Bender, L. Jouberta, J. Richterd, M. Catherine Aime, and Z.A. Pretorius. 2022. The life cycle of *Puccinia digitariae* on *Digitaria eriantha* and *Solanum* species in South Africa. *Mycologia* 114(2), 319–336. <https://doi.org/10.1080/00275514.2022.2031493> Q2: IF 2.7
- 54) Z. Spelman, B. Visser, T. Terefe, Z.A. Pretorius & W.H.P. Boshoff 2022. Pathogenicity and microsatellite characterization of *Puccinia hordei* in South Africa. *Crop Protection* 158, 106014 <https://doi.org/10.1016/j.cropro.2022.106014> Q1: IF 3.036

- 55) WH.P. Boshoff, B. Visser, C.M. Bender, A.R. Wood, L. Rothmann, K. Wilson, V.L. Hamilton-Attwell, Z.A. Pretorius. 2022. Fig rust caused by *Phakopsora nishidana* in South Africa. *Phytopathologia Mediterranea* 61(2): 283-298. <https://doi.org/10.36253/phyto-13034> Q2: IF 2.4
- 56) A. Marè, W.H.P. Boshoff, L. Herselman. 2022. Phenotypic assessment and fungal gene expression of *Fusarium graminearum* in wheat. *Euphytica* 218: 113 <https://doi.org/10.1007/s10681-022-03068-y> Q1: IF 2.13
- 57) T. Kloppe, W.H.P. Boshoff, Z.A. Pretorius, D. Lesch, B. Erdemel, A. Morgounov, P. Kuhnem, P. Murphy, & C. Cowger. 2022. Virulence of *Blumeria graminis* f. sp. *tritici* in Brazil, South Africa, Turkey, Russia and Australia. *Frontiers in Plant Science* 13, article 954958, doi: <https://doi.org/10.3389/fpls.2022.954958> Q1: IF 5.8
- 58) M. Chemonges, L. Herselman, Z.A. Pretorius, A. Marè & W.H.P. Boshoff. 2022. Characterisation of stem rust resistance in the South African winter wheat cultivar PAN 3161. *Euphytica* 218: 139 <https://doi.org/10.1007/s10681-022-03087-9> Q1: IF 2.13
- 59) R.F. Park, W.H.P. Boshoff, A.L. Cabral, J. Chong, J.A. Martinelli, M. McMullen, J.W. Mitchell-Fetch, E. Paczos-Grzęda, E. Prats, J. Roake, S. Sowa, L. Ziemis, D. Singh 2022. Breeding oat for resistance to the crown rust pathogen *Puccinia coronata* f. sp. *avenae*: achievements and prospects. *Theoretical and Applied Genetics* 135: 3709-3734 <https://doi.org/10.1007/s00122-022-04121-z> Q1: IF 5.7
- 60) T.G. Terefe, B. Visser, Z.A. Pretorius, & W.H.P. Boshoff 2023. Physiologic races of *Puccinia triticina* detected on wheat in South Africa from 2017 to 2020. *European Journal of Plant Pathology* 165: 1-15. <http://dx.doi.org/10.1007/s10658-022-02583-x> Q1: IF 1.9
- 61) M. Chemonges, L. Herselman, Z.A. Pretorius, M.N. Rouse, A. Marè & W.H.P. Boshoff. 2023. Mapping and validation of all-stage resistance to stem rust in four South African winter wheat cultivars. *Euphytica* 219: 11. <https://doi.org/10.1007/s10681-022-03143-4> Q1: IF 2.13
- 62) M.S. Mafa, B. Visser, W.H.P. Boshoff, G. Kemp, O. Alexander, H.D. Castelyn. 2023. Flagging defensive roles of carbohydrate-active enzymes and carbohydrates during *Puccinia triticina*-wheat interactions. *Plant Physiology and Biochemistry* 124: 101947. <https://doi.org/10.1016/j.pmpp.2023.101947> Q1: IF 6.75
- 63) M.S. Mafa, N. Lebusa, T. Gumani, G. Kemp, B. Visser, W.H.P. Boshoff, H.D. Castelyn. 2023. Accumulation of complex oligosaccharides and CAZymes activity under acid conditions constitute the Thatcher+Lr9 defence responses to *Puccinia triticina*. *Biologia* 78: 1929-1941. <https://doi.org/10.1007/s11756-023-01405-7>. Q1: IF 1.74
- 64) G. Yang, N. Zhang, W.H.P. Boshoff, H. Li, B. Li, Z. Li, Q. Zheng 2023. Identification and introgression of a novel leaf rust resistance gene from *Thinopyrum intermedium* chromosome 7J<sup>s</sup> into wheat. *Theoretical and Applied Genetics* 136(11): 231 <http://dx.doi.org/10.1007/s00122-023-04474-z> Q1: IF 5.57
- 65) T.G. Terefe, W.H.P. Boshoff, R.F. Park, Z.A. Pretorius & B. Visser 2024. Wheat stem rust surveillance reveals two new races of *Puccinia graminis* f. sp. *tritici* in South Africa during 2016 to 2020. *Plant Disease* 108:20-29. <https://doi.org/10.1094/PDIS-06-23-1120-SR> Q1: IF 1.8
- 66) T. Hewitt, E.C. Henningsen, D. Pereira, K. McElroy, E.S. Nazareno, S. Dugyala, H. Nguyen-Phuc, F. Li, M.E. Miller, B. Visser, Z.A. Pretorius, W.H.P. Boshoff, J. Sperschneider, E. Stuckenbrock, S.F. Kianian, P.N. Dodds, M. Figueroa 2024. Genome-enabled analysis of population dynamics and virulence associated loci in

- the oat crown rust fungus *Puccinia coronata* f. sp. *avenae*. Molecular Plant-Microbe Interactions 37(3):290-303. <https://doi.org/10.1094/MPMI-09-23-0126-FI> Epub ahead of print. PMID: 37955552. Q1: IF 3.5
- 67) W.H.P. Boshoff, B. Visser, C.M. Bender, Z.A. Pretorius **2024**. Pathogenicity of *Puccinia porri* on *Allium* species and varieties in South Africa. Australasian Plant Pathology 53: 15-30. <https://doi.org/10.1007/s13313-023-00960-6> Q3: IF 1.4
- 68) A. Bryan, A. Korolev, S. Bergmann, W.H.P. Boshoff, K. Flath, A.F. Justesen, P. Schulz, B. Visser, D.G.O. Saunders **2024**. Comparative genomics identifies genetic markers linked to structural variations that differentiate *Puccinia graminis* formae *speciales*. Plant Pathology 73: 1542-1552. <https://doi.org/10.1111/ppa.13890> Q1: IF 2.9
- 69) B. Visser, W.H.P. Boshoff & Z.A. Pretorius **2024**. First report of rust caused by *Phakopsora nishidana* on creeping fig, *Ficus pumila*, in South Africa. Plant Disease 108: 1892. <https://doi.org/10.1094/PDIS-12-23-2794-PDN> Q1: IF 1.8
- 70) N. Chiuraise B. Visser, A. Marè, and W.H.P. Boshoff **2024**. Occurrence and characterisation of *Puccinia triticina* in Zimbabwe. Submitted July 2023. Canadian Journal of Plant Pathology 46, 509-523. Q2: IF 2.13 <https://doi.org/10.1080/07060661.2024.2356192>
- 71) Z.A. Pretorius, T.G. Terefe, B. Visser, W.H.P. Boshoff **2024**. Battling Wheat Rust in South Africa: Challenges and Strategies. planthealthcases.2024.0019 <https://doi.org/10.1079/planthealthcases.2024.0019>
- 72) Cavalet-Giora et al., **2024**. Origin and evolution of the bread wheat D genome. Submitted March 2024 Nature 633, 848–855, <https://doi.org/10.1038/s41586-024-07808-z> Q1: IF 50.5
- 73) R. Prins, C. de Klerk, W.H.P. Boshoff, C.M. Bender & Z.A. Pretorius **2024**. Mapping of resistance loci in wheat line Milan/S87230//Babax to South African races of *Puccinia striiformis* f. sp. *tritici*. Euphytica 220:162 <https://doi.org/10.1007/s10681-024-03415-1> Q2: IF 1.97

#### Papers and Posters Presented at International Conferences:

- 1) W.H.P. Boshoff, W.J. Swart, Z.A. Pretorius, M.M. Liebenberg & P.W. Crous 1995. Genetic variation among isolates of *Phaeoisariopsis griseola* in southern Africa. Annual Meeting of the American Phytopathological Society, August 12-16, 1995, Pittsburgh, Pennsylvania, USA.
- 2) W.H.P. Boshoff, Z.A. Pretorius & W.J. Swart 1996. A comparison of scab development in wheat infected by *Fusarium graminearum* and *Fusarium crookwellense*. Annual meeting of the American Phytopathological Society, July 27-31, 1996, Indianapolis, Indiana, USA.
- 3) W. H. P. Boshoff, Z. A. Pretorius & B. D. van Niekerk 1998. Stripe rust: A new threat to wheat production in South Africa. 10<sup>th</sup> regional wheat workshop for Eastern, Central and Southern Africa, Stellenbosch, South Africa, 14- 18 September 1998.
- 4) B.D. van Niekerk & W.H.P. Boshoff 1998. Occurrence and pathogenicity of *Puccinia recondita* f. sp. *tritici* in South Africa during 1997. 10<sup>th</sup> regional wheat workshop for Eastern, Central and Southern Africa, Stellenbosch, South Africa, 14- 18 September 1998.
- 5) Prins, R., Boshoff, W.H.P., Boyd, L., Ramburan, V. & Pretorius, Z.A. 2003. Studies on wheat stripe rust resistance conferred by *Yr16*. Pages 1224-1226 in: Proceedings of the 10<sup>th</sup> International Wheat Genetics Symposium, Paestum, Italy.

- 6) R. Prins, C Smit, Z.A. Pretorius, W.H.P. Boshoff, J. Doležel, H. Šimková, M. Horn and S.G. Krattinger. 2017. Characterisation of the *QYr.sgi-4A.1* region conferring stripe rust resistance in Kariega. 13<sup>th</sup> IWGS. April 24-28 2017. Tulln, Austria.
- 7) J Zhang, T Hewitt, P Zhang, Z.A. Pretorius, N Upadhyaya, W Schnippenkoetter, I Dundas, RA. McIntosh, R Mago, S Periyannan, RF Park, WHP Boshoff, X Kong, S Hoxha, B Steuernagel, BH Wulff & ES Lagudah 2018. Isolation of durable wheat stem rust resistance gene *Sr26*. BGRI, Marrakech, Morocco.
- 8) Z.A. Pretorius, G.J. Booyesen, W.H.P. Boshoff, & J.H. Joubert 2018. Innovative manufacturing of a cereal rust inoculation device. BGRI, Marrakech, Morocco. Best poster award.
- 9) M. Chemonges, L. Herselman, B. Visser, W.H.P. Boshoff, & Z.A. Pretorius 2018. Genetics of stem rust resistance in South African winter wheat varieties. BGRI, Marrakech, Morocco.
- 10) J. Zhang, T. Hewitt, P. Zhang, Z.A. Pretorius, N. Upadhyaya, W. Schnippenkoetter, I. Dundas, R.A. McIntosh, T. Richardson, R.F. Park, R. Mago, S. Periyannan, W.H.P. Boshoff, B. Steuernagel, B.B.H. Wulff, & E. Lagudah 2018. Isolation of an immune receptor gene from tall wheat grass confers resistance to diverse races of stem rust in common wheat. 15<sup>th</sup> ICRPMC. 23 – 27 September 2018. Kruger National Park, South Africa.
- 11) R. Labuschagne, T. Terefe, W.H.P. Boshoff, Z.A. Pretorius, E. Venter & B. Visser 2018. Development of the *Puccinia triticina* population in South Africa. 15<sup>th</sup> ICRPMC. 23 – 27 September 2018. Kruger National Park, South Africa.
- 12) A. Maré, W.H.P. Boshoff & L Herselman 2018. Doubled haploid wheat lines with combined rusts and Fusarium head blight resistance. 15<sup>th</sup> ICRPMC. 23 – 27 September 2018. Kruger National Park, South Africa.
- 13) H. Li, Z.A. Pretorius, W.H.P. Boshoff, Q. Zheng, B. Li & Z. Li 2018. Establishment of new wheat-*Thinopyrum ponticum* translocation lines with resistance to Ug99 races of *Puccinia graminis* f. sp. *tritici*. 15<sup>th</sup> ICRPMC. 23 – 27 September 2018. Kruger National Park, South Africa.
- 14) R. Prins, C. Smit, E. Wessels, W.H.P. Boshoff, H. Minnaar, Z.A. Pretorius, M. Abbrouk, M. Horn, J. Doležel, H. Šimková, & S.G. Krattinger 2018. A step closer to an improved understanding of the partial stripe rust resistance *QYr.sgi-4A.1* region of the South African wheat cultivar Kariega. 15<sup>th</sup> ICRPMC. 23 – 27 September 2018. Kruger National Park, South Africa.
- 15) T.G. Terefe, B. Visser, W.H.P. Boshoff, L. Herselman, T. Soko, N. Chiuraise, J. Siwale, B. Mutari, D.P. Hodson & Z.A. Pretorius 2018. Evidence of wheat rust inoculum exchange between southern African countries. 15<sup>th</sup> ICRPMC. 23 – 27 September 2018. Kruger National Park, South Africa.
- 16) W.H.P. Boshoff, C.M. Bender & Z.A. Pretorius 2018. Can field ratings of differential lines be used for wheat stem rust pathotyping? 15<sup>th</sup> ICRPMC. 23 – 27 September 2018. Kruger National Park, South Africa.
- 17) R. Prins, C. de Klerk, W.H.P. Boshoff, M. Abbrouk, J. Bettgenhaeuser, H. Minnaar, Z.A. Pretorius, J. Doležel, H. Šimková, E. Wessels, M. Horn & S.G. Krattinger. 2019. Pursuing the partial stripe rust resistance *QYr.sgi-4A.1* gene of the wheat cultivar Kariega. Plant and Animal Genome Conference XXVII / 12-16 January 2019. San Diego, CA, USA.
- 18) M. Chemonges, L. Herselman, W.H.P. Boshoff, & Z.A. Pretorius 2019. Genetic analysis reveals monogenic resistance to *Puccinia graminis* f. sp. *tritici* in South African winter wheat varieties. 1<sup>st</sup>IWC, Saskatoon, Canada.

- 19) A. Marè, L. Herselman & W.H.P. Boshoff 2019. Development of wheat lines with complex resistance to rusts and Fusarium head blight. 1<sup>st</sup>IWC, Saskatoon, Canada.
- 20) T.G. Terefe, B. Visser, W.H.P. Boshoff 2021. Diversity in *Puccinia triticina* on wheat in South Africa from 2017 to 2020. 2021 BGRI Virtual Technical Workshop - Global Resilience: Science, Pandemics, and the Future of Wheat. 6-8 October 2021.
- 21) H. Bilal, W.H.P. Boshoff, and L. Mohase. 2022. Exogenous application of salicylic acid and *Puccinia triticina* pre-inoculation reduces *Diuraphis noxia* induced leaf damage in wheat. Plant resistance to insects workshop (25IPRI), 31<sup>st</sup> May-2<sup>nd</sup> June. Best Western Malmö Hotel, Hyllie Boulevard 12, Malmö, Sweden.
- 22) M. Figueroa, D.C. Lewis, E.C. Henningsen, T. Hewitt, K. McElroy, S. Dillon, C. Webers, T.D. Nguyen, R. Mago, E. Nazareno, E. Hartwig, B. Visser, Z.A. Pretorius, W.H.P. Boshoff, D. Pereira, E. Stuckenbrock, J. Lubega, K. Kanyuka, Y.-F. Huang, L. Hickey, A. Milgate, E. Stone, B.J. Steffenson, S.F. Kianian, J. Sperschneider, & P. Dodds. 2023. Rust's biggest secret tactic to kill a crop. GRDC Research Updates, Perth, Australia. 27-28 February 2023
- 23) K. Venter, A. Marè, L. Herselman, Z.A. Pretorius, & W.H.P. Boshoff 2023. Exploiting wheat landraces to boost food security and sustainable agriculture. Paper delivered online through LOGYTalks. 12<sup>th</sup> April 2023
- 24) M. Figueroa, E.C. Henningsen, D. Lewis, T. Hewitt, M. Outram, T. Arndell, C. Blundell, J. Chen, R. Mago, T.D. Nguyen, E. Hartwig, R. Spanner, E. Nazareno, L. Hickey, Y.-F. Huang, B. Visser, Z.A. Pretorius, W.H.P. Boshoff, E. Stone, N. Nienser, M. Moscou, D. Saunders, P. Silva, S. German, P. Campos, B. Steffenson, S.F. Kianian, T. Vanhercke, J. Sperschneider, P.N. Dodds. 2024. Securing crops against rust pathogens: Robigus in the modern times. Thirty-second Fungal Genetics Conference. 12-17 March 2024. Pacific Grove, California, USA.
- 25) R.E. Spanner, E.C. Henningsen, F. Li, O. Matny, D. Hodson, N. Virzi, K.-P. Nguyen, M. Moscou, Z.A. Pretorius, W.H.P. Boshoff, J. Sperschneider, P. Dodds, B. Steffenson, M. Figueroa. 2024. Understanding the role of somatic hybridisation in global wheat stem rust epidemics through the development of haplotype-phased reference genome assemblies. Fungal Genetics Conference. 12-17 March 2024. Pacific Grove, California, USA.
- 26) T.G. Terefe, Z.A. Pretorius, W.H.P. Boshoff. 2024. Virulence diversity of *Puccinia triticina* in South Africa and the response of wheat cultivars and breeding lines to new races. 20<sup>th</sup> International Plant Protection Congress. 1-5 July 2024; Athens, Greece.
- 27) L. Rothmann, E.M. Del Ponte, W.H.P. Boshoff, & Z.A. Pretorius. 2024. Plant rust research in South Africa: "A picture is worth a thousand words." APS Plant Health Conference. 27-30 July 2024. Memphis, Tennessee, USA.

#### **Papers and Posters Presented at National Conferences:**

- 1) Z.A. Pretorius, W.H.P. Boshoff, A.J. Jacobs, F.J. Kloppers & A.L. Vorster 1994. Quantitative assessment of interactions among *Lr33*, *Lr34* and *LrT3* in wheat infected with leaf rust. 32<sup>nd</sup> Congress of the South African Society for Plant Pathology. January 23-26, 1994, Christiana.
- 2) W.H.P. Boshoff, W.J. Swart, Z.A. Pretorius, M.M. Liebenberg & P.W. Crous 1995. Isozyme variability among isolates of *Phaeoisariopsis griseola*. 33<sup>rd</sup> Congress of the South African Society for Plant Pathology. January 15-18, 1995, Thaba 'Nchu Sun.
- 3) W.J. Swart, W.H.P. Boshoff, W.M. Botes & H.M. Meyer 1995. Effect of culture filtrate of *Sphaeropsis sapinea* on callus cells of three *Pinus* spp. 33<sup>rd</sup> Congress of the South African Society for Plant Pathology. January 15-18, 1995, Thaba 'Nchu Sun.

- 4) W.J. Swart & W.H.P. Boshoff 1995. Allozyme variation among isolates of *Sphaeropsis sapinea* from various host species. 33<sup>rd</sup> Congress of the South African Society for Plant Pathology. January 15-18, 1995, Thaba 'Nchu Sun.
- 5) W.H.P. Boshoff, Z.A. Pretorius & W.J. Swart 1996. Differences in fungicide sensitivity between *Fusarium graminearum* and *Fusarium crookwellense*. 34<sup>th</sup> Congress of the South African Society for Plant Pathology. January 14-17, 1996, Conservatoire-University of Stellenbosch.
- 6) W.H.P. Boshoff, Z.A. Pretorius, W.J. Swart & A.S. Jacobs 1996. Head blight development in wheat infected by *Fusarium graminearum* and *Fusarium crookwellense*. 34<sup>th</sup> Congress of the South African Society for Plant Pathology. January 14-17, 1996, Conservatoire-University of Stellenbosch.
- 7) W.H.P. Boshoff, W.J. Swart & Z.A. Pretorius 1998. Isozyme comparisons among *Fusarium* isolates associated with head blight of irrigated wheat. 36<sup>th</sup> Congress of the South African Society for Plant Pathology. January 25-28, 1998, Champagne Sports Resort.
- 8) Z.A. Pretorius, B.D. van Niekerk & W.H.P. Boshoff 1998. Pathogenic variation in *Puccinia coronata* f. sp. *avenae* on oat in South Africa. 36<sup>th</sup> Congress of the South African Society for Plant Pathology. January 25-28, 1998, Champagne Sports Resort.
- 9) W.H.P. Boshoff, F.J. Kloppers & B.D. van Niekerk 1998. Resistance in South African wheat cultivars to race 6E16 of *Puccinia striiformis*. Congress of the South African Society for Plant Breeding. March 16-19, 1998, Golden Gate.
- 10) B.D. van Niekerk & W.H.P. Boshoff 1998. Occurrence and pathogenicity of *Puccinia recondita* f. sp. *tritici* in South Africa during 1997. Congress of the South African Society for Plant Breeding, March 16-19, 1998. Golden Gate.
- 11) Z.A. Pretorius, B.D. van Niekerk & W.H.P. Boshoff 2000. Recent developments in pathogenic adaptation in fungi. Combined Millennium Congress for SSAPP, January 2000, Grahamstown, South Africa.
- 12) B.D. van Niekerk, Z.A. Pretorius & W.H.P. Boshoff 2000. Occurrence and pathogenicity of *Puccinia hordei* on barley in South Africa. Plant Breeding Symposium, 13-16 March 2000, Harare, Zimbabwe.
- 13) V.P. Ramburan, R. Prins, Z.A. Pretorius, L.A. Boyd, J.H. Louw & W.H.P. Boshoff 2000. The identification of polymorphic markers to map yellow rust resistance in the wheat cultivar 'Kariega'. 17<sup>th</sup> Congress of the South African Genetics Society, Pretoria. 27-30 June 2000.
- 14) W.H.P. Boshoff, Z.A. Pretorius & B.D. van Niekerk 2001. Influence of leaf rust, caused by *Puccinia triticina*, on wheat yield and quality. 39<sup>th</sup> SASPP Congress, Greenway Woods, Nelspruit, South-Africa. 21-24 January 2001.
- 15) B.D. van Niekerk, Z.A. Pretorius & W.H.P. Boshoff 2001. Occurrence and pathogenicity of *Puccinia graminis* f. sp. *avenae* and *P. coronata* f. sp. *avenae* on oat in South Africa. 39<sup>th</sup> SASPP Congress, Greenway Woods, Nelspruit, South-Africa. 21-24 January 2001.
- 16) K. Ntushelo & W.H.P. Boshoff 2001. Prospects on management of *Fusarium* head blight in wheat. 39<sup>th</sup> SASPP Congress, Greenway Woods, Nelspruit, South-Africa. 21-24 January 2001.
- 17) W.H.P. Boshoff, Z.A. Pretorius & B.D. van Niekerk 2001. Epidemiology of wheat stripe rust caused by *Puccinia striiformis* f. sp. *tritici* in South Africa. 39<sup>th</sup> SASPP Congress, Greenway Woods, Nelspruit, South-Africa. 21-24 January 2001.
- 18) Z.A. Pretorius, C.M. Bender, W.H.P. Boshoff, J.S. Komen, & J.E. Snyman 2007.

- Recent pathogenic adaptations in wheat rust fungi in South Africa. 45<sup>th</sup> Congress of the SASPP, Kopanong Conference Centre, Benoni, South Africa, 21 – 24 January 2007.
- 19) K. Wolmarans, W.H.P. Boshoff, R. Prins & Z.A. Pretorius 2013. Genetics of stem rust resistance in the wheat cultivar Matlabas. 48<sup>th</sup> Congress of the SASPP. 20-24 January 2013, ATKV Klein Kariba, Bela Bela, Limpopo Province.
  - 20) V.L. Tolmay, S.L. Sydenham, W.H.P. Boshoff, W. du Toit, B.S. Wentzel, C.W. Miles 2015. Registration of five South African spring wheat germplasm lines resistant to Russian wheat aphid; stem-, leaf- and stripe rust. Paper delivered at the Combined Congress of the Soil Science Society of South Africa (SSSSA), the South African Society of Crop Production (SASCP), the South African Society of Horticulture Sciences (SASHS), and the Southern African Weed Science Society (SAWSS), George, South Africa. 19-22 January. Board Floating Trophy for the Best Paper
  - 21) Z.A. Pretorius, E. Wessels, C. Smit, C.M. Bender, W.H.P. Boshoff and R. Prins 2015. Expanding QTL toolbox for adult plant stripe rust resistance in wheat. 49<sup>th</sup> Congress of the SASPP. 21-22 January 2015, Bains Game Lodge, Bloemfontein.
  - 22) C. Smit, Z.A. Pretorius, E. Wessels, C.M. Bender, V. Knight, W.H.P. Boshoff, and R. Prins 2016. Genetic analysis of stripe rust resistance in the wheat line NSRPan4. 11th SAPBA Symposium, Stellenbosch, 8–10 March 2016.
  - 23) E. Wessels, R. Prins, W.H.P. Boshoff and Z.A. Pretorius 2017. Mapping the stem rust resistance gene that failed to “Ug99” in wheat cv. Matlabas. 50<sup>th</sup> Congress of the SASPP. 21-22 January 2017, Champaign Resort, Drakensburg.
  - 24) T.G. Terefe, R. Labuschagne, W.H.P. Boshoff, B. Visser and Z.A. Pretorius. 2018. Diversity in *Puccinia triticina* on wheat and triticale in South Africa. Presented at the Combined Crops, Soils, Horticulture and Weeds Congress, 14-18 January 2018, Cape Town, South Africa.
  - 25) C.M. Bender, W.H.P. Boshoff and Z.A. Pretorius 2019. The impact of new races of *Puccinia graminis* f. sp. *tritici* on South African wheat cultivars. 51st Congress of the SASPP. 21-23 January 2019, Club Mykonos, Langebaan.
  - 26) H. Minnaar, R. Prins, C.M. Bender, G.J. Maree and W.H.P. Boshoff 2019. Phenotypic expression of stripe rust resistance using spray and point inoculation. 51st Congress of the SASPP. 21-23 January 2019, Club Mykonos, Langebaan.
  - 27) W.H.P. Boshoff, B. Visser, T. Terefe and Z.A. Pretorius 2019. Pathogenic variability in and oat cultivar response to *Puccinia graminis* f. sp. *avenae* in South Africa. 51st Congress of the SASPP. 21-23 January 2019, Club Mykonos, Langebaan.
  - 28) W.B. Meyer, W.H.P. Boshoff, A. Minnaar-Ontong and B. Visser 2019. Phenotypic and genotypic variation of *Puccinia helianthi* in South Africa. 51st Congress of the SASPP. 21-23 January, Club Mykonos, Langebaan.
  - 29) T.V. Masisi, L. Rothmann, C.M. Bender, G.J. Maree and W.H.P. Boshoff 2019. Resistance response of irrigation wheat cultivars to stripe rust under different temperature regimes. SANSOR Annual Conference. 21-24 May. Umlazi, KwaZulu-Natal. Awarded best Honours Research Poster Presented.
  - 30) T.V. Masisi, L. Rothmann, C.M. Bender, G.J. Maree & W.H.P. Boshoff 2019. Comparative virulence of stripe rust pathotype 6E22A+ and field isolate GWK2015\_56. Cereal Science and Technology SA (CST-SA). 3<sup>rd</sup> New Voices Symposium. 11<sup>th</sup> September 2019. The Grain Building Pretoria.
  - 31) P.P. Myburgh, A. Marè, & W.H.P. Boshoff 2019. Phenotypic and genotypic characterisation of South African winter wheat cultivars for stem rust resistance. 3<sup>rd</sup> November 2019. Annual post-graduate symposium of the Department of Botany and

- Plant Biotechnology at University of Johannesburg. Awarded runner-up in BSc Honours category.
- 32) L. Herselman, A. Marè, W.H.P. Boshoff & Z.A. Pretorius 2020. Wheat pre-breeding for rust and Fusarium head blight resistance at the University of the Free State. 13<sup>th</sup> SAPBA Conference. 8-11 March 2020. Future Africa, University of Pretoria, South Africa.
  - 33) W.B. Meyer, W.H.P. Boshoff & B. Visser 2021. Race diversity of *Puccinia helianthi* in South Africa (presented in Afrikaans). Student Symposium Natural Sciences. South African Academy for Science and Art. Potchefstroom, South Africa. 28-29 October 2021. Virtual.
  - 34) W.B. Meyer, W.H.P. Boshoff, A. Minnaar-Ontong & B. Visser 2021. An overview of virulence and genotypic assessment of South African *Puccinia helianthi* isolates. Annual post-graduate symposium of the Department of Botany and Plant Biotechnology at University of Johannesburg, South Africa. 9-12 November 2021, Virtual. Awarded runner-up in PhD category.
  - 35) Z. Spelman, B. Visser & W.H.P. Boshoff 2021. Phenotypic and genotypic variation of *Puccinia hordei* in South Africa. Annual post-graduate symposium of the Department of Botany and Plant Biotechnology at University of Johannesburg, South Africa. 9-12 November 2021, Virtual.
  - 36) K. Venter, A. Marè, L. Herselman, Z.A. Pretorius, & W.H.P. Boshoff 2022. Rust response of the Watkins Core Collection of wheat landraces. Paper delivered 14<sup>th</sup> SAPBA Conference. Protea Hotel by Marriott, Stellenbosch, South Africa. 6-9<sup>th</sup> March 2022.
  - 37) N. Chiuraise, B. Visser, A. Marè & W.H.P. Boshoff 2022. Status of resistance to *Puccinia triticina* in Zimbabwean wheat germplasm. Poster presented at the 14<sup>th</sup> SAPBA Conference. Protea Hotel by Marriott, Stellenbosch, South Africa. 6-9<sup>th</sup> March 2022.
  - 38) W.B. Meyer, W.H.P. Boshoff & B. Visser 2022. Occurrence and pathogenicity of *Puccinia helianthi* on sunflower in South Africa. Poster presented at the 14<sup>th</sup> SAPBA Conference. Protea Hotel by Marriott, Stellenbosch, South Africa. 6-9<sup>th</sup> March 2022.
  - 39) W.B. Meyer, W.H.P. Boshoff, and B. Visser. 2022. South African sunflower rust race variants and hybrid responses. Paper delivered at the 33<sup>rd</sup> SANSOR Annual Conference. 8-9 June. The President Hotel Bantry Bay, Western-Cape, South Africa. Awarded the Best PhD Research Poster Presented.
  - 40) T.G. Terefe, B. Visser, Z.A. Pretorius & W.H.P. Boshoff. 2022. The continual emergence of new *Puccinia triticina* races on wheat in South Africa. 52<sup>nd</sup> SASPP Conference. Paper delivered at the 52<sup>nd</sup> congress of the Southern African Society for Plant Pathologists, Future Africa, University of Pretoria, Pretoria, South Africa. 1-3 August 2022.
  - 41) C.M. Bender, W.H.P. Boshoff, B. Visser, A.R. Wood, L. Rothmann, Z.A. Pretorius. 2022. Fig rust: an unexplored disease in South Africa. Paper delivered at the 52<sup>nd</sup> congress of the Southern African Society for Plant Pathologists, Future Africa, University of Pretoria, Pretoria, South Africa. 1-3 August 2022.
  - 42) I. du Toit, W.H.P. Boshoff, L.A. Rothmann and B. Visser. 2022. Fungicide sensitivity among South African *Puccinia graminis* f. sp. *tritici* isolates. Poster presented at the 52<sup>nd</sup> congress of the Southern African Society for Plant Pathologists, Future Africa, University of Pretoria, Pretoria, South Africa. 1-3 August 2022.
  - 43) W.H.P. Boshoff, T.G. Terefe, B. Visser<sup>1</sup>, C.M. Bender & Z.A. Pretorius. 2022. Rust diseases of food and forage crops in South Africa: new threats and research to



- mitigate their impact. Paper delivered at the 52<sup>nd</sup> congress of the Southern African Society for Plant Pathologists, Future Africa, University of Pretoria, Pretoria, South Africa. 1-3 August 2022.
- 44) Z. Spelman, B. Visser, T. Terefe, Z.A. Pretorius & W.H.P. Boshoff. 2022. Pathogenicity and microsatellite characterization of *Puccinia hordei* in South Africa. Poster presented at the 52<sup>nd</sup> congress of the Southern African Society for Plant Pathologists, Future Africa, University of Pretoria, Pretoria, South Africa. 1-3 August 2022.
- 45) A.R. Wood, W.H.P. Boshoff, B. Visser, C.M. Bender & Z.A. Pretorius. 2022. The heteroecious life cycle of *Puccinia digitariae* on *Digitaria eriantha* and *Solanum* species, the first to be elucidated in South Africa in a century. Paper delivered at the 52<sup>nd</sup> congress of the Southern African Society for Plant Pathologists, Future Africa, University of Pretoria, Pretoria, South Africa. 1-3 August 2022.
- 46) M.E. Tsotetsi, W.H.P. Boshoff & B. Visser. 2022. Functional analysis of the *AvrSr50* avirulence gene in South African *Puccinia graminis* f. sp. *tritici* isolates. Poster presented at the 52<sup>nd</sup> congress of the Southern African Society for Plant Pathologists, Future Africa, University of Pretoria, Pretoria, South Africa. 1-3 August 2022.
- 47) W.B. Meyer, W.H.P. Boshoff & B. Visser. 2022. Identification of new *Puccinia helianthi* race variants in South Africa and their impact on sunflower hybrids. Paper delivered at the 52<sup>nd</sup> congress of the Southern African Society for Plant Pathologists, Future Africa, University of Pretoria, Pretoria, South Africa. 1-3 August 2022.
- 48) B. Visser, C.M. Bender, W.H.P. Boshoff, and Z.A. Pretorius. 2022. Back to the future: using herbarium specimens to reconstruct the genetic development of two wheat rusts in South Africa. Paper delivered at the 52<sup>nd</sup> congress of the Southern African Society for Plant Pathologists, Future Africa, University of Pretoria, Pretoria, South Africa. 1-3 August 2022.
- 49) W.B. Meyer, W.H.P. Boshoff & B. Visser. 2022. *Puccinia helianthi* race variants and sunflower hybrid responses. Paper delivered at the Annual post-graduate symposium of the Department of Botany and Plant Biotechnology at University of Johannesburg, South Africa. 21-24 November 2022.
- 50) T. Makhetha, W.H.P. Boshoff, & A. Maré. 2022. The phenotypic and genotypic validation of leaf rust resistance in wheat varieties. Paper delivered at the Annual post-graduate symposium of the Department of Botany and Plant Biotechnology at University of Johannesburg, South Africa. 22-23 November 2022. Awarded best talk in Honours category.
- 51) I. du Toit, L. A. Rothmann, W. H. P. Boshoff, & B. Visser. 2023. The sensitivity to triazole fungicides among South African *Puccinia graminis* f. sp. *tritici* isolates. Paper delivered at the Annual post-graduate symposium of the Department of Botany and Plant Biotechnology at University of Johannesburg, South Africa. 23-25 October 2022.
- 52) A. Coetzer, A. Maré, & W.H.P. Boshoff. 2023. First report of *Puccinia striiformis* f. sp. *tritici* race 142E30A+ on wheat in South Africa. Paper delivered at the Annual post-graduate symposium of the Department of Botany and Plant Biotechnology at University of Johannesburg, South Africa. 23-25 October 2022.
- 53) K. Pule, W.H.P. Boshoff, & A. Maré. 2023. Phenotypic and genotypic evaluation of wheat plants developed for combined rust and Fusarium head blight resistance. Paper delivered at the Annual post-graduate symposium of the Department of Botany and Plant Biotechnology at University of Johannesburg, South Africa. 23-25

- October 2022. Awarded 3<sup>rd</sup> best talk in Honours category.
- 54) N.A. Ntjabane, W.H.P. Boshoff, B. Visser & M.S. Mafa. 2024. Unravelling functions of the modified cell wall in Thatcher and ThatcherLr9 wheat infected by *Puccinia triticina*. South African Association of Botanists Conference. Richards bay campus, University of Zululand, South Africa. 7 to 11 January 2024.
- 55) B.N. Gqola, J. Mebalo W.H.P. Boshoff & T.G. Terefe. 2024. Virulence diversity of *Puccinia trichina* collected from wheat and triticale in South Africa from 2021 to 2022. Combined Crops, Soils, Horticulture and Weeds Congress. Wilderness Hotel, George. 22-25 January 2024.
- 56) W.H.P. Boshoff, B. Visser, C.M. Bender, Z.A. Pretorius 2024. The response of *Allium* species and varieties to *Puccinia porri* in South Africa. Paper delivered at the 53<sup>rd</sup> congress of the Southern African Society for Plant Pathologists, Golden Gate National Park, Clarens, South Africa. 22-25 January 2024.
- 57) W.H.P. Boshoff, B. Visser, Z.A. Pretorius 2024. *Thinopyrum distichum* as a possible ancillary host for cereal rusts in South Africa. Poster presented at the 53<sup>rd</sup> congress of the Southern African Society for Plant Pathologists, Golden Gate National Park, Clarens, South Africa. 22-25 January 2024.
- 58) T.G. Terefe, W.H.P. Boshoff, R.F. Park, Z.A. Pretorius, B. Visser 2024.- Virulence diversity of *Puccinia graminis* f. sp. *tritici* on wheat and triticale in South Africa. Paper delivered at the 53<sup>rd</sup> congress of the Southern African Society for Plant Pathologists, Golden Gate National Park, Clarens, South Africa. 22-25 January 2024.
- 59) M.E. Tsoetsi, W.H.P. Boshoff, B. Visser 2024. Sequence analysis of the *AvrSr35* and *AvrSr50* avirulence genes in South African *Puccinia graminis* f. sp. *tritici* isolates. Paper delivered at the 53<sup>rd</sup> congress of the Southern African Society for Plant Pathologists, Golden Gate National Park, Clarens, South Africa. 22-25 January 2024.
- 60) C.M. Bender, S.I. Hlongwa, W.B. Meyer, Z.A. Pretorius, W.H.P. Boshoff 2024. Macro- and microscopic phenotyping of *Uromyces appendiculatus* on beans. Poster presented at the 53<sup>rd</sup> congress of the Southern African Society for Plant Pathologists, Golden Gate National Park, Clarens, South Africa. 22-25 January 2024.
- 61) A. Coetzer, T. Terefe, A. Maré, J. Mebalo, B. Gqola, W.B. Meyer, Z.A. Pretorius, W.H.P. Boshoff 2024. Virulence of a new race of *Puccinia striiformis* f. sp. *tritici* detected on wheat in South Africa. Poster presented at the 53<sup>rd</sup> congress of the Southern African Society for Plant Pathologists, Golden Gate National Park, Clarens, South Africa. 22-25 January 2024.
- 62) L.A. Maphobole, B. Visser, W.B. Meyer, Z.A. Pretorius, W.H.P. Boshoff 2024. Pathogenicity and microsatellite analysis of *Puccinia sorghi* isolates in South Africa. Poster presented at the 53<sup>rd</sup> congress of the Southern African Society for Plant Pathologists, Golden Gate National Park, Clarens, South Africa. 22-25 January 2024.
- 63) D. Ramovha, C.M. Bender, W.H.P. Boshoff, B. Visser 2024. A study of *Puccinia coronata* isolates from oat and *Phalaris aquatica* in South Africa. Poster presented at the 53<sup>rd</sup> congress of the Southern African Society for Plant Pathologists, Golden Gate National Park, Clarens, South Africa. 22-25 January 2024.
- 64) I. du Toit, L.A. Rothmann, W.H.P. Boshoff, B. Visser 2024. Triazole fungicide sensitivity among South African *Puccinia graminis* f. sp. *tritici* isolates. Paper delivered at the 53<sup>rd</sup> congress of the Southern African Society for Plant Pathologists, Golden Gate National Park, Clarens, South Africa. 22-25 January 2024.

- 65) T.G. Terefe, B. Visser, Z.A. Pretorius, W.H.P. Boshoff 2024. Variation in *Puccinia graminis* f. sp. *tritici* and *P. triticina* on wheat in South Africa and reaction of commercial cultivars and breeding lines to recently identified races. ARC-DALRRD Conference, ARC-VIMP, Roodeplaat, Pretoria, South-Africa. 12-14 February 2024.
- 66) W.H.P. Boshoff, W.B. Meyer, L. Maphobole, A. Coetzer, C.M. Bender, T.G. Terefe, Z.A. Pretorius, B. Visser 2024. Mitigating the threat of rust pathogens of food and forage crops in South Africa. Paper delivered 15<sup>th</sup> Southern African Plant Breeding Symposium. Monte Bello Estate, Bloemfontein, South Africa. 11<sup>th</sup> - 13<sup>th</sup> March 2024.
- 67) J. du Plooy, W.H.P. Boshoff, B. Visser **2024**. Identification of putative virulence effector genes from *Puccinia graminis* f. sp. *tritici*. Paper delivered at the Annual post-graduate symposium of the Department of Botany and Plant Biotechnology at University of Johannesburg, South Africa. 21 October 2024.
- 68) B. Visser, T. Terefe, C.M. Bender, Z.A. Pretorius, W.H.P. Boshoff. **2024**. Wheat rust surveillance in South Africa: past, present and future. Paper delivered at the Annual post-graduate symposium of the Department of Botany and Plant Biotechnology at University of Johannesburg, South Africa. 21 October 2024.
- 69) I. du Toit, W.H.P. Boshoff, L.A. Rothmann, B. Visser **2024**. Monitoring of wheat rust in South-Africa with MARPLE-diagnostics. South African Academy for Science and Art. Bloemfontein, South Africa. 30-31 October 2024. (In Afrikaans).
- 70) A. Coetzer, A. Maré, W.H.P. Boshoff **2024**. First report of *Puccinia striiformis* f. sp. *tritici* race 142E30A+ on wheat in South Africa. South African Academy for Science and Art. Bloemfontein, South Africa. 30-31 October 2024. (In Afrikaans). Awarded best talk in Session.

#### Online Plant Rust Image Repository:

- Pretorius, Z.A., Bender, C.M. and Boshoff, W.H.P. (2024). The Repository of South African Plant Rust Images. Available at: <https://epidemiologiaufv.shinyapps.io/plantrustimages/>

#### Invited Talks and Lectures:

- 1) Boshoff W.H.P. 2008. Status of wheat breeding in SA. AGT wheat breeding. Adelaide, Australia.
- 2) Boshoff W.H.P. 2018. Status of rust research at the University of the Free State. Beijing, China, Institute of Genetics and Developmental Biology, Chinese Academy of Sciences.
- 3) Boshoff W.H.P. 2018. Report back on travel to Beijing China and Marrakech Morocco. IPP Lecture meeting. University of the Free State.
- 4) Boshoff W.H.P. 2019. Stem rust in wheat – the Southern African perspective. On-line seminar to MSc Students taking the course Plant Breeding (BI1296) and Protection for Sustainable Production. Department of Plant Protection Biology. Swedish University of Agricultural Sciences.
- 5) Boshoff W.H.P. 2020. Stem rust in wheat – the Southern African perspective. On-line seminar to MSc Students taking the course Plant Breeding (BI1296) and Protection for Sustainable Production. Department of Plant Protection Biology. Swedish University of Agricultural Sciences. (20 February 2020).
- 6) Boshoff W.H.P. 2021. Stem rust in wheat – the Southern African perspective. On-line seminar to MSc Students taking the course Plant Breeding (BI1296) and Protection for Sustainable Production. Department of Plant Protection Biology. Swedish University of Agricultural Sciences. (17 February 2021).

- 7) Boshoff W.H.P. 2021. Disease resistance in small grain cereals: The South African approach. National Science and Technology Forum, Discussion Forum, Plant health in South Africa – threats to biosecurity, biodiversity, and food security. 10-11 June 2021. Virtual Conference.
- 8) Boshoff W.H.P. 2022. Stem rust in wheat – the Southern African perspective. On-line seminar to MSc Students taking the course Plant Breeding (BI1296) and Protection for Sustainable Production. Department of Plant Protection Biology. Swedish University of Agricultural Sciences. (16 February 2022).
- 9) Boshoff W.H.P. 2023. Stem rust in wheat – the Southern African perspective. On-line seminar to MSc Students taking the course Plant Breeding (BI1296) and Protection for Sustainable Production. Department of Plant Protection Biology. Swedish University of Agricultural Sciences. (15 February 2023).
- 10) Boshoff W.H.P. 2024. Stem rust in wheat – the Southern African perspective. On-line seminar to MSc Students taking the course Plant Breeding (BI1296) and Protection for Sustainable Production. Department of Plant Protection Biology. Swedish University of Agricultural Sciences. (13 February 2024).

### **Non-Refereed Publications:**

- 1) Z.A. Pretorius, F.J. Kloppers, W.H.P. Boshoff, J. le Roux & D.B. Scott 1996. Suid-Afrikaanse koring nou ook deur streeproes bedreig. Koringfokus 14 (6): bl 6-9.
- 2) W.H.P. Boshoff 1997. Stripe rust. Annual Wheat Newsletter. Volume 43: 216.
- 3) Z.A. Pretorius, A. van Jaarsveld, W.H.P. Boshoff & L. Robertson 1997. Streeproes: Inligting aan koringprodusente vir die 1997 - seisoen. Pamflet saamgestel deur streeproestaakspan, Universiteitsdrukkery, UVS, Bloemfontein.
- 4) W.H.P. Boshoff & B. D. van Niekerk 1997. Streeproes moeilik om raak te sien. Plaagbeheer by wintergewasse. Bylae in Landbouweekblad: bl 7-8.
- 5) W.H.P. Boshoff 1997. Die beheer van aarskroei onder spilpuntbesproeiing. Kleingraaninstituut, Bethlehem. Adviseursdagboekie: bl 112-115.
- 6) W.H.P. Boshoff 1997. Die beheer van aarskroei onder spilpuntverbouing. Koringfokus 15 (3): bl 29.
- 7) W.H.P. Boshoff 1997. Geïntegreerde beheerstrategieë nodig vir aarskroei onder spilpuntverbouing. Koringfokus 15 (5): bl 10 - September/Okttober 1997.
- 8) F.J. Kloppers, W.H.P. Boshoff & B.D. van Niekerk 1997. Streeproes op Koring. Pamflet saamgestel vir koringprodusente. Universiteitsdrukkery, UVS, Bloemfontein.
- 9) F.J. Kloppers & W.H.P. Boshoff 1998. Yellow rust: Fight it early. Farmer's weekly/Boereweekblad: bl 12-15.
- 10) F.J. Kloppers, W.H.P. Boshoff & B. D. van Niekerk 1998. Streeproes versprei vinnig. Plaagbeheer by wintergewasse, Bylae in Landbouweekblad: Nr 1040. bl 5-7.
- 11) W.H.P. Boshoff 1998. Die beheer van Streeproes. Kleingraaninstituut, Bethlehem, Boeredagboekie vir Wes-Kaap: bl 56-61.
- 12) W.H.P. Boshoff 1998. Die beheer van Streeproes. Kleingraaninstituut, Bethlehem, Boeredagboekie vir Somerreënvalgebied: bl 36-37.
- 13) W.H.P. Boshoff & Z.A. Pretorius 1999. Nuwe streeproesras in Oos-Vrystaat geïdentifiseer. Koringfokus 17 (1): bl 4-5. Januarie/Februarie 1999.
- 14) W.H.P. Boshoff & Z.A. Pretorius 1999. Nuwe tegniek om Sr2-stamroesweerstandsgene te volg gee plaaslike koringroesnavorsing hupstoot. Koringfokus 17 (5): bl 10-11. September/Okttober 1999.
- 15) W.H.P. Boshoff 1999. Streeproes – Noodsaaklike inligting vir doeltreffende beheer. Kleingraaninstituut, Bethlehem, Boeredagboekie vir Somerreënvalgebied: bl 36-37.
- 16) W.H.P. Boshoff 2000. Riglyne vir die beheer van streeproes. OTKaner: bl 27-30.

Mei/Junie 2000.

- 17) W.H.P. Boshoff, B.D. van Niekerk & Z.A. Pretorius 2000. Koringroes: Chemiese spuitproewe in Wes-Kaap beklemtoon voortgesette navorsing. Koringfokus 18 (4): bl 23-30. Julie/Augustus 2000.
- 18) W.H.P. Boshoff & F. van Niekerk 2000. Behandelde saad sit streeproes op sy plek. Landbouweekblad bl 44-47. September 2000.
- 19) W.H.P. Boshoff 2000. 'n Vergelyking tussen saadbehandelingsmiddels op koring. Kleingraaninstituut, Bethlehem, Boeredagboekie vir Wes-Kaap: bl 34-42.
- 20) W.H.P. Boshoff 2000. Verskillende beheeropsies beskikbaar teen streeproes. Kleingraaninstituut, Bethlehem, Boeredagboekie vir Somerreënvalgebied: bl 47-54.
- 21) W.H.P. Boshoff & F. van Niekerk 2000. Is saadbehandeling effektief teen streeproes op koring? Koringfokus 18 (5). September/Okttober 2000. bl 22-24.
- 22) W.H.P. Boshoff & Z.A. Pretorius 2000. Stamroes, Suid-Kaap se grootste uitbraak in 15 jaar. Koringfokus 18 (6). November/Desember 2000. Bl 21.
- 23) Barnard, W.H.P. Boshoff & H.A. Smit 2002. Eienskappe en produksie-inligting vir Kleingraaninstituut se koringkultivars vir verbouing onder besproeiing. Koringproduksiehandleiding vir bemarkers. All-Gro produksiehandleiding, 5-8.
- 24) W.H.P. Boshoff & H.A. Smit 2002. Eienskappe van KGI se Kultivars. Koringproduksiehandleiding vir bemarkers. All-Gro produksiehandleiding, 9-16.
- 25) W.H.P. Boshoff & H.A. Smit 2003. Bestuur die "Fear Factor" van koring. Koringproduksiehandleiding vir bemarkers. All-Gro produksiehandleiding, 5-7.
- 26) A. Barnard, W.H.P. Boshoff & H.A. Smit 2003. Eienskappe en produksie-inligting vir Kleingraaninstituut se koringkultivars vir verbouing onder besproeiing. Koringproduksiehandleiding vir bemarkers. All-Gro produksiehandleiding, 8-10.
- 27) W.H.P. Boshoff & H.A. Smit 2003. Eienskappe van Kleingraaninstituut besproeiingskultivars bemark deur All-Gro. Koringproduksiehandleiding vir bemarkers. All-Gro produksiehandleiding, 11-17.
- 28) F. Komen, D. van Niekerk & W.H.P. Boshoff 2002. Chemiese beheer van streeproes in die Oos-Vrystaat. Koringfokus 20 (4). Jul/Aug 2002. Bl 28-30.
- 29) W.H.P. Boshoff 2003. Baviaans beskik oor uitstekende aanpassing. Koringfokus 21(1). Januarie/Februarie 2003. Bl 30-31.
- 30) W.H.P. Boshoff 2004. Pannar koringpakket vir die somerreënvalgebied. Landbouweekblad/Koringfokus. April 2004.
- 31) W.H.P. Boshoff & F. du Toit 2006. Kultivars met Russiese Koringluis weerstand gou hier. Landbouweekblad 1440. 3 Maart 2006.
- 32) Z.A. Pretorius, C.M. Bender, J.S. Komen & W.H.P. Boshoff 2006. Nuwe streeproes-ras in Oos-Vrystaat. Koringfokus 24 (1), 22-23.
- 33) W.H.P. Boshoff & F. du Toit 2006. Kultivars met gevorderde weerstandsbronne teen nuwe koringluis op pad. Koringfokus 24 (2), 9-11.
- 34) W.H.P. Boshoff & F. du Toit 2006. Pannar knip nuwe Russiese koringluis se vlerke. SA Graan 8 (4), 63.
- 35) Z.A. Pretorius, C.M. Bender, J.S. Komen & W.H.P. Boshoff 2006. Nuwe streeproes-ras in Oos-Vrystaat. SA Graan 8 (3), 38-39.
- 36) W.H.P. Boshoff & J.S. Komen 2007. PANNAR bied produsente uitstekende koringpakket vir verbouing op droëland in die somerreënvalgebied. Bylaag in SA Graan 9 (5).
- 37) W.H.P. Boshoff 2008. Koringverbouing in Suid-Afrika. SA Graan, Julie 2008, 30-31.
- 38) W.H.P. Boshoff 2009. PANNAR bied koringprodusente opsies met beheer van Russiese koringluis. SA Graan, Mei 2009, 44-45.

- 39) W.H.P. Boshoff 2011. PANNAR kultivars vir verbouing op droëland in die somerreënvalgebied. SA Graan, Februarie 2011, 44-46.
- 40) W.H.P. Boshoff 2012. Nuwe kultivars vir besproeiing en somerreëengebied. Koringfokus 30 (4), 14.
- 41) T. Terefe, W.H.P. Boshoff & Z.A. Pretorius 2017. Wheat rusts continue to evolve: New leaf rust races detected in the Western Cape. SA Grain 19 (9), 77-79.
- 42) Boshoff, W.H.P., Du Toit, A.G.A. & Pretorius, Z.A. 2017. Temperature plays a role in wheat resistance to stripe rust (in Afrikaans). Wheat Focus 35.5 Sep/Oct 16-17. (Awarded best article in edition).
- 43) Boshoff, W.H.P., Bender, C.M. & Pretorius, Z.A. 2018. Research on wheat rusts not to be downscaled: Remains a Threat (in Afrikaans). Koringfokus 36.1 Jan/Febr 13-14.
- 44) Boshoff, W.H.P. & Pretorius, Z.A. 2018. Internasionale navorsers besin oor risiko's van roesrasse. Koringfokus 36.4 Jul/Aug 6.
- 45) Boshoff, W.H.P., Pretorius, Z.A. & Terefe, T. 2019. Wheat rust – appearance of new races requires increased awareness (in Afrikaans). Koringfokus 37.1 Jan/Febr 10-11. (Awarded best article in edition).
- 46) Boshoff, W.H.P., Visser B. & Pretorius, Z.A. 2020. Oat stem rust – take informed decisions on cultivar response (in Afrikaans). Koringfokus 38.1 Jan/Febr 20-21. (Awarded best article in edition).
- 47) Visser, B., Boshoff, W.H.P. & Pretorius, Z.A. 2020. *Berberis* – A unknown factor in the struggle against wheat stem and stripe rust in South-Africa (in Afrikaans). Koringfokus 38.2 March/April 2020 8-11. (Awarded best article in edition).
- 48) Boshoff, W.H.P., Bender, C.M. & Pretorius, Z.A. 2020. The occurrence of rust diseases on rye, triticale, and barley in South Africa (in Afrikaans). Koringfokus 38.3 May/June 22-25. (Awarded best article in edition).
- 49) Boshoff, W.H.P., Kilian, W., Bender, C.M. & Pretorius, Z.A. 2020. Rust outbreak – setback for summer wheat production in the eastern Free State (in Afrikaans). Koringfokus 38.4 Jul/Aug 6-7.
- 50) Boshoff, W.H.P., Visser B. & Pretorius, Z.A. 2020. Oat crown rust – this rust disease can appear early in the season on susceptible cultivars (in Afrikaans). Koringfokus 38.4 Jul/Aug 16-17.
- 51) Meyer, W.B., Boshoff, W.H.P., Minnaar-Ontong, A. & Visser, B. 2020. Sunflower rust – new aggressive races concern (in Afrikaans). SA-Grain 22 (9), 44-45.
- 52) Boshoff, W.H.P. & Pretorius, Z.A. 2020. Considerations when Breeding for Rust Resistance. SAPBA web newsletter.
- 53) Visser, B., Boshoff, W.H.P. & Pretorius, Z.A. 2020. International research reveals the long-distance dispersal of wheat stem rust urediniospore. Koringfokus 38.6 Nov/Dec 26-27.
- 54) Terefe T. & Boshoff W.H.P. 2020. The wheat blast disease threat. Farmers Weekly. 20 November 2020. Pages 38-40.
- 55) Terefe T. & Boshoff W.H.P. 2020. Wheat blast disease detected in southern Africa. Koringfokus 38.6 Nov/Dec 20-21. (Awarded best article in edition).
- 56) Boshoff, W.H.P., Lesch, D., Wessels, E. & Pretorius, Z.A. 2021. Increased incidence of wheat stem rust in the south-eastern production areas of the Western Cape during the 2020-season (in Afrikaans). Koringfokus 39.3 May/Jun 10-11.
- 57) Pretorius, Z.A., Prins, R., Bender, C.M., Visser, B. & Boshoff, W.H.P. 2021. Stripe rust 25 years later: Collaboration turned hysteria around. (in Afrikaans). Koringfokus 39.5 Sep/Oct 22-24.

- 58) Pretorius, Z.A. & Boshoff, W.H.P. 2022. In: History of Plant Pathology in South Africa. Cereal Rust Pathology, pp 85-89. 1<sup>st</sup> Edition. Briza Publications, Pretoria, South Africa.
- 59) Terefe, T. & Boshoff, W.H.P. 2022. New leaf rust races detected on wheat in South Africa. SA-Grain 49 (5), 48-49.
- 60) Boshoff, W.H.P., Visser, B. & Pretorius, Z.A. 2022. Barley leaf rust – latest research on rust fungus (in Afrikaans). Koringfokus 40.4 Jul/Aug 10-11. (Awarded best article in edition).
- 61) Visser, B., Boshoff, W.H.P. & Pretorius, Z.A. 2022. Lessons from the past: herbarium samples share light on wheat rust in South Africa (in Afrikaans). Koringfokus 40.6 Nov/Dec 22-23.
- 62) Terefe, T., Boshoff, W.H.P. & Coetzer, A. 2023. Stripe rust on wheat – new race detected. Lead article. SA-Grain 50 (5), 8-11.
- 63) Du Toit, I., Boshoff, W.H.P., Rothmann L. & Visser B. 2023. Fungicide sensitivity among isolates of the stem rust fungus on small grains (in Afrikaans). SA-Grain 71 (8), 38-39.
- 64) Boshoff, W.H.P., Visser, B., Bender C.M., & Pretorius, Z.A. 2024. Rust can damage garlic, spring onions, and leek. (in Afrikaans). Vegetables & Fruit 218 Marc/April 2024, 30.
- 65) Terefe, T., Boshoff, W.H.P. & Pretorius, Z.A. 2024. Stem rust remains a threat to wheat production in South Africa. Lead article.SA-Grain 79 (5), 8-11.
- 66) Terefe, T. & Boshoff, W.H.P. **2024**. Wheat leaf rust – a widely distributed disease in South Africa. Wheat Focus 42.4, July/August 2024, 22-23.
- 67) Boshoff W.H.P. & Pretorius, Z.A. **2024**. Rust fungi is a factor in the production of oat (In Afrikaans). Wheat Focus 42.4, July/August 2024, 26-27.
- 68) Boshoff, W.H.P., Visser, B., & Pretorius, Z.A. **2024**. Fig rust under the spot light (In Afrikaans). Vegetables & Fruit 218 July/August 2024, 24-25.

#### **Contributions to News Articles:**

- 1) Pretorius, Z.A., Boshoff, W.H.P. Soko, T. & Terefe, T. 2019. Significant wheat rust occurrences in Southern Africa. BGRI-newsletter, January 2019. (<https://www.globalrust.org/sites/default/files/newsletters/january-2019.pdf/>)
- 2) Coleman, A. 2019. A fifth variant of wheat stem rust race Ug99 confirmed in South Africa. Farmer's weekly/ Boereweekblad 19004: page 22. (Terefe, T., Boshoff, W.H.P. Visser, B. & Pretorius, Z.A.)
- 3) Genis, A. 2019. Aggressiewe streeproes steek kop uit in Zimbabwe. Landbouweekblad 2089. page 23. (Pretorius, Z.A., Boshoff, W.H.P., Soko, T. & Terefe, T.)
- 4) Boshoff, W.H.P. Bender, C. & Pretorius, Z.A. 2024. British expert of plant diseases discusses their control (In Afrikaans). Wheat Focus 42.2. March/April 2024, page 4. [https://issuu.com/cariendaffue/docs/koringfokus\\_mrt-apr\\_2024](https://issuu.com/cariendaffue/docs/koringfokus_mrt-apr_2024)
- 5) Boshoff, W.H.P. 2024. Winter Wonder Garden. UFS Dumela. Issue 1, page 24. <https://indd.adobe.com/view/5afa835f-f1dc-4252-8617-782b674e4611>
- 6) UFS plant pathologists develop image repository for rusts. June 2024. Volume 4. Page 8. <https://saspp.co.za/sa-plant-pathologist/>

#### **Travel Report:**

- 1) W.H.P. Boshoff & F.P. Koekemoer 1999. Report of an international visit to CIMMYT Mexico and the USA. pp49.

#### **Contributions at Farmer's Days and Training Sessions:**

- 1) W.H.P. Boshoff 1997. Die beheer van aarskroei onder spilpuntbesproeiing. Kursus in Kleingraanverbouing vir Landbou-adviseurs. 15-16 April 1997, Kleingraaninstituut, Bethlehem. (150 adviseurs).
- 2) W.H.P. Boshoff 1997. Streeproes op Koring. Streeproes inligtingsdag te Hennenman, 8 Oktober 1997. (42 koringprodusente).
- 3) W.H.P. Boshoff 1997. Streeproes en aarskroei op Koring. KGI boeredag te Rietrivier, 21 Oktober 1997. (60 koringprodusente).
- 4) W.H.P. Boshoff 1997. Streeproes en aarskroei op Koring. Inligtingsdag op Vryheid, 23 Oktober 1997. (17 koringprodusente).
- 5) W.H.P. Boshoff 1997. Streeproes op Koring. Streeproes inligtingsdag te Ficksburg, 24 Oktober 1997. (15 koringprodusente).
- 6) W.H.P. Boshoff 1997. Streeproes en aarskroei op Koring. Inligtingsdag te Bergville, 30 Oktober 1997. (47 koringprodusente).
- 7) W.H.P. Boshoff 1997. Streeproes en aarskroei op Koring. Inligtingsdag te Excelsior, 11 November 1997. (44 koringprodusente).
- 8) W.H.P. Boshoff 1997. Streeproes op Koring. Kleingraaninstituut Boeredag, Bethlehem, 27 November 1997. (350 koringprodusente en adviseurs).
- 9) W.H.P. Boshoff 1998. Die beheer van Streeproes. Inligtingsdag vir boerevereniging van Petrus Steyn. 17 Februarie 1998. (20 koringprodusente).
- 10) W.H.P. Boshoff 1998. Streeproes op Koring. WPO-boeredae Wes-Kaap, 12-14 Maart 1998. (200 koringprodusente).
- 11) W.H.P. Boshoff 1998. Die beheer van Streeproes. Kleingraaninstituut Boeredae, Wes-Kaap (Langgewens, 2 September 1998). (150 koringprodusente).
- 12) W.H.P. Boshoff 1998. Die beheer van Streeproes. Kleingraaninstituut Boeredae, Wes-Kaap (Roodebloem, 21 September 1998). (100 koringprodusente).
- 13) W.H.P. Boshoff 1998. Die beheer van Streeproes. Boerevereniging te Ladybrand. 3 November 1998. (12 koringprodusente).
- 14) W.H.P. Boshoff 1998. Die beheer van Streeproes. Kleingraaninstituut Boeredag, Bethlehem, 26 November 1998. (150 koringprodusente en 17)
- 15) W.H.P. Boshoff 1999. Die beheer van aarskroei en vrotpootjie onder spilpuntbesproeiing. Boeredag te Upington, 8 April 1999. (46 koringprodusente).
- 16) W.H.P. Boshoff 1999. Streeproes op Koring. Kleingraaninstituut inligtingsdae aan Novartis en Sasol, 21 April en 11 Mei 1999. (40 adviseurs).
- 17) W.H.P. Boshoff 1999. Die beheer van streeproes en vrotpootjie op koring. Kleingraaninstituut Inligtingsessies aan Koringprodusente in die Wes-Kaap. 24-28 Mei 1999. (170 koringprodusente bereik op 12 lokaliteite).
- 18) W.H.P. Boshoff 1999. Streeproes – Noodsaaklike inligting vir doeltreffende beheer. Kleingraaninstituut, Bethlehem, 25 November 1999. (300 koringprodusente en verteenwoordigers).
- 19) W.H.P. Boshoff 2000. Die beheer van koringsiektes onder droëlandverbouing, Bredasdorp- Napier boerevereniging, 24 Februarie 2000. (30 koringprodusente).
- 20) W.H.P. Boshoff 2000. Die beheer van streeproes en aarskroei by besproeiingskoring. Inligtingsdag te Dundee, 19 April 2000. (25 koringprodusente).
- 21) W.H.P. Boshoff 2000. Die beheer van koringsiektes onder droëlandverbouing in die Oos-Vrystaat. Inligtingsdag te Reitz, 8 Mei 2000. (17 koringprodusente).
- 22) W.H.P. Boshoff 2000. Die beheer van koringsiektes onder droëlandverbouing in die Oos-Vrystaat. Inligtingsdag te Senekal, 16 Mei 2000. (5 koringprodusente).
- 23) W.H.P. Boshoff 2000. Die beheer van koringsiektes onder droëlandverbouing in die Oos-Vrystaat. Inligtingsdag te Bethlehem, 17 Mei 2000. (6 koringprodusente).



- 24) W.H.P. Boshoff 2000. Die beheer van koringsiektes onder droëlandverbouing in die Oos-Vrystaat. Inligtingsdag te Harrismith, 18 Mei 2000. (7 koringprodusente).
- 25) W.H.P. Boshoff 2000. Die beheer van koringsiektes onder droëlandverbouing in die Oos-Vrystaat. Inligtingsdag te Frankfort, 4 Julie 2000. (20 koringprodusente).
- 26) W.H.P. Boshoff 2000. 'n Vergelyking tussen saadbehandelingsmiddels op koring. Kleingraaninstituut Boeredag, Wes-Kaap (Langgewens, 6 September 1998). (250 koringprodusente).
- 27) W.H.P. Boshoff 2005. Koringnavorsing – nuwe uitdagings en vordering gemaak. Pannar Koringdag te Bainsvlei, 13 Oktober 2005.
- 28) W.H.P. Boshoff 2005. Invloed van nuwe streeproes ras in Oos-Vrystaat op Pannar koringkultivars. LNR Kleingraaninstituut Boeredag. 24 November 2005.
- 29) W.H.P. Boshoff 2006. Nuwe koring kultivars vir verbouing onder droëland in die Vrystaat. Pannar Koringdag te Bainsvlei, 12 Oktober 2006.
- 30) W.H.P. Boshoff 2007. Nuwe koring kultivars vir verbouing onder droëland in die Vrystaat. Pannar Koringdag te Bainsvlei, 11 Oktober 2007.
- 31) W.H.P. Boshoff 2008. Koring opleiding Pannar Vrystaat verteenwoordigers - Kroonstad, 28 Februarie 2008.
- 32) W.H.P. Boshoff 2008. Vordering met koringteelt, Pannar verteenwoordigers Vrystaat en Noord-Wes – Klerksdorp, 20 Mei 2008.
- 33) W.H.P. Boshoff 2008. Vordering met koringteelt, Pannar verteenwoordigers Vrystaat en Noord-Wes – Klerksdorp, 20 Mei 2008.
- 34) W.H.P. Boshoff 2008. Vordering met die ontwikkeling van nuwe koring kultivars vir verbouing onder droëland in die Vrystaat. Pannar Koringdag te Welkom, 16 Oktober 2008.
- 35) W.H.P. Boshoff 2010. Koringverbouing – oorsig van internasionale en plaaslike verbouing en vordering met plaaslike koringteelt, Pannar verteenwoordigers Vrystaat en Noord-Wes – Klerksdorp, 2 Junie 2010.
- 36) W.H.P. Boshoff 2010. Koringverbouing – nuutste Pannar koring kultivars en hul prestasie in die onderskeie produksie areas. Hebron Boeredag te Bainsvlei, 14 Oktober 2010.
- 37) W.H.P. Boshoff 2011. Koringverbouing – nuutste Pannar koring kultivars en hul prestasie in die onderskeie produksie areas. Hebron Boeredag te Bainsvlei, 20 Oktober 2011.
- 38) W.H.P. Boshoff 2012. Nuwe toevoegings tot Pannar koring kultivar pakket en hul prestasie. Pannar Bemaking Wegspring. Muldersdrif, 31 Januarie 2012.
- 39) W.H.P. Boshoff 2012. Wheat products and general aspects of production including agronomics, diseases and quality requirements. African Agronomy training session. Greytown 27<sup>th</sup> July 2012.
- 40) W.H.P. Boshoff 2012. Koringverbouing – nuutste Pannar koring kultivars en hul prestasie in die onderskeie produksie areas. Hebron Boeredag te Bainsvlei, 18 Oktober 2012.
- 41) W.H.P. Boshoff 2012. Koringverbouing – nuutste Pannar koring kultivars en hul prestasie in die Oos-Vrystaat. LNR-KGI Boeredag te Bethlehem, 22 November 2012.
- 42) W.H.P. Boshoff 2023. The control of Fusarium head blight under irrigation. On invitation from OMNIA. Farmers pre-plant information day. Bothaville. 22 February 2023.
- 43) W.H.P. Boshoff 2023. The control of rust diseases following outbreaks in the warmer irrigation areas. On invitation from AECl Plant Health. Training for Chemical

representatives. Bloemfontein. 7 March 2023.

**Marketing Specific Contributions:**

- 1) Product catalogues – wheat cultivar info and recommendations 2006 – 2016
- 2) PANNAR SEED Wheat Production Manual (SA) – published on-line at [www.pannar.com](http://www.pannar.com)

**Radio Talks:**

- 1) Streeproes, die pad vorentoe. RSG-Landbouradio (Desember 1996).
- 2) Voorkoms van streeproes in die somerreënvalgebied. Radio Oranje (Oktober 1997).
- 3) Voorkoms en beheer van streeproes. Radio Hoogland (November 1998).
- 4) Streeproes - Voorkoms en beheer in die somerreënvalgebied. RSG-Landbouradio (Oktober 2000).
- 5) Koringteling, Russiese koringluis en die beheer van streeproes. RSG Landbouradio, 18 en 25 April, asook 2 Mei 2007.
- 6) Koringteling, Fusarium en Koringverbouing. RSG Landbouradio, 2, 9 en 16 April 2008.
- 7) Plaas/Farm TV (YouTube broadcaster and RSG) to participate in a series of monthly talks during 2022 on the topic Plant health in South Africa - threats to biosecurity, biodiversity, and food security. <https://www.youtube.com/watch?v=j2tRmNsg4yE>

**Acknowledgements in Published Peer Reviewed Papers:**

- 1) Yu et al., 2022. *Aegilops sharonensis* genome-assisted identification of stem rust resistance gene Sr62. Nature Communications 13:1607. <https://doi.org/10.1038/s41467-022-29132-8>
- 2) Lewis et al., 2024. Resurgence of wheat stem rust infections in western Europe: causes and how to curtail them. New Phytologist. <https://doi.org/10.1111/nph.19864>