



Marc Bouwer

Curriculum Vitae

Education

- 2011–2014 **Philosophy of Science (Analytical Chemistry)**, *University of Pretoria, Forestry and Agricultural Biotechnology Institute.*
- 2008–2010 **Masters of Science (Analytical Chemistry)**, *University of Pretoria, Forestry and Agricultural Biotechnology Institute.*
- 2007–2007 **Bachelor of Science Honours (Chemical Pathology)**, *University of Pretoria.*
- 2002–2005 **Bachelor of Science (Biochemistry)**, *University of Pretoria.*

Doctoral Thesis

- Title Identification of semiochemicals from four major insect pest of *Eucalyptus* and *Pinus* species in South Africa
- Supervisors Professors Bernard Slippers & Micheal John Wingfield & Egmont Richard Rohwer
- Description The chemical ecology of four major insect pests in South Africa's commercial forestry industry were explored in the thesis. The main aim was to discover and characterize semiochemical compounds that explain certain behaviours associated with the studied insects. The systems studied included:
- *Eucalyptus* host volatiles for *Gonipterus* beetles
 - Sex pheromone of the *Eucalyptus* cossid moth *Coryphodema tristis*
 - Fungal semiochemicals for a bio-control agent, *Ibalia leucospoides*, of the wood-wasp *Sirex noctilio*
 - Potential semiochemicals from the egg clutches of the bronze bug *Thaumastocoris peregrinus*

Masters Thesis

- Title Identification of volatile organic compounds from *Eucalyptus* detected by *Gonipterus scutellatus* (Gyllenhal) females
- Supervisors Professors Bernard Slippers & Micheal John Wingfield & Egmont Richard Rohwer

Description Project concerned the development of semiochemical identification methodologies at the University of Pretoria with a special focus on the *Eucalyptus* snout beetle *Gonipterus* species and volatile compounds released from their host *Eucalyptus* trees.

Scientific Publications

- 2017 **Bouwer MC, Slippers B, Wingfield MJ, Allison JD, Rohwer ER**, Optimization of Pheromone Traps for *Coryphodema tristis* (Lepidoptera: Cossidae), Journal of Economic Entomology, 110(4):1603-1610 doi.org/10.1093/jee/tox171.
- 2015 **Bouwer MC, Slippers B, Degefu D, Wingfield MJ, Lawson S, Rohwer ER**, Identification of the sex pheromone of the tree infesting cossid moth *Coryphodema tristis* (Lepidoptera: Cossidae), PLoS ONE, 10(3): e0118575. doi:10.1371/journal.pone.0118575.
- 2014 **Bouwer MC, Slippers B, Wingfield MJ, Rohwer ER**, Chemical signatures affecting host choice in the *Eucalyptus* herbivore, *Gonipterus* sp. (Curculionidae: Coleoptera), Arthropod-Plant Interactions, 8(5):439-451. 10.1007/s11829-014-9327-y.

Other Publications

- 2014 **Bouwer MC**, Pheromones provide a possible solution for the cossid moth problem, Wood SA, Vol. 39. No 8:20-21.

Patents

- Patent no 2014/03257 **Bouwer MC, Slippers B, Wingfield MJ, Rohwer ER**, A pheromone luring formulation for *Coryphodema tristis*.
- Patent no f2014/00749 **Bouwer MC, Slippers B, Wingfield MJ, Rohwer ER**, Functional design application for a device for releasing a pheromone luring formulation for *Coryphodema tristis*.

Conference presentations (Oral)

- 10-12th Oct 2016 **Bouwer MC, Slippers B, Wingfield MJ, Rohwer ER**, The Eucalyptus Cossid moth, *Coryphodema tristis*, pheromone, Max Planck partner group inauguration and workshop on "Chemical Interactions among Plants, Insects and Fungi". Pretoria, Gauteng, South Africa
- 8-12th July 2013 **Bouwer MC, Slippers B, Wingfield MJ, Rohwer ER**, Elucidating the sex pheromone of the lepidopteron pest, *Coryphodema tristis*, International chemistry conference of Africa. University of Pretoria, South Africa
- 3-6th July, 2011 **Bouwer MC, Slippers B, Rohwer ER**, Analysis of Female Gland Extracts of the Cossid Moth *Coryphodema tristis*, XVII Congress of the Entomological Society of Southern Africa. Bloemfontein, South Africa

- 26-28th September, 2011 **Bouwer MC, Slippers B, Wingfield MJ, Rohwer ER**, Identifying semiochemicals for insect pests in South African forestry, ASSAf-DST-NRF Second Annual South African Young Scientists' Conference. Pretoria, South Africa
- December 2010 **Bouwer MC**, Antennal responses of *Gonipterus scutellatus* to semiochemicals from *Eucalyptus* species, International Symposium Analitika. Stellenbosch, South Africa
- 2009 **Bouwer MC, Slippers B, Nadel R, Wingfield MJ, Naudé Y, Rohwer ER**, Antennal responses of *Gonipterus scutellatus* to semiochemicals from *Eucalyptus* species, Sixteenth entomological congress, Entomological society of Southern Africa. Stellenbosch, South Africa

Conference presentations (Posters)

- Aug 2017 **Bouwer MC, Slippers B, Aguirre Gil OJ, Allison JD**, Plume structure of intercept traps for trapping *Monochamus* spp. (Coleoptera: Cerambycidae), International Society of Chemical Ecology. Kyoto, Japan
- July 2017 **Bouwer MC, Slippers B, Wingfield MJ, Rohwer ER**, Optimization of pheromone traps for *Coryphodema tristis* (Lepidoptera: Cossidae), Entomological society of Southern Africa. CSIR, Pretoria, South Africa
- 9-14th Aug 2015 **Bouwer MC, Slippers B, Wingfield MJ, Rohwer ER**, Identification of a sex pheromone in the Eucalyptus-infesting cossid moth, *Coryphodema tristis*, International Union of Pure and Applied Chemistry. BEXCO Busan, Korea
- 21-24th Oct 2015 **Bouwer MC, Slippers B, Wingfield MJ, Rohwer ER**, Pheromone release rates and ratio's from an artificial pheromone dispenser for the Eucalyptus-infesting cossid moth, *Coryphodema tristis*, International Union of Forestry Research Organizations. Zhanjiang, Guangdong, China
- June 2013 **Bouwer MC, Slippers B, Wingfield MJ, Rohwer ER**, Identification of semiochemicals produced by *Amylostereum areolatum* for *Ibalia leucospoides* and *Sirex noctilio*, Entomological society of Southern Africa. Potchefstroom, South Africa
- 8-11th November 2011 **Bouwer MC, Slippers B, Wingfield MJ, Rohwer ER**, Identification of pheromone compounds in Cossid moth *Coryphodema tristis*, a serious pest of *Eucalyptus* in South Africa, International Union of Forest Research Organizations. Colonia, Uruguay
- 2009 **Bouwer MC, Slippers B, Nadel R, Wingfield MJ, Naudé Y, Rohwer ER**, Identification of semiochemical compounds from *Eucalyptus* detected by *Gonipterus scutellatus*, using GC-FID-electroantennography and GC-MS, Chromsaams. Bela-Bela, South Africa

Student supervision

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- 2014 **Mbombi K.**, Honors, Analytical chemistry.
University of Pretoria
- 2013 **Van Niekerk E.**, Honors, Analytical chemistry.
University of Pretoria
- 2012 **Louw W.J.**, Honors, Analytical chemistry.
University of Pretoria

Analytical skills

- Intermediate
- Two Dimensional Gas Chromatography - Mass Spectrometry (GC*GC-MS)
 - Infrared Spectroscopy (IR)
 - Fungal Culturing
- Advanced
- Gas Chromatography (GC-FID)
 - Electro-antennography (EAG)
 - Gas Chromatography - Electro-antennography (GC-EAD)
 - Thermal Desorption
 - Dynamic Headspace sampling
 - Solid Phase Micro Extraction (SPME)
 - Solvent Extraction
- Bioassays
- Field trials
 - Flight tunnel
 - Y-tube Olfactometer

Awards

- 2008 **Merck prize for Best analytical chemistry student in 2008.**
- 2007 **Certificate for enthusiasm in Chemistry.**
- 2006 **Golden Key membership: Top 15% of students.**

Experience

- 2009–Present **GC Lab Manager**, *University of Pretoria*, Forestry and Agricultural Biotechnology Institute, Bernard Slippers.
012 420 3938
- 2016-2017 **Researcher**, *Natural Resources Canada*, Great Lakes Forestry Centre, Jeremy Allison.
(705) 541-5519
- 2016-2017 **Researcher**, *USDA*, Southern Research Station Pineville, Louisiana, Jeremy Allison.
(705) 541-5519
- 2008-2010 **Tutor for infrared practical for engineers Cmy 271**, *University of Pretoria*, Chemistry department, Prof Rohwer.
012 420 2518

2005 **Data capture and paper marking**, *University of Pretoria*, Chemistry department,
Dr Potgieter.
012 420 3093

Computer skills

Intermediate R, JMP
Advanced Microsoft Office, Latex

Languages

Afrikaans Native Proficiency
English Full Professional Proficiency

Interests

- Sports: Tennis, Squash, Golf, Fishing
- Music: Guitar

Nationality

- South African

Drivers Licence

- Code B South African Licence