

Publications resulting from research done at the FABIO Biocontrol Centre

(As on 7 November 2015)

Book

Slippers B, de Groot P, Wingfield MJ (eds.) 2012. **The Sirex Woodwasp and its Fungal Symbiont: Research and Management of a Worldwide Invasive Pest**. Springer.

Book chapters

1. Hurley BP, Croft P, Verleur M, Wingfield MJ, Slippers B (2012). The Control of the Sirex Woodwasp in Diverse Environments: The South African Experience. In: *The Sirex Woodwasp and its Fungal Symbiont: Research and Management of a Worldwide Invasive Pest*. Springer, pp. 247-264.
2. Roux J, Hurley BP, Wingfield MJ (2012). Disease and pests of eucalypts, pine and wattle. In: *South African Forestry Handbook*. The South African Institute of Forestry, Pretoria, pp. 303-335.
3. Ryan K, Hurley BP (2012). Life history and biology of *Sirex noctilio*. In: *The Sirex Woodwasp and its Fungal Symbiont: Research and Management of a Worldwide Invasive Pest*. Springer, pp. 15-30.
4. Slippers B, Hurley BP, Mlonyeni XO, de Groot P, Wingfield MJ (2012). Factors Affecting the Efficacy of *Deladenus siricidicola* in Biological Control Systems. In: *The Sirex Woodwasp and its Fungal Symbiont: Research and Management of a Worldwide Invasive Pest*. Springer, pp. 119-133.
5. Slippers B, Wingfield MJ (2012). Sirex Research and Management: Future Prospects. In: *The Sirex Woodwasp and its Fungal Symbiont: Research and Management of a Worldwide Invasive Pest*. Springer, pp. 287-295.
6. Van der Nest M, Wingfield BD, Wingfield MJ, Stenlid J, Vasaitis R, Slippers B (2012). Genetics of *Amylostereum* Species Associated with Siricidae Woodwasps. In: *The Sirex Woodwasp and its Fungal Symbiont: Research and Management of a Worldwide Invasive Pest*. Springer, pp. 81-94.
7. Wingfield MJ, Hurley BP, Gebeyehu S, Slippers B, Ahumada R, Wingfield BD (2006). Southern hemisphere exotic pine plantations threatened by insect pests and associated pathogens. In: *The Sirex Woodwasp and its Fungal Symbiont: Research and Management of a Worldwide Invasive Pest*. Springer, pp. 53-62.
8. Wingfield MJ, Slippers B, Roux J, Wingfield BD (2010). Fifty Years of Tree Pest and Pathogen Invasions, Increasingly Threatening World Forests. In: *The Sirex Woodwasp and its Fungal Symbiont: Research and Management of a Worldwide Invasive Pest*. Springer, pp. 89-99.

Journal Articles

1. Bergeron MJ, Leal I, Foord B, Ross G, Davis C, Slippers B, de Groot P, Hamelin RC (2009). Multilocus genotyping of *Amylostereum areolatum*, the fungal symbiont of *Sirex noctilio* on *Pinus* spp. *Canadian Journal of Plant Pathology* **31**: 118-118.
2. Bergeron MJ, Leal I, Foord B, Ross G, Davis C, Slippers B, de Groot P, Hamelin RC (2011). Putative origin of clonal lineages of *Amylostereum areolatum*, the fungal symbiont associated with *Sirex noctilio*, retrieved from *Pinus sylvestris*, in eastern Canada. *Fungal Biology* **115**: 750-758.
3. Bihon W, Wingfield MJ, Slippers B, Duong TA, Wingfield BD (2014). MAT gene idiomorphs suggest a heterothallic sexual cycle in a predominantly asexual and important pine pathogen. *Fungal Genetics and Biology* **62**: 55-61.
4. Boissin E, Hurley B, Wingfield MJ, Vasaitis R, Stenlid J, Davis C, De Groot P, Ahumada R, Carnegie A, Goldarazena A, Klasmer P, Wermelinger B, Slippers B (2012). Retracing the routes of introduction of invasive species: The case of the *Sirex noctilio* woodwasp. *Molecular Ecology* **21**: 5728-5744.
5. Bouwer MC, Slippers B, Degefu D, Wingfield MJ, Lawson S, Rohwer ER (2015). Identification of the Sex Pheromone of the Tree Infesting Cossid Moth *Coryphodema tristis* (Lepidoptera: Cossidae). *PLoS ONE* **10**: e0118575.

6. Bouwer MC, Slippers B, Wingfield MJ, Rohwer ER (2014). Chemical signatures affecting host choice in the Eucalyptus herbivore, *Gonipterus* sp. (Curculionidae: Coleoptera). *Arthropod-Plant Interactions* **8**: 439-451.
7. Carnegie AJ, Matsuki M, Haugen DA, Hurley BP, Ahumada R, Klasmer P, Sun J, Iede ET (2006). Predicting the potential distribution of *Sirex noctilio* (Hymenoptera: Siricidae), a significant exotic pest of *Pinus* plantations. *Annals of Forest Science* **63**: 119-128.
8. Degefu DT, Hurley BP, Garnas JR, Wingfield MJ, Ahumada R, Slippers B (2013). Parallel host range expansion in two unrelated cossid moths infesting *Eucalyptus nitens* on two continents. *Ecological Entomology* **38**: 112-116.
9. Dittrich-Schroder G, Harney M, Nesar S, Joffe T, Bush S, Hurley BP, Wingfield MJ, Slippers B (2014). Biology and host preference of *Selitrichodes nesar*: A potential biological control agent of the Eucalyptus gall wasp, *Leptocybe invasa*. *Biological Control* **78**: 33-41.
10. Dittrich-Schröder G, Wingfield MJ, Hurley BP, Slippers B (2012). Diversity in Eucalyptus susceptibility to the gall-forming wasp *Leptocybe invasa*. *Agricultural and Forest Entomology* **14**: 419-427.
11. Dittrich-Schröder G, Wingfield MJ, Klein H, Slippers B (2012). DNA extraction techniques for DNA barcoding of minute gall-inhabiting wasps. *Molecular Ecology Resources* **12**: 109-115.
12. Dukes JS, Pontius J, Orwig D, Garnas JR, Rodgers VL, Brazee N, Cooke B, Theoharides KA, Stange EE, Harrington R, Ehrenfeld J, Gurevitch J, Lerdau M, Stinson K, Wick R, Ayres MP (2009). Responses of insect pests, pathogens, and invasive plant species to climate change in the forests of northeastern North America: What can we predict? *Canadian Journal of Forest Research* **39**: 231-248.
13. Garnas JR, Ayres MP, Liebhold A, Evans C (2011). Subcontinental impacts of an invasive tree disease on forest structure and dynamics. *Journal of Ecology* **99**: 532-541.
14. Garnas JR, Houston DR, Ayres MP, Evans C (2012). Disease ontogeny overshadows effects of climate and species interactions on population dynamics in a nonnative forest disease complex. *Ecography* **35**: 412-421.
15. Garnas JR, Hurley BP, Slippers B, Wingfield MJ (2012). Biological control of forest plantation pests in an interconnected world requires greater international focus. *International Journal of Pest Management* **58**: 211-223.
16. Gebeyehu S, Hurley BP, Wingfield MJ (2005). A new lepidopteran insect pest discovered on commercially grown *Eucalyptus nitens* in South Africa. *South African Journal of Science* **101**: 26-28.
17. Hunter GC, Slippers B, Wingfield MJ, Coutinho TA, Yamada T (2001). A study of symbiotic white rot fungi of *Sirex* and *Urocerus* from the southern hemisphere and Japan. *South African Journal of Science* **97**: xix-xx.
18. Hurley BP, Garnas J, Cooperband MF (2015). Assessing trap and lure effectiveness for the monitoring of *Sirex noctilio*. *Agricultural and Forest Entomology* **17**: 64-70.
19. Hurley BP, Govender P, Coutinho TA, Wingfield BD, Wingfield MJ (2007). Fungus gnats and other Diptera in South African forestry nurseries and their possible association with the pitch canker fungus. *South African Journal of Science* **103**: 43-46.
20. Hurley BP, Hatting HJ, Wingfield MJ, Klepzig KD, Slippers B (2012). The influence of *Amylostereum areolatum* diversity and competitive interactions on the fitness of the *Sirex* parasitic nematode *Deladenus siricidicola*. *Biological Control* **61**: 207-214.
21. Hurley BP, Slippers B, Coutinho TA, Wingfield BD, Govender P, Wingfield MJ (2007). Molecular detection of fungi carried by *Bradysia difformis* (Sciaridae: Diptera) in South African forestry nurseries. *Southern Hemisphere Forestry Journal* **69**: 103-109.
22. Hurley BP, Slippers B, Croft PK, Hatting HJ, van der Linde M, Morris AR, Dyer C, Wingfield MJ (2008). Factors influencing parasitism of *Sirex noctilio* (Hymenoptera: Siricidae) by the nematode *Deladenus siricidicola* (Nematoda: Neotylenchidae) in summer rainfall areas of South Africa. *Biological Control* **45**: 450-459.
23. Hurley BP, Slippers B, Wingfield BD, Govender P, Smith JE, Wingfield MJ (2010). Genetic diversity of *Bradysia difformis* (Sciaridae: Diptera) populations reflects movement of an invasive insect between forestry nurseries. *Biological Invasions* **12**: 729-733.
24. Hurley BP, Slippers B, Wingfield MJ (2007). A comparison of control results for the alien invasive woodwasp, *Sirex noctilio*, in the southern hemisphere. *Agricultural and Forest Entomology* **9**: 159-171.

25. Hurley BP, Slippers J, Wingfield MJ, Dyer C, Slippers B (2012). Perception and knowledge of the *Sirex* woodwasp and other forest pests in South Africa. *Agricultural and Forest Entomology* **14**: 306-316.
26. Kelly J, La Salle J, Harney M, Dittrich-Schröder G, Hurley BP (2012). *Selitrichodes neseri* n. sp., a new parasitoid of the eucalyptus gall wasp *Leptocybe invasa* Fisher & La Salle (Hymenoptera: Eulophidae: Tetrastichinae). *Zootaxa* **3333**: 50-57.
27. Lantschner MV, Villacide JM, Garnas JR, Croft P, Carnegie AJ, Liebhold AM, Corley JC (2014). Temperature explains variable spread rates of the invasive woodwasp *Sirex noctilio* in the Southern Hemisphere. *Biological Invasions* **16**: 329-339.
28. Lantschner V, Villacide JM, Garnas JR, Croft P, Carnegie AJ, Liebhold AM, Corley JC (2013). Temperature explains variable spread rates of the invasive woodwasp *Sirex noctilio* in the Southern Hemisphere. *Biological Invasions* **16**: 329-339.
29. Leal I, Foord B, Davis C, de Groot P, Mlonyeni XO, Slippers B (2012). Distinguishing isolates of *Deladenus siricidicola*, a biological control agent of *Sirex noctilio*, from North America and the Southern Hemisphere using PCR-RFLP. *Canadian Journal of Forest Research-Revue Canadienne De Recherche Forestiere* **42**: 1173-1177.
30. Mlonyeni XO, Wingfield BD, Wingfield MJ, Ahumada R, Klasmer P, Leal I, De Groot P, Slippers B (2011). Extreme homozygosity in Southern Hemisphere populations of *Deladenus siricidicola*, a biological control agent of *Sirex noctilio*. *Biological Control* **59**: 348-353.
31. Mutitu EK, Garnas JR, Hurley BP, Wingfield MJ, Harney M, Bush SJ, Slippers B (2013). Biology and rearing of *Cleruchoidea noackae* (Hymenoptera: Mymaridae), an egg parasitoid for the biological control of *Thaumastocoris peregrinus* (Hemiptera: Thaumastocoridae). *Journal of Economic Entomology* **106**: 1979-1985.
32. Nadel RL, Slippers B, Scholes MC, Lawson SA, Noack AE, Wilcken CF, Bouvet JP, Wingfield MJ (2010). DNA bar-coding reveals source and patterns of *Thaumastocoris peregrinus* invasions in South Africa and South America. *Biological Invasions* **12**: 1067-1077.
33. Nadel RL, Wingfield MJ, Scholes MC, Garnas JR, Lawson SA, Slippers B (2015). Population dynamics of *Thaumastocoris peregrinus* in Eucalyptus plantations of South Africa. *Journal of Pest Science* **88**: 97-106.
34. Nadel RL, Wingfield MJ, Scholes MC, Lawson SA, Noack AE, Naser S, Slippers B (2012). Mitochondrial DNA diversity of *Cleruchoidea noackae* (Hymenoptera: Mymaridae): A potential biological control agent for *Thaumastocoris peregrinus* (Hemiptera: Thaumastocoridae). *BioControl* **57**: 397-404.
35. Nadel RL, Wingfield MJ, Scholes MC, Lawson SA, Slippers B (2012). The potential for monitoring and control of insect pests in Southern Hemisphere forestry plantations using semiochemicals. *Annals of Forest Science* **69**: 757-767.
36. Oates CN, Külheim C, Myburg AA, Slippers B, Naidoo S (2015). The transcriptome and terpene profile of *Eucalyptus grandis* reveals mechanisms of defence against the insect pest, *Leptocybe invasa*. *Plant & Cell Physiology*
37. Pérez G, Slippers B, Wingfield MJ, Wingfield BD, Carnegie AJ, Burgess TI (2012). Cryptic species, native populations and biological invasions by a eucalypt forest pathogen. *Molecular Ecology* **21**: 4452-4471.
38. Roux J, Hurley BP, Wingfield MJ (2012). Disease and pests of eucalypts, pine and wattle. In: *South African Forestry Handbook* eds). The South African Institute of Forestry, Pretoria, South Africa: 303-335.
39. Six DL, Poulsen M, Hansen AK, Wingfield MJ, Roux J, Eggleton P, Slippers B, Paine TD (2011). Anthropogenic effects on interaction outcomes: Examples from insect-microbial symbioses in forest and savanna ecosystems. *Symbiosis* **53**: 101-121.
40. Slippers B, Coutinho TA, Wingfield BD, Wingfield MJ (2003). A review of the genus *Amylostereum* and its association with woodwasps. *South African Journal of Science* **99**: 70-74.
41. Slippers B, Hurley BP, Wingfield MJ (2014). *Sirex* Woodwasp: A model for evolving management paradigms of invasive forest pests. *Annual Review of Entomology* **60**: 601-619.
42. Slippers B, Wingfield BD, Coutinho TA, Wingfield MJ (2002). DNA sequence and RFLP data reflect geographical spread and relationships of *Amylostereum areolatum* and its insect vectors. *Molecular Ecology* **11**: 1845-1854.

43. Slippers B, Wingfield MJ, Coutinho TA, Wingfield BD (2001). Population structure and possible origin of *Amylostereum areolatum* in South Africa. *Plant Pathology* **50**: 206-210.
44. Slippers B, Wingfield MJ, Coutinho TA, Wingfield BD, Tribe G (1996). The *Amylostereum* symbiont of *Sirex noctilio* in South Africa. *Phytopathology* **86**: S87.
45. Slippers B, Wingfield MJ, Wingfield BD, Coutinho TA (2000). Relationships among *Amylostereum* species associated with siricid woodwasps inferred from mitochondrial ribosomal DNA sequences. *Mycologia* **92**: 955-963.
46. Van der Nest MA, Slippers B, Steenkamp ET, De Vos L, van Zyl K, Stenlid J, Wingfield MJ, Wingfield BD (2009). Genetic linkage map for *Amylostereum areolatum* reveals an association between vegetative growth and sexual and self recognition. *Fungal Genetics and Biology* **46**: 632-641.
47. Van der Nest MA, Slippers B, Stenlid J, Wilken PM, Vasaitis R, Wingfield MJ, Wingfield BD (2008). Characterization of the systems governing sexual and self-recognition in the white rot homobasidiomycete *Amylostereum areolatum*. *Current Genetics* **53**: 323-336.
48. Van der Nest MA, Steenkamp ET, Slippers B, Mongae A, van Zyl K, Stenlid J, Wingfield MJ, Wingfield BD (2011). Gene expression associated with vegetative incompatibility in *Amylostereum areolatum*. *Fungal Genetics and Biology* **48**: 1034-1043.
49. Van der Nest MA, Steenkamp ET, Wilken MP, Stenlid J, Wingfield MJ, Wingfield BD, Slippers B (2013). Mutualism and asexual reproduction influence recognition genes in a fungal symbiont. *Fungal Biology* **117**: 439-450.
50. Vivas M, Kemler M, Slippers B (2015). Maternal effects on tree phenotypes: considering the microbiome. *Trends in Plant Science* **20**: 541-544.
51. Wingfield MJ, Brockerhoff EG, Wingfield BD, Slippers B (2015). Planted forest health: The need for a global strategy. *Science* **349**: 832-836.
52. Wingfield MJ, Roux J, Slippers B, Hurley BP, Garnas J, Myburg AA, Wingfield BD (2013). Established and new technologies reduce increasing pest and pathogen threats to Eucalypt plantations. *Forest Ecology and Management* **301**: 35-42.
53. Wingfield MJ, Slippers B, Hurley BP, Coutinho TA, Wingfield BD, Roux J (2008). Eucalypt pests and diseases: Growing threats to plantation productivity. *Southern Forests* **70**: 139-144.
54. Wingfield MJ, Slippers B, Roux J, Wingfield BD (2001). Worldwide movement of exotic forest fungi, especially in the tropics and the southern Hemisphere. *BioScience* **51**: 134-140.
55. Wingfield MJ, Slippers B, Wingfield BD (2010). Novel associations between pathogens, insects and tree species threaten world forests. *New Zealand Journal of Forestry Science* **40**: S95-S103.
56. Wingfield MJ, Slippers B, Zhou XD, De Beer ZW, Govender P, Wingfield BD (2001). Global spread of insect-associated fungi on exotic plantation pines. *IUFRO World Series* **11**: 107-114.
57. Wooding AL, Wingfield MJ, Hurley BP, Garnas JR, De Groot P, Slippers B (2013). Lack of fidelity revealed in an insect-fungal mutualism after invasion. *Biology Letters* **9**: 20130342.
58. Yek SH, Slippers B (2014). Biocontrol opportunities to study microevolution in invasive populations. *Trends in Ecology and Evolution* **29**: 429-430.