

IMPROVING FOREST HEALTH IN COMMERCIAL PLANTATIONS

Towards the end of March, three Scion Pathologists, Beccy Ganley, Stuart Fraser and Mireia Gomez-Gallego, attended the first conference of the IUFRO (International Union of Forest Research Organisations) Working Party 7.02.13 “Forest Health in Southern Hemisphere Commercial Plantations”. The meeting took place in the beautiful town of Punta del Este in Uruguay and attracted participants from eleven countries: Argentina, Australia, Brazil, Canada, Chile, Colombia, Ecuador, Indonesia, New Zealand, South Africa, and Uruguay.



Participants at the ‘Improving Forest Health on Commercial Plantations’ conference.

The meeting started with a series of highly informative talks about the forest industries and main pests and pathogens impacting each country. Eucalypts, followed closely by pine, are the most commonly used plantation species in participant countries. Whilst there were a wide range of pests and pathogens affecting these plantation species, what was very clear was there were a selection of common issues shared by all. The keynote speakers set the scene for the conference, highlighting the most important issues facing forest health in commercial plantations: biosecurity, surveillance, diagnostics, and impacts and management of pests and diseases. These talks were complimented by a selection of excellent oral presentations, posters and round table discussions.

The conference included a field trip to several eucalypt plantations (*Eucalyptus globulus*, *E. dunnii* and *E. smithii*) affected by a range of different pests and pathogens. Important pathogens included species of *Teratosphaeria*

(*T. nubilosa*, *T. pseudoecalypti* and *T. gauchensis*), which cause highly damaging leaf blight diseases across the Southern Hemisphere, and a native basidiomycete pathogen, *Arambarria cognata* (syn. *Innocutis jamaicensis*), which causes stem cankers. The main insect pest observed was bronze bug, *Thaumastocoris peregrinus*, a scourge to eucalypt growers across the Southern Hemisphere. We heard from forest growers and scientists about the impacts these pests and pathogens are having on the plantations and the management strategies in place to control them. We were also lucky to see a ñandú (a large flightless bird, a type of rhea) and leaf cutter ants in action (happily a species attacking grass, rather than eucalypts).



Field trip: Pest and diseases in eucalyptus plantations.

The contribution from New Zealand came from the Pathology team, mainly centred on research on red needle cast, caused by *Phytophthora pluvialis*. Stuart Fraser gave a talk on the impact of seasonality and weather on the sporulation of *P. pluvialis* and *P. kernoviae* and the implications for management. Mireia Gomez-Gallego contributed with two talks, one on the assessment of *P. pluvialis* infection of radiata pine in a fog-room experiment, and one on the interaction between *P. pluvialis* and *Phaeocryptopus gaeumannii* (Swiss needle cast) on Douglas fir in Oregon and New Zealand. As part of her role on the organising committee, Beccy Ganley chaired several sessions. She gave an overview of forest health issues in New Zealand (both pathogens and insects), and a well-received, plenary talk on improving forest health through biosecurity and diagnostics, which triggered a lively discussion.



Stuart Fraser presents on the epidemiology of red needle cast.

The outcome from the conference was a commitment for increased collaboration between researchers working on common issues. This will be facilitated by establishing a list of researchers who work on forest health issues in commercial plantations, to be hosted on the webpage of IUFRO Working Party 7.02.13. The Working Party is also planning two publications, one on forest health issues in Southern Hemisphere plantations and the other on the economic impacts of pests and diseases in Southern Hemisphere commercial plantations. It is hoped that both publications will provide industry and governments clear information on the costs and impacts of biological invasions, allowing them to better manage biosecurity and forest issues in their countries.

Stuart Fraser, Mireia Gomez-Gallego, and Beccy Ganley
(Scion)

PETER GADGIL (1936-2018)

Peter's long career in New Zealand started in 1965, when he was recruited to work on dothistroma needle blight, a new disease of *Pinus radiata* in New Zealand. His fundamental work in the 1960s on the infection process of the pathogen and its epidemiology was critical to the development of a successful control programme that is still in use today. Recent research using advanced molecular techniques that were not available in the 1960s have demonstrated that Peter's findings in his 1967 publication "Infection of *Pinus radiata* needles by *Dothistroma pini*" were correct. In the 1970s Peter and his wife Ruth published two papers on the interaction of mycorrhiza and other soil organisms that is still described today as the "Gadgil effect". Another significant achievement at that time was proving that a *Phytophthora* was the cause of kauri dieback on Great Barrier Island in 1972. In 2005, Peter published a book describing over 700 fungi associated with woody plants in New Zealand. This book was hailed as the first comprehensive reference book ever produced on fungi that live in New Zealand's forests.

Peter, as Research Leader of the Forest Health Group, was a pioneer when we transitioned from a purely Government-funded research programme to one funded by industry and Government. Peter was the main driver behind the development of the forest grower funded surveillance and diagnostic services, and the Forest Health Research Collaborative which was a precursor to the Biosecurity Technical Steering Team we have now.

The achievements above should ensure Peter will be remembered for more than just his pipe, white lab coat and walk socks. Peter was never afraid to voice his opinion, and relished a good verbal battle. This was perhaps best encapsulated by receiving an 'award' in 1995 "for the most obstreperous, cantankerous presentation of an essentially sound argument". For all that, Peter helped me and many others develop in their careers through his helpful advice and mentorship and he will always be regarded as one of New Zealand's eminent forest pathologists.

Lindsay Bulman (Scion)