

Analysis of indigenous members of the citrus-family (Rutacea) for bacteria of the “*Candidatus Liberibacter*” genus.

During 2-4 March 2011, Prof Gerhard Pietersen, Michelle Pietersen and Ronel Viljoen undertook a field trip to the Southern Cape to determine the presence of *Candidatus Liberibacter* species on indigenous members of the citrus-family, Rutacea. Bacteria within the genus *Liberibacter* are plant pathogens on a variety of plant hosts. In South Africa, *Ca. L. africanus* causes greening disease of citrus and ‘*Ca. L. africanus*’ subspecies, ‘*Ca. L. africanus* subsp. *capensis*’; has been found infecting an indigenous Rutaceous species, *Calodendrum capense* (Cape Chestnut) in the Western Cape.

During the field trip, samples were collected from specifically *Calodendrum capense* (Cape Chestnut), *Vepris lanceolata* (White ironwood) and *Zanthoxylum capensis* (Forest knobwood) growing in areas from George to Plettenberg Bay. Samples had not been collected previously from this region, which forms part of the natural geographic distribution of the three species. With the help of Dave Reynell, a retired Forestry scientist from the area, 38 *C. capense*, 65 *V. lanceolata* and 5 *Z. capensis* trees were sampled.

The trees samples were tested for the presence of *Candidatus Liberibacter* species using real-time and conventional PCR. The specific *Liberibacter* species were then identified by sequencing parts of two ribosomal protein genes. *Candidatus Liberibacter africanus* subsp. *capensis* (LafC) was identified from *C. capense* samples, confirming the ubiquitous distribution of this bacterium with this host in South Africa. LafC was also identified in *V. lanceolata*, being the first report of this bacterium on this host. On *Z. capensis* a bacterium related to LafC and *Candidatus Liberibacter africanus* (Laf) was identified.



Collecting samples from trees belonging to the Rutaceae. Michelle Pietersen and Ronel Viljoen at a marked *Calodendrum capense* (Cape chestnut) tree in the Keurboomsriver Caravan Resort. Gerhard Pietersen and Mikael de Beer discuss the logistics of collecting leaf samples from a difficult to reach specimen on Mikael's father's farm.