

RED NEEDLE CAST APPEARING

The first sample of red needle cast for this season was received in the Forest Health Reference Laboratory on 5 May from a forest near Palmerston North. We are keen to collect information on the development of the disease in New Zealand this year. If you see any red needle cast symptoms, please send an email with the details of the disease symptoms (preferably with a photo) together with the locality and age of the stand to:

judy.gardner@scionresearch.com

Symptoms of red needle cast were observed for the first time in the Gisborne region in autumn 2008. The needles had dark/resinous bands and sometimes khaki patches (see picture below), which had not been seen before by Scion forest pathologists. An unknown *Phytophthora* species was often isolated from the symptomatic needles. Later this was found to be *Phytophthora pluvialis*, a species described in 2013 from Oregon streams, soil and canopy drip in the mixed tan oak and Douglas fir forest.



Dark bands and khaki patches on needles.

The disease is found in every region in the North Island and the Marlborough Sounds, Marlborough, Nelson and Buller regions in the South Island. Symptoms are seen in the field from March to November but are most common in autumn and winter. First occurrence and severity varies from year to year.

Diagnostic features for red needle cast (and other needle diseases) are reported on the New Zealand Farm Forestry Association website: <http://www.nzffa.org.nz/farm-forestry-model/the-essentials/forest-health-pests-and-diseases/diseases/Needle-diseases/red-needle-cast>.



Red needle cast symptoms.

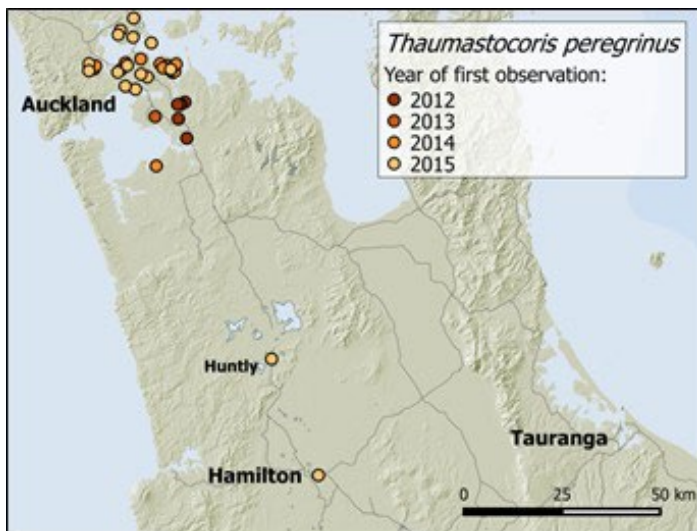
Reference: Dick, M.A., Williams, N M., Bader, M.K., Gardner, J.F., & Bulman, L.S. 2014. Pathogenicity of *Phytophthora pluvialis* to *Pinus radiata* and its relation with red needle cast disease in New Zealand. *New Zealand Journal of Forestry Science*, **44**: 6.

Judy Gardner

UPDATE ON THE SPREAD OF BRONZE BUG IN NEW ZEALAND

In April 2015 Scion scientists conducted a survey for bronze bug, *Thaumastocoris peregrinus*, and discovered that the bug had spread considerably beyond central Auckland. Three years since the original find, we now know it to be present from Auckland's North Shore southward to Hamilton, a distance of approximately 130 km. Bronze bug is a eucalypt feeder originating from Australia and its feeding damage can lead to premature leaf drop, branch death, and in severe cases tree mortality.

These recent findings, along with earlier records found via the Ministry for Primary Industries' High Risk Site Surveillance programme, have been recorded on the NatureWatch website. NatureWatch is a public forum encouraging citizen science, and we urge readers to get involved and help us map the spread of this pest insect in New Zealand. Please look for the NatureWatch project entitled "Spread of Bronze Bug in New Zealand" at www.naturewatch.org.nz.



Bronze bug observations between March 2012 and May 2015. A brief survey of previously identified *Eucalyptus nicholii* and *E. viminalis* in Rotorua, Tauranga and Mt. Maunganui in mid-May yielded only negative records for bronze bug, thus it may still be absent from the Bay of Plenty region.

Autumn is the time of year when the damage to eucalypt trees is particularly apparent and heavily infested trees can be spotted from a distance by their rust colour. Bronze bug is a sap feeder and this leaf discoloration is termed 'winter bronzing'. For trees with foliage out of reach, infestations can often be confirmed by looking for clusters of black eggs that are visible to the naked eye and can be seen on fallen leaves. As long as the fallen leaves are present, this is a good way to establish the bug's presence since hatched eggs are still highly visible. When in close proximity to trees, great care must be taken not to facilitate the spread of bronze bug as it is known to travel by hitchhiking.

Over 40 species of eucalypts have been recorded as hosts of bronze bug worldwide, but the most severely affected species in New Zealand thus far appear to be *Eucalyptus nicholii* and *E. viminalis*, both popular amenity trees. In New Zealand it has also been recorded on *E. globulus* (and subspecies), *E. leucoxylon*, *E. macarthurii*, *E. saligna* and *Corymbia ficifolia*. In addition, adult foliage of the forestry species, *E. nitens*, has been determined to be suitable host material in laboratory experiments (Saavedra et al., 2015).

Climex modelling has been used to predict the spread of bronze bug in New Zealand, and shows that it has the potential to establish throughout most of the North Island and in the northern and eastern regions of the South Island (Saavedra et al., DOI: 10.1111/afe.12117).

References: Saavedra, M.C.; Avila, G.Z.; Withers, T.M.; Holwell, G.I. The potential global distribution of the Bronze bug, *Thaumastocoris peregrinus* Carpintero and Dellapé (Hemiptera: Thaumastocoridae). *Agricultural and Forest Entomology*: DOI: 10.1111/afe.12117.

Saavedra, M.C.; Withers, T.M.; Holwell, G.I. 2015. Susceptibility of four *Eucalyptus* host species for the development of *Thaumastocoris peregrinus* Carpintero and Dellapé (Hemiptera: Thaumastocoridae). *Forest Ecology and Management* **336**: 210-216.

Stephanie Sopow

FOREST HEALTH REFERENCE LABORATORY GETS IANZ ACCREDITATION

Scion's Forest Health Reference Laboratory has been around since the 1950s to provide a nationwide diagnostic service for insect pests and fungal diseases of trees including exotic plantations, amenity trees and native forests. This service supports national biosecurity surveillance programmes for the Ministry for Primary Industries and the Forest Owners Association.



Recently the laboratory gained IANZ (International Accreditation NZ) accreditation to the International Standard for Laboratories ISO/ICE 17025:2005, Biological Testing for Entomology and Fungal Identification. This shows that the laboratory is meeting internationally accepted standards of quality, performance, technical expertise and competence. We are one of only three laboratories in NZ to achieve this for this type of testing.

For further information on the laboratory and its services you can contact us at fhdiagnostics@scionresearch.com.

For more information in regards to accreditation go to www.ianz.govt.nz.

Debra Bly

NEW FACE

Mireia Gómez has recently joined the Forest Protection team as a PhD student working on the physiological interactions of *Phytophthora* spp. (*P. pluvialis* and *P. kernoviae*) on radiata pine and Douglas fir under the Healthy Trees Healthy Future programme and Needle Disease Strategy. Her background comprises two relevant fields: forest pathology and tree physiology. She gained knowledge in forest pathology during her work on biological control of chestnut blight (*Cryphonectria parasitica*) and Swiss needle cast outbreaks (*Phaeocryptopus gaeumannii*) in the Forest Sciences Centre of Catalonia. Mireia also has an MSc in Terrestrial Ecology from Autonomous University of Barcelona where she focussed on the ecophysiological mechanisms related to drought-induced tree mortality and its interaction with pathogenic agents. Through her PhD, she aims to better understand host-pathogen interactions and the ecophysiological dysfunctions derived from *Phytophthora* infections.

Nicolas Meurisse