A National ONE DAY Workshop on Monterey Pine Aphid (*Essigella californica*)

To be held at
Centre For Forest Tree Technology
123 Brown Street
Heidelburg Vic. 3084
Australia

Wednesday 17th November 1999

A National Workshop on Monterey Pine Aphid (*Essigella californica*)

PURPOSE

RPCC recommended in September 1999 that a national workshop be convened by RWG7 under the auspices of SCF to:

- review our knowledge of the Monterey pine aphid, *Essigella californica* (Essig)
- establish a coordinated approach by industry to management of this pest
- identify research priorities on an Australasian basis.

BACKGROUND

Essigella californica, a native of the western coast of the United States of America, was found in New Zealand in February 1998 and is now found throughout the North Island and in Canterbury in the South Island. Numbers are usually low and infestations are generally not associated with any visible damage other than minor spotting on the needles.

The Monterey Pine Aphid was first detected in Australia in March 1998 at Canberra, Australian Capital Territory, and has subsequently become established in pine plantations in Queensland, New South Wales, Victoria and South Australia. In some localities infestations of *E. californica* have been associated with substantial defoliation of *Pinus radiata* D. Don. Monterey pine aphid is not known to be present in Tasmania, Western Australia or the Northern Territory.

The aphid has also been reported in pine plantations (*Pinus radiata*) in France and Spain but little information is available on its impacts. In its native range, the aphid causes minimal defoliation and is not considered a pest of economic importance.

While *E. californica* has been found in Australia on a variety of conifer species of all age classes, the most serious damage has been observed in thinned *P. radiata* plantations aged 15 years and over. There is evidence that defoliation in 1998/99 has caused considerable economic loss in some plantations.

Preliminary observations have shown the aphid displays distinct preferences for particular trees indicating possible variation in genetic resistance/susceptibility within *P. radiata*. Some native insects have been recorded preying on the aphid although it is unknown what level of control is achieved. Defoliation of aphid infested trees has also been linked to drought conditions, and the presence of the fungus *Cyclaneusma minus* (Butin) DiCosmo *et al.*

ISSUES

As the aphid causes minimal impact in its native range in the United States, there is little information available on its biology or any measures previously used in its control. The existing research programs on Monterey pine aphid are limited in their scope and tend to be concentrated at the local and State rather than national level. There is an immediate need for an evaluation of a nationally coordinated research strategy to examine relevant aspects of the life cycle, biology, host selection, economic impact and potential management strategies for *E. californica*. The program for the Workshop, prepared by Nick Collett and Jack Simpson, attempts to address these issues.

WORKSHOP PROGRAM

Wednesday 17th November 1999

08:30 –08:55 **Coffee and registration**

08:55 – 09:00
Introduction (Assoc. Prof. David Flinn)

09:00 –09:20
1. **Aphids as pests of exotic pine plantations** (Dr Ross Wylie)
- Southern Hemisphere Overview
- Aphids on *Pinus* in Australasia
- Quarantine implications

09:20 –09:40
2. ***Essigella californica*** (Dr Mary Carver & Deborah Kent)
- The genus *Essigella*
- Native range and economic importance
- Records of outbreaks and damage overseas

09:40 – 11:25
3. **Distribution in Australasia**
- Overview on a state/territory basis on:
  - Distribution
  - Quarantine issues
  - Susceptible *Pinus* species
  - Extent of defoliation by locality, age-class and pine species
  - Expected spread and potential for damage over next 5 years
  - Status of current monitoring program(s)
  - Predators, parasites, parasitoids

1. Western Australia (to be advised) 09:40–09:45
2. South Australia (Dr Charlma Philips) 09:45–10:00
3. Victoria (Nick Collett) 10:00–10:15
4. Tasmania (Dick Bashford) 10:15–10:20

10:20 – 10:40 **Morning Tea**

5. New South Wales & A.C.T. (Debbie Kent) 10:40–10:55
6. Queensland (Dr Judy King) 10:55–11:10
7. New Zealand (Clive Appleton) 11:10–11:25

11:25 – 11:45
4. **Biology** (Dr Martin Steinbauer)
- Known biology, life cycle of the pest
- Conditions suited for pest development
- Interactions with drought and other environmental factors

11:45 – 12:05
5. **Interactions with needle cast fungi** (Jack Simpson)

12:05 – 12:25

6. **Economic Impact** (Steve Pollett, Andrew Moore)
   - Growth losses
   - Estimated losses over the years 98/99
   - Recovery of trees following severe defoliation
   - Projected losses at current rates of defoliation over next 5 years
   - Effect of defoliation on other plantation programs (e.g. thinning schedules, fertiliser programs)

12:25 –13:10 **Lunch**

13:10 – 13:30

7. **Management of Lucerne Aphids – A Case Study** (Gordon Berg)

13:30 –13:50

8. **Insecticidal control for *Essigella*** (Nick Collett)
   - Screening of suitable insecticides
   - Application
   - Problems regarding cost and broad scale spraying
   - Pesticide resistance

13:50 – 14:10

9. **Silvicultural control measures** (Dr Peter Hopmans, Ian Smith, Ross Bickford)
   - Stand management options available
   - Effects of spacing and thinning
   - Changes in tree physiology at canopy closure and after thinning
   - Effects of cuttings versus seedlings as planting stock
   - Effects of treatments such as fertilising before and after defoliation

14:10 – 14:30

10. **Genetic resistance** (Dr David Boomsma)
    - Current evidence for heritability of aphid resistance in *Pinus radiata* and other *Pinus* species grown commercially in Australasia
    - Identifying trials suitable for monitoring
    - Age at which selections can be made
    - Breeding strategies

14:30 – 14:50

11. **Application of Molecular Markers to Reveal Polymorphisms within Aphid Resistant and Aphid Sensitive *Pinus radiata* plants** (Dr Morley Muralitharan)

14:50 – 15:10

12. **Biological control** (Dr Rob Floyd)
    - Potential of imported biocontrol agents for aphid control
    - Developmental time for biocontrol options
    - Interim measures while possible candidates are screened

15:10 – 15:30 **Afternoon Tea**

15:30 – 16:30

13. Further Research Needed

- Identification and priority for further research needs

16:30 – 16:50

14. Funding Options

- Identification of funding sources

16:50 – 17:00

15. Meeting Summary

- Review of workshop findings
- List of actions to be implemented

17:00 **Meeting Closes**

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WORKSHOP DETAILS

Registration
There is a Registration Fee of A$30.00 per person payable to Centre For Forest Tree Technology. Registration includes morning and afternoon tea, lunch, and a copy of the Workshop Proceedings.

Venue
Department of Natural Resources and Environment
Centre For Forest Tree Technology
123 Brown Street
Heidelburg Vic. 3084 Australia

The venue is approximately 11km northeast of central Melbourne, 25km from Tullamarine airport, and has limited free car parking available.

Accommodation
A number of motels are close by. Suggested places of accommodation to contact are:

Jika Restaurant Motor Inn Functions (approx. 5km south west of workshop venue)
551 Heidelberg Road, Fairfield, Vic, 3078
Tel: (03) 9481 2822, Fax: (03) 9489 8819

Greensborough Motor Inn (approx. 4km north of workshop venue)
Cnr Greensborough Rd and Torbay Street, Macleod, Vic, 3085
Tel: (03) 9434 7000, Fax (03) 9434 6492, Email: gboroinn@vicnet.net.au

Bell Motor Inn (approx. 5km west of workshop venue)
Cnr Bell and Patterson Streets, Preston, Vic, 3072
Tel: (03) 9480 2099, Fax: (03) 9484 0356, Reservations: 1800 035 651
(mention 'Natural Resources & Environment Workshop' for 10% discount)

Please contact the motel directly to make your booking. We are unable to organise accommodation bookings and can take no responsibility for payment.

Further Information

Workshop program enquiries to:	**Registration enquiries to:**
Jack Simpson Research Division State Forests of NSW P.O. Box 100 Beecroft NSW 2119 Australia Telephone: 02 9872 0111 Facsimile: 02 9871 6941 Email: jacks@sf.nsw.gov.au	Nick Collett Centre For Forest Tree Technology 123 Brown Street (P.O.Box 137) Heidelberg Vic 3084 Australia Telephone: 03 9450 8642 Facsimile: 03 9450 8644 Email: Nick.Collett@nre.vic.gov.au

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Workshop Registration Form

Registration/Attendee Details

Title (Prof./Dr/Mr/Ms/Mrs).....First name.....

Last name.....

Position .....

Organisation .....

Postal Address .....

.....Postcode.....

Telephone.....Facsimile.....Email.....

Special Requirements (dietary, disability etc.) .....

Preferred name on name badge .....

Registration Fees

Workshop registration must be accompanied by full payment ($30.00). Please make cheques payable to: Centre For Forest Tree Technology.

Cheque enclosed A$ .....
(We regret payment can only be made by cheque. Credit Cards and cash cannot be accepted).

Please complete and return with your payment no later than Monday November 8th to:

Nick Collett
Centre For Forest Tree Technology
P.O.Box 137
Heidelberg VIC 3084
Australia