



Suction Traps to Understand CLA Migration Patterns

Craig Feutrill - University of Adelaide

Cooperative Research Centre for National Plant Biosecurity and University of Adelaide PhD student Craig Feutrill has been running around the Australian landscape erecting tall structures to help understand the wind assisted migration of small insects such as the Currant Lettuce Aphid (CLA).

A series of six nine-metre suction traps were built and are being positioned strategically in south-eastern Australia. All traps, including fully automated sampling turntables and steel support structures are completed and three of the five permanent sited traps erected. Two on the north coast of Tasmania and one at Waterloo Corner in South Australia. The final two permanent traps will be at Yanco and near Melbourne. A sixth trap will be mobile mounted on a trailer for placing in 'hotspots' such as Hay and the Sydney Basin.

The suction traps sample 45 cubic metres of air per minute, which when funnelled down through a fine mesh cone collects flying insects in 70ml sample jars containing polyethylene glycol. The eight jars are replaced weekly and are on an automated turntable, which rotates one jar forward at midnight.

Collaborators such as Lionel Hill from Department of Primary Industries and Water in Tasmania, replace the sample jars on a Monday morning and send them to Craig for sorting and analysis.



The data collected from the traps will be analysed compared to temperature, wind direction and speed and synoptic weather charts to gain an understanding on migration timing and patterns of dispersal. For small insects like aphids, movement is mainly through wind and human activity. The distance dispersed is influenced by many factors. Understanding how these interact to influence dispersal is critical in determining the size of quarantine zones.

Craig has also established a working relationship with the New Zealand lettuce aphid researchers to share data from the NZ Aphid-Watch suction trap network.

Ground surveys in most states will augment the suction trap results to establish where CLA resides when not migrating. Although we have some of the weed hosts, the aphid pest can be extremely difficult to find during summer.

For more information, contact Craig Feutrill at craig.feutrill@adelaide.edu.au



Lettuce Growers "Hitting the Target"

Tony Napier – NSW DPI

Getting the best results from any spray application was the focus of a field day conducted at Hay in August 2008. The field day was organised by NSW DPI to give local vegetable growers an opportunity to see a new Quantum Mist™ sprayer operating in the field. David Hamilton (from Croplands Equipment) was there to demonstrate the machine and answer any questions.

The boom spray demonstrated at the field day incorporated five lightweight axial fans mounted on a horizontal bar delivering high volume, turbulent airflow, directed into the canopy of the lettuce. David Hamilton said "The Quantum mist spray is a new spraying concept that gives excellent spray coverage and helps reduce growers' application and operational costs".



Coragen® new insecticide for Lettuce

A new selective insecticide will be the first of new international registrations of pesticides. Coragen® a Dupont chemical with rynaxpyr as the active will be registered in lettuce for control of caterpillars (*Heliothis* and Cluster caterpillar). It will also be registered in a number of other vegetables for other caterpillar pests. Coragen is reportedly soft on beneficial insects and has low mammalian toxicity. It's translaminar activity enables it to be rain fast within two hours.

Insecticide resistance in *Helicoverpa armigera* should be impossible with the number of different modes of action now available and the availability of selective chemistry and biologicals that can work in tandem with key *Helicoverpa* predators.

| Current Permits for Lettuce, Endive, Chicory & Radicchio (Oct 2008) | | | | | | |
|---|--|---|---|------------|-------------|----------------------|
| Permit number | Pesticide - active | Target crop | Target pest | Issue date | Expiry date | State coverage |
| FUNGICIDES | | | | | | |
| PER7905 | Phosphorous acid | Lettuce (leaf and hydroponic)* | Downy Mildew | 4-Apr-06 | 30-Sep-12 | All states |
| PER8186 | Phosphorous acid | Endive, chicory & radicchio* | Downy mildew | 25-Jan-05 | 24-Jan-10 | All states |
| PER8819 | Filan Fungicide (boscalid) | Lettuce* | Sclerotinia rot | 10-Oct-05 | 31-Oct-09 | All states |
| PER9127 | Folicur (tebuconazole) | Field lettuce | Sclerotinia rot | 30-Aug-07 | 30-Aug-09 | All states |
| PER9918 | Switch (cyprodinil & fludioxonil) | Protected head-lettuce* | Botrytis Rots | 4-Feb-08 | 30-Jun-10 | All states |
| PER10095 | Metalaxyl-M | Lettuce (winter grown in clay to clay-loam soils) | Damping off | 22-Jun-07 | 30-Jun-09 | All states |
| PER09778 | Potassium bicarbonate | Protected lettuce* | Powdery Mildew | 6-Sep-07 | 5-Sep-12 | All states |
| INSECTICIDES | | | | | | |
| PER7416 | Confidor 200SC (imidacloprid) | Lettuce, chicory, endive & radicchio | Lettuce aphid | 24-Mar-04 | 31-Dec-08 | All states |
| PER9318 | Vertimec (abamectin) | Hydroponic lettuce | Two-spotted mite | 4-Jan-07 | 4-Jan-10 | Qld, SA, Tas, NT, WA |
| PER9932 | Methomyl | Field grown lettuce | Helicoverpa spp., Cluster caterpillar and WFT. | 23-Mar-07 | 28-Feb-09 | All states |
| PER10058 | Bifenthrin | Lettuce* | Silverleaf whitefly | 15-Apr-08 | 30-Apr-10 | All states |
| PER10105 | Piperonyl butoxide + bifenthrin | Head-lettuce* | Silverleaf whitefly | 18-Apr-08 | 31-Mar-10 | QLD |
| PER10184 | insecticide soaps | Protected & hydroponic lettuce | Greenhouse whitefly and Silverleaf whitefly | 20-Feb-08 | 28-Feb-13 | All states |
| PER10311 | Eco-Oil (Botanical Oil) | Protected & hydroponic lettuce* | Greenhouse whitefly and Silverleaf whitefly | 7-Feb-08 | 30-Sep-13 | All states |
| PER10335 | Petroleum oil | Protected & hydroponic lettuce | Leafhoppers, Rutherglen bug, green mirid, grey cluster bug, green vegetable bug | 18-Mar-08 | 31-Mar-11 | All states |
| PER10416 | Methamidophos | Field head-lettuce | Western Flower Thrips | 25-Mar-08 | 31-Mar-13 | All states |
| HERBICIDES | | | | | | |
| PER5776 | Ramrod (propachlor) | Lettuce | Grass and broadleaf weeds | 10-Nov-05 | 3-Nov-10 | All states |
| PER6920 | Dacthal (chlorthal-dimethyl) | Lettuce | Stinging nettle | 24-Aug-05 | 24-Aug-10 | WA |
| PER10465 | Betanal (phenmedipham) | Transplanted lettuce | Potato weed & Nettles | 16-Apr-08 | 30-Sep-09 | All states |
| PER10677 | Propyzamide | Chicory, endive & radicchio | Grass and Broadleaf weeds | 14-Apr-08 | 30-Apr-18 | All states |
| PER9859 | BALAN (benfluralin) | Lettuce seed crop | Grass and Broadleaf weeds | 1-Apr-07 | 31-Mar-12 | WA |
| | | <i>* other crops also on permit</i> | "Lettuce" includes field, hydroponic & protected unless specified | | | |
| | "Hydroponic lettuce" includes open and covered systems | | "Protected lettuce" includes only lettuce under cover | | | |
| | | | | | | |
| | | | | | | |