

State Roundups

South Australia – Greg Baker SARDI

Water availability and quality remain the greatest issues facing South Australian lettuce growers at the moment. Continued use of Confidor-treated seedlings and extreme weather conditions appears to be limiting CLA to occasional outbreaks.

A trial was established in November on Confidor-dipped head lettuce (Gumeracha SA) using compost amendments to assess whether populations of predatory mites would develop and control pests including CLA. The compost was incorporated into the top 5cm of soil, after cultivation but before bed formation, at approximately 200 m³ per ha. Two plots in the trial area were planted with seedlings which were not Confidor dipped. No other pesticide applications were required throughout the trial.

Prior to the trial the predatory mites considered potential predators of CLA, *Hypoaspis* sp. and *Pergamasus* sp., were present in soil at densities of 1.2 and 0.1 per 100 ml sample. CLA was detected in nearby lettuce prior to the trial.

The *Hypoaspis* increased marginally over the trial to 2.5 per 100 ml sample in compost treated soil and 1.4 in untreated soils. The *Pergamasus* increased to 20 per sample in the composted soil and 5 per sample in untreated soil. However, CLA was not detected in any of the crop, regardless of treatment. Hence, although the compost treatment increased predatory mite abundance, the potential of these mites as aphid predators remains unproven.



Predatory mite: Pergamasus sp.
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More than 50% of the undipped lettuces were damaged by thrips, mainly plague thrips (*Thrips imaginis*), which caused brown spots throughout the heads and rendered them unmarketable. The lettuce in the Confidor-treated plots was largely free of thrips blemish.

Interestingly, the compost treatment had a significant benefit on crop production. The lettuce in the compost beds matured more quickly than those in soil alone, and was harvested a week earlier than the lettuce in untreated soils. The lettuces in the composted soils were also more consistent in size, which resulted in a higher packout rate.

Riverina – Tony Napier NSW DPI

CLA was detected in Hay at the end of last season which has prompted an increase in interest in CLA resistant varieties this year. Most of the new commercial CLA resistant lettuce varieties, suitable for an autumn sowing, will be assessed by NSW DPI on a grower's property during the 2008 season. The aim of the trial is to assess the performance of these varieties and determine their appropriate sowing window for Hay.

Sydney Basin - Tanya Shaw NSW DPI

Larger populations of aphids (mainly brown sowthistle aphid and potato aphid) are starting to reappear on both lettuce and weeds across Sydney after weather conditions have become more favourable. CLA is still present in the Hawkesbury and Camden areas in both hydroponic and field lettuce varieties that are susceptible and haven't been treated with Confidor®. Red Mignonette and Green Oak varieties remain a popular choice for CLA to colonise. High populations of CLA have also been found on hydroponic raddichio in the Camden area. Specimens were collected and sent to EMAI to establish a CLA culture for pesticide resistance testing. No new CLA host weeds have been found in the Sydney Basin.

Thrips populations especially WFT have declined or have not been sighted on lettuce during recent monitoring. Many farmers have said that they have suffered less crop loss to TSWV than last year. Farm hygiene has improved on most farms. Better weed control, and more regular removal and disposal of diseased plants is likely to be a contributing factor to reduced thrips numbers. Chemicals such as Success® are still being used regularly by some growers for thrips control.

Beneficial insects such as hoverflies are very active at the moment laying eggs near growing aphid populations and their larvae are feeding on the aphids reducing pest pressure. Lady beetles are also reappearing and laying eggs now the aphids are back and the weather has improved.

Pesticide Residues in Hydro Lettuce

A new hydroponic lettuce project was recently approved for funding by Horticulture Australia Limited. Sophie Parks and Katina Lindhout from NSW Department of Primary Industries' Gosford Horticultural Institute are conducting the six-month long project titled: VG07165 Review of pesticide residues in hydroponic lettuce.

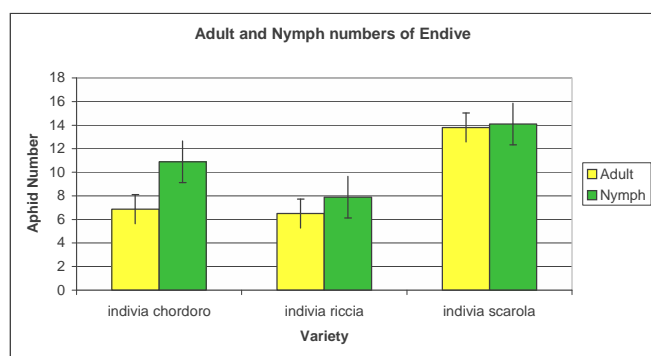
The aim of this project is to produce a report that summarises the hydroponic lettuce industry in terms of management practices and the physical specifications of hydroponic systems currently used by Australian growers. Information for the report is being sourced from all states and from a range of people involved in the hydroponic lettuce industry. The final document will be a source of information on current industry trends and may help identify factors that could increase the potential risk of pesticide residues exceeding specified maximum residue limits. Current recommendations regarding the ways in which pesticide residue risks can be minimised will be updated and new areas for research may be identified.

We are calling on input from growers and industry representatives in all states, either through the completion of a survey or the provision of general information. All individual responses will be kept confidential. If you are interested in participating in this project or obtaining more information, please contact Katina Lindhout by phone: (02) 4348 1900; or email: Katina.Lindhout@dpi.nsw.gov.au.

Host Suitability for CLA

Brendan Langfield conducted some host suitability studies of CLA as part of his honours project at the University of Sydney. He introduced CLA onto three varieties each of endive and petunia and counted nymphs and adults after 7 and 14 days. He also tested host suitability of three latex producing aster weeds. Of the weeds the sow thistle (*Sonchus asper*) is included on some international lists of alternative hosts for CLA but catsear (*Hypochaeris radicata*) and false hawkbit (*Urospermum picrioides*) are not.

CLA reproduced well on all the endives with higher numbers of both nymphs and adults on the escarole type (Franchi - *Indivia verde a cuore pieno*) than the curly type (Franchi - *Indivia riccia romanesco da taglio*) or the Frisée type (Franchi - *Indivia riccia cour d'oro*). After 7 days mean numbers of aphid adults were: 13.8, 6.5 and 6.9 and mean numbers of aphid nymphs were: 14.1, 7.9 and 10.9 respectively. The Frisée type had the lowest number of nymphs and adult aphids but the highest proportion of winged adults (~21%) compared to the curly type (12%) and the escarole type (10%).



All three petunias cultivars were suitable CLA hosts with an average of 41 aphids per plant after two weeks. There was no significant difference between the numbers of adults on the pink, red or purple cultivars but the red cultivar had significantly fewer nymphs than the pink or purple with 14.7 nymphs versus 21.3 and 24.1 respectively. The red petunia also had significantly more winged aphids (22%) versus ~11% for both the pink and purple petunias. Interestingly the red petunia had aphids on only 8.5% of the leaves while the pink petunia had aphids on 24% and the purple 19% of the leaves.

CLA were unable to reproduce on two common latex producing aster weeds: catsear and false hawkbit with all aphids dying within 48 hours of introduction. The sowthistle, a very common weed in lettuce did produce a full generation of aphids – however there were not enough replicates for statistical analysis of numbers.

Note: field inspections have not found CLA on sowthistle yet.

New or Renewed Lettuce Chemical Permits

PER10184- **Natrasoap**/ Greenhouse & Silverleaf Whitefly - 20/02/08- 31/03/13

PER 10335 **Petroleum oil**/Leafhoppers, Green Veg. bug, grey cluster bug, Rutherglen bug & Green mired 18/03/08-31/03/11

PER 9932 **Methomyl**/WFT, Helicoverpa, Cluster caterpillar 23/03/07 to 28/02/09

PER 10416 **Methamidophos**/WFT (field head-lettuce only) 25/03/08-31/03/13

Potential Beneficial Nurseries

The first of three plantings of varieties of wheat, oats, barley and rye were planted at Yanco and Sommersby (Sydney) to assess their potential as nurseries for aphid predators through autumn and winter. During the winter of 2006 plantings of susceptible lettuce were monitored at Eddie Galea's and although CLA numbers were high no beneficial insects appeared until the first of the spring warmth. Paul Horne had recommended having cereal plantings sown before the lettuce was sown as a means of supporting beneficials in the system. Cereals are ideal nurseries as they do not host pests and diseases common to lettuce and other vegetables but do host cereal aphids which are a good food source for aphid predators. The aim of these trials is to assess the different cereal types and planting times for crop habit, the numbers of cereal aphids and numbers of beneficials that feed on them through autumn and winter. Potential pest species, particularly thrips will also be monitored.

The cereals could be incorporated into the lettuce in a number of ways depending on the farm set up. Some growers in Victoria already use rye-corn in sprinkler beds or between plantings.

VG05044 Lettuce IPM

This 2 year project will finish in May and although another 2 years of funding has been approved the project team wishes to consult with lettuce growers about their priorities for the project. The aim of the project was to test and demonstrate that a biological IPM strategy can manage lettuce pests, including CLA. The main component was to have IPM demonstrations in two major regions each year with the aim to have all states with demonstrations over 4 years (only 2 years was initially funded). Plus we had components to research options that would enhance the potential for IPM management of CLA and Western Flower thrips, and components that would assist with adoption.

In the 2006 survey of lettuce growers 61% said they were IPM growers, 91% monitored their crops regularly although only 28% used consultants. 92% of growers who had CLA at the time were using Confidor® and 70% of growers who didn't have CLA at the time expected to use Confidor, now that CLA is in virtually all lettuce growing areas most are using Confidor. Given Confidor has been shown to be detrimental to key generalist predators it is not compatible with a biologically based IPM strategy. Hence we feel that IPM adoption in lettuce has actually gone backwards since the arrival of CLA.

A series of meetings are being organised for each State to report and discuss our options for lettuce IPM.

SA: 21st April – Virginia Hort Centre 1.30-4.30pm

WA: 22nd April – Wanneroo Tavern 4.15-6pm

QLD: 23rd April – Gatton RS – 2-6pm [also SLW field day]

Vic: 1st May – am Werribee & pm Cranbourne – flier to come

NSW: 2nd May – K28 Pioneer Room UWS Richmond 2-4pm

If you can't make a meeting please email/fax/phone me (Sandra McDougall) with your feedback on the project.

Updated sheet of Nas and Downy Mildew resistant lettuce varieties
<http://www.dpi.nsw.gov.au/agriculture/horticulture/vegetables/disease/s/pests/currant-lettuce-aphid2/resistant/>