



Figure 7: Winged *Nasonovia* aphid showing dark head and thorax (7a) and dark siphunculi (7b)



Figure 8: Wingless *Nasonovia* aphid showing dark thorax markings (8a)



Figure 9: A side by side comparison of winged Foxglove aphid, *Aulacorthum solani* (left), and the Currant-Lettuce aphid, *Nasonovia ribisnigri* (right)

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The pictures in this catalogue show the types to which the varieties as mentioned belong and not all varieties as such. These pictures do not constitute any warranty, express or implied, of crop performance.

If there is still doubt over the identification of the aphid growers can consult with their local Rijk Zwaan Sales Representatives to arrange sampling and identification of the aphid in question.

Foxglove Aphid

Aulacorthum solani



There has been a reported increase in the level of aphid activity this winter. Although the aphid in question looks like the lettuce aphid, *Nasonovia ribisnigri*, all the samples received have been identified as the Foxglove aphid (greenhouse-potato aphid), *Aulacorthum solani*.

Host range

Foxglove aphid has one of the broadest host ranges recorded for any aphid, having been identified from samples taken from over 82 plant families (both monocot and dicot), including;

- crop species such as potatoes, lettuce, spinach, ornamentals, cucurbits, beans, celery, tomatoes, eggplants, capsicums
- common weed species such as shepherd's purse, amaranth, nightshade, sowthistle, dandelion, pigweed and fat hen

Reasons for high levels of activity

The reason for the increase of Foxglove aphid in Australian lettuce fields this year is suspected to be the result of above average temperature during the winter months. Similar observations have been made overseas, eg. USA, where unseasonable warm weather led to a significant increase in Foxglove aphid activity.

Viral Vector

Foxglove aphids have been implicated in the transmission of at least 45 plant viruses (eg. lettuce mosaic virus, cucumber mosaic virus).

General Information

The Foxglove aphid is a cool temperature aphid with an optimum temperature range of 10°C-25°C.

Similar to the *Nasonovia*, this aphid species has a rapid population growth and infests the heart of lettuces, making it nearly impossible to eradicate with foliar aphicides applications once the lettuce hearted.

Sharing a healthy future

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Toxicity

Foxglove aphids have a toxic saliva, which is injected into the plant as it feeds. The toxin can lead to curled and twisted leaves, spots of dead leaf tissue, and can even cause early leaf-drop.

Control:

Control is best achieved by an integrated approach to pest management;

- regular monitoring
- use of beneficial predators (when appropriate)
- use of appropriate chemical controls when necessary

Monitoring

Regular monitoring of the lettuce crop is crucial for early detection of infestation. Monitoring should occur preferably twice a week, and should cover all varieties (including those resistant to *Nasonovia*).

IPM

Due to the lower temperatures in the winter months, beneficials included in any IPM strategy might not be around and/or able to keep up with the population growth in the aphids.

Chemical Control

Foxglove aphids are not currently known to have any pesticide resistance to date.

Drenching

Growers using seedlings that have been drenched to control Currant-Lettuce aphid are likely to be controlling Foxglove aphid as well, however the active components present in most seedling drenches can negatively impact IPM either by indirectly killing beneficial insects, or by interrupting their natural population growth.

Spray

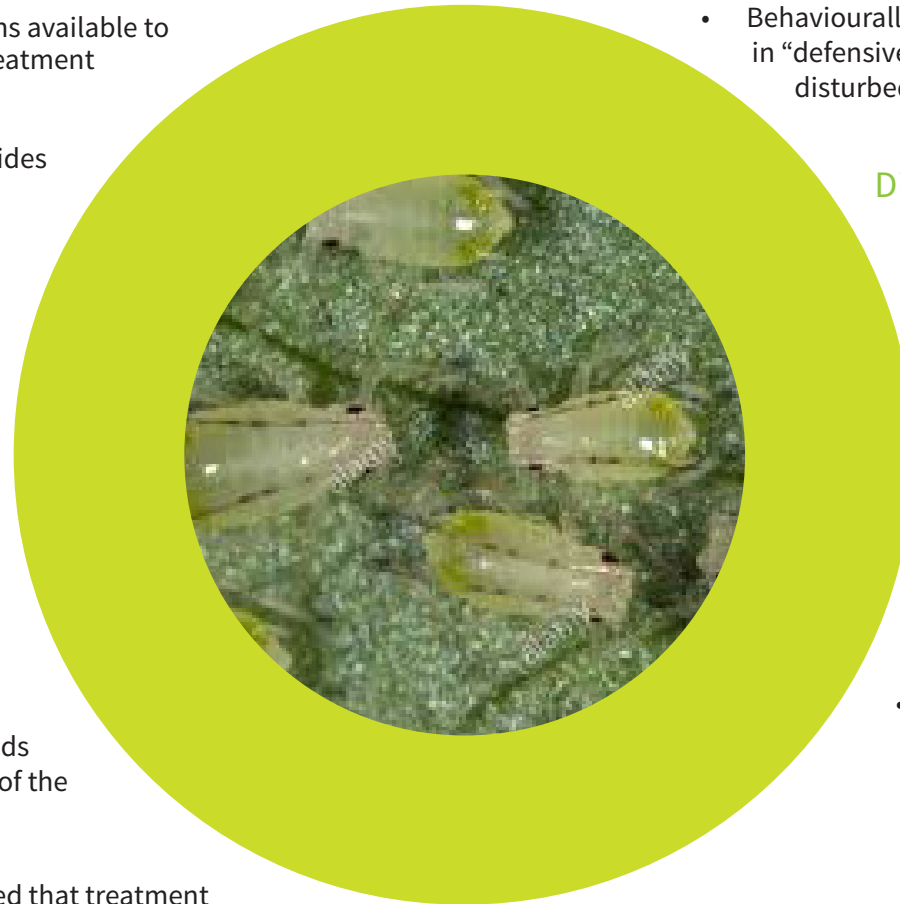
If chemical treatment is considered it is important to treat early when the aphid colonisation reaches a threshold of 1 to 5 percent and use effective pesticide rates to control that population.

There are various options available to growers for chemical treatment including:

- Contact insecticides and aphicides, which need to fall onto the aphid and are only effective up until the lettuce forms a heart
- Systemic insecticides and aphicides, which are taken up and distributed within the plant and can kill aphids inside the heart of the lettuce.
- It should be noted that treatment with a systemic control after head formation can be effective in stopping the spread of aphid, but if infestation levels are high dead aphids in the heart of the lettuce can effect the marketable value of the crop.
- For more information speak with your local agronomist or chemical supplier as registrations and permits can vary from state to state.

Identifying Foxglove aphid

- body size is larger than the green peach aphid
- the wingless form is a shiny light green or light yellow colour, usually with darker green patches at the base of the siphunculi
- antennae and legs have dark joints (in both winged and wingless form)
- siphunculi are pale with dark ends (in both winged and wingless form): see figure 2.
- winged form: brownish head, and two dark patches on thorax, distinct dark bands on abdomen



- Behaviourally, *A. solani* is known to engage in “defensive dropping behaviour”; if disturbed, it will drop off the leaf

Differentiating Foxglove aphid from *Nasonovia*

The winged aphids are nearly indistinguishable in the field from the Currant-Lettuce aphid (*Nasonovia ribis-nigri*) However, the currant lettuce aphid has in its winged form:

- darker head and thorax, dark bands on abdomen
- siphunculi dark throughout

Images

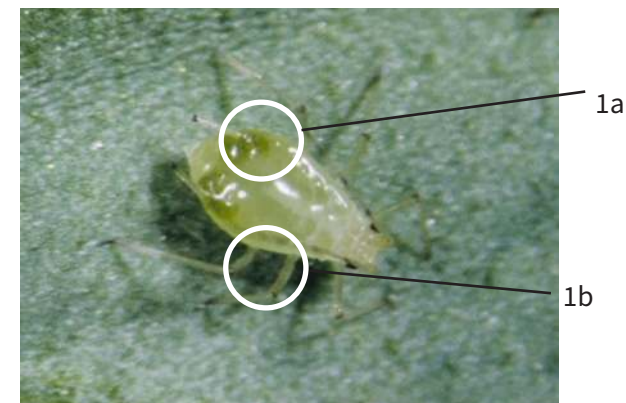


Figure 1: Wingless Foxglove Aphid, showing light green / yellow colour and darker patches at the base of the siphunculi (1a) and dark joints (1b)



Figure 2: Foxglove aphid siphunculi showing dark end (2a)

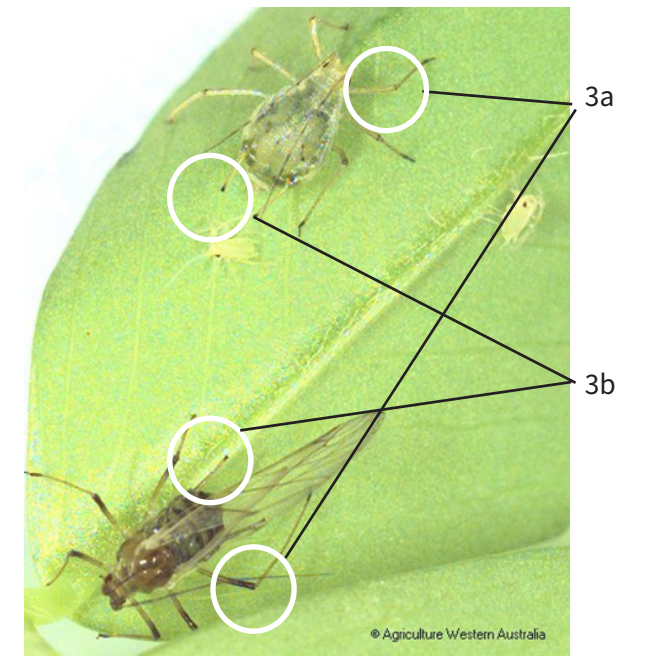


Figure 3: both winged and wingless Foxglove aphids showing dark joints (3a) and pale siphunculi with dark ends (3b)

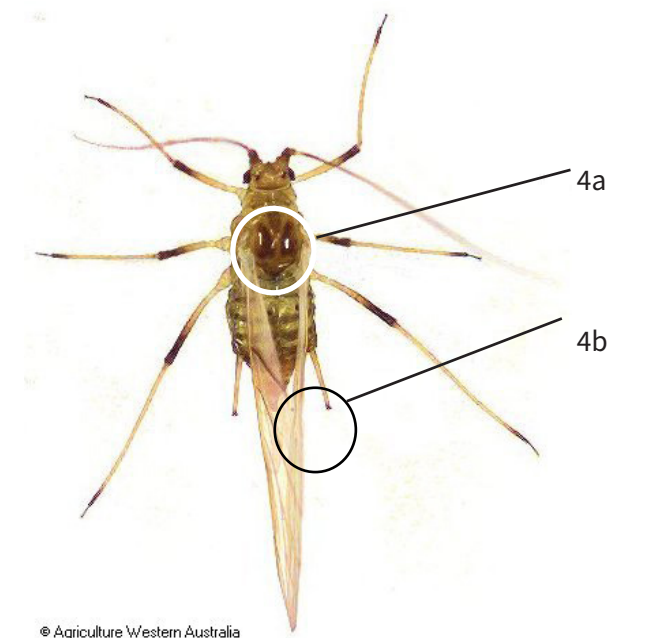


Figure 4: winged Foxglove aphid showing dark patches on thorax (6) and pale siphunculi with dark ends (4b)

Nasonovia ribisnigri



Figure 6: *Nasonovia* siphunculi dark throughout