Acyrthosiphon lactucae
Foxglove Aphid in Desert Lettuce

- Native to Europe, has been recorded on crops in Western US since 1940’s, including CA.
- Has a wide host ranges, but primarily a pest of potatoes and ornamentals in greenhouse production.
- Jan 1999 - Lettuce aphid found on lettuce in desert.
- Mar 2001 – Found an unidentifid aphid in untreated lettuce plots at YAC.
- Feb 2002 – Identified Foxglove in Yuma on untreated lettuce plots at YAC.
Sticky Trap Monitoring for Aphids 2002-2003

Gila Valley
- Ave 5E and Co. 8 1/2 St.
- Laguna Dam Rd and Gila River
- Ave 8E and Co. 7 1/2 St.
- Ave 10 E and Co 8th St
- Ave 11 1/2 E and Co. 5th St.

Dome Valley / Wellton
- Ave 18 1/2 E and Co. 5 1/2 St.
- Ave 20 1/2 E and Co. 7 1/2 St.
- Ave 25E and Co. 11th st
- Ave 32 1/2 E and Co. 9th St
- Ave 39 E and Co. 6 1/2 St
Sticky Trap Monitoring for Aphids  2002-2003

Yuma Valley - Colorado River

Yuma Valley - Field

Mean Winged Aphid / trap / day

River and Co. 18th St.
River and Co. 14 1/2 St.
River and Co. 9 1/2 St.

Ave I and Co. 21th St.
Ave G and Co. 20th St.
Ave F and Co. 14th St.
Somerton Ave and 8th St
Foxglove Aphid in Desert Lettuce

- **Nov 2002:** First Foxglove aphids found colonizing untreated head lettuce in Yuma Valley.
- **Jan 2003:** Light infestations on numerous untreated fields in Yuma Valley.
- **Feb 2003:** Found on organic lettuce in Bard, CA and Algodones, Mexico.
- **Feb 2003:** Found colonizing mature head lettuce and Romaine treated with Admire in Yuma Valley.
- **Winter 2004:** ?
### Will Foxglove Aphid Continue to be a Desert Pest?

<table>
<thead>
<tr>
<th>Vegetables</th>
<th>Plants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Celery</td>
<td>Brassicas</td>
</tr>
<tr>
<td>Beans</td>
<td>Citrus</td>
</tr>
<tr>
<td>Peas</td>
<td>Melons</td>
</tr>
<tr>
<td>Potato</td>
<td>Pecans</td>
</tr>
<tr>
<td>Purslane</td>
<td>Ragweed</td>
</tr>
<tr>
<td>Ground cherry</td>
<td>Pigweed</td>
</tr>
<tr>
<td>Silverleaf nightshade</td>
<td>Shepards purse</td>
</tr>
<tr>
<td>Dandelion</td>
<td>Lambsquarter</td>
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</tbody>
</table>
Green Aphid Complex
(Green Peach / Potato / A. lactucae)

Average Daily Temperature

Oct 11
Nov 1
Nov 15
Dec 1
Dec 15

1999-2000
2000-2001
2001-2002
2002-2003

Wet dates

Oct 10
Oct 28
Nov 14
Dec 3

Oct 11
Nov 1
Nov 15
Dec 1
Dec 15

Acyrthosiphon lactucae

Acyrthosiphon lactucae
Comparison of Soil-applied Insecticides
For Aphid Control in Head Lettuce
Foxglove Control in Head Lettuce
With Nicotinoids

Nov 14 wet date

106 DAP; 66 DAT SD; 14 DAT #3

- **Foxglove aphid**
- **A. lactucae / Potato aphid**

<table>
<thead>
<tr>
<th>Product</th>
<th>Mean Aphids / Head</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admire 16 oz</td>
<td>~10</td>
</tr>
<tr>
<td>Platinum 8 oz</td>
<td>73%</td>
</tr>
<tr>
<td>Platinum side-dress 8 oz</td>
<td>80%</td>
</tr>
<tr>
<td>Assail 1.7 oz</td>
<td>82%</td>
</tr>
<tr>
<td>Untreated</td>
<td>90%</td>
</tr>
</tbody>
</table>
Interactions between Aphid and Thrips Control in Head Lettuce
Interactions between Aphid and Thrips Control in Head Lettuce

Dec 1 wet date

Mean aphids / plant

- Foxglove aphid
- Green aphid complex

88 DAP; 11 DAT # 2

Admire 16 oz
Admire 16 oz Lannate Mustang
Admire 16 oz Success 6 oz
Untreated

91 %
Interactions between Aphid and Thrips Control in Head Lettuce

![Graph showing interactions between Aphid and Thrips control in Head Lettuce. The graph includes mean aphids per head and shows the effectiveness of various treatments such as Admire 16 oz, Lannate 0.7 lb, Mustang 4 oz, and Success 6 oz compared to the untreated control. The graph indicates 85% effectiveness for Admire 16 oz, 95% for Lannate 0.7 lb, 85% for Mustang 4 oz, and 109 DAP; 20 DAT # 3 for untreated control.]
Interactions between Aphid and Thrips Control in Head Lettuce

Dec 12 wet date

- **Admire 16 oz**
  - Foxglove aphid: 40%
  - Green aphid complex: 10%

- **Admire 16 oz Lannate 0.7 lb Mustang 4 oz**
  - Foxglove aphid: 82%
  - Green aphid complex: 5%

- **Admire 16 oz Success 6 oz Mustang 4 oz**
  - Foxglove aphid: 80%
  - Green aphid complex: 5%

- **Untreated**
  - Foxglove aphid: 40%
  - Green aphid complex: 50%

98 DAP; 10 DAT # 3
Considerations for Foxglove Control in Desert Lettuce

- Begin scouting for aphids in October; be aware of fields adjacent to citrus / houses.
- Consider closing the Admire-free window earlier: late October in Yuma Valley.
- Apply a minimum of 16 oz of Admire in October / early November plantings.
- Increase rates of Admire to 20 oz or > in mid November – December plantings.
Foxglove Aphid Seasonal Contamination in Head Lettuce

Infested Heads at Harvest in untreated lettuce

- 2001/2002
- 2002/2003

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<tbody>
<tr>
<td>Oct 10</td>
<td>0</td>
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</tr>
<tr>
<td>Nov 2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Nov 14</td>
<td>0</td>
<td>40</td>
</tr>
<tr>
<td>Dec 3</td>
<td>0</td>
<td>140</td>
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<tr>
<td>Dec 12</td>
<td>0</td>
<td>80</td>
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</tbody>
</table>

Mean Aphids / Head
Considerations for Foxglove Control in Desert Lettuce

- Begin scouting for aphids in November; be aware of fields adjacent to citrus / houses.
- Consider closing the Admire-free window earlier: late October in Yuma Valley.
- Apply a minimum of 16 oz of Admire in October / early November plantings.
- Increase rates of Admire to 20 oz or > in late plantings: mid November – December.
- Incorporate foliar aphicides into your thrips program – Orthene, dimethoate, endosulfan...
Foliar Efficacy Against Foxglove Aphid in Desert Lettuce

YAC, Spring 2003

Mean aphids / plant

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>3</th>
<th>6</th>
<th>9</th>
<th>12</th>
<th>15</th>
<th>18</th>
<th>21</th>
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<tbody>
<tr>
<td>Untreated</td>
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<tr>
<td>Orthene</td>
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<tr>
<td>Dimethoate</td>
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<td></td>
</tr>
<tr>
<td>Endosulfan 1 lb</td>
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<tr>
<td>Endosulfan 12 oz</td>
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<tr>
<td>Endosulfan 30 oz</td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Untreated</td>
<td>21</td>
<td>18</td>
<td>15</td>
<td>12</td>
<td>9</td>
<td>6</td>
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10- DAT #2
Thrips Control in Head Lettuce

**Larvae**

<table>
<thead>
<tr>
<th>Compound</th>
<th>% Control (Range)</th>
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<tbody>
<tr>
<td>Lannate 0.7 lb + Mustang 4 oz</td>
<td>80 - 90</td>
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<tr>
<td>Ortho'ne 1 lb + Mustang 4 oz</td>
<td>60 - 70</td>
</tr>
<tr>
<td>Dimethoate 12 oz + Mustang 4 oz</td>
<td>60 - 70</td>
</tr>
<tr>
<td>Dimethoate 12 oz + Mustang 4 oz</td>
<td>60 - 70</td>
</tr>
<tr>
<td>Endosulfan 32 oz</td>
<td>60 - 70</td>
</tr>
</tbody>
</table>

**Adults**

<table>
<thead>
<tr>
<th>Compound</th>
<th>% Control (Range)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lannate 0.7 lb + Mustang 4 oz</td>
<td>60 - 70</td>
</tr>
<tr>
<td>Ortho'ne 1 lb + Mustang 4 oz</td>
<td>60 - 70</td>
</tr>
<tr>
<td>Dimethoate 12 oz + Mustang 4 oz</td>
<td>60 - 70</td>
</tr>
<tr>
<td>Dimethoate 12 oz + Mustang 4 oz</td>
<td>60 - 70</td>
</tr>
<tr>
<td>Endosulfan 32 oz</td>
<td>60 - 70</td>
</tr>
</tbody>
</table>
ag.arizona.edu/crops/