Aphid and Thrips Management in Desert Lettuce
Aphids in the Desert

Total Aphid Complex

Harvest Densities

(% reduction compared with untreated check)

Aphids/Plant

Untreated
Admire 12-16 oz

(96) (96)
(94) (97)
(98) (97)
(98)
(91) (95) (99)
(92)

93 94 95 96 97 98 99 00 01 02 03

0 200 400 600 800

0 200 400 600 800

0 200 400 600 800
What happened in 2003?
Lettuce Aphid
*Nasonovia ribisnigri*

Foxglove Aphid
*Aulacorthum solani*

Green peach Aphid
*Myzus persicae*
Lettuce Aphid
*Nasonovia ribisnigri*

Foxglove Aphid
*Aulacorthum solani*

Green peach Aphid
*Myzus persicae*
Foxglove Aphid in Head Lettuce

- **Average Daily Temperature**
- **Avg. Aphids / Plants**

**2000-2001**
- Oct 11
- Nov 1
- Nov 15
- Dec 1
- Dec 15

**2001-2002**
- Oct 10
- Oct 28
- Nov 15
- Dec 3
- Dec 13

**2002-2003**
- Oct 10
- Oct 29
- Nov 14
- Dec 3
- Dec 12

**Wet date**
- Oct 10
- Oct 28
- Nov 15
- Dec 3
- Dec 13
Will Foxglove Aphid Continue to be a Desert Pest?

- Celery
- Brassicas
- Citrus
- Melons
- Ragweed
- Pigweed
- Shepards purse
- Lambsquarter
- Beans
- Peas
- Potato
- Purslane
- Ground cherry
- Silverleaf nightshade
- Dandelion
- Pecans

[Image of a field with crops]
**Keys to Economic Aphid Management**

- Early detection of colonization
- Proper ID of species
- Treat when populations begin to colonize plants (1-5% infestation)
- Use Insecticides at effective rates
## Effective Insecticides for Aphid Management

<table>
<thead>
<tr>
<th>Insecticide</th>
<th>Duration</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admire</td>
<td>Season-long *</td>
<td>★★★★★</td>
</tr>
<tr>
<td>Provado</td>
<td>7-14 d</td>
<td>★★★</td>
</tr>
<tr>
<td>Endosulfan</td>
<td>7-14 d</td>
<td>★★★</td>
</tr>
<tr>
<td>Dimethoate</td>
<td>10-14-d</td>
<td>★★★★</td>
</tr>
<tr>
<td>Orthene</td>
<td>Head lettuce; 21 d PHI</td>
<td>★★★★</td>
</tr>
<tr>
<td>MSR</td>
<td>Head lettuce; 28 d PHI</td>
<td>★★★★</td>
</tr>
<tr>
<td>Fulfill</td>
<td>7-10 d</td>
<td>★★★</td>
</tr>
<tr>
<td>Assail (CA)</td>
<td>7-14 d residual</td>
<td>★★★</td>
</tr>
</tbody>
</table>

* Higher rates in late Nov-Dec plantings for foxglove aphid
Population Dynamics

Onion Thrips
(3%)

Western Flower Thrips
(93%)
Thrips Population Dynamics in Head Lettuce
Thrips Sampling

- Determining presence and abundance
- Initiating Control
- Evaluating Control
- Research
Absolute Estimates Counting All Thrips on Plant using a Plant Wash Technique
Population Dynamics of Thrips in Head Lettuce 2003

Graph showing the population dynamics of thrips with various data points indicating Beat Pan, Direct counts, and Plant Wash measurements. Key dates and population numbers are marked on the graph.
Beat Pan Counts (n=27)

~ 20 % of what was actually on plant

Y = -22.3 + 5.0x

R² = 0.85
Direct Visual Counts (n=27)

~ 12% of what was actually on plant
Thrips Damage on Romaine
Thrips Damage 'scarring' in Romaine

Leaf Position

Damage Rating

Cages

- 17 adults/ plant
- 42 larvae / plant

Untreated

- 231 adults/ plant
- 1122 larvae / plant
Thrips Damage 'scarring' in Romaine

- 203 adults/ plant
- 390 larvae / plant

- 231 adults/ plant
- 1122 larvae / plant

7-day Spray Interval

Untreated

Leaf Position vs. Damage Rating

Damage Rating
Thrips Damage ’Rib bronzing’ in Romaine

17 adults/ plant
42 larvae / plant

231 adults/ plant
1122 larvae / plant
Key to Economic Thrips Management

- Early detection of thrips populations
  “A few probably means a lot”

- Treat before thrips larval populations become established

- Use Insecticides at effective rates

- By ground when possible
Western Flower Thrips in Lettuce

What Rate of Success® Should I Use For Thrips?
What Rate of Success® Should I Use For Thrips?

Head Lettuce

10 DAT#2

A

% Control

Success

Success

Success

Lannate

6 oz

10 oz

5 oz

Mustang

4 oz

Mustang

4 oz

LAR

LAR

LAR

0 20 40 60 80 100

0 20 40 60 80 100

0 20 40 60 80 100