► 1995-2000 sporadic samples from Mexico and South Texas with same problem

► 2000 serious defect caused by this disorder in south Texas

► 2001 still a serious problem in TX

► 2002 minor problem in TX

► 2003 disease rare in TX; serious in Guatemala

► 2004 disease rare in TX; less of a problem in Guatemala
Potato Psyllid Migrations

- Psyllids do not overwinter in north Texas and beyond?
- Infestations arise from flights of psyllids that migrate from south TX, NM, and Mexico?
- Scouting for the arrival and establishment of lifestages of psyllids remains critical.
Air Parcel Trajectory Assessments

- Tracking of movement of air parcels across regions
- Trace back origins and the paths it took to arrive at a location (backward).
- Probable destination and the path it would take (forward)
- Wide range of applications - tracking and forecasting dispersions of pollutants, hazardous materials, and fungal spores that move through the air
- Tracking Psyllid movement???
Columbia River Basin – OR/WA

Backward tracking June – July
IDAHO - Twin Falls

Backward tracking June - July
Weslaco,  TX

Forward tracking April - July
If psyllids do indeed migrate north from southern regions, trajectory analyses could be a good tool (in conjunction with ground-truthing) for prediction of their origin, route, and destination.

Trajectory analysis indicates that psyllids in PNW and Idaho likely wouldn’t have come from TX, but TX could be a source of psyllids for Northcentral production regions.
Potato Psyllid Sampling

- Sweep net sampling
- Mid-canopy, leaf sampling
- Yellow sticky cards
Psyllid Activity

Lower Rio Grande Valley 2011 season Potato Psyllids

<table>
<thead>
<tr>
<th>Date</th>
<th>Mean no. psyllid Adults / Yellow Sticky Trap +/- se</th>
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<tbody>
<tr>
<td>11/22/2010</td>
<td>0.0</td>
</tr>
<tr>
<td>11/29/2010</td>
<td>0.5</td>
</tr>
<tr>
<td>12/06/2010</td>
<td>1.0</td>
</tr>
<tr>
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<tr>
<td>12/20/2010</td>
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<td>12/27/2010</td>
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</tr>
<tr>
<td>01/03/2011</td>
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</tr>
<tr>
<td>01/24/2011</td>
<td></td>
</tr>
<tr>
<td>01/31/2011</td>
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</tr>
</tbody>
</table>

Legend:
- W100
- W1
- W20
- W13
- B28
- UTC1
- UTC2
- UTC3
Candidatus *Liberibacter solanacearum* Detections

Lower Rio Grande Valley 2011 season

<table>
<thead>
<tr>
<th>Date</th>
<th>% Adults positive for Liberibacter</th>
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<tbody>
<tr>
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<tr>
<td>12/06/2010</td>
<td>7.7%</td>
</tr>
<tr>
<td>12/13/2010</td>
<td>9.1%</td>
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<tr>
<td>12/20/2010</td>
<td>37.5%</td>
</tr>
<tr>
<td>12/27/2010</td>
<td>50%</td>
</tr>
<tr>
<td>01/03/2011</td>
<td>23.1%</td>
</tr>
<tr>
<td>01/10/2011</td>
<td>9.1%</td>
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<td>02/21/2011</td>
<td>37.5%</td>
</tr>
<tr>
<td>02/28/2011</td>
<td>0%</td>
</tr>
</tbody>
</table>

Nos. of hot adult potato psyllids/total collected from 100 traps/week
Potato Psyllid
3-4 Generations / Year

- At-plant, in-furrow insecticides can be effective
- Ineffectiveness may result from arrival time of adult psyllids
- Full-season control achieved with well-timed, foliar applications
Full-Season Control
Potato Psyllid

- Complete canopy coverage
- Perimeter applications during early colonization
- Product selection based upon predominant stadia
- Resistance management essential – rotation of insecticides as a series of successive applications
- Avoid the use of synthetic pyrethroids
Neonicotinoids – Group 4A: AdmirePro, Platinum, Belay, Scorpion, Assail, Actara, Provado, Endigo, etc.

Spinosyns – Group 5: Blackhawk, SpinTor, Radiant

Avermectins – Group 6: Agri-Mek, Epi-Mek, Abba

Selective Feeding Blockers – Group 9: Fulfill, Beleaf

Lipid Biosynthesis Inhibitors – Group 23: Oberon, Movento

Anthranilic diamides – Group 28: Benevia**, Verimark**

**Not currently registered in potato
At-plant, in-furrow insecticides can be effective

Ineffectiveness may result from arrival time of adult psyllids

Full-season control achieved with well-timed, foliar applications

**Not currently registered for use in potato**

Need to protect potato crop from potato psyllid for 8-10 weeks

- **Platinum® 75SG (2.67 oz)**
- **Admire® Pro (8.7 fl oz)**
- **Belay® (12 fl oz)**
- **Movento® (5 fl oz)**
- **Verimark™ 20SC**
- **Fulfill® 50WDG (5.5 fl oz)**
- **Agri-Mek® SC (3.5 fl oz)**
- **Radiant® SC (8.0 fl oz)**

Potato Crop