Bee Informed Partnership
Overview & 2019 Recap

Ben Sallmann
Pacific NW Tech Team
The Bee Informed Partnership - Our Mission

• Improve colony health
• Support beekeepers
• Largest US repository for colony health data
• Bridge between science and industry
How we do what we do

- Tech Transfer Team
- Sentinel Apiaries
- Emergency Response Kits
- National Loss & Management Surveys
- Field Trials
- IT Products
Tech Transfer Teams

110+ commercial beekeepers
Representing >500,000 colonies or ~17% of US colonies
Tech Transfer Team Professionals

• Colony inspection
• Diagnostics and Consulting
• Disease monitoring
• Hygienic testing
• Research trials
• Emergency visits
Colony Inspection/Evaluation

- Colony Configuration
- Queen Status
- Frames of Bees
- Weight
- Brood Pattern
- Varroa/Nosema
- Other diseases & pests
Varroa destructor
Alcohol Wash
### Unique ID Code for All Beekeepers

**Tech-Team Inspection Report**

Your Beekeeper ID Code = XX-MD

Samples collected between 2/17/2013 - 2/18/2013

#### Summary Varroa & Nosema per Apiary, during the above date range (excludes frames of bees = 0)

<table>
<thead>
<tr>
<th>Yard Name</th>
<th>Varroa Average Mites/100 Bees</th>
<th>Varroa Minimum - Maximum</th>
<th>Nosema Average Millions of Spores / Bee</th>
<th>Nosema Minimum - Maximum</th>
<th>Frames of Bees Average</th>
<th>Frames of Bees Minimum - Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yard 1</td>
<td>0.1</td>
<td>0 - 0.5</td>
<td>3.6</td>
<td>1.1 - 6.8</td>
<td>9</td>
<td>5.5 - 12</td>
</tr>
<tr>
<td>Yard 2</td>
<td>1.2</td>
<td>0 - 6.1</td>
<td>2.4</td>
<td>0.5 - 5.9</td>
<td>7.5</td>
<td>3 - 11.5</td>
</tr>
</tbody>
</table>

#### Observations per colony, including previous records on the same colony

<table>
<thead>
<tr>
<th>Sample Date</th>
<th>Yard</th>
<th>Hive #</th>
<th>Colony Type</th>
<th>Hive</th>
<th>Quee Staus</th>
<th>Fram of Bees</th>
<th>Brood Patter</th>
<th>Weight</th>
<th>Disease</th>
<th># Mites/100Bees</th>
<th>Millions of Spores / Bee</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/14/2012</td>
<td>Yard 1</td>
<td>1645</td>
<td>Field</td>
<td>1D,</td>
<td>QS</td>
<td>10</td>
<td>3</td>
<td>.</td>
<td>.</td>
<td>.</td>
<td>0</td>
<td>0.1 Strip Added</td>
</tr>
<tr>
<td>8/26/2012</td>
<td>Yard 1</td>
<td>1645</td>
<td>Field</td>
<td>1D,</td>
<td>QS</td>
<td>8</td>
<td>2</td>
<td>.</td>
<td>.</td>
<td>.</td>
<td>0.3</td>
<td>0.1</td>
</tr>
<tr>
<td>10/15/2012</td>
<td>Yard 1</td>
<td>1645</td>
<td>Field</td>
<td>1D,</td>
<td>QS</td>
<td>5</td>
<td>3</td>
<td>.</td>
<td>.</td>
<td>.</td>
<td>0</td>
<td>0.6</td>
</tr>
<tr>
<td>2/18/2013</td>
<td>Yard 2</td>
<td>1645</td>
<td>Field</td>
<td>1D,</td>
<td>QS</td>
<td>3.5</td>
<td>2.5</td>
<td>Varroa</td>
<td>3</td>
<td>0.9 No Pollen Patty Left</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6/14/2012</td>
<td>Yard 1</td>
<td>1646</td>
<td>Field</td>
<td>1D,</td>
<td>QS</td>
<td>13</td>
<td>3</td>
<td>CB</td>
<td>0.3</td>
<td>0.2</td>
<td>0.1</td>
<td>3.3 No Eggs, Little Brood</td>
</tr>
<tr>
<td>8/28/2012</td>
<td>Yard 1</td>
<td>1646</td>
<td>Field</td>
<td>1D,</td>
<td>OR</td>
<td>12</td>
<td>4</td>
<td>.</td>
<td>.</td>
<td>.</td>
<td>3</td>
<td>0.1</td>
</tr>
<tr>
<td>10/15/2012</td>
<td>Yard 1</td>
<td>1646</td>
<td>Field</td>
<td>1D,</td>
<td>OR</td>
<td>8.5</td>
<td>3.5</td>
<td>.</td>
<td>.</td>
<td>.</td>
<td>0</td>
<td>0.3</td>
</tr>
<tr>
<td>2/18/2013</td>
<td>Yard 2</td>
<td>1646</td>
<td>Field</td>
<td>1D,</td>
<td>QS</td>
<td>4.5</td>
<td>3</td>
<td>.</td>
<td>2.4</td>
<td>3.3</td>
<td>0.3</td>
<td>0.2 Package Added</td>
</tr>
<tr>
<td>6/14/2012</td>
<td>Yard 1</td>
<td>1617</td>
<td>Field</td>
<td>1D,</td>
<td>QS</td>
<td>15</td>
<td>4.5</td>
<td>.</td>
<td>0</td>
<td>0.2</td>
<td>0.1</td>
<td>0.2 Essential Oil Patty</td>
</tr>
</tbody>
</table>
2019 Recap

- Difficult start to almond pollination
- Lower mite loads most of the year
- Higher Nosema spore counts
- EFB and chalkbrood very prevalent
- Poor brood patterns/brood issues
- Honey crop variable
Almond Pollination

- Cold, rainy weather
- Late bloom = slow brood buildup
- Bees dwindled for much of Jan/Feb
- EFB/Chalk widespread
Nosema Levels, Average per Month for Past Year

error bars represent the 95% confidence interval
Nosema Levels, Average per Month for Past Year

error bars represent the 95% confidence interval

Millions of Spores per Bee

California  Oregon
Nosema

• High spore counts throughout year
• Possible causes:
  • Stress
  • Wet weather
  • Old bees in samples
  • Brood diseases
  • Fungicide exposure
  • Lack of treatment options
Varroa Levels, Average per Month for Past Year

error bars represent the 95% confidence interval

- California
- Oregon
Hygienic scores
Hygienic scores

11 beekeepers
4,145 observations
Protein Feeding
https://bip2.beeinformed.org/

• Colony Loss Map
• Management Survey
• Hive Monitors
• Sentinel Apiaries Map
• MiteCheck
• Bee Your Best Survey
• Virus Map
• APHIS State Reports
We make a difference

### Varroa Monitoring Techniques

Report: Varroa Monitoring Techniques

Select one or more monitoring techniques:

- [ ] All
- [ ] Alcohol Wash
- [ ] BIP Samples (ether)
- [ ] Ether Roll

- [ ] BIP Tech Team Samples

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### Average Winter Loss per Beekeeper

Varroa Monitoring Techniques

- **Used selected techniques**: 22.6% loss
- **Did not use selected techniques**: 32.4% loss

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<table>
<thead>
<tr>
<th>States</th>
<th>Operation Size</th>
<th>Survey Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>All</td>
<td>All</td>
</tr>
<tr>
<td>AK</td>
<td>Backyard</td>
<td>2017 - 2018</td>
</tr>
<tr>
<td>AL</td>
<td>Sideline</td>
<td>2016 - 2017</td>
</tr>
<tr>
<td>AR</td>
<td>Commercial</td>
<td>2015 - 2016</td>
</tr>
<tr>
<td>AZ</td>
<td></td>
<td>2014 - 2015</td>
</tr>
</tbody>
</table>
Thank you to our sponsors and collaborators:

Huge Thank You to our Participating Beekeepers!