Pollination Updates

Chris Heintz, Moderator
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Pollination Updates

Presenters:
Chris Heintz, ABC Bee Task Force Liaison
Keys to Healthy Bees in Almonds
Chris Heintz, ABC Bee Task Force Liaison
Today’s Topics

• Honey bee status - Christi Heintz & Eric Mussen

• Building a successful grower/beekeeper relationship
  - What you can do to help your beekeeper pollinate your crop
  - Impact of fungicides

• Introduce conference poster session

• Bee supply and the business of pollination with Matt Beekman and John Miller
YOU NEVER KNOW WHERE LIFE TAKES YOU, SO WE FLY ALL OVER THE COUNTRY.

OVER 65 DESTINATIONS ACROSS THE COUNTRY
# Keys to Healthy Bees in Almonds

The Changing Landscape in California

<table>
<thead>
<tr>
<th></th>
<th>1980</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>23,667,902</td>
<td>36,961,664</td>
</tr>
<tr>
<td>Farm Acres</td>
<td>32,156,894</td>
<td>23,364,695</td>
</tr>
</tbody>
</table>
U. S. Honey Bee Colonies

Number of Colonies (million)

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Colonies</th>
</tr>
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<tbody>
<tr>
<td>1909</td>
<td>3.4</td>
</tr>
<tr>
<td>1959</td>
<td>5.4</td>
</tr>
<tr>
<td>2009</td>
<td>2.4</td>
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</tbody>
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Almond Bearing Acreage

- 1950: 91,500
- 1960: 169,900
- 1970: 247,900
- 1980: 326,800
- 1990: 411,000
- 2000: 510,000
- 2010: 740,000
California State Beekeepers Assn Survey

Almond Pollination Fee

<table>
<thead>
<tr>
<th>Year</th>
<th>Fee</th>
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<tbody>
<tr>
<td>2008</td>
<td>$ 148.50</td>
</tr>
<tr>
<td>2009</td>
<td>$ 157.03</td>
</tr>
<tr>
<td>2010</td>
<td>$ 150.79</td>
</tr>
<tr>
<td>2011 (projected)</td>
<td>$ 158.37</td>
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</tbody>
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Keys to Healthy Bees in Almonds

![Graph showing Overwintered Colonies vs. Annual Cost in U.S. Dollars]
Honey bee health status

• Bee mortality
  - CCD symptoms - seemed to be decreasing, but … now?
  - Queen problems - seem to be increasing
  - Poor nutrition - is weakening colonies
  - Mites + Nosema (virus + Nosema) – a deadly duo?
Keys to Healthy Bees in Almonds

Honey bee health status

• Overwintering losses
  □ Still 30% +
  □ Goal is to return to 10%
    Accomplished by
      • Continued research
      • Changing management paradigms
        • 2007 Specialty Crop Grant on diagnostic services
        • 2009 Specialty Crop Block Grant on BMP’s
        • 2010 Specialty Crop Grant to improve forage resources
Building the Grower/Beekeeper Relationship

• Forage - If possible, help your beekeeper locate flowering forage prior to and after bloom.

• Water - Provide abundant and potable water free from contamination and accessible to bees.
Building the Grower/Beekeeper Relationship

- **Agricultural Sprays** - Let your beekeeper know the applications used for crop protection, including tank mixes. Minimize exposure by spraying late in the afternoon or at night when bees are not flying.
Impact of Fungicides on Honey Bees

- May not always be direct mortality of adult bees
- Contaminated pollen can affect growth and development of larvae and pupae
  - Dose dependent
  - Higher doses – larval death
  - Lower doses – pupae fail to molt
  - Malformed bees and/or partially emerged bees
Fungicide-Contaminated Pollens – Questions

- Shortened life span?
- Failure of internal organs to function properly?
- Other negative effects?
- Fungicide/pesticide synergies?
Building the Grower/Beekeeper Relationship

• Pollination contracts - A signed contract protects both grower and beekeeper. Secure contracts early for the following pollination season so beekeepers will make the investment in colony health and strength.

- For a pollination contract template, visit www.ProjectApism.org/Downloads
California 7% Withholding Tax

Consult your tax advisor!
CA appears to be broke and looking for money
Go to [www.ftb.ca.gov](http://www.ftb.ca.gov) or call 800-852-5211
Out-of-state beekeepers
  - should be filing Form 588
  - claiming CA expenses against this CA income
Keys to Healthy Bees in Almonds

Visit the PAm booth in the Pollination Pavilion

Pick up a copy of BMPs for Almond Growers renting bees
Keys to Healthy Bees in Almonds

Conference poster session – Pollination Pavilion

- David Wick – Essential oils for virus & Nosema
- Jerry Bromenshenk – Viruses & Nosema in CCD samples
- Mark Carroll – Varroa mite control using brood pheromones
- Diana Sammataro – Antioxidants, probiotics
- Gloria DeGrandi-Hoffman – Impact of fungicides, Pristine
- Sue Cobey – Stock improvement
- Marla Spivak – Tech transfer team for bee breeders
- Ruben Alarcon – Bee forage, Mustard
- Theresa Pitts-Singer/Carolyn Pickel – Blue Orchard Bees
- Meg Ribotto – Project Apis m.
Managing Bees for Almonds 2011 Bloom

with beekeepers
John Miller, ID, ND, CA
Matt Beekman, CA
Thank You
Session at 2:40 pm:
Common Issues in the Orchard in Grand Ballroom
Continuing Education Units are available for most sessions.

Please check in at the CEU desk in the Doubletree Hotel lobby for details and instructions.
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Leadership through Research
2010
38th Annual Almond Industry Conference