Michigan's Honey Bee Programs

Michigan Commission of Agriculture
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Michigan Bees

- Michigan Bees go brood-less in September, restart brood rearing in February.
- Over-wintering bees need to be healthy.
- Severe Cold, lack of food, parasite and diseases attribute to winter losses in the north.
- Perhaps 30-35,000 colonies are over-wintered in state

J Pettis

Michigan Bees move south for the winter.

- Michigan's bees return in April:
- Florida: 48,000 colonies* (2009)
- California: 10-20,000 colonies – Some of them go first to Florida and Georgia before returning.
- Georgia: 10-15,000 colonies. 15-20,000 packages of bees.
- Mississippi: 5000 colonies.

J Pettis, USDA-ARS

Colony ready for pollination. 8 frames of brood or more.

F Eischen
USDA

Pollination Resources:

- Beekeepers? 1200-1500 No ones counting.
- Honeybee colonies? 100-150,000 during the summer.
- 50-100 commercial, 500-5000 colonies each.
- 250-300 sideline or semi commercial beekeepers.
  - 50-500 colonies
- Hobbyists: Estimated at over 1000, 1-50 colonies each.
- In recent years Michigan bees have pollinated almonds in California, Blueberries in Maine, and returned to Michigan for a honey crop.

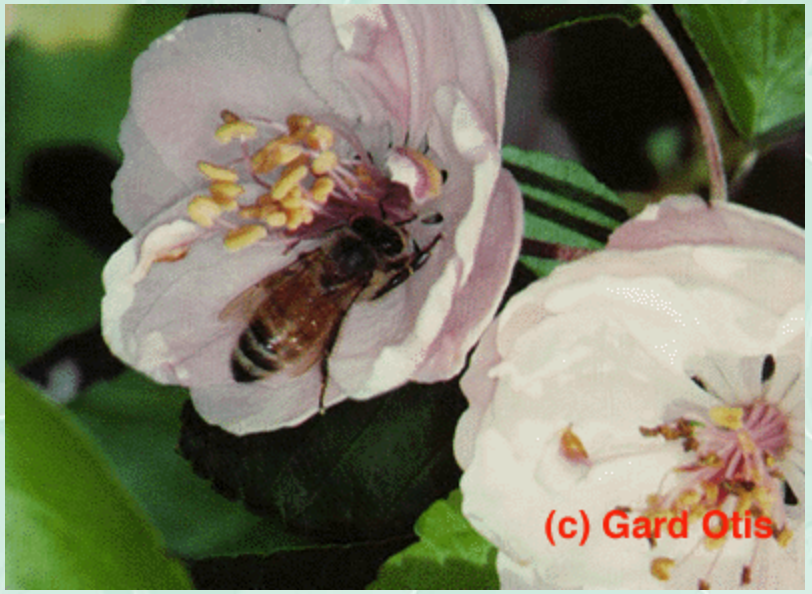
Michigan Beekeeping Websites:

- www.michiganbees.org
  Michigan Beekeepers Assn.
  Links to Michigan Bee Clubs and National Organizations.

- www.sembabees.org
  Southeastern Michigan Beekeepers

- www.michiganbeekeepers.com
  Kalamazoo Beekeepers

- www.cyberbee.msu.edu
  Dr. Zachary Huang, Dept. of Entomology

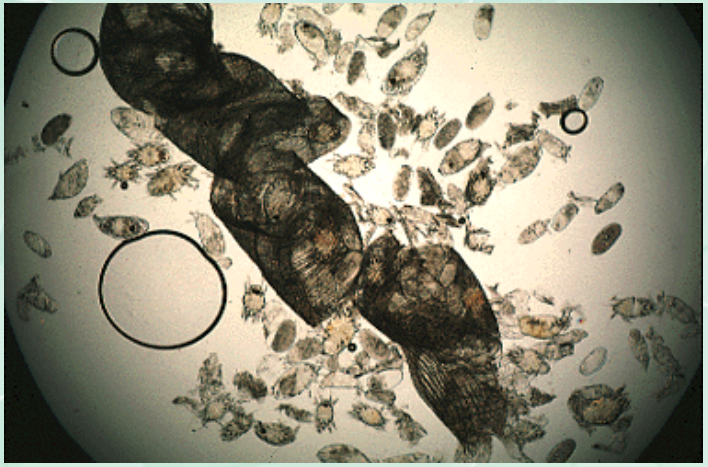


Parasitic Mites

- Varroa Mite
  - External parasite
  - Reproduces in the cell
  - Deforms/Kills young bees as they develop
  - Moves from colony to colony on drifting bees
  - Virus transmission

"VSH Honeybee"

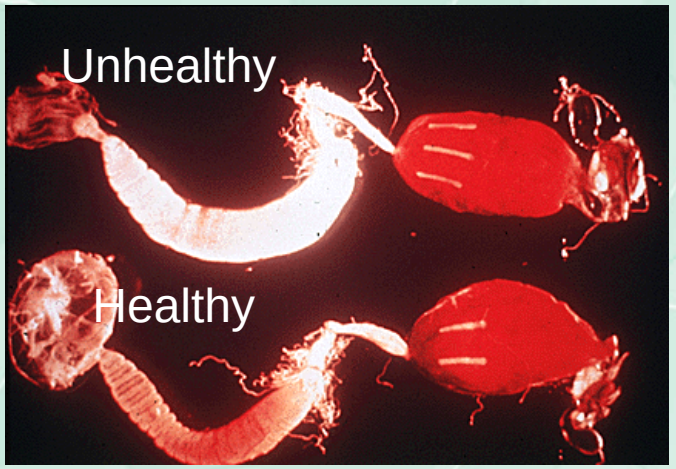
- Tracheal Mite
  - Internal parasite
  - Entire life cycle in trachea



MAAREC

Microsporidians.

- Nosema disease: Dysentery symptoms
- *Nosema apis, native*
- *Nosema ceranae, new*
  - *Recently identified in North America*
  - *Blamed for CCD type losses in Spain*
  - *Now the dominant species in North America*
  - *Fumigillin is the only treatment on the market*



MAAREC

Colony Collapse Disorder


CCD Workgroup

- Absence of dead bees
- Bees appear young
- Hive is Queen - right
- Not enough bees to cover the brood
- Science looking at Synergistic effects of organisms, bee health, bee diet…

US winter losses at 30-35% in recent years, blamed on CCD, on investigation, many of the losses can be explained.

Canadian winter losses at 30-35%, CCD not blamed. Mites most often the culprit.

Multiresidue Pesticide Analysis on US Beehive Pollen Samples 2007-08, Penn State

- **Screened for 171 different pesticides.**
- **Wax, foundation, pollen (trapped), Bee Bread, Royal Jelly**
- **Found: 73 different pesticides and 9 other metabolites**
  - **2007 finds:**
    - **8 pyrethroids 4 organophosphates, 4 carbamates, 3 neonicotinids, 2 insect growth regulators, 2 organochlorines, 1 chlorinated cyclodiene**
    - **13 fungicides, 6 herbicide**
    - **At least 14 of these are systemic pesticides**
- **2008: Up to 31 different pesticides per sample, 6+ average**
- **Only 3 samples lacked detections N=699 samples**
- **No direct correlation between pesticide residue and CCD!**

MDA Activities

- National Survey: Funded by USDA APHIS 2010

  One of 11 states, 25 yards to be sampled

  Trade implications: Federal Bee Act

  Survey for Tropilaelaps, Virus, Microsporidians?

- Right to Farm: Care of Farm Animals GAAMPS for Beekeeping

- Honeybee Certification for movement

- Bumble Bee Certification, Koppert Biological in Romulus

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