



Present & Future Beekeeping: "Almonds"

Gabriele Ludwig, Ph.D.
Senior Manager, Global Technical &
Regulatory Affairs
Almond Board of California





US Almond Crop



- **100% of US Almond Production in CA**
- **740,000 ac spanning the Central Valley**
- **Farm Value**
2007: \$2.4 bill
2008: \$2.2 bill
- **Production**
2007: 1.2 bill lbs
2008: 1.5 bill lbs
- **CA grows 80% of the world's supply**

The Almond Board of California (ABC) is a Federal Marketing Order under USDA-AMS which focuses on promotion of and research on almonds

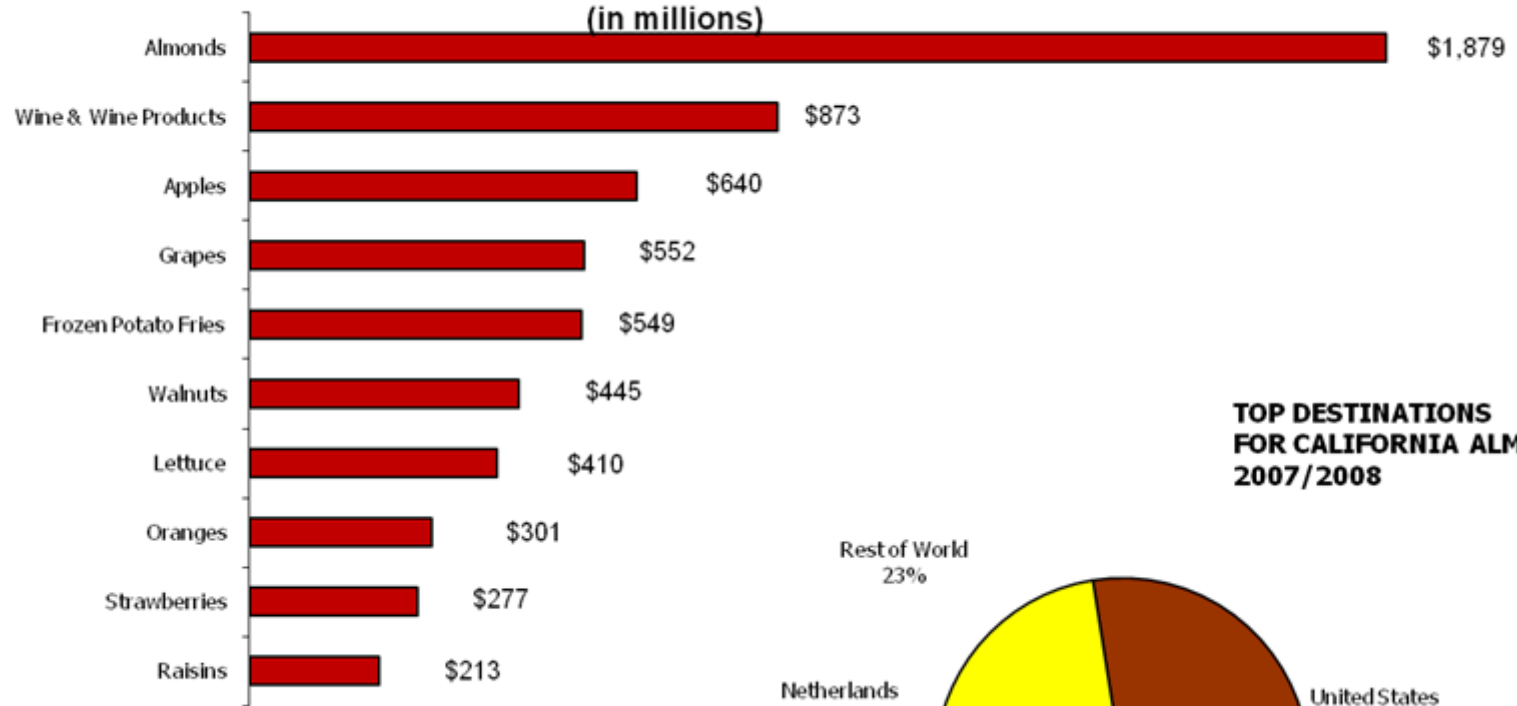




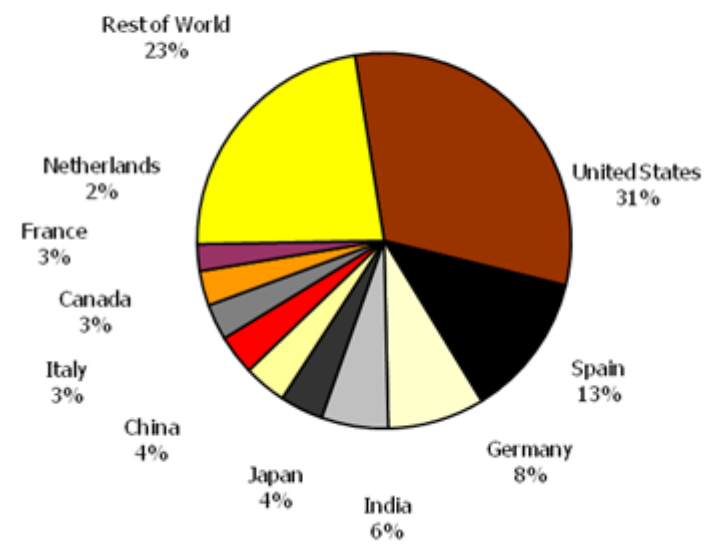
Almond Export Markets



**TOP TEN U. S. SPECIALTY CROP EXPORTS
BY VALUE 2007***
(in millions)



**TOP DESTINATIONS
FOR CALIFORNIA ALMONDS
2007/2008**





Why do Almonds Need Bees?

- Almond varieties are self-incompatible
- Each orchard is planted with 2 or 3 varieties of almonds to allow cross-pollination
- Rely on bees to move the pollen from one variety to another
- Need pollination services mid-February through mid-March





Pollination Costs to Almonds



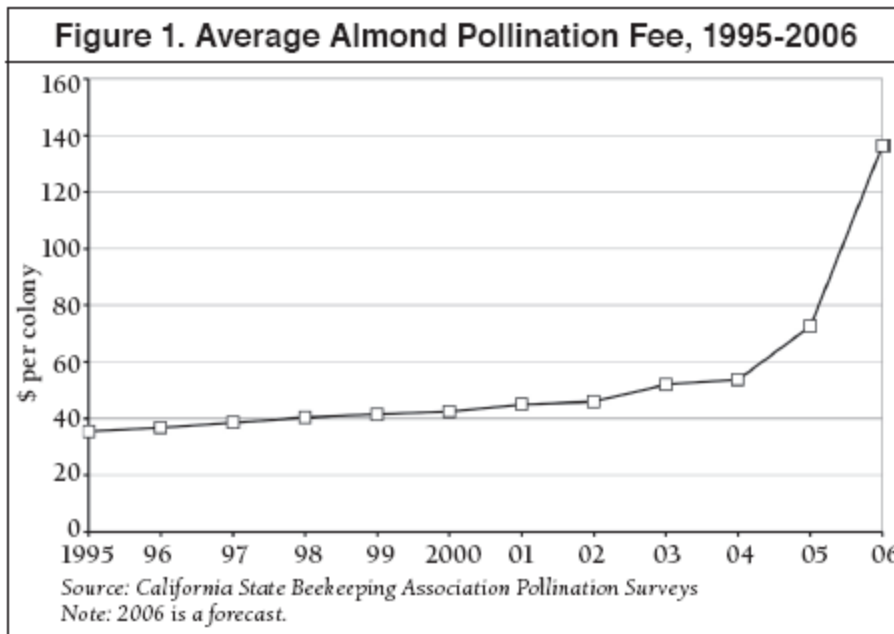
● Average Hive Rental Prices for Almonds

- 2004: \$ 52
- 2005: \$ 72
- 2006: \$137
- 2007: \$143
- 2008: \$149
- 2009 est: \$125-150



● Production Input Costs

- 2004: \$2,000-2,100/ac
- 2008: \$2,400-2,500/ac



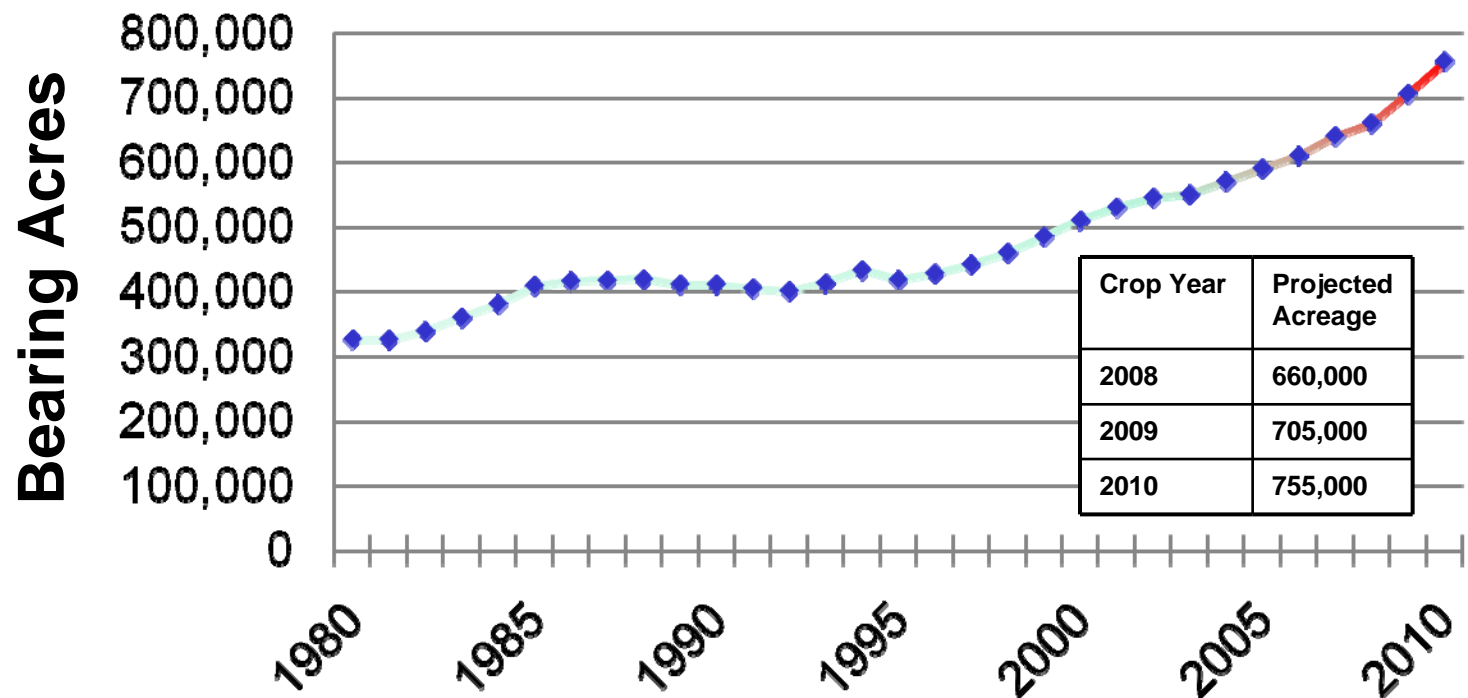
From: Bee-comonics and the Leap in Pollination Fees. DA Sumner & H Boriss, Giannini Foundation of Ag. Econ.(2007)



Why the change in hive prices?

● Bee Demand

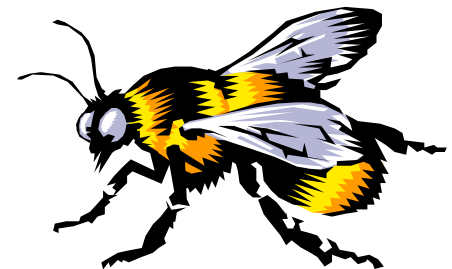
- Almond acreage has doubled in 25 years
 - By 2010, 755,000 bearing almond acres x 2 hives/acre = > 1.5 mill colony demand
- Almonds use 75% of the current available colonies



Why the change in hive prices?

● Bee Supply

- Considerable bee health challenges
 - Colony losses and honey bee health significant issues before CCD came on scene
 - Varroa mites, various pathogens, available forage, nutrition,
 - Colony Collapse Disorder (CCD)
- Honey imports have reduced honey prices
- *Almond pollination is critical to the viability of many beekeeping operations.*

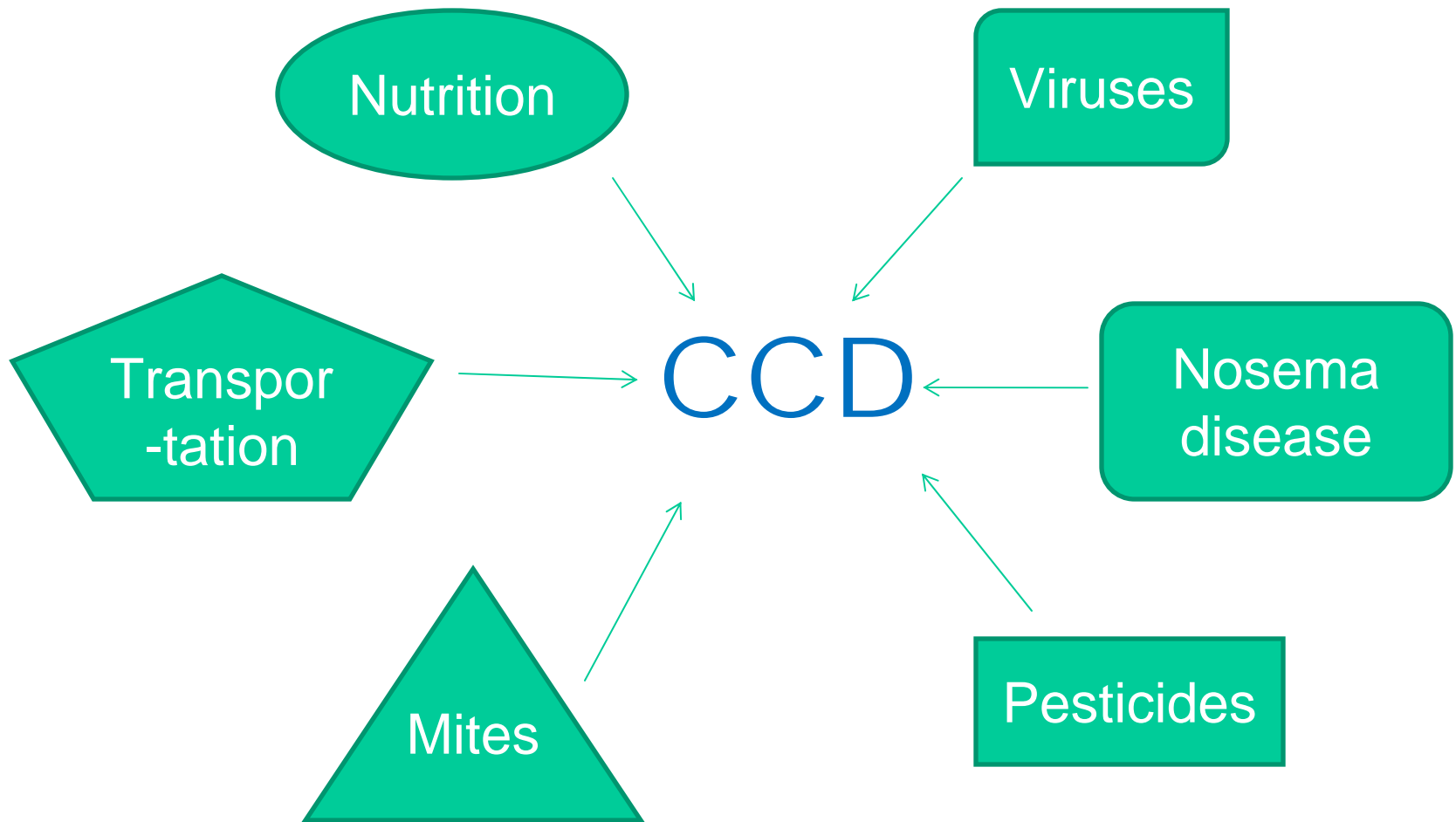




Colony Collapse Disorder (CCD) and Bee Health



No one “smoking gun”, rather a complex of different issues affecting bee health





2009 Outlook



● Bee Supply

- Varroa mites still a major factor
- CCD still a factor
 - In better shape this year than last year at this time

● Bee Demand

- Water restrictions due to drought and Endangered Species are reducing almond production in 2009
 - 200,000 ac in severe water restricted area of CA
- 2008 Almond prices declined
 - Largest crop ever
 - Increased value of \$ vs. other currencies
 - General economic uncertainty





Longer Term Outlook

- Self-compatible almond varieties are being developed
 - First one is in the market
 - Still need bees for pollination, just not as many
- Evaluating native bee options (Blue Orchard Bee) as a supplemental pollinator
- Honey Bees will still be critical to almond production



Almond Board Pollination Programs

- The ABC has funded pollination research since 1976
 - Over \$1.5 million invested in pollination research
- ABC research focused on Honey Bee Health, even prior to the advent of CCD
 - Funded research has addressed
 - bee nutrition,
 - pest and disease management, which now includes CCD
 - breeding
 - Cooperate with USDA-ARS, other bee research groups





almond board

OF CALIFORNIA

Committed to the mission of almonds becoming
"the healthiest specialty crop in the world."

Almond News

Jan. 8, 08 - [Almond Pest Management Alliance Honored by DPR with Second IPM Innovator Award](#)

Almond Suppliers/Exporters

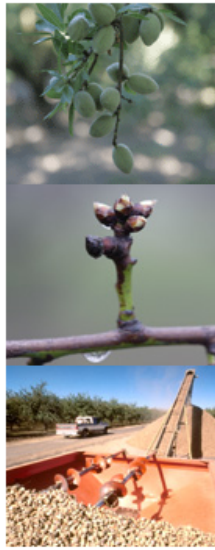
Locate an almond supplier/exporter.

Current Position Report

Monthly publication containing recent almond trade statistics.

Almond Almanac

Annual statistical report and summaries of Almond Board activities.



Almond Board Programs

- [International Issues](#)
- [Global Marketing](#)
- [Environmental Stewardship](#)
- [Food Quality & Safety](#)
- [Nutrition Research](#)
- [Production Research](#)

Almond News

- [Press Releases](#)
- [Environmental News](#)
- [International News](#)
- [California Almonds Newsletter](#)
- [Online Newsletter Sign-Up](#)

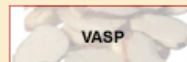


Almond Trade & Statistics

- [Almond Suppliers/Exporters](#)
- [Statistics](#)
- [Technical Information](#)
- [Almond Board Publications](#)

Industry Resources

- [E-Learning Modules](#)
- [Almond Fact Sheets](#)
- [Pollination](#)
- [Almond Recipes](#)

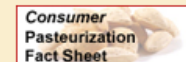


About the Almond Board

- [What is the Almond Board?](#)
- [Calendar of Events](#)
- [35th ANNUAL CONFERENCE](#)
- [Employment Opportunities](#)
- [2007-2008 Budget](#)

Other Almond Board Sites

- [Almonds Are In](#)
- [Get Your E](#)
- [PortfolioEatingPlan](#)
- [International Sites](#)



•Pollination Directory

