



# **Beekeeping in California an Overview of Colony Management**



# Gene Brandi Apiaries

## Los Banos, CA Since 1978

- Crop pollination – Almonds, Cherries, melons, berries
- Honey production
- Bulk bee production
- Colonies moved an average of six times per year in CA (350 to 1,000 miles per colony annually)
- 2,000 colonies during peak season (with my son)
- Lease bees from the Mid-West and New England for almond pollination







Gene Brand  
Apiaries

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# Annual Colony Migration Patterns

- February/March – Almonds, Cherries
- April/May – Sage, Eucalyptus, Citrus, Berries
- June – Wild Alfalfa, Toyon, Melons
- July/August – Melons, Cotton, Alfalfa
- September/October – Tarweed, Bluecurl
- Nov./Dec./January – Winter Yards





# Natural Bee Forage in Central California

- Sage (the best!), wild buckwheat, toyon, vetch, manzanita, Eucalyptus, star thistle, bluecurl, tarweed, Russian knapweed, mustard
- Filaree, fiddle neck, sticker weed, poison oak
- The Great Honey Years 1969, 1973, 1978,
- 1982, 1986, 1993, 1995, 1998, 2005, 2010, 2017
- Honey Crops extremely variable
- Avoid California Buckeye (poisonous to bees)

























# Irrigated Bee Forage

- Tree crops - Almonds, deciduous, citrus
- Cotton - #1 summer honey in San Joaquin
- Alfalfa – Seed and some hay
- Melons
- Berries
- Sunflowers, Safflower





















# Almond Pollination

- “The increase in demand for almond pollination is the best and worst thing that has ever impacted California beekeeping”
- 1969 - \$5 per colony rental fee
- 2017 - \$175 - \$200 rental fee
- 85-90% of the available commercially managed honey bees in the USA are needed to pollinate 1,000,000 acres of almonds in California
- 1.8 million colonies needed
- Self fertile varieties – still need some bees





# Crop Pollination (other than almonds)

- Cherry, apple, plum, avocado
- Raspberries, blackberries
- Melons
- We no longer pollinate alfalfa seed or chemigated watermelons due to pesticide issues





# California Citrus

- Primary citrus belt is in the southeastern San Joaquin Valley – Kern, Tulare, Fresno, Madera Counties – 200,000+ acres
- More than 50% of acreage is naval and valencia oranges
- App. 20% is mandarins (some covered)
- Mandarin Issues - seeds
- More than 250,000 bee hives annually
- Citrus Bee Protection Area (pesticides)
- Asian Citrus Psyllid - HLB









Major issues which continue to negatively impact honey bee colony health include:

- Varroa Mites
- Pesticides
- Nutritional Issues
- Diseases
- NOT cell phones or transportation



# Mites

- The Good Old Days Before Mites
- 1984 Tracheal mite
- 1987 Varroa
- 1992 Began Miticide Treatment
- We treat at least 3 times per year now
- Treatments with various products continue.....





# Pesticide Impacts

- 1970's – organophosphates, carbamates
- 1976 – Pennacap – M
- 1980's - Synthetic Pyrethroids
- 1990's – Neonicotinoids, IGR's
- 2000's - Sulfoximines, Spirotetramat
- Systemics, Chemigation
- Fungicides and IGR's – Brood damage
- Residuals and synergism
- OSU – How to Reduce Bee Poisoning from Pesticides (PNW 591)







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# California Apiary Registration Pesticide Notification

- Apiary Registration Required
- Registering locations for pesticide notification is voluntary
- Pesticide applicators should notify all registered beekeepers within one mile of their intended bee toxic applications
- Notification does not often result in bee hive movement





# Supplemental Feeding

- Feed Type 50 sugar syrup as needed using top feeder cans
- Often will feed during almond pollination to prevent starvation
- Protein feeding – July through October and again in January
- Probiotics
- Antibiotics?









- We used to produce an average of 200 to 250 million pounds of honey annually in the USA
- The last year we produced over 200 million pounds was in the year 2000 (221m)
- Bee health issues from varroa, pesticide exposure, poor nutrition, and diseases have caused greater colony mortality as evidenced by large winter and annual losses
- More splitting of colonies weakens them so they are not as efficient honey producers





- The beekeepers in the USA are working harder than ever to keep up their numbers of viable colonies
- Management costs are through the roof
- Queens, mite control, feed, labor and other costs are higher than ever
- Most colonies would not survive without beekeeper intervention





# Queens

- Normally purchase around 1,400-1,500 queens per year
- Mostly California queens but we get also get some from Hawaii
- Mostly Italians and a few New World Carniolans
- Queens cost \$24-\$26 in 2017







American Beekeeping  
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# American Beekeeping Federation

*Where you and your bees come first!*



# Questions?

[www.abfnet.org](http://www.abfnet.org)





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