

Citrus Growers and Beekeepers: Relationships, Communication and Information Exchange



NRLI Class XIII Fellows



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Florida Farm Bureau Federation



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Florida Citrus Industry

- 63% of US citrus
- 90% juice processing
- 10% fresh market
- \$1.1 billion crop on-tree value
- Total economic impact ~\$9 billion



Citrus Challenge

- Huanglongbing (HLB) or citrus greening discovered in Florida in 2005
- Caused by bacterium *Candidatus Liberibacter asiaticus*
- Vectored by the Asian citrus psyllid
- Delayed symptoms; results in malformed, bitter fruit, fruit drop and ultimate tree death



Avg. 200 M boxes/yr



133 M boxes last yr



114 M boxes this yr



Florida Beekeeping Industry

- 🐝 3,400 registered beekeepers
- 🐝 400,000 hives
- 🐝 Annual honey crop value of \$15 million
- 🐝 Top 5 beekeeping state



Beekeeping Challenge



United States colony declines



Beekeepers prefer citrus honey flow for Orange Blossom honey



Most oranges do not require honey bees for pollination



Citrus growers using more insecticides to fight citrus greening



Concerns of pesticide sprays and bee kills

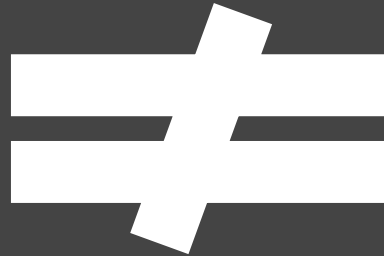


The Conflict

How to protect bees and citrus?



Critical applications of insecticides to control the citrus psyllid until long term solutions to citrus greening are available



Insecticide sprays contributing to colony declines

Stakeholders



Objectives

1. Provide a forum which will allow citrus growers and beekeepers to share their unique perspectives and respective challenges.
2. Identify barriers to effective citrus grower/beekeeper relationships.
3. Identify strategies to creating and/or maintaining effective citrus grower/beekeeper relationships.

Meetings

FLORIDA FARM BUREAU FEDERATION ADVISORY COMMITTEE MEETING AGENDA

CITRUS

February 24, 2014



- | | | |
|-------|---|---|
| 10 | Call to order
Invocation/Pledge
Introductions
Statement of Purpose
Reading of Minutes | Michael Carter
Michael Carter
Group
Jaime Jerrels
Jaime Jerrels |
| 10:15 | Practicum | Jaime Jerrels
Chandra Bowden |
| 12:15 | University of Florida/IFAS
Florida Citrus Mutual
Heartland Ag. Coalition | Dr. Jackie Burns
Andrew Meadows
Ray Royce |
| 12:30 | Lunch | |
| 1 | Tour of Greenhouse | Mike Kesinger
Ben Rosson |
| 2 | Adjourn | |

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FLORIDA FARM BUREAU FEDERATION ADVISORY COMMITTEE MEETING AGENDA

APICULTURE

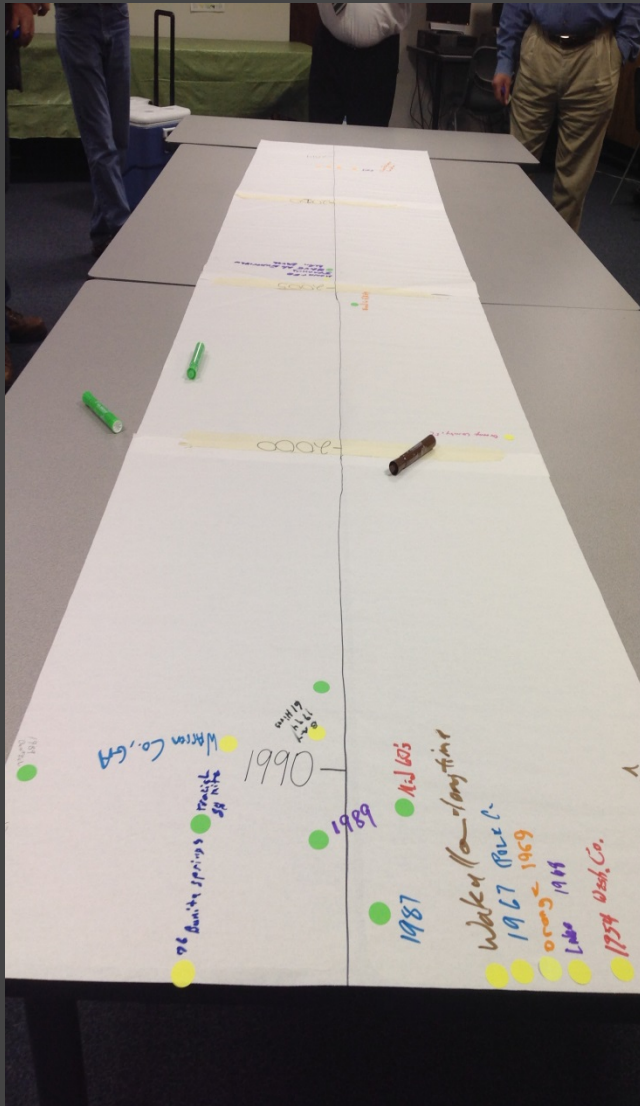
March 17, 2014



- | | | |
|-------|---|--|
| 12 | Lunch | |
| 12:30 | Call to order
Invocation/Pledge
Introductions
Statement of Purpose
Reading of Minutes | Keith Councill
Keith Councill
Group
Jaime Jerrels
Jaime Jerrels |
| 12:45 | Practicum | Jaime Jerrels
Chandra Bowden |
| 2 | AFBF Comm. Report
University of Florida/IFAS
Florida State Beekeepers
FDACS | Keith Councill
Dr. James Ellis
Dr. Malcolm Sanford
David Westervelt |
| 3 | Adjourn | |

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NRLI Toolbox



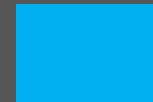
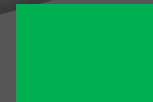
Participatory
Timeline



NRLI Toolbox



**Listing Ideas
&
Categorizing**



Citrus Results



Barriers

- Don't know beekeepers
- No communication
- Blooming year round
- No contracts
- Liability

Strategies

- Learn beekeeper
- Written contracts
- Map location of hives
- Use bee-friendly insecticides
- Lock gates to groves

Beekeeper Results



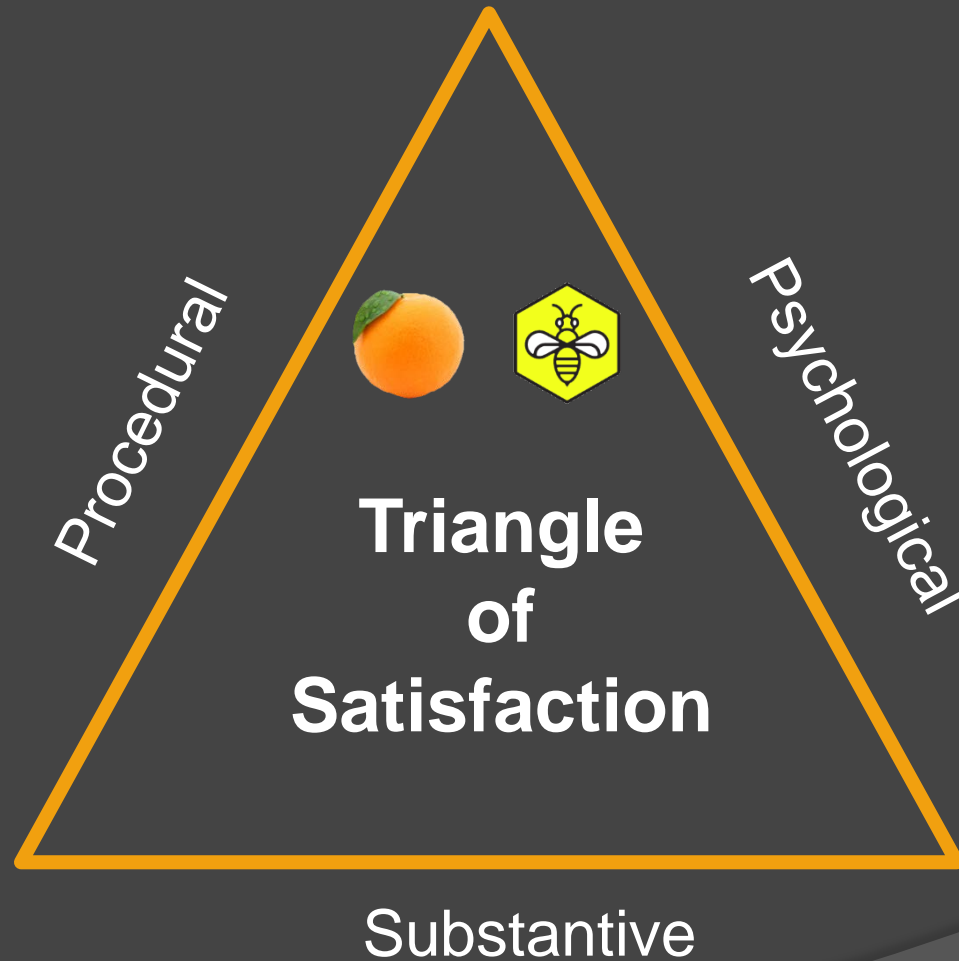
Barriers

- 🐝 No communication
- 🐝 Blooming year round
- 🐝 Difficult to move hives in short window

Strategies

- 🐝 Get to know citrus grower
- 🐝 Inform citrus grower when will be in grove and where
- 🐝 Move hives to other crops
- 🐝 Written contracts

NRLI Toolbox



Evaluation



Thank you for agreeing to complete our survey! This survey was designed to help us serve you better, and should take about 15 minutes to complete. There are no right or wrong answers. Please return your completed survey to a FFB staff member.

When answering the following questions, please try to indicate the degree to which you agree or disagree with the statements as they relate to how you naturally tend to view them. You will find some you strongly agree with and some you strongly disagree with; there is not a right or wrong response.

Please indicate your level of agreement or disagreement with the following statements.

I FEEL:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The use of pesticides is effective in the battle against citrus greening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Confident stating my opinion on the citrus-beekeeper issue	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That the tension between citrus growers and bee keepers needs to be addressed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The facilitators of the discussion were transparent in their motives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I had ample opportunities to express my opinions during the discussion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That the right people were at the table to carry out this discussion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The objectives of this discussion were presented clearly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The issue of bee death and pesticide exposure is important	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That all of the pertinent information was available to everyone at the same time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Reviewed by
Committee Chairs

Strongly Disagree: -2

Disagree: -1

Neutral: 0

Agree: 1

Strongly Agree: 2

Results



- 15 Members
- White males
- ~ 51 years
- 24 years in citrus
- 32 years in ag



- 10 Members
- White males
- ~ 60 years
- 35 years in beekeeping
- 34 years in ag

Participant Satisfaction

- Procedural satisfaction: Agree (1.02)
- Psychological satisfaction: Agree (1.14)
- Substantive satisfaction: Neutral (0.82)

- 🐝 Procedural satisfaction: Agree (1.28)
- 🐝 Psychological satisfaction: Agree (1.38)
- 🐝 Substantive satisfaction: Agree (1.33)

Strongly Disagree

-2

0

Strongly Agree

2



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