Organic Tree Fruit Pest Management and Marketing

Thursday afternoon 1:00 pm

Where: Gallery Overlook (upper level) Room A-B
CCA Credits: PM(0.5) PD(2.0)

1:00 p.m. Solving the Puzzle of Mating Disruption of Sesiid Borer Pests in Cherry, Peach, and Apple
- David Epstein, Tree Fruit IPM Integrator, MSU
- Luis Teixeira, Entomology Dept. MSU
- Matt Grieshop, MSU Organic Pest Management Specialist
- Larry Gut, Entomology Dept., MSU

1:20 p.m. Organic Options for Orchard Disease Management
- George Sundin, Plant Pathology Dept., MSU

1:40 p.m. Organic Tree Fruit Association: A New Voice for Organic Tree Fruit
- Harry Hoch, Hoch Orchard and Gardens, LaCrescent, MN

2:00 p.m. Grower Panel and Discussion: Marketing Strategies for Organic Tree Fruit
- Jim Koan, Al-Mar Orchards, Flushing, MI
- Steve Tennes, Association President, Charlotte, MI
- Harry Hoch, Hoch Orchard and Gardens, LaCrescent, MN

3:00 p.m. Organic Tree Fruit Association Meeting
SOLVING THE PUZZLE OF MATING DISRUPTION OF SESIID BORER PESTS IN CHERRY, PEACH AND APPLE ORCHARDS IN MICHIGAN


Borer Survey in MI Cherry
- 1-3 traps deployed in May-Sept, monitored weekly
- 5 peach sites and 4 cherry sites in WestCentral, MI
- 4 peach sites and 8 cherry sites in SW MI
- 26 sweet and tart cherry blocks - 15 weeks

Total # moths trapped in NW MI

Dogwood Borer (*Synanthedon scitula* [Harris])
- Pest of apple in eastern US
- Burr knots are preferred oviposition sites
  - M26, M9, MM106 rootstocks (also Mark w/some scions)
- Larval mining - tree decline / death
- Mounding for organic control (Gut et al. 2009)

2009 Pheromone Trials
- DWB Pheromone lure trials
- Isomate® DWB dose response trials
- Attract and kill trials (Mass Trapping)

2009 DWB Pheromone lure trials
- 2008 1mg Trécé® commercial DWB lure
- 2009 1mg Alpha Scents DWB lure (Z,Z-3,13-18Ac 0.88mg; E,Z-2,13-18Ac 0.06mg; Z,E-3,13-18Ac 0.06mg) (E,Z-3,13-ODDA)
- Isomate® DWB Dispenser (50mg) (Z,Z-3,13-ODDA 84.14%; E,Z-2,13-ODDA 6.3%; Z,E-3,13-ODDA 4.25%; E,Z-3,13-ODDA 0.45%; E,E-3,13-ODDA 1.93%)
- Red Septa loaded with 3 rates of Isomate® DWB
  - IS 1mg, IS 10mg, IS 20mg
- 1/4 ac plots
- 8 replications
- Delta traps (Trécé® Pherocon VI) ~1.2m-1.5m high
- Traps checked & rotated twice weekly

2009 DWB Lure Trial

2009 DWB Lure Trial 2009

Mean Moth Capture

Leskey et al. 2006
2009 Isomate® DWB Dose Response Trials
- 6 rates: 0, 4, 8, 25, 75 and 150 per ac
- 1/4 ac plots; 4 replications

2009 Attract and kill trials (Mass Trapping)
- 1/4 ac plots; 3 replications
- 2 treatments:
  - 14 traps/plot w/liners; plus 1 center trap w/liner (140/ha)
  - 14 traps/plot w/no liniers; plus 1 center trap w/liner
  - Traps placed ~1.2m-1.5m high (Trécé® Phercon VI)
  - Traps baited with 1mg lure (trinary blend, Alpha Scents)

(Leskey et al. 2009) - 5 & 20 traps/ha

DWB Mass Trapping
- high-density traps
- attract & remove
- no reorientation of males to pheromone source

Mechanism of disruption
- Behavioral observations
- Field-deployed cameras

Preliminary results of video trials using custom lures loaded with pure LPTB pheromone blends
- 30 mg lure over 6 days: 450 approaches, many by multiple moths (up to 4 moths at a time)
- 0.1 mg lure over 6 days: 11 approaches all by single moths.
**Mating disruption targeting PTB & LPTB**

- (E,Z)-3,13-octadecadien-1-ol acetate (EZA)
- (Z,Z)-3,13-octadecadien-1-ol acetate (ZZA)

- Small amounts of EZA do not affect PTB captures
- Small amounts of ZZA inhibit response of LPTB to lures baited with EZA
- Use separate dispensers for each species' pheromone, placed on opposite sides of the tree (Snow 1991)
- Effective mating disruption of LPTB using dispenser containing EZA and ZZA (Pfeiffer et al. 1991)
- Isomate® Dual Dispenser (40.0 mg EZA + 40.0 mg ZZA)

**PTB & LPTB 2008-2009 Trials**

- **Dispenser Efficacy Trials**
  - 3-2.6 ac plots; five replications
  - No difference in infestation between plots - Measured mean number of exuviae/50 trees prior to start of trials

- **Treatments**
  - Control - no disruption
  - LPTB + PTB - 150 dispensers/ac of each
  - Isomate® Dual - 150 dispensers/ac

- **Dose Response Trials**
  - 0, 4, 8, 25, 75, 150 dispensers/ha
  - 1/4 ac plots, replicated 4 times

**Inhibition of Male Orientation**

No difference between dispensers

**Dosage response**

Preliminary trial indicates reduced application rate may be effective

**Mechanism of disruption**

Competitive attraction

- Miller et al. 2006

**Larval Infestation Levels**

- Counted number of exuviae per 50 trees
- No reduction from 2008 levels in 2009
- DWB infestation measured in spring 2010
Conclusions

- Sessiid males highly attracted to dispensers
- Increased male response to high load lures
- Increased inhibition of male Sessiid orientation to traps with increasing dispenser density
- Isomate® Dual and DWB dispensers are effective at inhibiting male orientation to traps
- PTB & LPTB larval infestations not reduced after 1 year - DWB to be evaluated in 2010
- Mass trapping with high trap density and high load lures may prove to be an effective strategy for control of sessiid pests

Acknowledgements

- Julia Jones, Krista Buehrer, Matt Kulpa
- Grower cooperators
- Pacific Biocontrol
- Funders:
  - American Farmland Trust/USEPA
  - MSU Project GREEEN
Organic Tree Fruit Growers Association

- OTFA is a professional association dedicated to serving the interests of organic tree fruit growers and advancing the organic tree fruit industry through
- EDUCATION
- RESEARCH
- ADVOCACY

History

- Formed a Network 2004 at the MOSES conference in LaCrosse WI
- Created a yahoo groups list serve
- Organized some field days
- Deirdre Birmingham wrote a grant proposal to RMA
  - Funded newsletter, meetings, formal field days
- Created an advisory council
- Formed a group to work on creating a formal association, council became our acting board

Reason for an Association

- We want a representative voice for the Organic tree fruit industry
- Actively promote organic production
- Find funding and promote more organic fruit research in our region

Where are we now

- Filed articles of incorporation in Minnesota
- Set a membership fee and developed a mission statement
- Created a formal structure with a set of bylaws that was approved by our membership
- Have been awarded a USDA Specialty Crops Block grant

USDA Block Grant

Applied for a three year $80,000 with the Minnesota Department of Ag

We were awarded $40,000 for 1.5 years

What is funded by the grant

*Organic Tree Fruit Education and Research Collaborative*

Education Component

Research Component
What the Education component will fund over 1.5 years

- Two seminars
  - The first will deal with issues of transition and certification
  - The second will be determined by the board
- Four field days
- Create fact sheet on organic certification for tree fruit growers
- Six issues of the ‘Just Picked’ newsletter

Research Component

- Create a program that can enhance and develop new organic tree fruit research
  - Put together an organic tree fruit research Catalog with four areas of emphasis
    1. Current organic tree fruit research projects in the midwest and east
    2. Identify researchers and institutions interested in working on organic tree fruit projects
    3. Identify through surveys organic tree fruit growers willing and able to collaborate in research projects
    4. Identify research facilities with an interest in organic tree fruit research
  - Make this catalog available in print and online

What do we need to do

1. Put together an active board of directors to guide the association
2. Begin the process of attaining 501C3 status
3. Hire individuals or contractors to begin the grant funded projects
4. Continue the membership drive
5. Identify areas that need more research
6. Write grant proposals and coordinate more organic tree fruit research
The Organic Tree Fruit Association is a 501c3 non-profit organization dedicated to serving the interests of organic tree fruit growers and serving the organic tree fruit industry through education, research and advocacy.

You don't need to be a grower to join. If you want to learn more about organic tree fruit issues or would simply like to support organic tree fruit growers, please join OTFA as an Active Grower Member or as an Associate Member.

Please note: Active Grower and Active Non-Grower Memberships include full voting rights within the organization. Associate Membership does not include voting rights. All Membership levels receive a $10.00 discount at OTFA events.

☐ Active Grower Member = $50.00 Annual Fee, plus $1.00 per bearing acre (as indicated below)
☐ Active Non-Grower Member = $50.00 Annual Fee
☐ Associate Member = $25.00 Annual Fee

Name ___________________________ Farm Name ___________________________

Street Address _____________________________________________________________

City/Town ______________________ State ____, Zip ________________

Phone ______________________ Email ________________________________

How many acres do you currently have in organic (certified, non-certified or transitional) tree fruit production?

# of bearing acres ______ # of non-bearing acres ______

What types of tree fruit do you grow?

☐ Apples ☐ Pears ☐ Plums ☐ Pluots ☐ Cherries ☐ Apricot ☐ Other _________

What marketing strategies do you use?

☐ Direct to public from farm ☐ Farmers market ☐ U-Pick ☐ Wholesale

Do you offer value-added products?

☐ Sweet cider ☐ Hard cider ☐ Preserves ☐ Dried fruit ☐ Vinegar ☐ Other _________

What growing practices do you currently use? (Check all that apply.)

☐ Dual operation - both organic and conventional
☐ Use organic practices but not certified
☐ In transition to certified organic production
☐ Certified organic
☐ Low input conventional
☐ Other _________

Send this form with your check to:
OTFA c/o Bridget O'Meara 1223 St. Croix Street, Hudson, WI 54016
Mistakes in Marketing That I’ve Made in the Last 30 Years

Jim Koan
AlMar Orchards
Genesee County

In the Beginning ...

- 35 acres of low ground with no air drainage
- 15 acres of standard apple trees
- Few buildings and no cider mill

Today ...

250 organic acres + 150 acres organic apples

Retail market open all year (makes a 12-week profit)
  - Agri-business/hours
  - U-Pick with wagon rides
  - Festival experiences
  - Farmers’ Markets
  - High Tunnels

Today ...

- Wholesale (with no deliveries)
  *** After 30 years, I’m finally making a profit***
  (At the same time, I’m watching others lose their profit)
  - 2 wholesale produce delivery companies
  - Several CSAs
  - Co-ops (some travel great distances)
  - Custom orders

Today ...

- Cider Mill (backbone of my operation)
  - 5-7 days per week year-round, producing both sweet and fermented cider
  - 2/3 of apple production goes to making either fresh or fermented cider
  - The consumer’s mindset of coca-cola and pop can be a “plus”
  - The USDA Organic label sells cider!

*** After 30 years, I’m finally making a profit***
(At the same time, I’m watching others lose their profit)
Apple Storage Rooms
- 46,000 bushels within 6 rooms
  - Cold storage
  - Controlled-Atmosphere (CA) storage
  - Sweat room (heating or cooling)

Not true.
I’m a grower; not a marketer. But, I have to market to survive.
I wanted to grow apples; not buy them to sell to others.

Tried to grow a farm market
Too large of a petting zoo
Too much money spent on doing festivals
Didn’t cooperate with other farm market and growers enough

Relied too heavily on large accounts (should have reduced pricing to the smaller accounts that picked up at the farm / not the bigger accounts)
Didn’t build a big enough brand-name to differentiate from the competition

What I DID do right was balance my business demands with my family’s demands successfully.
I grew competitive, self-disciplined, focused, caring individuals that enjoy giving and sharing with their community.
Marketing Apples at Hoch Orchard and Gardens

What we grow at Hoch Orchard and Gardens

- 40 acres organic fruit operation
  - 30 acres of tree fruit
    - Apples
    - Plums
    - Apricots
    - Cherries
  - 10 acres of small fruit
    - Strawberries
    - Raspberries
    - Grapes
    - Blackberries
    - Blueberries

What is Hoch Orchard and Gardens?

- Vertically integrated fruit production and processing company
  - Grow 5000 to 10,000 bushels of fruit
  - Store
  - Pack
  - Process
  - Distribute (only the products we grow or make)

What we make at Hoch Orchards and Gardens

- Fresh apple cider
  - Apple-berry juice blends
  - 16 oz Single serving
  - 48 oz
- Sauces
  - Apple
  - Apple-berry blends
- Jellies

Juices

Sauces in 16oz jars
Jelly in 8oz jars

How Package our Fruit

- Berries, cherries, plums, and grapes are packed into clamshells
- Apples are packed into
  - 3lb poly bags US #1
  - 5lb poly bags US #2
  - 35lb bulk stickered loose pack

Fruit is stored and packed on the farm

Who buys our fruit?

- Small cooperative grocery stores
- Health food stores
- Restaurants
- One small distribution company

How we pack our fruit for direct store delivery

- 10x 3lb poly in a returnable wooden case
- 35lb bulk stickered apples in wooden case

How we ID cardboard cases for delivery to the warehouse
How we ID the wooden cases

Inventory Sheet

Variety | Inventory # | Ordered Package | Grade | Price
---|---|---|---|---
Haralson - Transitional | 33 | 10x3 | 1 | 50.00
Haralson - Transitional | 21 | | 1 | 70.00
Haralson - Transitional | 7 | 6x5 | 2 | 21.00
Regent - Transitional | 18 | 10x3 | 1 | 30.00
Regent - Bulk Bushel | 7 | | 1 | 40.00
Hoch Cider - Transitional | 22 | 3 | | 37.80

Sauces and Spreads

Variety | Inventory | Ordered | Package | Price
---|---|---|---|---
Apple Sauce | 8 | 1 | 12 pints per case | 30.00
Strawberry Apple Sauce | 18 | 1 | 12 pints per case | 30.00
Apple Cider Jelly | 3 | | 12 ½ pints per case | 30.00
Plum Cider Jelly | 1 | | 12 ½ pints per case | 30.00
Grape Cider Jelly | 6 | | 12 ½ pints per case | 30.00
Apricot Cider Jelly | 3 | | 12 ½ pints per case | 30.00
Raspberry Cider Jelly | 10 | | 12 ½ pints per case | 30.00
Strawberry Cider Jelly | 4 | | 12 ½ pints per case | 30.00
Grampa Jack's Orchard Honey | 10 | | 12 ½ pints per case | 30.00

Available at CPW

Haralson | 30 | 10x3
Haralson | 26 | Bulk
Regent | 17 | 10x3
Regent | 24 | Bulk

Where do we deliver our fruit?

- LaCrosse WI
- Viroqua WI
- Winona MN
- Saint Paul MN
- Minneapolis MN

Where does the Distributor send our fruit?

- Twin Cities metro area
- Through out MN as far as Grand Marais
- Northern Iowa
- Central Wisconsin
- UP MI to Marquette
How do we label?

Fruit packaging has a unique label/logo  Our processed products use a recognizable version

Point of Purchase signs with our recognizable logo

How does our distribution system work?

• We send an inventory/price sheet by fax or email to seven stores
• Stores fax, email, or call in the order the Day before delivery
• We deliver two to four times per week
• Stores are invoiced by us and payment is sent within 30 days

Orders are pulled in the cooler

Orders are palletized  Pallets are loaded onto the via pallet jack

Fruit goes on our trucks

Invoice and routes are set  Pallets are loaded
Jackie pulls the orders and Jack delivers the apples

Truck is loaded and on its way