TART CHERRY IPM
A Self-assessment Guide

Jean Haley
Haley Consulting Services, LLC
Bloomington, IN
**SPECIAL THANKS**

- Growers & industry representatives who reviewed the guide book and provided feedback
- Nikki Rothwell & Erin Lizotte
- RAMP management team
- Michigan State University Board of Trustees
- USDA Cooperative State Research, Education, and Extension Service
OVERVIEW

- Background – RAMP I & II
- Tart Cherry IPM Framework
- Self-Assessment Guide
- IPM Scores
RAMP I & II

- Increase the likelihood of IPM adoption and self-reported use of IPM
- Test and refine innovative project evaluation system that measures the adoption of biointensive IPM
IPM Framework

- Researched existing programs
- Defined the organizing structure
  - Strategies → Tactics → Tools
- Identify and weight practices
- Ground-truth
  - Grower & industry focus groups
SELF-ASSESSMENT GUIDE

- Assess your level of IPM
- Compiled resource of tart cherry IPM practices
- Plan to improve your operation
- Resource for MAEAP and EQIP
KEY SOURCES

- www.cherries.msu.edu
- 2012 Michigan Fruit Management Guide
- Fruit Crop Ecology and Management
- A Pocket Guide for IPM Scouting in Stone Fruit
WHAT’S IN IT?

- Reference guide
  - 4 Strategies
  - 21 Tactics
  - 73 tools
- Tally sheets
- Additional Resources
REFERENCE GUIDE

- 4 Chapters
- 1 tactic per page
- Tools and points

---

### Tool Chart

<table>
<thead>
<tr>
<th>Tool</th>
<th>4 Points</th>
<th>8 Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use cherry fly-traps</td>
<td>Stock-specific</td>
<td>2</td>
</tr>
<tr>
<td>Use pheromone-baited traps for monitoring insect pests</td>
<td>Stock-specific</td>
<td>2</td>
</tr>
<tr>
<td>Use pheromone-baited traps for monitoring insect pests</td>
<td>Stock-specific</td>
<td>2</td>
</tr>
<tr>
<td>Use pheromone-baited traps for monitoring insect pests</td>
<td>Stock-specific</td>
<td>2</td>
</tr>
<tr>
<td>Total Points</td>
<td></td>
<td>18</td>
</tr>
</tbody>
</table>

---

The date of first emergence, as well as subsequent activity, of CUF can be monitored using yellow-sticky traps baited with pheromone attractants. This information can influence timing of SCU control practices (e.g., burn SCU infested by fruit fly larvae). Proper trap placement is crucial to trap effectiveness. The exoin laboratory catches along with regional trapping information to determine control treatment timing. Deciding treatment decisions solely on regional information may lead to unnecessary insecticide applications. (adapted from a Pocket Guide for IPM scouts in Your State).

See pheromone are powerful chemical attractants used by female insects. These chemicals are detected by the males, allowing them to locate infested females. Some pheromone attract only one type of species, while others attract several related species. Pheromone traps are not intended for monitoring pest populations alone, but aid in determining if a pest is present and whether a population is increasing, peaking, or declining. This information is essential in determining when and how often to control actions.

Traps can be used to monitor certain behaviors of some pests, such as a tendency to fly before or after pest control. For example, CUF can be monitored using yellow-sticky traps baited with pheromone attractants. Proper trap placement is crucial to trap effectiveness. Deciding treatment decisions solely on regional information may lead to unnecessary insecticide applications. (adapted from a Pocket Guide for IPM scouts in Your State).

Flower traps are the most efficient means of monitoring plant carrossio activity in the season. These traps can be placed in outdoor areas in which carrossio is likely to be found. Monitoring traps with pheromone (e.g., mites or mites/birds) significantly increases trap catches, but the addition of pheromone baits only slightly increases (1.2:1) pheromone-catches in either trap.

Traps are a good indicator of likely pheromone trap pheromone in the area, and should be placed on the borders of fields where monitors or scouts have observed damage in past years. Current models for pheromone are available at Enviro-weather (http://www.enviroweather.com and others). Select a weather station from the map that is closest to your location.
TALLY SHEETS

- Facilitates scoring
- Reference guide page numbers
- Points
- MAEAP Fruit*A*Syst practices
### Summary Table

<table>
<thead>
<tr>
<th>Page</th>
<th>Strategy</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>52</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>80</td>
</tr>
<tr>
<td>7</td>
<td>3</td>
<td>76</td>
</tr>
<tr>
<td>7</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>7</td>
<td>Bonus</td>
<td>16</td>
</tr>
</tbody>
</table>

**Totals**: 219

To determine your current level of IPM, complete the summary table by recording your total points for each strategy. The page where you can find each strategy’s total is listed in the first column for convenience. After you have added up your total, find where it falls on the IPM scale using the table on the right. If you scored below 55 points, your current practices are not considered IPM. Scores between 55 and 109 are low IPM, meaning that you use some IPM practices, but there is room for greater use of IPM practices. Scores between 110 and 164 points are considered medium IPM. This is where the majority of tart cherry producers will find themselves. High or bio-intensive IPM include all scores above 165 points. If you find yourself here, you are among the top IPM producers for tart cherries in the US.

You can use the following pages to create an action plan to improve your IPM score.

### Tart Cherry IPM Scale

<table>
<thead>
<tr>
<th>IPM Level</th>
<th>Points Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not IPM</td>
<td>1 – 54 points</td>
</tr>
<tr>
<td>Low IPM</td>
<td>55 - 109 points</td>
</tr>
<tr>
<td>Medium IPM</td>
<td>110 - 164 points</td>
</tr>
<tr>
<td>High IPM</td>
<td>165 - 219 points</td>
</tr>
</tbody>
</table>
Action Plan for Improvement

Tools: “Receive advanced IPM training”

Reference guide: p 2

Notes: contact NWMHRS, find out dates & cost, sign up, go to training

Completion Date: February 20-21, 2012
ADDITIONAL RESOURCES

- Websites & publications
- EQIP references
- MDA GAAMPS for Pest Utilization and Pest Control
- MAEAP Crop*A*Syst for Fruit Producers
Survey Methods

- Pilot test
- Mailed to growers
- Reminder postcard
- 2nd Mailing
# RESPONSE RATES

<table>
<thead>
<tr>
<th>State</th>
<th>2004 (N=757)</th>
<th>2008 (N=599)</th>
<th>2010 (N=517)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utah</td>
<td>81%</td>
<td>57%</td>
<td>50%</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>60%</td>
<td>61%</td>
<td>49%</td>
</tr>
<tr>
<td>Michigan</td>
<td>54%</td>
<td>44%</td>
<td>32%</td>
</tr>
<tr>
<td>NY</td>
<td>44%</td>
<td>40%</td>
<td>28%</td>
</tr>
<tr>
<td>Overall</td>
<td>54%</td>
<td>45%</td>
<td>35%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Growing Season</th>
<th>2003 (N=401)</th>
<th>2007 (N=265)</th>
<th>2009 (N=174)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey total acres</td>
<td>32,405</td>
<td>27,072</td>
<td>21,373</td>
</tr>
<tr>
<td>NASS acres</td>
<td>37,300</td>
<td>37,412</td>
<td>37,412</td>
</tr>
<tr>
<td>Survey % of NASS</td>
<td>87%</td>
<td>72%</td>
<td>57%</td>
</tr>
</tbody>
</table>
SELF-REPORTED IPM USE

- **2004 (N=387)**
  - Yes*: 52%
  - No*: 25%
  - Not sure: 12%

- **2008 (N=261)**
  - Yes*: 63%
  - No*: 25%
  - Not sure: 12%

- **2010 (N=169)**
  - Yes*: 69%
  - No*: 20%
  - Not sure: 12%

Percentage of Respondents
**IPM Scores 2010**

- **N = 179 respondents**
- Mean = 108 points (SE = 2.5)
- Median = 111 points
- Mode = 98 points
- Range = 26 to 184 points

**Bar Chart**

- **No IPM (0-53 points)**: 7%
- **Low IPM (54-107 points)**: 41%
- **Medium IPM (108-161 points)**: 47%
- **High IPM (162-215 points)**: 6%

**Categories**

- No IPM (0-53 points)
- Low IPM (54-107 points)
- Medium IPM (108-161 points)
- High IPM (162-215 points)
IPM Scores 2004 – 2010

2004 (N=411) | 2010 (N=179)
---|---
N | 411 | 179
Mean | 45 | 50
Std. Error of Mean | .8 | 1.1
Median | 45 | 51
Mode | 42 | 51
Range | 7-81 | 5-78

Percentage of respondents:
- No IPM (0-20 points): 7% (2004), 2% (2010)
- Medium IPM (42-61 points): 39% (2004), 46% (2010)
STRATEGY 1 KNOWLEDGE & EDUCATION

N = 179 respondents

Strategy 1 tactics

Consult with & use the services of knowledgeable people for pest management decisions
- 36% respondents

Participate in USDA Natural Resource Conservation Service programs
- 15% respondents

Attend meetings & workshops, keep up-to-date on new information
- 4% respondents
Strategy 2 - Monitoring

Strategy 2 tactics

- Monitor soil & leaf health/quality: 54%
- Maintain pesticide and scouting reports: 52%
- Monitor for beneficials: 48%
- Monitor tree vigor: 47%
- Pest scouting during the season: 37%
- Monitor for weeds before making herbicide decisions: 32%
- Use sampling & monitoring for insect & disease management decisions: 32%
- Monitor the weather for disease & insect management decisions: 13%
- Use sampling & monitoring for mite management decisions: 9%
**Strategy 3 – Pest Suppression**

**Strategy 3 tactics**

- Manage and conserve moisture in the orchard: 94%
- Protect/conserve natural enemy populations & pollinators: 83%
- Practice resistance management: 70%
- Manage and maintain tree vigor: 68%
- Manage the orchard floor: 66%
- Use cover crops and/or companion plantings: 33%

N = 179 respondents
CONTACT INFORMATION

Jean Haley
Haley Consulting Services, LLC
311 N Clark St
Bloomington, IN 47408
812-320-0462

jean@usableknowledge.com