Vegetable Insect Management
How Teamwork Helped Move Vegetable IPM Forward

Rick Foster – Purdue University
and
Brian Flood – DelMonte Foods
Vegetable Insect Management

- First Edition published in 1995
- Focused on Midwest
- 15 chapter, 23 authors
- Second Edition published in 2005
- National focus
- 14 chapters, 32 authors
Guiding Principles

☐ Must be practical
☐ Provide only enough insect biology for pest manager to make decisions
☐ Recognize that pest managers must make decisions, whether researchers have all the answers or not
☐ Must be easy to read
How the IPM World Changed From 1995 to 2005

- Internet
- Cell phones
- CDs
- GPS readily available
- Downsizing of Extension programs
- GMO crops
- FQPA
- Seed treatments
- Reduced risk insecticides
Vegetable Insect Management
Features

- Combined effort of academia, industry, and regulatory personnel
- Focuses on total management system
- “Act local, think global” mindset
- Handy Dandy Chart/Treatment Window
Chapter Format

- Highlights key insect pests per region in 13 specific vegetable crop groups
- Geographic balance in authorship
- Designs the management around the key pests
- 250 color photos with charts, illustrations, pictures and summary boxes to allow quick reference and resources
- Web links for additional information
# New Foliar Insecticide Options:

<table>
<thead>
<tr>
<th>Primary Bloom to Harvest Insecticide</th>
<th>Years of Use Applications</th>
<th>Average COST PER AP</th>
<th>PEST</th>
<th>Pest On plant BEFORE treatment KNOCKDOWN CONTROL</th>
<th>Ap Date</th>
<th>Pest On plant AFTER treatment RESIDUAL CONTROL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Parathion &amp; Sevin 80S</strong></td>
<td>1960 - 1980</td>
<td></td>
<td>ECB - adults</td>
<td>7 6 5 4 3 2 1 0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4X - 8X</td>
<td></td>
<td>ECB - larvae</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ACTUAL: $5.25</td>
<td>CEW - adults</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2002 $ : $11.50</td>
<td>CEW - larvae</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Orthene / Penncap Programs:

### Orthene 75S

<table>
<thead>
<tr>
<th>Years of Use</th>
<th>ECB - adults</th>
<th>ECB - larvae</th>
<th>CEW - adults</th>
<th>CEW - larvae</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980 - 2000</td>
<td>ECB - adults</td>
<td>ECB - larvae</td>
<td>CEW - adults</td>
<td>CEW - larvae</td>
</tr>
<tr>
<td></td>
<td>ACTUAL: $6.25</td>
<td>ACTUAL: $8.62</td>
<td></td>
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</table>

### Penncap M

<table>
<thead>
<tr>
<th>Years of Use</th>
<th>ECB - adults</th>
<th>ECB - larvae</th>
<th>CEW - adults</th>
<th>CEW - larvae</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985 - 1998</td>
<td>ECB - adults</td>
<td>ECB - larvae</td>
<td>CEW - adults</td>
<td>CEW - larvae</td>
</tr>
<tr>
<td></td>
<td>ACTUAL: $4.75</td>
<td>ACTUAL: $6.55</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Capture 2EC

<table>
<thead>
<tr>
<th>Years of Use</th>
<th>ECB - adults</th>
<th>ECB - larvae</th>
<th>CEW - adults</th>
<th>CEW - larvae</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990 - 2003</td>
<td>ECB - adults</td>
<td>ECB - larvae</td>
<td>CEW - adults</td>
<td>CEW - larvae</td>
</tr>
<tr>
<td></td>
<td>ACTUAL: $5.75</td>
<td>ACTUAL: $5.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2003 $ : $5.75</td>
<td>2003 $ : $5.75</td>
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</tbody>
</table>

**1st Edition**

**2nd Edition**
New Control Tool: thiamethoxam (Cruiser®) Seed Treatment

- Seed Corn Maggot
- Potato Leaf Hopper
- Bean Leaf Beetle
- Soybean Aphid

April May June July August Sept

Totally eliminated the need of organophosphate (OP) seed treatments and significantly reduced (+90%) foliar OP insecticides prior to bloom. Net result increased yields, resulted in less cost, and, most importantly good business.
Weather & Insect Migration

Applied to North America, east of the Rocky Mountains

A Tutorial
by Michael Sandstrom and Tracy Flood Bramall

click to begin
GMO Field Crop Impact

Round Up Ready volunteer corn defeats the purpose of crop rotation

Year one

Year two

Year three
Wisconsin European Corn Borer Fall Survey Results 1954-2004
Statewide Average Number of Borers per Plant

GMO Field Crop Impact

Krista Lambrecht, Plant Pest & Disease Specialist
Wisconsin Department of Agriculture, Trade & Consumer Protection
Pest Survey Program  www.datcp.state.wi.us
Vegetable Insect Management

Handy Dandy Chart implementation

- Tutorial on CD
- Chapter provides a step-by-step process in Treatment Window and Handy Dandy Chart development
How to Build a Handy Dandy Chart
How to Build a Handy Dandy Chart
Green Beans

1. Planting Schedule
2. Pest Occurrence
3. Treatment

May
- PLANT
- Bud
- Beans
- HARVEST

June
- Bud
- Beans
- HARVEST

July
- Bud
- Beans
- HARVEST

Aug
- Bud
- Beans
- HARVEST

Treatment Window:
- European Corn Borer

Key:
- Treatment Window
- Pest Occurrence
- Treatment
Vegetable Insect Management

Using a total management system

- Tutorials on CD
- Encouraging people to look beyond the field
Vegetable Insect Management

CD Contents:
- Tutorials
- Reference Materials
- Regulations
- Application
Vegetable Insect Management

Although the 1st Edition had emphasis on the Midwest United States, it was used around the world. It is our hope that this 2nd edition will be a new tool that will help reinvent the thought process in Vegetable Insect Pest Management.

Rick Foster & Brian R. Flood-editors
Thanks

- Meister Media Worldwide
- Authors
- Photographers who let us use their images
- DelMonte Foods
- Purdue University