Adoption of IPM

Dr Paul Horne
IPM Technologies Pty Ltd
IPM

• Advantages well known
• Promoted by many agencies
• This Symposium too.

• Levels of adoption?
  – Slow
  – Low
IPM Technologies Pty Ltd

• Australia - base
• Help farmers to adopt IPM strategies
• Develop and Implement IPM strategies as needed
  – Invertebrate Pests
  – Horticulture
  – Cropping
  – Pasture
  – www.ipmtechnologies.com.au
Advantages and Disadvantages of IPM

- **Advantages of IPM**
  - Reduced dependence on pesticides
  - A slower development of resistance to pesticides
  - Increased safety to farm workers, spray operators and the community
  - Reduced contamination of food and the environment
  - Improved crop biodiversity

- **Disadvantages of IPM**
Advantages and Disadvantages of IPM

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  • Reduced dependence on pesticides
  • A slower development of resistance to pesticides
  • Increased safety to farm workers, spray operators and the community
  • Reduced contamination of food and the environment
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• Disadvantages of IPM
  • More complex than control by pesticide alone and requires a shift in understanding
  • Requires a greater understanding of the interactions between pests and beneficials
  • Requires a greater understanding of the effects of chemicals
  • Increased time and resources
  • Level of damage to the crop may initially increase during transition to an IPM programme, in some horticultural crops
Pesticides vs IPM
Bajwa and Kogan 2003

- **Pesticides**
  - Compact technology
  - Easily incorporated into regular farming operations
  - Promoted by private sector
  - Aggressive sales promotion supported by professionally developed advertising campaigns
  - Results of applications usually immediately apparent
  - **Consequently:** pesticide technology was rapidly adopted

- **IPM**
Pesticides vs IPM
Bajwa and Kogan 2003

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- **IPM**
  - Diffuse technology with multiple components
  - At times difficult to reconcile with normal farming operations
  - Promoted by public sector
  - Promoted by extension personnel usually trained as educators not as salespersons
  - Benefits often not apparent in the short term
  - Consequently: Adoption of IPM technology has been slow
How do we change this?

- The answer is available
- Proven
- Scientifically sound
- 3 examples from 2 countries in vastly different crops here
How to achieve rapid adoption

• Pesticide (Insecticide) applications familiar, locally proven, offer immediate (or quick) results

• IPM needs to be demonstrated to be easily used, proven locally and give results within the life of a crop

• That is, make IPM as easy as pesticide use
3 Examples of Rapid Adoption

- Strawberries in Victoria, Australia – 100% adoption in 4 years (entire industry)

- Arable crops – Victoria, Australia – 2 projects – 100% adoption over 3 years (all participants)

- Arable crops – New Zealand – 2 projects – 100% adoption over 3 years (all participants)
1. Strawberry Crops
Victoria, Australia

- Crisis
- Western flower thrips and two-spotted mite
- Other minor pests
- Pesticide based strategy
How to control all pests?

• Need agreed framework
• What are the Pests?
• Set of beneficials
  – Commercial
  – Natural
• Cultural options
• Compatible chemicals
• Try it out and Refine!
WHAT WE DID

• Looked at all pests and all pesticide inputs
• Worked with interested growers
• Identified a range of beneficial species
• Looked at releasing commercially produced beneficials
• Looked at cultural controls
• Looked at compatible pesticides
• Implemented IPM during development phase
Cultural Control Options

• Includes:
• Canopy management
• Grassy rows
• Remove leaf material (1st Year of IPM only)
Chemical Sprays

• What is compatible?
• Use as Support, Not Primary Control
• Almost all sprays disrupt some beneficials
  – Rate and Frequency of Sprays
  – Type of Spray Equipment, speed of tractor
IPM Strategy

• 100% Adoption in 4 years (entire industry)
• growers
Australian Model -
Spain, Canada, Denmark interest
2. Arable Crops, Victoria, Australia

- *No Crisis*
- Pesticide based strategy

- Find participating growers
- Identify range of pests
- Try out an agreed strategy on a paddock
## IPM Strategy

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Adoption of IPM in Arable Crops

- Year 1  – 5 to 13% of area of farm
- Year 2  – 5 to 13%
- Year 3 - 100%
- Participating farmers
3. New Zealand – Arable Crops
No Crisis
Demonstrating the feasibility of IPM in arable cropping systems in NZ.

• (Abie Horrocks Poster)
• Pesticide based approach

• 6 Sites (farmers)
• Paired paddocks at each site
• South Island New Zealand
IPM in NZ Arable Crops

• Agreed strategy to test on the range of pests nominated
• No broad-spectrum insecticides
• Advice when required
Small group: Each visited the others farms – Trial Blocks
Uptake

- First year: ½-1 paddock IPM
- Third year: 85 – 100% of paddocks IPM

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Participatory Research

• Who is the research for?
• Entomologist?
• Farmer?
• Research and Extension together
Rapid Adoption of IPM?

• Be willing to work with and develop solutions that are tailored for individuals
• Be realistic, many solutions that may control pests are just not practical.
• Advisors often more cautious than farmers
Rapid Adoption of IPM?

• Answer

• Collaboration between farmer and entomologist from the start of any project

• Entomologist to provide immediate advice on any farmer question about pests
  – *If the entomologist cannot advise then why expect the farmer to change?*
Acknowledgements

• Jessica Page
• Abie Horrocks (NZ)

• www.ipmtechnologies.com.au