Reducing Pesticide Risk and Measuring the Success of IPM Adoption in Canada

Tim MacDonald - Agriculture and Agri-Food Canada

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The Pest Management Centre
Agriculture and Agri-Food Canada

- Created in 2003
- Part of the Agricultural Policy Framework (APF)
- Three programs
  - Minor Use Pesticides
  - Minor Use Research
  - Pesticide Risk Reduction

www.agr.gc.ca/prrmup
The Pesticide Risk Reduction Program

- Cooperatively managed by AAFC and PMRA
- Develop commodity specific risk reduction strategies
- Providing funding for projects
  - Research
  - Education
  - Demonstration
- Providing a link between the growers and the regulator
Key Attributes of the Program

• National in scope and perspective
• Voluntary, grower led process
• Success depends on the participation of proactive grower organizations
Information gathering

- CROP PROFILE
- STAKEHOLDER CONSULTATION
- ISSUE DOCUMENT
- IDENTIFY STAKEHOLDERS

Prioritization / Action

- STEERING COMMITTEE MEETINGS
- IMPLEMENTATION
- STRATEGY DOCUMENT
- ACTION ITEMS

Outcome

- ENHANCED SUSTAINABILITY
- RISK REDUCTION

Assessment

- PERFORMANCE INDICATORS
- MEASUREMENT OF GROWER ADOPTION

ESTABLISH GROWER INTEREST

Prioritization / Action

Prioritization / Action

Outcome

Outcome

Assessment

Assessment

Prioritization / Action

Prioritization / Action

Outcome

Outcome

Assessment

Assessment

Prioritization / Action

Prioritization / Action

Outcome

Outcome

Assessment

Assessment
## Status of Progress: Priority Crops

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<th>Prioritized Issues Document</th>
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Risk Reduction Strategy Support

Three funding initiatives

- Pesticide Risk Reduction Strategies
- Minor Use Research
- Biopesticide Support
Success Stories:
Apple and pear fire blight strategy

- Literature review
- Steering committee
- Strategy developed
- Key issues identified
- Joint EPA/PMRA review of two biopesticides
- Workshops on IPM held across the country
Tracking Success

• Why measure pesticide use and IPM adoption?
• What sources of data are already available?
  – Provincial surveys
  – Private surveys
  – Sales information
  – Statistics Canada Surveys
  – Research surveys
• Consulted with other Federal government departments regarding data needs
Development of a new survey

- Available data did not meet requirements
- Decided to develop a new survey:

**Crop Protection Survey** (CPS)

- Designed to measure pesticide use and IPM adoption
Considerations

- Respondent burden
- Accuracy, complexity and cost
- Qualitative practice selection and integration
- Quantitative measurements
- Linkages
Methods used to measure IPM adoption

1. Count the practices
2. Intensity of pesticide use
3. Response to system change
Response to system change

• System changes:
  – Pests, strains, pest pressure
  – Pesticide registrations (regulations and business decisions)
  – Varietal resistance
  – Pest resistance
  – Tactics or strategies for suppression or control

• Possible responses:
  1. Increase reliance on moderate to high-risk pesticides with little change to IPM system
  2. Increase the number and complexity of pest management practices
Survey methodology

- Winter 2005/06
  - apple, carrot and grape
- Face-to-Face interviews
- Done at the growers home or business
- 45-60 minutes in duration
- Ask growers to have records on hand
- Grower association support
### 2005 Crop Protection Survey

**Apple Growers**

**Step 3:** Questions about herbicide, insecticide or fungicide applications from January 1 to December 31, 2005 on the orchard selected in Step 2.

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Innovative and Sustainable Pest Management
La Lutte antiparasitaire durable et innovatrice

- Perception of pest pressure

17 In 2005, for the selected orchard, was the incidence of **INSECTS** compared to the last five years ...?  

(Check one circle only.)  

1. Much less  
2. More  
3. Less  
4. More  
5. Much more  

If the answer is "More" or "Much more", continue to question 18. Otherwise → Go to Question 19.

- Plans for next season

18 What do you plan to do during the next growing season to reduce your **INSECT** problems? Will you ...? (Check all that apply)

- Scout for insect or damage presence
- Use forecasting systems
- Switch to a different insecticide
- Apply an additional insecticide
- Take actions to disrupt insect reproduction or development
- Increase rate of insecticide applications
- Other, specify: ____________________________

- New pests

19 In 2005, did you deal with any **NEW INSECTS** in this field?  

1. Yes  
2. No  

If yes, what was the main insect? ____________________________
What was done to control this most prevalent pest?

20 In 2005, for the selected orchard, what was the **MOST PREVALENT INSECT** you had to control?

If there was no significant insect problem, enter "0" and skip to Question 22.

21 What did you do to control the **MOST PREVALENT INSECT**? Did you ...? *(Check all that apply.)*

- Apply insecticides throughout the growing season
- Time insecticide applications to target the insect at different development stages

**What were the developmental stages?**

*If not applicable, go to next choice: Box 832*

- Early nymph or egg stages
- Larval or nymphal stages
- Adult

- Take other steps to disrupt the reproduction of this insect
- Take other actions to disrupt the morphological development of this insect
- Release beneficial organisms to control this insect
- Manage this orchard and its surrounding area to attract beneficial organisms
• Actions taken to prevent resistance development
• Perception of resistance
Results

• Data will be available in July, 2006
• Comparison with other data sources
  – Purchased data sets
  – Focus group “expert poll” data
  – Interview “expert poll” data
  – Sales data
  – Crop insurance data
Improvements

• Debriefing sessions with interviewers
  – Survey well received
  – Respondent burden a concern
  – Improvements are suggested

• Analysis of results
Next steps

• Published results
  – Statistics Canada publication
  – Crop Profiles to be updated

• Plan for winter 2006/07 survey
  – potato, canola and wheat