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PMRA Report to the Canadian Association of Professional Apiculturists

2012 ACTIVITIES PEST CONTROL PRODUCTS

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Canada 

Outline

- New Registrations
- Submissions Under Review
- Registered Products
- Incident Reporting
- Canadian Bee Mortality Incidents- 2012
- Moving forward- Planning, Resources- 2013 and on
- International Activities



New Registrations

- Mite Away Quick Strips (46.7% formic acid, Reg. No. 30324): Registered January 18, 2012 for control of varroa and tracheal mites in honey bee hives, includes application during honey flow.
- Permanone Multi-Purpose 10% E.C (10% permethrin): User Requested Minor Use Label Expansion (URMULE) submission to expand the Permanone Multi-Purpose 10% EC label to include suppression of small hive beetle in soil around honey bee hives was registered on February 17, 2012
- Apivar (3.3% amitraz): Registered with conditions on August 27, 2012 for control of varroa mite in honey bee hives.



Submissions Under Review

- **Permethrin:** A User Requested Minor Use Label Expansion (URMULE) submission is under review to expand the Perm-Up Emulsifiable Concentrate Insecticide label to include suppression of small hive beetle in soil around honey bee hives.



Other Registered Honey Bee Products

- Varroa Mite: Apistan (10.25% fluvalinate-tau), CheckMite+ (10% coumaphos), Oxalic Acid Dihydrate (99.65%), Thymovar (15 g thymol per wafer), Formic Acid 65%
- Tracheal Mite: Tracheal Mite Treatment (65% formic acid), Formic Acid 65%
- Small Hive Beetle: CheckMite+ (10% coumaphos)



Pesticide Incident Reporting

- A pesticide incident is any unintended or unexpected effect to human health, domestic animal health or the environment, resulting from exposure to, or use of, a pesticide. This includes honeybees.
- A pesticide incident could be the result of intentional or accidental misuse of a pesticide product.
- Pesticide incidents are entered in the PMRA database, and are posted to the PMRA Public Registry, accessible on the PMRA website. Personal information protected under the *Privacy Act* is not included in the Public Registry.



What happens to the reports?

- The PMRA database is regularly searched for any type of pattern related to a specific pesticide. If the result of a search indicates that there is a trend for a particular pesticide, Health Canada evaluates the information in conjunction with scientific literature.
- If evaluation identifies a safety issue, appropriate action is taken. Actions can range from minor label changes to discontinuation of the product.



Incident Reporting and Pollinators

- Voluntary reporting of pollinator/bee incidents are highly encouraged as they allow the PMRA to more accurately understand potential risks to pollinators/bees in the field.
- Detailed incident reports and conclusions of the incident report evaluations can be obtained on the PMRA website in the Public Registry.



How to report a pesticide incident

- Report any incident related to a pesticide to the manufacturer using the contact information available on the pesticide label (manufacturers are required by law to report to Health Canada any incident information they receive related to their product)

AND/OR

- Report the incident directly to Health Canada by completing the appropriate forms for the public, available on the PMRA website, or contacting Health Canada's Pest Management Regulatory Agency directly by email or phone.
- **2013 Incidents should be reported to PMRA Regional Offices**
- **Anyone may submit an incident report to the PMRA.**
 - Provinces may submit incident reports



Pollinator Incident Reports

- The PMRA incident reporting programme was started in 2007. From 2007 to 2011, only 5 reports involving honey bees were submitted to the PMRA. All of these reports were from Quebec.



CANADIAN BEE MORTALITY INCIDENTS - 2012



Canadian Bee Mortality Incidents- 2012

Province	IR-BK	IR-BY	Seeding	Spray	Report linked to:
Ontario	38 1	~205 1	X	X	Planting of corn seed ; Spray-soybean (dimethoate)
Quebec	1 1	8 9	X	X	Planting of corn seed Spray- orchards (phosmet)
Nova Scotia	1	2		X	Spray- orchards (dimethoate, carbofuran, captan, captafol)
Alberta	3	>4		X	Canola seed/spray (carbaryl); other
Manitoba	1	1		X	Spray- alfalfa (dimethoate)
Saskatchewan	6	>12		X	Spray- alfalfa, canola, wheat (dimethoate, clorpyrifos, etc)

IR= Incident Report; BK=beekeeper; BY= beeyard



Ontario Bee Mortality Incidents- 2012

- Ontario ~205 incidents (affected beeyards); involving ~38 beekeepers between April and May
- Timing coincided with planting of treated corn (clothianidin or thiamethoxam)
- Response to incidents by Inspectors from Health Canada PMRA and the Province (OMAFRA, MOE)
- Over 200 samples collected and submitted to the PMRA laboratory for residue analysis (bees, vegetation, pollen, other)



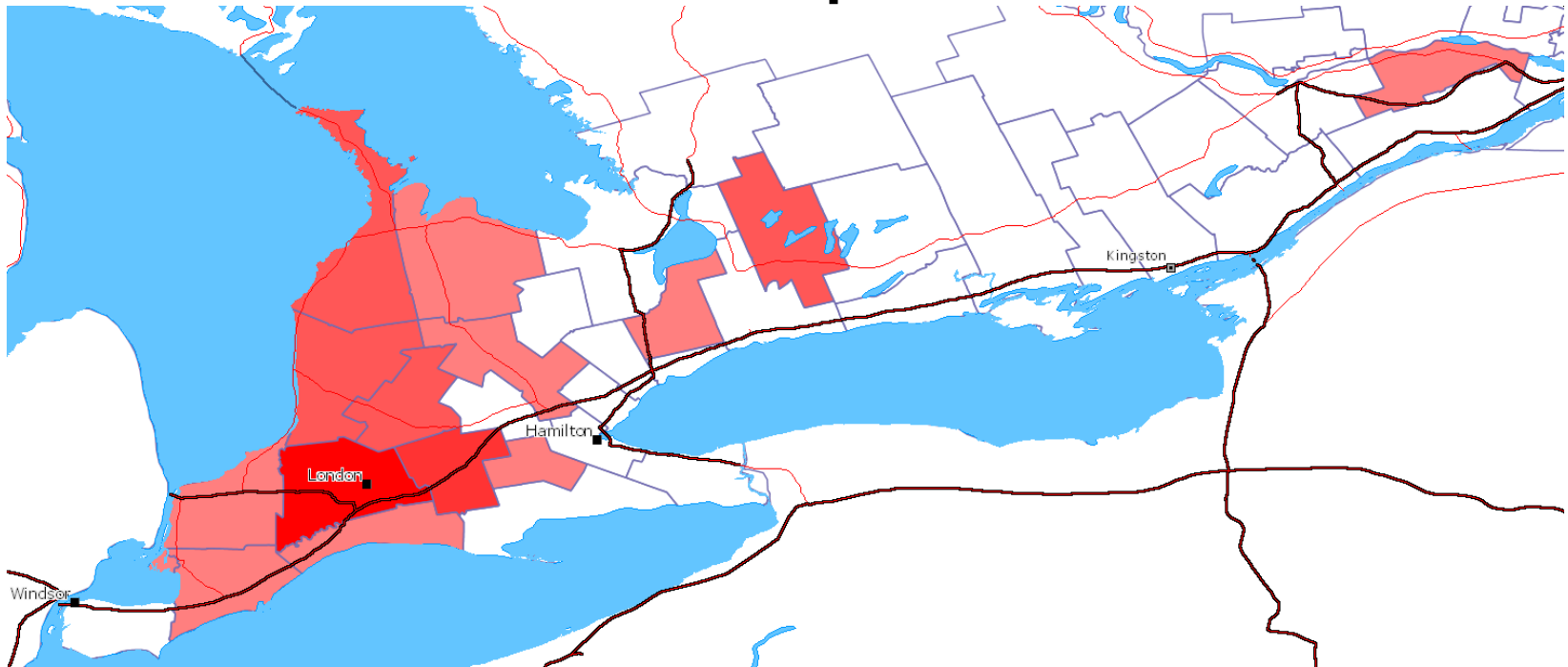
Bee Mortality Incidents- 2012

Residue analysis- bee samples

- 127 dead bee samples (25 BK)
 - Clothianidin detected in ~70% of dead bee samples (20 BK)
 - (0.001 – 0.024 ppm, 3 with trace)
- 20 live bee samples (4 BK)
 - Clothianidin detected in 1 sample (1 BK)
 - (0.001 ppm)
- No detections of thiamethoxam, however:
 - Clothianidin is a transformation product of thiamethoxam
 - Thiamethoxam was detected in a similar incident reported in Quebec (Thiamethoxam 0.0002-0.0008 ppm; Clothianidin 0.0021 -0.0059 ppm)
- Various other pesticides also detected in some samples

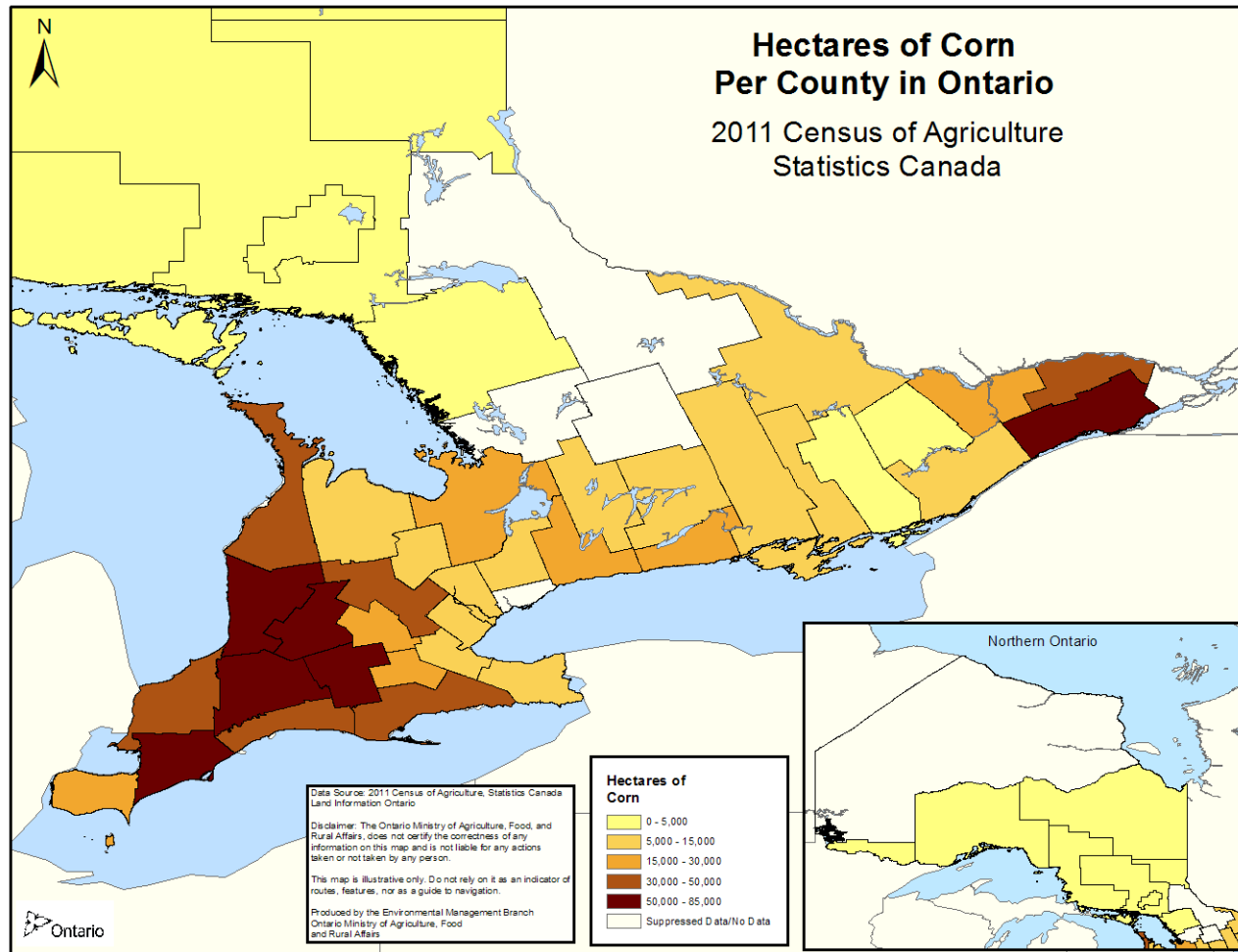


Map of Ontario Bee Mortality Incidents Based on Beekeeper location



The darker colour indicates that a larger number of beekeepers reported incidents in that county





Ontario Bee Mortality Incidents- 2012 Preliminary Observations

- Based on the preliminary information evaluated to date, there is an indication that pesticides used on treated corn seeds may have contributed to at least some of the 2012 spring bee losses that occurred in Ontario
- There is still additional information being collected and analysed for consideration and final conclusions have not been made.
 - Targeted inspection program to further understand incidents
 - Bee health information available from province (OMAFRA)



Ontario Bee Mortality Incidents- 2012

Targeted PMRA Inspection Program

- Targeting 7 beeyards and adjacent agricultural lands
 - Detailed information gathering
 - MOE inspector assistance
- Survey of agricultural lands at 2km & 5km radius around bee yards
 - seeding / planting
 - seed treatments
 - planting practices
 - weather conditions
 - crops grown
 - pesticide applications
 - other factors.



Prevention of Future Bee Mortality

- PMRA is working with international and Canadian partners to reduce exposure to dust during planting in the future
 - Initiatives include
 - Seed Tags- Labelling
 - Best Management Practices- General
 - Communication between growers and beekeepers
 - Handling / loading of treated seed
 - Cleanup of equipment / disposal of waste seed/dust/bags
 - Other considerations (weather, flowering vegetation)
 - Best Management Practices- Technical Improvements
 - Seed treatments - seed coating quality
 - Lubricants (talc, graphite, new options)
 - Planting equipment (modifications)
 - Outreach/Education- providing information
 - Information available for next planting season (2013)
 - Communication with many stakeholders before next planting season



Prevention of Future Bee Mortality

- Neonicotinoid treated corn seeds have been registered in Canada for over 10 years
- First time this number of incidents has been reported
 - Quebec has reported four similar incidents between 2009 – 2011
- Unusual weather conditions in spring 2012 likely contributed
 - Similar conditions where international incidents occurred- Europe
- Ensuring best management practices to reduce dust exposure
 - Includes technical improvements
 - Europe- development of BMPs



Prevention of Future Bee Mortality

- PMRA/US EPA joint re-evaluation of neonicotinoid pesticides
 - Additional risk mitigation measures may be required as necessary
 - May include measures to:
 - Reduce exposure to dust during planting
 - Reduce exposure to spray applications- label language
 - Any other mitigation determined necessary



Moving Forward- Planning, Resources Based on 2012 Bee Mortality Incidents



Considerations

- Bee Mortality: Agency, Canada, International Priority
- 2012 Canada incidents- high number of reports
 - Reports: Spray Incidents (ON, QC, NS, AB, SK, MB)
 - 11 beekeepers; >25 beeyards; >1800 hives
 - Reports: Dust-off during planting of treated seed (ON, QC)
 - Quebec- 1 beekeeper; 9 beeyards; 788 hives
 - Ontario- 38 beekeepers; 205 beeyards; >2700 hives
- Future Bee mortality Incident Reports
 - Expected to increase due to awareness of incidents and IRP
- PMRA need to address when related to pesticides



Considerations

- What does this mean for 2013 and on?
- Ongoing investigation/inspection of incidents
 - To determine if pesticide related
 - As ongoing follow-up to determine if mitigation effective
- BMPs and requirements- ongoing development
 - Reduce exposure from dust during planting of treated seed
 - Reduce insecticide spray incidents (orchards, alfalfa, etc.)
- Education and Communication programs
 - BMPs, new requirements
 - Multi-stakeholder communication: growers, beekeepers, etc.



Considerations

- Education/Communication Programs- examples
- Dust reduction during planting of treated seed
 - General BMPs: communication, location of hives, weather, handling of treated seed, disposal of treated seed, dust, equipment cleanup
 - Technical BMPs: new lubricants to replace talc, modifications to planting equipment
 - 2014 new seed tag label; 2013- to be distributed w/seed
- Reduction of spray incidents
 - Education- e.g., do not spray insecticides while bees are foraging; caution needed around spraying flowering crops, orchards, drift, type of insecticide used- residual toxicity
 - Improved label statements



PMRA and Provincial Collaboration

- Bee Mortality Incident Reports
 - How do IRs come into Agency (Provinces, HC regions, IRP)
 - Primarily reported to Provinces
 - Providing information to PMRA- what/when/where/how
- Conducting Inspections/Collecting Information
 - More guidance for inspections- based on 2012 learning
 - Questionnaire (beekeepers, growers), Sampling protocols
 - Partnering with provinces- inspector resources, bee health
- Laboratory Analysis- residues, disease/pest
 - PMRA lab, Alternative labs, Provincial options
- Education and Communication
 - Provincial role- BMPs for pollinator protection



PMRA and Provincial Collaboration

- 2012- Bee Mortality Incidents
 - Collaborative effort
 - HC PMRA
 - Provinces
 - Resource Intensive
- 2013 and onward- Bee Mortality Incidents
 - Continued collaborative efforts required
 - Manage Resources appropriately
 - PMRA will be inspecting/collecting information on 2013 bee incidents
 - Guidance for incident inspections- questionnaire, sampling
 - Provincial roles / collaboration
 - Other opportunities- research



INTERNATIONAL POLLINATOR ACTIVITIES



International Pollinator Activities

Pollinators are recognized globally for their importance

- SETAC – Pellston Pollinator Workshop – January 2011
 - Pesticide Risk assessment framework for pollinators, data requirements
- OECD Working Group on Pesticides: Pesticide Effects on Insect Pollinators (PEIP)
 - Co-lead by Canada, USA, France
 - Incidents, risk assessment and data requirements, risk mitigation
- International Commission for Plant-Bee Relationships (ICPBR)
 - Working groups on hazards of pesticides to bees
 - European pesticide risk assessment framework for pollinators (2010)
 - Risk to bees from treated seed dust, guttation water
 - Guidance for field, semi-field, monitoring, and brood studies



North American Collaboration PMRA, EPA, CalDPR

- Pollinator SAP- September 11–14, 2012
 - Risk Assessment Framework
 - Data requirements
- EPA PPDC WG on Pollinator Protection
 - Risk mitigation- Labeling, Best Management Practices
- Evaluations / Re-evaluation of pesticides with pollinator concerns
 - Data requirements, study protocols
 - Evaluations and risk mitigation
 - Joint re-evaluations of nitroguanidine neonicotinoids
 - Imidacloprid, clothianidin, thiamethoxam
 - Focus on pollinators



Pollinator Study types for Pesticide Registration

- Basic toxicity data; more studies triggered based on concerns identified
- Studies done with active ingredients (a.i.), end use products (EP), major transformation products (TP) as appropriate
- Example: new insecticides: ~ 35 -70 studies provided
- Study types:
 - Acute oral toxicity- adults
 - Acute contact toxicity- adults
 - Acute larval study- larvae
 - Chronic studies- adults and larvae
 - Extended residue contact toxicity-adults residues on plants
 - Residue studies- concentrations in pollen and nectar (systemic)
 - Colony Feeding Studies- colony, including brood effects
 - Semi-field studies- colony effects under worst case scenarios
 - Field studies- colony effects under realistic use conditions



Contact Information- Assistance

- PMRA Incident Reporting
 - 1-800-267-6315 Within Canada
 - Incident reporting email: PMRA-Incident-ARLA@hc-sc.gc.ca
 - Website: www.healthcanada.gc.ca/pesticideincident
 - 2013 Contact PMRA Regional Offices
- PMRA Information Services
 - 1-800-267-6315 Within Canada
 - 1-613-736-3799 Outside of Canada (Long distance charges apply)
 - General email: pmra.infoserv@hc-sc.gc.ca



Questions

