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Update on neonicotinoid insecticides

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Overview

- PMRA background
  - Legal obligations under the PCPA

- Overview of neonicotinoid work
  - Pollinator focused re-evaluations
  - Imidacloprid re-evaluation
  - Special reviews of clothianidin and thiamethoxam
  - Multi-stakeholder forum
  - Neonicotinoid water monitoring data

PMRA Background

- Regulates all pest control products (pesticides) imported into, sold or used in Canada under the *Pest Control Products Act (2006)*
- Pre-market review (scientific assessment of new products)
- Post-registration oversight (Incident Reporting Program, Compliance and Enforcement Program)
- Re-evaluation (scientific re-assessment - 15 year cycle)

Legal Obligations under PCPA

- 4(1) “the Minister’s primary objective is to prevent unacceptable risks to people and the environment from the use of pest control products.”

- 2(2) “the health or environmental risks of a pest control product are acceptable if there is reasonable certainty that no harm to human health, future generations or the environment will result from exposure to or use of the product, taking into account its conditions or proposed conditions of registration.”

The Neonics

- Neonics are a class of pesticides used extensively in agriculture.
  - Imidacloprid registered in 1995
  - Thiamethoxam conditionally registered in 2000
  - Clothianidin conditionally registered in 2003

- Since 2012, the Agency has undertaken an extensive scientific review of the neonics
  - The main focus of most of this work has included
    - Risks to pollinators
    - Risks to aquatic insects
    - Cyclical re-evaluations

Pollinator Re-evaluations

- Imidacloprid pollinator re-evaluation
  - PRVD 2018-12 published for consultation: May 31, 2018
  - Consultation closed: August 29, 2018 (90 days)
  - Target for final decision: December 2018

- Clothianidin pollinator re-evaluation
  - PRVD 2017-23 published for consultation: December 19, 2017
  - Consultation closed: March 19, 2018 (90 days)
  - Target for final decision: December 2018

- Thiamethoxam pollinator re-evaluation
  - PRVD 2017-24 published for consultation: December 19, 2017
  - Consultation closed: March 19, 2018 (90 days)
  - Target for final decision: December 2018

Pollinator Focused Re-evaluations

- Proposed decision for all three includes phase-out of some uses, additional restriction on other uses (timing of application)
  - Proposed decisions found that most seed treatments where acceptable for continued registrations based on risk to pollinators.

- Many comments and additional data submitted during the consultation period.

- Final assessment for all three pollinator evaluations (imidacloprid, clothianidin, thiamethoxam) considered all information submitted during the consultation as well as any new information that was not considered during the initial assessment.

Cyclical Re-evaluations

- Cyclical re-evaluations
  - Initiated as per Section 16 (2) of the *Pest Control Products Act*
  - Imidacloprid cyclical re-evaluation (PRVD 2016-20)
    - Human health and environmental assessment (excluding pollinators)
    - Proposed decision (for consultation): published November 23, 2016
    - Consultation closed: March 23, 2017 (120 days)
    - Target for final decision: December 2018
  - Clothianidin and Thiamethoxam cyclical re-evaluations
    - Human health and environmental assessment (excluding pollinators)
    - Initiated: November 2016
    - Target for final decision (for consultation): 2019

Imidacloprid Re-evaluation

- Cyclical re-evaluation of imidacloprid (human health and environment except pollinators) was completed in 2016
  - proposed the phase out of most outdoor uses of imidacloprid due to risk to aquatic insects
  - no human health concerns identified
  - driver for the decision was potential impacts on freshwater invertebrates
  - both water modelling as well as environmental water monitoring was used to support exposure estimates
  - robust monitoring data was only available for some regions raising some uncertainty around risks in some regions of Canada

- The proposed re-evaluation decision was published for consultation in December 2016 (PRVD2016-20).
  - the consultation period was open for 120 days and closed in March 2017.
  - ~ 46,000 comments received

Imidacloprid Re-evaluation

- The aquatic risk assessment has been revised. Changes to the initial risk assessment were based on:
  - Inclusion of toxicity data that the PMRA was not aware of or was not available at the time of the initial assessment (acute + chronic aquatic toxicity data, higher tier aquatic field data);
  - Revised species sensitivity distribution calculations
  - Comments and additional information received during the consultation period
  - Consideration of new surface water monitoring data
  - Refined water modelling for seed treatments

Special Reviews

- Special reviews
  - As a result of the findings in the imidacloprid review and because clothianidin and thiamethoxam are also frequently detected in water, Special Reviews for both these actives were initiated under section 17(1) of the PCPA
  - Clothianidin special review
    - PSRD 2018-01 published for consultation August 14, 2018
    - Consultation closed: November 13, 2018 (90 days)
    - Final decision expected January 2020
  - Thiamethoxam special review
    - PSRD 2018-02 published for consultation August 14, 2018
    - Consultation closed: November 13, 2018 (90 days)
    - Final decision expected January 2020

Special Reviews (Clothianidin & Thiamethoxam)

- The Risk Assessment determined in that areas of intense agriculture clothianidin and thiamethoxam were being measured in aquatic environments at levels harmful to aquatic insects.

- The risk assessment considered all available and relevant environmental fate, ecotoxicity, and water monitoring data from industry, open literature and unpublished work from government/academic researchers.

- Final decisions will incorporate any additional information submitted during the comment period and data provided by the multistakeholder forum.

Multi-Stakeholder Forum

- Federal and provincial government agencies, grower groups, independent researchers, non-government organizations (NGOs) and manufacturers have undertaken several initiatives through Agriculture and Agri-Food Canada's Multi-Stakeholder Forum
  - Examination of alternative risk management strategies
  - Generation of additional water monitoring data
  - Identification of potential alternative pest control products to replace imidacloprid

Monitoring Data and Pesticide Regulation

Robust monitoring data provide realistic levels that can be used in the pesticide registration decision-making process to determine risks to both human health and the environment.

With robust monitoring data, real-life exposure estimates can be used for both human health and environment exposure estimates.

- Inform registration decision for both human health and environment
- Validation of assumptions (i.e., model estimates) used in risk decision
- Localized mitigation versus broad scoping mitigation

Robust Water Monitoring Data

- Analysis method – limits of detection and quantification
- Ancillary information
  - Sampling location (GPS coordinates)
  - Sampling date
  - Type of water body (size, depth, lotic vs. lentic)
  - Surrounding crops
  - Watershed information
  - Pesticide use information
- Frequency of sampling
- Transformation products and degradates
- Recent data
- Raw data

Neonicotinoid Monitoring Data

- Significant stakeholder engagement has resulted in the collection and analysis of water samples from across the country during the 2017 and 2018 growing seasons.
  - Monitoring data from across Canada has been generated during the 2017 and 2018 growing seasons
  - Data being generated by Federal and Provincial departments and by registrants
  - Multi-stakeholder monitoring working group coordinated efforts
  - Ancillary information, including watershed crop/use information, is also being collected and reported.
  - Data from across the country was submitted before the end of the consultation period for the special reviews of clothianidin and thiamethoxam (November 13, 2018)
  - The PMRA will be considering the monitoring data received to date in the final decisions for all three neonicotinoids.


Questions