

Pest Management Regulatory Agency Annual Report 2016–2017

YOUR HEALTH AND SAFETY... OUR PRIORITY.



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The Pest Management Regulatory Agency publications team was responsible for the translation, formatting and publication of this document.

For additional copies, please contact:

Publications
Pest Management Regulatory Agency
2720 Riverside Drive
Ottawa ON K1A 0K9

Telephone: 1-800-267-6315

Facsimile: 1-613-736-3758

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TABLE OF CONTENTS

Message from the Executive Director.....	1
About PMRA	2
Vision.....	2
Mission.....	2
New Pesticide Registrations	3
New Active Ingredients Registered in 2016–2017	5
Repeal of Conditional Registration Regulations.....	6
Joint Reviews	6
Minor Uses.....	6
Emergency Registrations	7
Generic Registrations.....	7
Grower Requested Own Use.....	7
Regulation of Pesticides on the Market	8
Re-evaluation / Special Review Programs.....	8
Pest Control Product Sales Information Reporting.....	9
Pesticide Compliance and Enforcement Program.....	9
Incident Reporting	13
Outreach Activities	13
Keeping Pace with Change	14
Neonicotinoid Pesticides.....	14
Maximum Residue Limits.....	16
Cumulative Risk Assessments	17
Integrated Approaches to Testing and Assessment / 21 st Century Alternative Testing Methods	17
Developmental Neurotoxicity Study (DNT) Guidance Document.....	18
Cost Recovery	18
Pesticide Labels Mobile Application	19
International Scientific and Regulatory Cooperation.....	19
Comprehensive-Economic and Trade Agreement (CETA)	19
Stockholm Convention.....	20
Rotterdam Convention	20
OECD.....	21
Regulatory Cooperation Council	21
NAFTA	22

Financial Profile.....	23
Appendices.....	24
Table 1 Product Submission Categories	24
Figure 1 Number of Submissions Completed ¹ by PMRA from April 1, 2014 to March 31, 2017 ...	25
Figure 2 Performance Against Review Timelines for Category A, B and C Submissions Completed from April 1, 2014 to March 31, 2017.....	26
Figure 3 Number of New Active Ingredients Registered by PMRA from April 1, 2014 to March 31, 2017.....	27
Table 2 New Active Ingredients Registered in 2016–2017	28
Table 3 Approved GROU Products 2016–2017	35
Table 4 Re-evaluation/Special Review Documents Published in 2016–2017	37

Message from the Executive Director



Health Canada's Pest Management Regulatory Agency (PMRA) is pleased to present the 2016–2017 Annual Report to Parliament, which details PMRA's accomplishments and activities over the last fiscal year.

PMRA continues to maintain its focus on the protection of both human health and the environment in setting priorities, as each year brings new challenges.

Science continues to evolve, increasing the complexity of the assessment and management of risks for both new and older pesticides. PMRA continues to support building greater international awareness and regulatory alignment of pesticide regulation, with emphasis on the need for strong science-based decision making. This requires continued international engagement on the part of our scientific and technical staff who play a leadership role in many international fora including the Organisation for Economic Co-operation and Development (OECD) and international environmental protection treaties. The number and types of applications for pesticide registrations fluctuates each year, including applications for new technologies, requiring a highly trained workforce capable of meeting the expectations of stakeholders and Canadians. The development and integration of key science policies is progressing very well, including the cumulative assessment of pesticide exposure, and the management of risks to pollinators.

PMRA's re-evaluation of older pesticides has been a significant workload pressure and this is expected to increase in the future as a result of special reviews, new re-evaluations, and highly complex re-evaluations of pesticides. Significant resources continue to be allocated towards the assessment and management of neonicotinoid pesticide issues and pollinator protection, and ensuring we are addressing risks to people and the environment. Key to this will be an enhanced emphasis on understanding trends in the environment and the changing use of pesticides in Canada. Each year, PMRA's compliance and enforcement program builds on knowledge and experience from previous years in identifying and prioritizing compliance issues on the basis of risk, and addressing them with effective strategies, from outreach and education to enforcement action.

The accomplishments highlighted in this report reflect the hard work and dedication of a workforce that continues to uphold the highest standards of health and environmental protection for Canadians.

Richard Aucoin, Ph. D.

Executive Director

Pest Management Regulatory Agency

About PMRA

The Pest Management Regulatory Agency (PMRA) is the branch of Health Canada responsible for regulating pesticides under the authority of the *Pest Control Products Act*. PMRA's primary mandate is to prevent unacceptable risks to Canadians and the environment from the use of these products.

PMRA applies current, evidence-based scientific approaches to assess whether the health and environmental risks of pesticides proposed for registration are acceptable, and if the products have value.

This same approach is used to regularly and systematically review whether pesticides already on the Canadian market continue to meet modern scientific standards. PMRA seeks to minimize health and environmental risks by facilitating access to new, lower-risk products in support of sustainable pest management practices.

In collaboration with Health Canada's Regulatory Operations and Regions Branch, PMRA also promotes, monitors and enforces compliance with the *Pest Control Products Act* across Canada. PMRA is committed to doing this in a collaborative, open and transparent manner.

This work is carried out by a highly skilled workforce, the majority of whom are scientists, with additional expertise in areas such as regulatory and policy development, stakeholder engagement and international collaboration and information management.

Vision

Canadians are confident that Canada's pesticide regulatory system protects their health and the environment.

Mission

To protect the health and environment of Canadians by using modern evidence-based scientific approaches to pesticide regulation, in an open and transparent manner.

New Pesticide Registrations

Pesticides are regulated in Canada by Health Canada, reflecting the importance placed on human health and environmental protection in the regulation of these products. The *Pest Control Products Act* governs how pesticides are risk-assessed and risk-managed, before and after they are registered for use.

Before a pesticide can be sold in Canada, pesticide registrants are required to provide PMRA with large volumes of scientific data to show that their product does not pose unacceptable risks to health and the environment, and that the product has value. These data are reviewed by PMRA scientists to determine whether a product is acceptable for registration in Canada.

PMRA's science-based risk assessment includes the following:

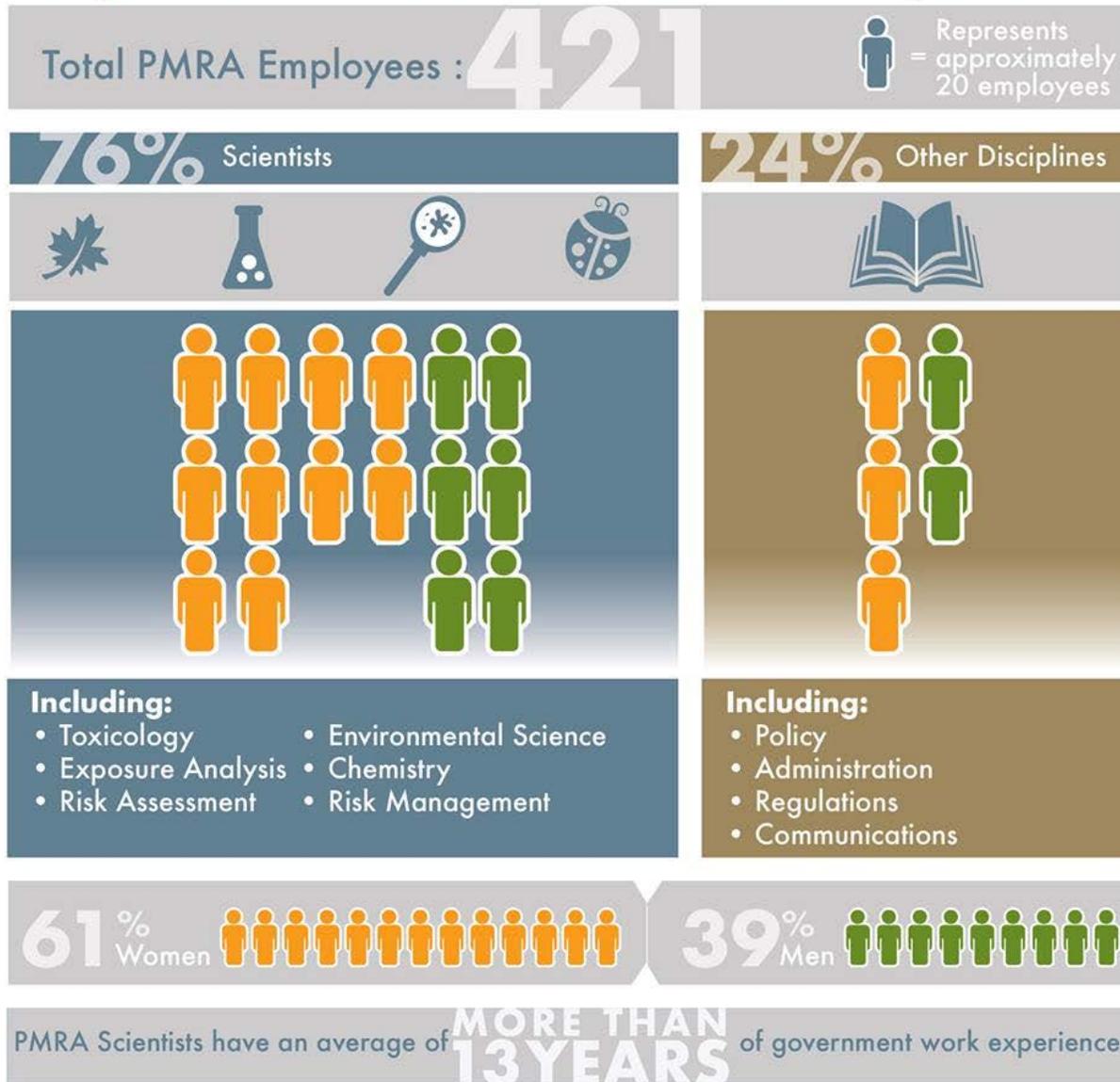
- an examination of all sources and routes (oral, dermal, inhalation) of potential exposure to a given pesticide, including exposure through diet, from drinking water and from contact with treated areas like lawns and gardens;
- an estimation of the amount of pesticides that people, including children, may come in contact with, both during and after a pesticide application;
- a human health risk assessment with a particular focus on vulnerable populations, including pregnant women, infants, children, women and seniors; this considers the potential for a pesticide to cause adverse health effects such as cancer, birth defects and endocrine disruption, and allows registration only for those pesticides with exposures well below levels that cause adverse effects;
- an environmental risk assessment that considers the fate (movement, persistence and transformation), toxicity, and risks to plants, birds, mammals, beneficial insects, aquatic organisms; and,
- a value assessment that considers the contribution of the product to pest management, as well as its health, safety and environmental benefits, and social and economic impact.

Some pesticides that are new to Canada may have existing registrations in other jurisdictions. For some currently registered pesticides, registrants may request changes to the use pattern. For these types of registrations, PMRA may also assess:

- additional environmental data, such as levels of pesticides detected through monitoring of pesticide concentrations in water across Canada and/or the United States
- any incident reports from Canada or other jurisdictions where the pesticide is already registered

The studies required to be submitted by applicants for registration depends on various factors such as the nature of the product, the intended use, and the type of registration (for an overview of product submission types, please see Appendix Table 1). PMRA follows established service standards, or defined timelines, for these evaluations as outlined in the “Revised Management of Submissions Policy” (Regulatory Directive DIR2013-01). The number and type of submissions reviewed by PMRA can vary significantly by year, as shown in Appendix Figure 1. Despite these shifts, PMRA continues to work to meet review timelines consistently across all submission categories (Appendix Figure 2).

Snapshot of the PMRA workforce, April 2017



NEW ACTIVE INGREDIENTS REGISTERED IN 2016–2017

In 2016–2017, 10 new active ingredients (the substance with the pesticidal effect) were registered for use in Canada, resulting in the registration of 24 new related end-use products (different formulations of products containing the active ingredient). Of the 10 new active ingredients, 4 were biopesticides (derived from natural sources such as bacteria, fungi, viruses, plants, animals and minerals) and 5 were conventional (in other words, chemical) pesticides and one was an antimicrobial (Appendix Figure 3).

Please see Appendix Table 2 for a full list of new active ingredients registered, and their uses.

REPEAL OF CONDITIONAL REGISTRATION REGULATIONS

Conditional registrations were previously granted only when the review of the scientific data showed that the risks of a pesticide were acceptable, but PMRA required additional information, such as monitoring data after a product registration, to confirm the results of the risk assessment. In June 2016, Health Canada published its *Final Decision Regarding Conditional Registrations* under the Pest Control Products Regulations, informing Canadians and interested stakeholders that Health Canada was no longer granting conditional registrations as a matter of policy. In December 2016, Health Canada took further action by publishing its proposal to repeal the Conditional Registration Regulations in Canada Gazette I, for public comment.

All of the new active ingredients registered in 2016–2017 were granted full registration. PMRA is working to address remaining conditionally registered products by converting them to full registrations, or eliminating them. As of March 31, 2017, there remained 37 conditionally registered products, representing less than 1% of all registered products.

JOINT REVIEWS

Joint reviews are pesticide assessments conducted in cooperation with other jurisdictions. In the last two decades, Canada has progressed from developing pilot pesticide joint review approaches with the United States, to conducting international joint reviews as a primary course of business. As of March 31, 2017, 8 new active ingredients were under joint review, including two conventional chemicals under global joint review.

MINOR USES

A "minor use" of a pesticide is when a product is used only on small or specialty crops, or where pest control is only needed on a small portion of the crop area. These pesticides are usually used in such low quantities that manufacturers find the sales potential is not enough to justify the registration costs. However, some growers need these products in order to produce their crops, and to remain competitive with growers in other countries.

To help resolve these pesticide access issues for Canadian growers, PMRA works with Agriculture and Agri-Food Canada's Pest Management Centre to provide regulatory support to growers and grower associations in identifying priorities for new minor use registrations in Canada. PMRA also works directly with the provinces to assist in addressing the regional minor use needs. An online Canadian Grower Priority Database provides a forum for stakeholders to communicate their pest control product needs, while allowing PMRA to monitor progress in resolving pesticide access issues.

In 2016–2017, PMRA reviewed the minor use submissions from Agriculture and Agri-Food Canada and the provinces, and made 72 regulatory decisions resulting in the registration of 490 new minor uses of which 24 were joint reviews or workshares with regulators in other countries, primarily the US.

EMERGENCY REGISTRATIONS

A pest control product can be registered for up to one year for the emergency control of seriously detrimental pest infestations, such as during the spread of invasive species. The product must be already registered for another use, must be effective, and the human health and environmental risks must be acceptable.

Emergency registrations are not intended as a solution to an ongoing pest-management problem and may not be extended or renewed. However, they may be considered again if the emergency situation continues. The number of emergency registration submissions that PMRA receives can vary from year to year, depending on pest outbreaks, environmental conditions and the availability of alternative products and methods. In 2016–2017, PMRA granted 17 emergency registrations.

GENERIC REGISTRATIONS

When a new pesticide is developed, the innovator invests substantial funds into the studies required to show that the product works as intended, and poses no unacceptable health and environmental risks. The data supporting a new innovation to Canada (i.e., a new active ingredient) receives exclusive use protection for a period of time, to prevent it from being used for the benefit of a competitor without the innovator's approval.

This practice allows the innovator the opportunity to recover their investment, but also encourages further innovation by allowing competition on the market after a period of time. Allowing timely introduction of equivalent products by generic manufacturers following the exclusive period can enhance market competition to the benefit of users, including growers. These regulations are important to innovators, generic companies and to growers. PMRA continues to seek ways to improve the data protection program for innovator registrants, generic companies and PMRA.

In 2016–2017, 54 generic products were registered, including 33 technical or manufacturing products and 21 end-use products. Some examples of generic active ingredients registered for agricultural use include azoxystrobin, bromoxynil, clethodim, clopyralid, cypermethrin and deltamethrin.

GROWER REQUESTED OWN USE

Grower Requested Own Use (GROU) is an initiative that aims to make it easier for Canadian growers to import less expensive, equivalent pest control products available in foreign jurisdictions. Prior to 2014 this program was based on policy; however, in August 2014, GROU was formalized in the Pest Control Products Regulations. Through continued support from not-for-profit national grower associations, growers are able to request product nominations for the program. Growers with an approved import certificate can legally obtain an equivalent version of a Canadian-registered product from outside Canada. Please see Appendix Table 3 for a list of approved GROU products for 2016–2017.

Regulation of Pesticides on the Market

Once a pesticide has been granted registration status, it becomes subject to a system of post-market risk management controls under the *Pest Control Products Act*. This includes re-evaluations and special reviews of registered pesticides, compliance and enforcement activities, and response to health and environmental incidents. This section will also describe activities addressing pollinator impacts and outreach activities targeted at users.

RE-EVALUATION / SPECIAL REVIEW PROGRAMS

Under the *Pest Control Products Act*, registered pesticides currently available on the market are subject to re-evaluations, which are initiated every 15 years at the latest. Under this program, new methodologies, data, and scientific approaches are incorporated into the assessments to ensure that registered pesticides continue to meet modern standards for health and environmental protection, and have value. Special reviews are another mechanism used under the *Pest Control Products Act* to determine the continued acceptability of registered pesticides. These reviews focus on addressing specific aspects of concern, such as concerns raised by an OECD member country decision to prohibit all uses of an active ingredient.

In 2016–2017, PMRA published final decisions for 15 re-evaluations and 8 special reviews. This includes 9 re-evaluations and 4 special reviews that were scheduled for future publication according to the 2015–2020 work plan. These decisions involve 374 end-use products, some requiring updated use conditions to further protect human health and the environment. The public was consulted on 17 proposed re-evaluation decisions and 8 proposed special review decisions during this fiscal year. Appendix Table 4 provides a list of re-evaluation and special review proposed and final decision documents published in 2016–2017. An additional 6 re-evaluations and 8 special reviews were initiated in accordance with the *Pest Control Products Act*.

Overall, in 2016–2017, PMRA did not meet the 80% performance target for re-evaluations and special reviews as outlined in the 2015-2020 work plan. Major factors contributing to this performance result include significant resources being dedicated to certain re-evaluations (e.g., neonicotinoids) and to additional risk assessment refinements. However, while PMRA's resources were diverted to addressing certain priority areas, PMRA continued to improve the efficiency and effectiveness of re-evaluation and special review processes.

In November 2016, PMRA published Regulatory Directive (DIR2016-04), Management of Pesticides Re-evaluation Policy, taking into consideration comments received during the public consultation. This new Regulatory Directive is aimed at enhancing transparency, predictability, and stakeholder engagement, and includes performance targets for both PMRA and stakeholders, guidance on the consideration of new information, and clearer public consultation timelines. Re-evaluations already underway at the time were transitioned to this new process.

Stakeholder Engagement in Re-evaluation and Special Review Programs

In 2016–2017, PMRA increased outreach and stakeholder engagement activities with respect to re-evaluations and special reviews. Where proposed decisions included a requirement for additional information to refine the risk assessment, or where risk management actions were proposed, PMRA engaged specific stakeholder groups near the publication date to encourage and facilitate participation in the consultation process.

Final decision documents have been improved to clearly indicate the time frame to implement decisions, and now provide a list of products that are involved, so that the public can be better informed of which products are impacted and when changes will take effect. In certain cases, PMRA also engages user and stakeholder groups to better inform their members of required changes to products as a result of re-evaluation, such as new use directions, or removal of products from the marketplace. This collaborative approach improves awareness among users, and leads to faster improvements to product safety.

In December 2016, PMRA published Regulatory Proposal (PRO2016-04), Policy on Cancellations and Amendments Following Re-evaluation and Special Review. The public was invited to provide feedback on the proposed policy, processes and criteria for establishing timelines to implement product changes and cancellations following the completion of a re-evaluation or special review.

PEST CONTROL PRODUCT SALES INFORMATION REPORTING

PMRA's Pest Control Product Sales Information Reporting Program has been collecting sales information in the form of total volume since 2007, for all registered products available for sale. These data are reported by calendar year (January 1 to December 31). The purpose of the sales information reporting program is to collect sales data to be used by PMRA to better understand pesticide use in Canada.

Sales data are considered in risk assessments of pesticides, in policy decisions, in identifying trends in pesticide use, and in providing guidance for risk-reduction strategies. For example, sales data are used in the re-evaluation of older pesticides to help understand the presence and value of the pesticide in the Canadian marketplace, as well as the potential impacts if changes are made to the registration status of the pesticide.

Sales data are also used to inform the Pesticide Incident Reporting Program on the market share of particular pesticides to help identify potential risks that may require attention. In 2016–2017, PMRA published annual sales reports for the 2014 calendar year.

PESTICIDE COMPLIANCE AND ENFORCEMENT PROGRAM

The National Pesticide Compliance Program (NPCP) is responsible for promoting, monitoring and enforcing compliance with the *Pest Control Products Act* (PCPA) and its Regulations. The program is administered jointly by Health Canada's Pest Management Regulatory Agency (PMRA) and the Regulatory Operations and Regions Branch (RORB). PMRA sets the strategic

direction, program priorities and policies, and determines how those priorities are implemented nationally. RORB is responsible for the delivery of compliance and enforcement activities and for maintaining valuable relationships with regional partners and stakeholders.

The following highlights are drawn from the 2016–2017 Compliance and Enforcement Annual Report, which summarizes compliance and enforcement activities conducted by PMRA in partnership with RORB in 2016–2017. Compliance activities are prioritised based on risk. In some instances, when non-compliance is known or suspected, a targeted approach may be used, while in other situations, random inspections are preferred. Compliance rates presented in this section reflect only the regulated parties inspected, and are not representative of the industry as a whole due to the focus on areas of known or suspected non-compliance.

Active Prevention

Active prevention activities are developed to provide regulatory guidance to industry and the public, while identifying compliance concerns at an early stage to encourage compliance with the PCPA and its associated regulations.

The key priority continues to involve educating stakeholders of their obligations under the PCPA. In 2016–2017, six active prevention programs were conducted, including:

- promotion of the safe use of pesticides by following label directions and use of Personal Protective Equipment (PPE) by agricultural and commercial users
- consultation with school boards about pest control practices
- promotion of pollinator protection
- outreach to customs brokers

A total of 159 outreach activities were conducted, including presentations, meetings, and exhibit booths at trade shows. Interviews were conducted to gather information about pest management practices and to assess awareness of the PCPA. Communication materials were distributed on topics such as PPE, Incident Reporting, Restricted Entry Intervals (REI) and Preharvest Intervals (PHI).

Targeted Oversight

The purpose of targeted oversight activities is to identify health, safety and environmental concerns at the appropriate stage of the pest control product life cycle. The key priority was to monitor compliance with the PCPA among users (commercial, agricultural and industrial), registrants, manufacturers, and vendors of pest control products. Targeted oversight activities conducted in 2016–2017 included:

- 1067 inspections and interviews focusing on 26 NPCP priority areas
- 233 compliance verification inspections conducted in response to complaints, incidents and inquiries

- 321 soil, plant tissue, animal tissue, wipe, formulation and other samples analysed by PMRA's laboratory to verify compliance as part of the NPCP targeted oversight activities

In 2016–2017, detected instances of non-compliance included:

- possession of an unregistered product
- import and/or use of unregistered products
- use contrary to the label approved by PMRA

Surveillance inspections are conducted to verify whether compliance had been restored. Regulated parties who were previously non-compliant, and for whom the risks to re-offend were significant, were inspected, and 77% were found to have returned to compliance.

Rapid Response

Rapid response activities involve timely interventions when unacceptable risks of non-compliance are identified. The key priority was risk-based action in response to non-compliant situations noted during inspections, as well as responding to publicly reported complaints and incidents.

In 2016–2017, inspections resulted in a total of 848 enforcement responses to non-compliance, including:

- 83 verbal education responses
- 416 written education responses
- 337 enforcement letters
- 12 Compliance Orders
- 22 Notices of Violation (NOVs) with penalties issued under the Agriculture and Agri-Food Administrative Monetary Penalties (AMPs) Act

Enforcement actions taken in response to non-compliant product included:

- 392 requests to dispose of product
- 732 requests to cease activity or remove product
- 30 requests to return or recall product
- 20 request to re-label
- 45 orders to cease activity or remove product

- 4 orders to dispose of product
- 68 investigative samples collected
- 222 denials of entry at the border
- 76 other actions including forfeiture, seizure and detention

Border and International Activities

Activities at the border are monitored in partnership with the Canada Border Services Agency (CBSA) to reduce risks posed by imported pesticides, and to facilitate cooperative international management of global pesticide compliance and enforcement issues.

Following the analysis of CBSA importation data, 150 targeted inspections of suspected non-compliant importations were conducted. Thirty-nine percent of the inspected importations were found to be compliant with the PCPA. Enforcement actions requested of non-compliant importers included ceasing activity, removing product from sale, disposing of product, and denial of entry at the border. Enforcement letters were also sent to 52 international vendors of suspected non-compliant pest control products located outside of Canada, requesting that they stop selling non-compliant products to Canadian consumers.

Laboratory Activities

The laboratory's objective is to conduct timely, science-based sample analyses of pesticides for compliance verification, and enforcement within the *Pest Control Products Act*.

The laboratory supports planned NPCP inspection activities as well as surveillance and compliance verification activities, collaborates on international pesticide laboratory proficiency testing, and maintains ISO17025 accreditation of its laboratory facilities.

In 2016–2017, the PMRA laboratory analyzed 321 samples in support of NPCP activities, and 125 were compliance verification samples in response to complaints.

In 2016–2017, new methodologies were developed by the laboratory to support a wide variety of pesticide analysis activities.

Cannabis for Medical Purposes Collaboration

In 2016–2017, the Pesticide Compliance Program partnered with Health Canada's Office of Medical Cannabis to provide pesticide-related training, inspection, and laboratory support to the cannabis for medical purposes inspection program. As a result of this collaboration, the Pesticide Compliance Program developed additional training materials and laboratory analysis methodologies related to cannabis.

INCIDENT REPORTING

PMRA's Pesticide Incident Reporting Program collects information on any incidents associated with pest control products that can help detect adverse effects that are not evident during the initial registration of a pesticide. Since April 2007, PMRA has used incident report data to identify and characterize potential risk to humans, domestic animals and the environment from the use of pesticides. Incident report assessments are prioritized based on the type of incident. Serious adverse effects (such as death) are evaluated immediately and protective measures are put into place if warranted. If a potential risk is identified, it is investigated and protective action may be taken, such as changes to how a pesticide is manufactured, packaged, labelled, or used. Incident report data also informs risk assessments for new registrations and re-evaluations.

Scientific studies must be submitted to the PMRA by registrants if they reveal any new hazard, an increase in risk, or the presence of a previously undetected substance in a pest control product. Monitoring incidents for unexpected effects is an ongoing process that includes re-assessing previous conclusions, as necessary. In cases where protective strategies have been put in place, PMRA also monitors incident report data to evaluate whether the strategies were effective in reducing the identified risk.

In 2016–2017, 2508 incident reports were filed, 1781 of which occurred in Canada. Details of these reports can be found on the Health Canada website. Actions taken by PMRA following evaluation of incident reports include:

- For two products containing beta-cyfluthrin and cyfluthrin, the implementation of longer delays prior to re-entering treated areas, additional ventilation, and a requirement to inform building occupants of product use.
- Labels for some products, such as boron, were modified to include statements reminding users to keep products away from children and pets.
- Stronger warning and first aid statements were applied to diquat and paraquat product labels. The registrants rolled out a stewardship/outreach program for applicators and vendors, with follow-up inspections by the PMRA in 2016, to monitor how well the changes were being implemented. Of the sites inspected, 63%-76% had a successful level of implementation for diquat and paraquat, respectively. The PMRA continues to work with the registrants to improve implementation of the changes.

OUTREACH ACTIVITIES

PMRA's outreach program has three main functions: to develop and distribute material to professional and consumer audiences on all aspects of responsible pesticide use; manage a 1-800 information line and e-mail service to respond to enquiries on pesticides and pest management; and provide support and advice for the participation of regional pesticide managers and officers at fairs, exhibits and other opportunities through the use of displays, didactic tools and printed material.

A communications and outreach strategy was launched in 2016 to improve public awareness and opinion of the regulatory system through a renewed approach that included the following activities to better support outreach efforts:

- Risk communications training for employees
- Plain language training for PMRA's scientists
- Public opinion research to gauge level of awareness and views
- Improvements to PMRA's web content and presentation
- Support in development of improved outreach around re-evaluation activities

Keeping Pace with Change

Globalization, rapid technological advances, evolving science, economic pressures and various other challenges and opportunities require a pesticide regulatory system that is flexible and responsive to change. PMRA is continuously modernizing risk assessment and risk management approaches, refining business practices to ensure the needs of all stakeholders are met, and responding to major scientific and environmental developments, in Canada and abroad, with the goal of improving health and environmental protection.

NEONICOTINOID PESTICIDES

Neonicotinoids are a group of pesticides used in agriculture to protect crops from various insects. They are also used for other purposes, including killing insects in homes, controlling fleas on pets, and protecting trees from invasive insects such as the Emerald Ash borer. There are three important neonicotinoids currently approved for agricultural use in Canada, imidacloprid, clothianidin, and thiamethoxam.

In the last few years, neonicotinoid pesticides have been the focus of significant scientific, environmental and public interest. PMRA has worked with scientists from around the world to study the relationship between the use of neonicotinoid pesticides and pollinator health. PMRA continued to be an active participant at Agriculture and Agri-food Canada's Bee Health Roundtable, and international working groups, including OECD pesticide working groups Pesticide Effects on Insect Pollinators (co-led by Canada, the United States and Germany) and the International Commission for Plant-Pollinator Relationships Bee Protection Group.

More recently, a risk to aquatic insects was identified based on levels of imidacloprid detected in the Canadian environment, and this is a new focus of risk mitigation efforts.

Imidacloprid — Health and Environment Assessments

On November 23, 2016, PMRA published a proposed re-evaluation decision for imidacloprid (PRVD2016-20 – Imidacloprid). The health assessment did not identify human health concerns from any exposure route when used according to current label standards. An extensive body of information was considered for any potential toxicity and exposure, including sensitive populations such as children. To date, our assessments of the available data and published literature do not point to unacceptable risks to human health from the use of neonicotinoids, including any potential exposure from drinking water or food.

The environmental risk assessment determined that imidacloprid is being measured in Canadian surface waters at levels that are harmful to aquatic insects. These insects are an important part of the ecosystem, including as a food source for fish, birds and other animals. As a result, PMRA proposed to phase out all the agricultural and a majority of other outdoor uses of imidacloprid over three to five years.

The assessment and proposed risk management was open for public consultation for 120 days, concluding in March 2017. During the public consultation for imidacloprid, approximately 46,000 comments were received. These comments are currently being reviewed by PMRA. In addition, 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 (MSF) including:

- examination of alternative risk management strategies
- generation of additional water monitoring data
- identification of potential alternative pest control products to replace imidacloprid

PMRA supported the work of AAFC's Multi-Stakeholder Forum (MSF), and their Environmental Monitoring Working Group, to develop and submit a plan to collect additional environmental data for consideration by PMRA during the scientific review.

Clothianidin and Thiamethoxam — Special Review of Aquatic Risks

Given the aquatic risk identified for imidacloprid, the review of potential risk to aquatic invertebrates (such as insects) for clothianidin and thiamethoxam has been given high priority among special reviews. Data has been received from registrants and provincial government agencies. In addition, the MSF Environmental Working Group submitted a plan to collect additional monitoring data for clothianidin and thiamethoxam as well as imidacloprid (described above) for consideration as part of PMRA's scientific review.

Pollinator Assessments and Incident Reports

In 2013, in response to reports of bee deaths linked to neonicotinoids (primarily in corn and soybean growing regions), the PMRA increased incident monitoring and continues to monitor the situation in collaboration with the provinces. Incidents related to honeybees have consistently been reduced by 70% to 80% since 2014. In January 2017, PMRA published an Update on

Canadian Bee Incident Reports 2012–2016 which contains a summary of pollinator incidents that have been reported to potentially be associated with pesticides. The report also includes incidents that have been reported for clothianidin, imidacloprid and thiamethoxam.

The pollinator risk assessments are being conducted in collaboration with the US EPA and California Department of Pesticide Regulation. Work on the pollinator risk assessment for imidacloprid continued, building on the preliminary assessment published in January 2016, which did not identify unacceptable risks to managed honeybees, provided that strict precautions to limit exposure were followed.

PMRA continued to update the pollinator risk assessment for imidacloprid based on additional data from the registrant, additional literature that had recently been published, and the comments that were received during the public consultation period for the preliminary assessment. PMRA also continued to conduct pollinator risk assessments for clothianidin and thiamethoxam based on extensive data from the registrants and published literature.

PMRA reviewed most of the studies on-hand that were received from registrants or obtained from published literature. This included studies on potential toxic effects to honey bees and native bees (such as bumblebees) as well as measures of exposure (for example, levels of clothianidin or thiamethoxam in pollen and nectar). All of these relevant studies were incorporated into the pollinator risk assessments.

PMRA published an update on the pollinator risk assessments for all three neonicotinoids in January 2017. PMRA is targeting completion of the pollinator risk assessments for the neonicotinoids by December 2017. Consultations will take place later in 2017 or early 2018.

MAXIMUM RESIDUE LIMITS

A Maximum Residue Limit (MRL) is the maximum amount of residue that is expected to remain on food products when a pesticide is used according to label directions. These are set at levels well below the amount that could pose a health concern, and are established around the world for each combination of pesticide and treated agricultural product.

International differences in MRLs can occur as a result of differences in both methods and data available to regulators at the time of MRL establishment, as well as other factors. Though MRL differences rarely reflect differences in risk, aligning MRLs globally has become increasingly important in order to reduce barriers to the movement of treated agricultural products around the world. Domestic and international collaboration is critical in resolving these issues, which are of high importance to registrants, growers, and the Canadian economy.

PMRA continued work with its international partners under the North American Free Trade Agreement (NAFTA), OECD and the Codex Alimentarius Commission on science policies relevant to establishing MRLs internationally. Through its involvement in the Regulatory Cooperation Council (RCC) initiative, PMRA also continued to develop new scientific methods and process improvement strategies to further streamline data requirements for establishing MRLs between jurisdictions. This included the streamlining of Joint Canada/United States Field Trial Requirements, which was published in June, 2017.

CUMULATIVE RISK ASSESSMENTS

As an emerging area in regulatory science, PMRA continues to work with international partners to develop approaches for applying the principles of cumulative risk assessment in protecting the health and safety of Canadians.

In March 2017, PMRA published a regulatory proposal on the Cumulative Risk Assessment Framework for pesticides. This document outlines the methodology that will be applied to pesticides that have a common mechanism of toxicity and fulfils one of the PMRA commitments to the Commissioner of the Environment and Sustainable Development 2015 Audit on Pesticide Safety.

PMRA will be initiating the cumulative assessments that are required for those groups from completed re-evaluations, beginning with the N-Methyl carbamate class, in addition to identifying new assessment groups for ongoing re-evaluations moving forward.

INTEGRATED APPROACHES TO TESTING AND ASSESSMENT / 21ST CENTURY ALTERNATIVE TESTING METHODS

PMRA is committed to reducing the need for animal testing wherever possible, while continuing to provide scientifically valid approaches to assessing risk.

Integrated Approaches to Testing and Assessment (IATA) involves using data from existing laboratory animal studies, in vitro high throughput screening assays, predictive models, mechanistic studies and other data in order to refine, reduce and in some cases even replace laboratory animal studies for human health and ecological risk assessment of pesticides.

Several activities were completed under this initiative during the past year in collaboration with the USEPA under NAFTA and RCC. For example, in August, 2016, an OECD guidance document was published on Considerations for Waiving or Bridging of Mammalian Acute Toxicity Tests, which was co-led by PMRA. The PMRA also published a Science Policy Proposal on Waiving Acute Dermal Toxicity Studies in March, 2017, for public consultation, with the final document published in June 2017.

The removal of the routine requirement for the 1-year dog study for assessing food use pesticide applications was incorporated into the 2016 Guidance for Developing a Database for Conventional Pest Control Products. In 2017, PMRA's scientific analysis, on which this decision was based, was published in Critical Reviews in Toxicology.

PMRA continues to collaborate with other jurisdictions and stakeholders on a number of other initiatives related to updating conventional testing protocols, including alternative approaches for the acute eye irritation/corrosion toxicity study, the use of IATA for skin sensitization, (Q)SAR predictions, genomics, and other alternative methods.

DEVELOPMENTAL NEUROTOXICITY STUDY (DNT) GUIDANCE DOCUMENT

Exposure to certain chemical compounds during fetal development, infancy and childhood can affect the development of the nervous system, which is why the evaluation of developmental neurotoxicity (DNT) is part of the health risk assessment of pesticides in Canada, United States and Mexico. Despite the publication of internationally recognized test guidelines, there has been a continued interest in developing additional guidance for evaluators responsible for assessing chemicals that trigger this kind of assessment. From a regulatory perspective, such guidance would serve as a tool that could be referred to when evaluating and interpreting study results, allowing for a higher level of consistency.

To address the need for this guidance, in 2017, PMRA published the PMRA-led NAFTA Technical Working Group (NAFTA TWG) Developmental Neurotoxicity Study Guidance Document. This document is a result of extensive collaboration over several years with researchers and regulatory scientists, and provides guidance on the review and interpretation of DNT data submitted by registrants. It also includes guidance on evaluating quality, conduct, and data derived from the behavioral methods, as described in OECD and/or US EPA DNT Guidelines. The guidance may contribute to wider international alignment of how DNT data is interpreted.

COST RECOVERY

Until April 1, 2017, the fees charged in relation to pesticide registrations had remained unchanged since 1997, despite an increasingly complex regulatory environment. PMRA had been consulting with pesticide registrants and other interested stakeholders on a new fee structure since 2010, culminating in the publication of two consultation documents in 2014. Throughout the consultations, stakeholders expressed a clear desire that increased revenues from fees be re-invested in the pesticide regulatory program to fund priority activities and to provide stability to the program.

All of this work resulted in Health Canada's Pesticide Cost Recovery Official Notice of Fee Proposal, which outlined updated fees and charges, and provision for an annual adjustment of fees. After the Proposal was approved by Parliament in May 2016, the proposed Regulations were pre-published in the Canada Gazette, Part I on June 11, 2016 for consultation.

The final regulations were published in Canada Gazette, Part II on February 22, 2017, coming into effect on April 1, 2017.

The new Pest Control Products Fees and Charges Regulations better reflect the current costs of regulating pesticides in Canada. They include updated fees for regulatory activities to reflect current costs, an annual adjustment for fees to account for inflation and other cost increases, a new fee for pesticides containing living organisms (microbial pesticides) and an increased annual fee to maintain registration of existing pest control products that are registered.

Over 2016–2017, PMRA completed a number of process changes in preparation for the April 1, 2017 implementation date. Some of these activities included updates to various guidance

documents such as the Management of Submissions Policy (MOSP) and the Fee Guidance document, in addition to updating the fee form and application form, cost recovery web pages and our internal electronic Pesticide Regulatory System (ePRS).

PESTICIDE LABELS MOBILE APPLICATION

On January 25, 2016, PMRA launched a new mobile app that allows users to access pesticide labels for registered products in Canada. This app allows stakeholders, including registrants, growers, and the public, to search and download labels for pest control products on their mobile devices.

This app was developed to have labels available to stakeholders whether they are at their home, office, retailer, warehouse, or field. The app provides updated and on-demand information on the product, its uses, how to apply and most importantly, how to use the product safely. The ability for the user to download the label to their mobile device also allows them to have access to the label even if they don't have Internet access.

Updates to a product label can supplement, or even replace the printed label on the product, the latter of which may be outdated by the time the user applies the product. The app has since been updated with an improved user interface, and the ability to more easily access the PDF labels. Further updates are planned to improve the user experience and provide more information on products to users.

International Scientific and Regulatory Cooperation

Canada's internationally respected regulatory model has allowed Canada to form strong partnerships, and to play a significant role in developing collaborative approaches to joint pesticide reviews, promoting international regulatory alignment, and addressing barriers to agricultural innovation and trade. This leadership role has also afforded Canada the capacity to ensure that terms of trade are compatible with Canada's unique market conditions, and our commitment to health and environmental protection.

COMPREHENSIVE-ECONOMIC AND TRADE AGREEMENT (CETA)

The Comprehensive-Economic and Trade Agreement (CETA) between Canada and the European Union (EU) that was signed in October 2016 during the 16th EU-Canada Summit in Brussels is a progressive trade agreement that upholds and promotes the values that Canada shares with the EU. PMRA, as the federal body responsible for regulating pesticides in Canada, provided expertise on the PCPA and on plant protection product (pesticide) intellectual property provisions to inform the trade negotiations.

Both Canada and the EU are committed to protecting the rights of registrants from the unfair commercial use of data they generate, and to providing a fair and balanced regulatory framework for all. Article 20.30 of CETA reflects this alignment between Canada and the EU, and also includes a specific commitment for establishing rules to avoid duplicative testing on vertebrate animals.

Similar to the EU, Canada is engaged in ongoing efforts to develop and implement testing methods that avoid the use of live animals, and adheres to the Three Rs (reduce, refine, replace), which are the guiding principles for more ethical use of animals in testing.

To help implement the requirement to reduce duplicative animal testing, the PCPA was amended via Bill C-30 (which received Royal Assent on May 16, 2017). This amendment provides the flexibility to adjust Health Canada's pest control product data protection program to allow an applicant or registrant of a pest control product to rely on a previous study involving animals, rather than completing a new, duplicative one. Proposed amendments aligning the Pest Control Product Regulations with the PCPA in order to meet the CETA commitment were pre-published in Canada Gazette Part I on July 15, 2017 for a 15 day consultation period. Canada and the European Union have agreed to seek provisional application of CETA by September 21, 2017.

STOCKHOLM CONVENTION

The Stockholm Convention is a legally binding international treaty that addresses international management of chemicals with the focus on production and use of persistent organic pollutants.

PMRA collaborated with other federal partners in the development of Canadian positions and submissions to the Persistent Organic Pollutants Review Committee and the Conference of the Parties of the Stockholm Convention and by providing the Canadian technical expert to the POPRC. PMRA is the responsible federal authority for meeting the obligations and for ongoing participation at the Stockholm Convention as it pertains to pesticides.

ROTTERDAM CONVENTION

The Rotterdam Convention promotes information exchange and informed consent in the international trade of chemicals, with the aim of protecting human health and the environment. Canada is a party to this Convention. In collaboration with Environment Canada, PMRA participated in the development of Canadian positions and submissions to the Convention.

In 2016–2017, PMRA participated in the Convention's annual technical committee meeting, where the committee recommended adding one new pesticide formulation (carbofuran) to the Convention's Prior Informed Consent (PIC) list. PMRA continues to administer Canada's obligations concerning import and export of all other pesticides subject to the Convention.

OECD

PMRA is involved in several OECD task forces and subcommittee expert group projects and initiatives. For example, PMRA continues to provide advice to the Expert Group on Residue Chemistry, and was the lead on an OECD project to develop the capacity to securely share key information within the regulatory community, such as pesticide bans, registration cancellations, and significant enforcement actions.

In 2016–2017, PMRA continued to participate in collaborative science policy work, including IATA related initiatives described earlier in this report, and an ad hoc Expert Group on Novel Technologies and their Use as Pesticides. The initial current focus of the latter group has been on a novel pesticide technology involving Ribonucleic acid interference (RNAi), and its potential non-target environmental effects.

Finally, PMRA is co-chair of the Expert Group on the Electronic Exchange of Pesticide Data (EGEPPD). In 2014, this group completed the Globally Harmonised Submission Transport Standard (GHSTS), which is intended to be an OECD standard for the submission of pesticide product applications, or dossiers. This expert group is now working on an implementation strategy, part of which is the development of an eDossier Builder, which helps companies and regulatory authorities prepare and receive dossiers based on the GHSTS.

REGULATORY COOPERATION COUNCIL

In 2016, PMRA continued work on the pollinator risk assessment of the neonicotinoids under the Regulatory Cooperation Council. In January 2016, a joint progress report for the pollinator risk assessment of the neonicotinoid insecticides, and the first preliminary pollinator risk assessment for imidacloprid were published by PMRA and the US EPA. Following collaboration throughout 2016, PMRA and the US EPA were aligned in their risk assessment conclusions on both pollinator and environmental risk for imidacloprid, published in November 2016 and January 2017 respectively. Moving forward, PMRA and the US EPA continue to work together on the re-evaluation of the neonicotinoid pesticides, including the non-pollinator risk assessment work. The end result of this cooperation is a more consistent Canada-US approach to this class of pesticides.

To support simultaneous domestic registration applications in both the United States and Canada, the USEPA and PMRA re-assessed trial requirements for representative crops in the NAFTA Residue Chemistry Crop Groups. Key minor or specialty crops of importance to growers in both countries were also included in the trial requirement assessment. The reduction in the number of trials required for joint projects will allow both the minor use programs in the United States and Canada as well as pesticide registrants to use their resources more efficiently, and facilitate increased joint American/Canadian registrations. This reduction in requirements may meet the criteria for trial distinction/separation by allocating fewer field trials across the available geographic range.

NAFTA

Since its inaugural meeting in 1996, the NAFTA Technical Working Group on Pesticides has served as the focal point for addressing pesticide-related issues arising in the context of liberalized trade between Canada, Mexico, and the United States. Our multilateral collaboration has resulted in success in aligning pesticide regulation in North America to create and maintain high standards of protection for human health and the environment.

The North American Free Trade Agreement (NAFTA) Technical Working Group on Pesticides met in Quebec City in the fall of 2016 to discuss various issues

- Innovations in technology and in plant sciences (such as exogenously applied RNAi)
- MRLs and implications in trade
- Improvements to joint reviews
- Mexican project on risk and stress factors impacting bee colonies

Financial Profile

Financial Profile (in millions of dollars)	
A-Base	27.8
Revenue	7.9
Growing Forward	3.7
Chemicals Management Plan	5.0
Total	44.4

PMRA received \$3.7M through the Growing Forward initiative to support the registration of minor use products. As a result, newer, more environmentally sustainable, and more modern products have been made available to Canadian producers, which helps sustain Canada's competitive position globally.

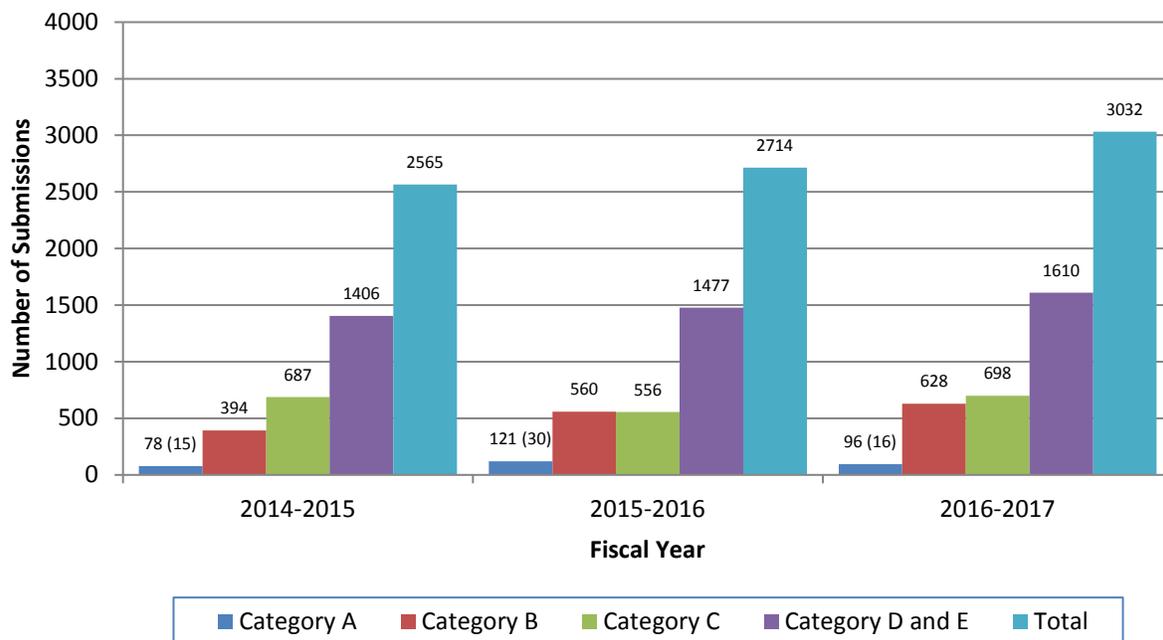
Through Canada's Chemicals Management Plan, PMRA received \$5M to re-evaluate older pesticides, improve risk management approaches through Incident Reporting and Sales Reporting regulations, and contribute to the development of scientific and regulatory approaches with other jurisdictions on high-priority issues. For more information, please consult the Chemicals Management Plan webpage at: <http://www.chemicalsubstanceschimiques.gc.ca/plan/index-eng.php>.

Appendices

TABLE 1 PRODUCT SUBMISSION CATEGORIES

Category A	Submissions to register new active ingredients and their companion end-use product(s); applications to add a major new use to a registered pesticide; submissions to establish a maximum residue limit for a previously non-assessed active ingredient; and submissions for user requested minor use registrations. Category A submissions require a full, supporting data package.
Category B	Submissions to amend a product label (for example, changes in application rates, timing of applications, new pests, changes to precautionary statements) or to change the product chemistry. Supporting data must be provided.
Category C	Submissions to register or amend a product label (add pest, use or change application rate) or change a formulation based on previously established precedents.
Category D	Submissions to register or amend products within particular programs such as the Import for Manufacture and Export, Own-Use Import, Grower Requested Own Use program, Master Copy, Private Label, User Requested Minor Use Label Expansion and renewal of registration.
Category E	Submissions for research authorizations and research notifications, when the research is carried out in Canada.

FIGURE 1 Number of Submissions Completed¹ by PMRA from April 1, 2014 to March 31, 2017

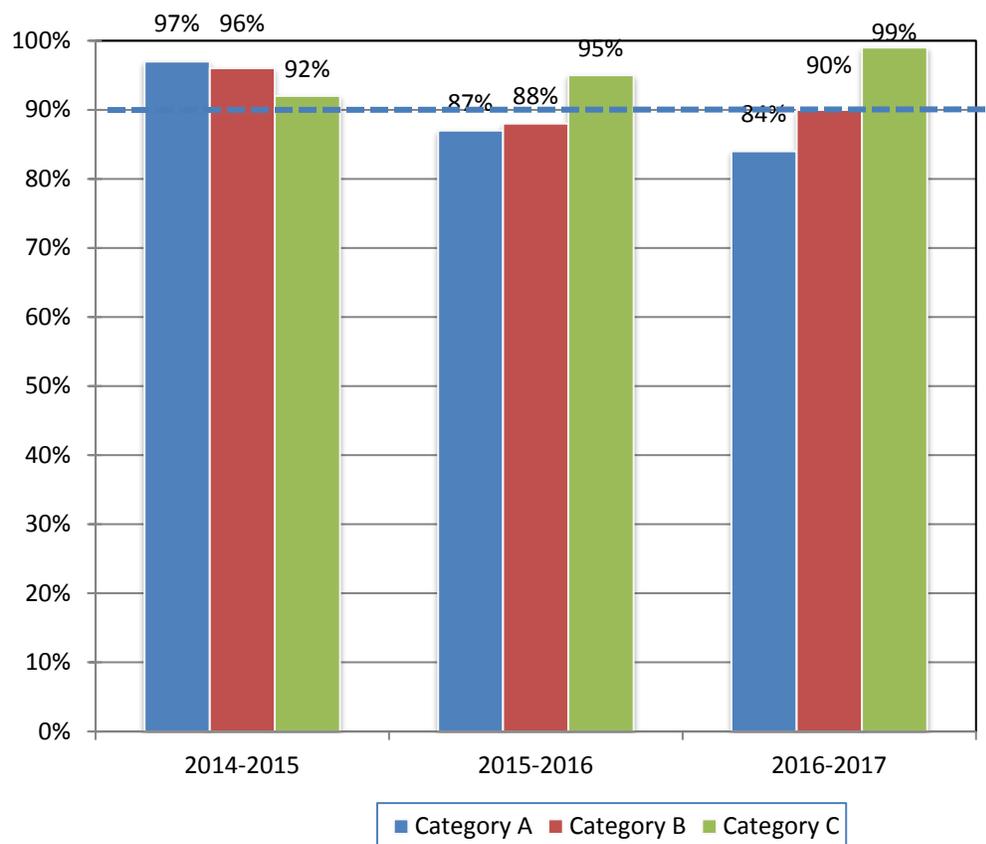


¹ Does not include pre-submission consultations

Trends and Limitations:

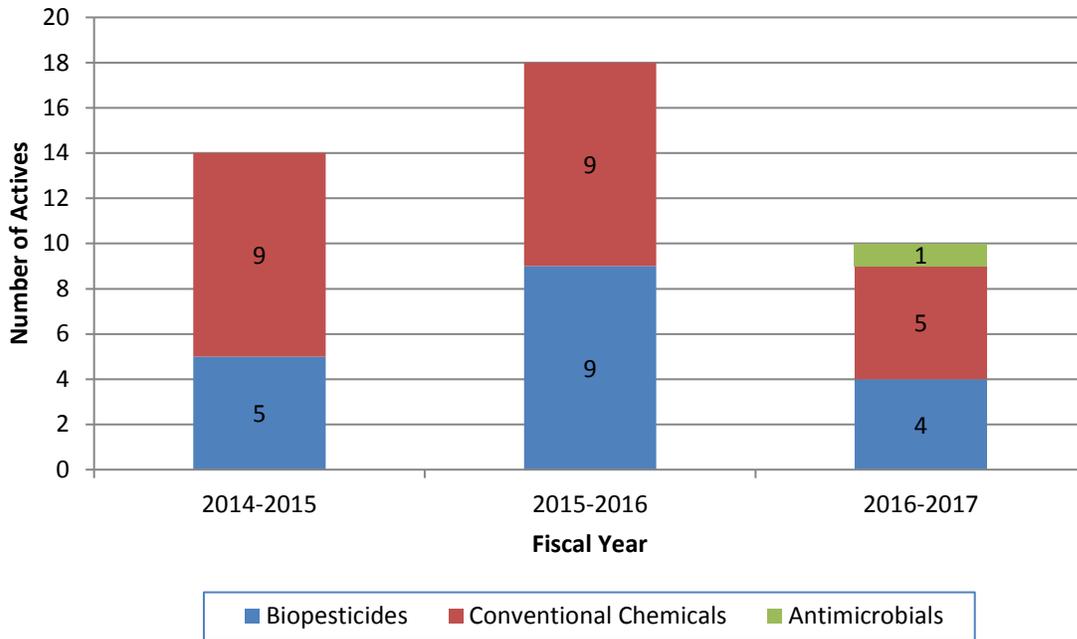
- Represents 12-month period
- Most Category A and many Category B submissions have a review timeline greater than 12 months, therefore work on many of the submissions reported as being completed in 2016-2017 was conducted in previous years.
- For Category A submissions, the number in parentheses reflects the number of new active ingredients completed and includes any new active ingredient for which only a maximum residue limit on imported food was established.
- The number of submissions completed does not include pre-submission consultations, and includes Registered, Withdrawn and Rejected submissions.

FIGURE 2 Performance Against Review Timelines for Category A, B and C Submissions Completed from April 1, 2014 to March 31, 2017



- This figure shows the percentages of submissions that were completed according to pre-determined timelines across different submission categories over the last three fiscal years.
- All categories of pre-market submissions have a performance standard of 90% against the established review timelines for Category A, B, and C submissions.
- Performance against review timelines for Category C submissions has increased since 2014-2015. Several policy changes (see Figure 1) contributed to improved performance in this submission category, which is now surpassing the published standard.
- Performance against timelines for Category A submissions is slightly below the performance standard of 90%.

FIGURE 3 Number of New Active Ingredients Registered by PMRA from April 1, 2014 to March 31, 2017



- This figure provides the number of new active ingredients registered over the course of the last three fiscal years. It represents active ingredients that have been registered for use in Canada and excludes any new active ingredients for which only a maximum residue limit on imported food was established.

TABLE 2 NEW ACTIVE INGREDIENTS REGISTERED IN 2016–2017

	Active Ingredient	End-Use Product (s)	Product Type	Registration Status	Product Category	Uses/Sites
1	4-chloroindole-3-acetic acid, present as potassium salt	Wilson Lawn WeedOut Selective Weed Control	Herbicide	Full	Biopesticide	Turf.
		Wilson Lawn WeedOut Battery Powered	Herbicide	Full	Biopesticide	
		Wilson Lawn WeedOut Ultra Battery Powered	Herbicide	Full	Biopesticide	
		Wilson Lawn WeedOut Ultra Concentrate 10X	Herbicide	Full	Biopesticide	
		Wilson Lawn WeedOut Concentrate 3X	Herbicide	Full	Biopesticide	
		Wilson Lawn WeedOut Ultra	Herbicide	Full	Biopesticide	
		Lawn WeedOut Selective Weed Control	Herbicide	Full	Biopesticide	
		Lawn WeedOut Ultra Selective Weed Control	Herbicide	Full	Biopesticide	
		WeedOut Ultra Professional	Herbicide	Full	Biopesticide	Lawns and turf (on right-of-ways, non-crop areas, golf courses, sod production, parks, cemeteries and athletic fields).
2	Ammonia (present as ammonium carbamate)	SPECTRUM XD1878 Chlorine Stabilizer	Slimicide	Full	Antimicrobial	Pulp and paper mill water systems. Recirculating cooling water systems: industrial cooling towers, evaporative condensers, heat exchange water towers, and influent systems such as flow through filters and industrial water scrubbing systems.
3	<i>Bacillus mycoides</i> isolate J	LifeGuard WG	Fungicide	Full	Biopesticide	Tomato (field and greenhouse), peppers (all types) (field and greenhouse), potatoes, spinach (field and greenhouse), sugarbeet.
4	Beta-Cyfluthrin	Temprid ReadySpray	Insecticide	Full	Conventional Chemical	Indoor uses: perimeter treatment around outside edges of a room (baseboards, ceiling), doorways, and/or windows. Spot, crack and crevice treatment, or void treatment. Outdoor uses on exterior surfaces: spot, crack and crevice, or broadcast treatment. Use Locations: apartment buildings, bakeries, cafeterias, correctional facilities, homes, hospitals, hotels, greenhouses (structures only), industrial buildings,
		Temprid SC	Insecticide	Full	Conventional Chemical	

	Active Ingredient	End-Use Product (s)	Product Type	Registration Status	Product Category	Uses/Sites
						kitchens, laboratories, livestock housing, pet kennels, manufacturing establishments, mausoleums, motels, nursing homes, poultry houses, food/feed and non-food/feed processing and packing plants, restaurants, schools including nurseries and daycares, shelters, stores, warehouses, inside transportation vessels such as buses, trucks, vans, trailers, rail cars marine vessels, cars and mobile homes (excluding the passenger areas of aircraft).
5	Buprofezin	APPLAUD Insect Growth Regulator	Insect growth regulator	Full	Conventional Chemical	Greenhouse cucumbers, peppers, tomatoes. Greenhouse ornamentals (ground covers and landscape plants; container-grown ornamentals).
6	Canola Oil	Vegol Ready-To-Spray	Insecticide miticide fungicide	Full	Biopesticide	Greenhouse and outdoors: flowering, foliage and bedding plants. Roses. Ornamental and shade trees (flower and foliage plants, ash, birch, barberry, flowering cherry, crabapples, dogwood, elm, evergreens, hawthorn, holly, lilac, magnolia, maple, oak, pine, flowering peach, flowering plum, privet, pyracantha, spruce, sycamores, tuliptree, willow), ornamental shrubs. Houseplants. Greenhouse and outdoors: beets, carrots, potatoes, radishes, rutabagas, sugar beets, onions, lettuce, celery, chard, broccoli, cabbage, cauliflower, kale, soybeans, beans, peas. Asparagus, apples, pears, apricots, cherries, nectarines, peaches, plums, prunes, sour cherries, hazelnuts, chesnuts, pecans, walnuts, corn, hops. Crop Group 8-09, Fruiting Vegetables (Greenhouse and outdoors): cocona, eggplant, bell peppers, African eggplant, pea eggplant, scarlet eggplant, garden huckleberry, goji berry, groundcherry, martynia, narajila, okra, pepino, Non-bell pepper, roselle, sunberry, tomatillo, tomato, currant tomato, bush tomato, tree tomato. Crop Group 9 Cucurbit Vegetables (Greenhouse and outdoors): Chayote (fruit), Chinese waxgourd (Chinese preserving melon), citron melon, cucumber, gherkin, edible gourd (includes hyotan, cucuzza), edible gourd (includes hechima, Chinese okra), momordica (includes balsam apple, balsam pear, bitter melon, Chinese cucumber), muskmelon (includes true cantaloupe, cantaloupe, casaba, crenshaw melon, golden pershaw

	Active Ingredient	End-Use Product (s)	Product Type	Registration Status	Product Category	Uses/Sites
						<p>melon, honeydew melon, honey balls, mango melon, Persian melon, pineapple melon, Santa Claus melon and snake melon), pumpkin, Summer squash (includes crookneck squash, scallop squash, straightneck squash, vegetable marrow, zucchini), Winter squash (includes butternut squash, calabaza, hubbard squash, [(C. mixta, C. pepo) {includes acorn squash, spaghetti squash}]), Watermelon.</p> <p>Crop Group 13-07 – Berries (greenhouse and outdoors): amur river grape, aronia berry, bayberry, bearberry, bilberry, blackberry, blueberry (highbush and lowbush), buffalo currant, buffaloberry, che, Chilean guava, chokecherry, cloudberry, cranberry, currant (black and red), elderberry, European barberry, gooseberry, grape, highbush cranberry, Edible honeysuckle, huckleberry, jostaberry, juneberry (Saskatoon berry), kiwifruit (fuzzy and hardy), lingonberry, maypop, mountain pepper berries, mulberry, muntries, native currant, partridgeberry, pincherry, phalsa, raspberry (black and red), riberry, salal, schisandra berry, sea buckthorn, serviceberry, strawberry, wild raspberry.</p>
		Vegol Crop Oil	Insecticide miticide fungicide	Full	Biopesticide	<p>Greenhouse and outdoors: Flowering, foliage and bedding plants.</p> <p>Roses.</p> <p>Ornamental and shade trees (flower and foliage plants, ash, birch, barberry, flowering cherry, crabapples, dogwood, elm, evergreens, hawthorn, holly, lilac, magnolia, maple, oak, pine, flowering peach, flowering plum, privet, pyracantha, spruce, sycamores, tuliptree, willow), ornamental shrubs.</p> <p>Houseplants.</p> <p>Greenhouse and outdoors: beets, carrots, potatoes, radishes, rutabagas, sugar beets, turnips, onions, lettuce, celery, chard, broccoli, cabbage, cauliflower, kale, soybeans, beans, peas.</p> <p>Asparagus, apples, pears, apricots, cherries, nectarines, peaches, plums, prunes, sour cherry, hazelnuts, chestnuts, pecans, walnuts, corn, alfalfa (animal feed), hops, <i>Cannabis</i> (marihuana) produced commercially indoors.</p> <p>Crop Group 8-09, Fruiting Vegetables (greenhouse and outdoors): :cocona, eggplant, bell peppers, African eggplant,</p>

	Active Ingredient	End-Use Product (s)	Product Type	Registration Status	Product Category	Uses/Sites
						<p>pea eggplant, scarlet eggplant, garden huckleberry, goji berry, groundcherry, martynia, okra, narajila, pepino, nonbell pepper, roselle, sunberry, tomatillo, tomato, bush tomato, Currant tomato, tree tomato.</p> <p>Crop Group 9 Cucurbit Vegetables (greenhouse and outdoors): Chayote (fruit), Chinese waxgourd (Chinese preserving melon), citron melon, cucumber, gherkin, edible gourd (includes hyotan, cucuzza), edible gourd (includes hechima, Chinese okra), momordica (includes balsam apple, balsam pear, bitter melon, Chinese cucumber), muskmelon (includes true cantaloupe, cantaloupe, casaba, crenshaw melon, golden pershaw melon, honeydew melon, honey balls, mango melon, Persian melon, pineapple melon, Santa Claus melon and snake melon), pumpkin, summer squash (includes crookneck squash, scallop squash, straightneck squash, vegetable marrow, zucchini), Winter squash (includes butternut squash, calabaza, hubbard squash, [(C. mixta, C. pepo) {includes acorn squash, spaghetti squash}]), Watermelon.</p> <p>Crop Group 13-07- Berries (greenhouse and outdoor): amur river grape, aronia berry, bayberry, bearberry, bilberry, blackberry, blueberry (highbush and lowbush), buffalo currant, buffaloberry, che, chilean guava, chokecherry, cloudberry, cranberry, currant (black and red), elderberry, european barberry, gooseberry, grape, highbush cranberry, edible honeysuckle, huckleberry, jostaberry, juneberry (Saskatoon berry), kiwifruit (fuzzy and hardy), lingonberry, maypop, mountain pepper berries, mulberry, muntries, native currant, partridgeberry, phalsa, pincherry, raspberry (black and red), riberry, salal, schisandra berry, sea buckthorn, serviceberry, strawberry.</p>
		Vegol Insecticidal Oil	Insecticide miticide fungicide	Full	Biopesticide	<p>Greenhouse and outdoors: Flowering, foliage and bedding plants.</p> <p>Roses.</p> <p>Ornamental and shade trees (flower and foliage plants, ash, birch, barberry, flowering cherry, crabapples, dogwood, elm, evergreens, hawthorn, holly, lilac, magnolia, maple, oak, pine, flowering peach, flowering plum, privet, pyracantha, spruce, sycamores, tuliptree, willow), ornamental shrubs.</p>

	Active Ingredient	End-Use Product (s)	Product Type	Registration Status	Product Category	Uses/Sites
						<p>Houseplants.</p> <p>Greenhouse and outdoors: beets, carrots, potatoes, radishes, rutabagas, sugar beets, turnips, onion, lettuce, celery, chard, broccoli, cabbage, cauliflower, kale, soybeans, beans, peas.</p> <p>Asparagus, apples, pears, apricots, cherries, nectarines, peaches, plums, prunes, sour cherries, hazelnuts, chestnuts, pecans, walnuts, corn, hops.</p> <p>Fruiting Vegetables (Greenhouse and outdoors): cocona, eggplant, bell peppers, African eggplant, pea eggplant, scarlet eggplant, garden huckleberry, goji berry, groundcherry, martynia, narajila, okra, pepino, Non-bell pepper, roselle, sunberry, tomatillo, tomato, currant tomato, bush tomato, tree tomato.</p> <p>Cucurbit Vegetables (Greenhouse and outdoors): Chayote (fruit), Chinese waxgourd (Chinese preserving melon), citron melon, cucumber, gherkin, edible gourd (includes hyotan, cucuzza), edible gourd (includes hechima, Chinese okra), momordica (includes balsam apple, balsam pear, bitter melon, Chinese cucumber), muskmelon (includes true cantaloupe, cantaloupe, casaba, crenshaw melon, golden pershaw melon, honeydew melon, honey balls, mango melon, Persian melon, pineapple melon, Santa Claus melon and snake melon), pumpkin, Summer squash (includes crookneck squash, scallop squash, straightneck squash, vegetable marrow, zucchini), Winter squash (includes butternut squash, calabaza, hubbard squash, [(C. mixta, C. pepo) {includes acorn squash, spaghetti squash}]), Watermelon.</p> <p>Berries (greenhouse and outdoors): amur river grape, aronia berry, bayberry, bearberry, bilberry, blackberry, blueberry (highbush and lowbush), buffalo currant, buffaloberry, che, Chilean guava, chokecherry, cloudberry, cranberry, currant (black and red), elderberry, European barberry, gooseberry, grape, highbush cranberry, Edible honeysuckle, huckleberry, jostaberry, juneberry (Saskatoon berry), kiwifruit (fuzzy and hardy), lingonberry, maypop, mountain pepper berries, mulberry, muntries, native currant, partridgeberry, phalsa, pincherry, raspberry (black and red), riberry, salal, schisandra berry, sea buckthorn, serviceberry, strawberry, wild raspberry.</p>

	Active Ingredient	End-Use Product (s)	Product Type	Registration Status	Product Category	Uses/Sites
7	Flumethrin	Bayvarol Beehive Pest Control Strip	Insecticide	Full	Conventional Chemical	Beehives.
8	Mandestrobin	S-2200 4 SC Fungicide	Fungicide	Full	Conventional Chemical	<p>Canola (subgroup 20A): Borage; carinata; crambe; cuphea; echium; flax seed; gold of pleasure; hare's ear mustard; lesquerella; lunaria; meadowfoam; milkweed; mustard seed; oil radish; poppy seed; rapeseed (including canola); sesame; sweet rocket; cultivars, varieties, and/or hybrids of these).</p> <p>Grape (subgroup 13-07F): Gooseberry, Amur river grape, Grape, Maypop, Schisandra berry, Cultivars, varieties and/or hybrids of these).</p> <p>Strawberry (subgroup 13-07G except cranberry): Blueberry, lowbush, Bearberry, Bilberry, Cloudberry, Lingonberry, Muntries, Partridgeberry, Strawberry, Cultivars, varieties and/or hybrids of these.</p> <p>Turfgrass on golf courses, lawns and landscape areas around residential, institutional, public, commercial and industrial buildings, parks, recreational areas, athletic fields and sod farms.</p>
		S-2200 3.2 FS Fungicide	Fungicide	Full	Conventional Chemical	<p>Corn (field corn, sweet corn, popcorn).</p> <p>Crop Group 6: Legume Vegetables (Succulent or Dried) Bean (<i>Lupinus</i>) (includes grain lupin, sweet lupin, white lupin, and white sweet lupin); bean (<i>Phaseolus</i>) (includes field bean, kidney bean, lima bean, navy bean, pinto bean, runner bean, snap bean, tepary bean, wax bean); bean (<i>Vigna</i>) (includes adzuki bean, asparagus bean, blackeyed pea, catjang, Chinese longbean, cowpea, crowder pea, moth bean, mung bean, rice bean, southern pea, urd bean, yardlong bean); broad bean (<i>Fava</i>); chickpea (garbanzo); guar; jackbean; lablab bean; lentil; pea (<i>Pisum</i>) (includes dwarf pea, edible-podded pea, English pea, field pea, garden pea, green pea, snowpea, sugar snap pea); pigeon pea; soybean; soybean (immature seed); sword bean.</p> <p>Canola (Rapeseed Subgroup 20A) carinata; crambe; cuphea; echium; flax seed; gold of pleasure; hare's ear mustard; lesquerella; lunaria; meadowfoam; milkweed; mustard seed; oil radish; poppy seed; rapeseed (including canola); sesame; sweet rocket; cultivars, varieties, and/or hybrids of these.</p>
		Intuity Fungicide	Fungicide	Full	Conventional Chemical	<p>Canola (Crop Subgroup 20A): Borage; carinata; crambe; cuphea; echium; flax seed; gold of pleasure; hare's ear mustard; lesquerella; lunaria; meadowfoam; milkweed; mustard seed; oil radish; poppy seed; rapeseed (including canola); sesame; sweet rocket; cultivars, varieties, and/or hybrids of these).</p>

	Active Ingredient	End-Use Product (s)	Product Type	Registration Status	Product Category	Uses/Sites
						<p>Grape (Crop Subgroup 13-07F): Gooseberry, Amur river grape, Grape, Maypop, Schisandra berry, Cultivars, varieties and/or hybrids of these).</p> <p>Strawberry (Crop Subgroup 13-07G except cranberry): Blueberry, lowbush, Bearberry, Bilberry, Cloudberry, Lingonberry, Muntries, Partridgeberry, Strawberry, Cultivars, varieties and/or hybrids of these.</p>
		Pinpoint Fungicide	Fungicide	Full	Conventional Chemical	Turfgrass on golf courses, lawns and landscape areas around residential, institutional, public, commercial and industrial buildings, parks, recreational areas, athletic fields and sod farms.
9	Nicarbazin	OvoControl P	Bird chemosterilant	Full	Biopesticide	Reduces hatchability of eggs in pigeons. For outdoor use at manufacturing facilities, power utilities, hospitals, food processing plants, distribution centers, oil refineries and processing centers, chemical plants, rail yards, schools, campuses, military bases, seaports, hotels, apartments, condominiums, maintenance yards, shopping malls, airports and other commercial or industrial locations.
10	Pyriofenone	PYRIOFENONE 300SC Fungicide	Fungicide	Full	Conventional Chemical	<p>Grapes, strawberries, Caneberries (blackberry; loganberry; red and black raspberry; wild raspberry; cultivars and/or hybrids of these), goose berries, Saskatoon berries.</p> <p>Cucurbit Vegetable Crop Group 9: Chayote (fruit); Chinese waxgourd (Chinese preserving melon); citron melon; cucumbers; gherkin; gourd, edible (includes hyotan, cucuzza, hechima, Chinese okra); <i>Momordica spp</i> (includes balsam apple, balsam pear, bitter melon, Chinese cucumber); muskmelon, <i>Cucumis melo</i> (includes true cantaloupe, cantaloupe, casaba, Santa Claus melon; crenshaw melon; honeydew melon, honey balls, Persian melon, golden pershaw melon, mango melon, pineapple melon, snake melon); pumpkin; squash, summer (<i>Cucurbita pepo</i> includes crookneck squash, scallop squash, straightneck squash, vegetable marrow, zucchini); squash, winter (includes butternut squash, calabaza, hubbard squash, acorn squash, spaghetti squash; watermelon (<i>Citrullus spp.</i>); and hybrids and/or varieties of these.</p>

TABLE 3 Approved GROU Products 2016–2017

In 2016–2017, 23 products were available under the Grower Requested Own Use (GROU) Program:

SWITCH 62.5 WG Fungicide (Pest Control Product # 28189) - Canadian Registered Version of the GROU Approved Product, Switch 62.5 WG (U.S. EPA #100-953), GROU Equivalency Certificate #046 [expires December 31, 2019]

Agri-Mek SC Insecticide (Pest Control Product # 31607) - Canadian Registered Version of the GROU Approved Product, Agri-Mek SC Miticide/Insecticide (U.S. EPA #100-1351), GROU Equivalency Certificate #045 [expires December 31, 2018]

Upbeet Herbicide Dry Flowable 50% (Pest Control Product # 25813) - Canadian Registered Version of the GROU Approved Product, Dupont Upbeet Herbicide (U.S. EPA #352-569), GROU Equivalency Certificate #044 [expires December 31, 2018]

Ridomil Gold 480SL Fungicide (Pest Control Product # 28474) - Canadian Registered Version of the GROU Approved Product, Ridomil Gold SL (U.S. EPA #100-1202), GROU Equivalency Certificate #043 [expires December 31, 2017]

Assail 70 WP Insecticide (Pest Control Product # 27128) - Canadian Registered Version of the GROU Approved Product, Assail 70 WP Insecticide (U.S. EPA #8033-23), GROU Equivalency Certificate #042 [expires December 31, 2017]

Tattoo Fungicide (Pest Control Product # 29554) - Canadian Registered Version of the GROU Approved Product, Previcur Flex (U.S. EPA #264-678), GROU Equivalency Certificate #041 [expires December 31, 2019]

QUADRIS Flowable Fungicide (Pest Control Product # 26153) - Canadian Registered Version of the GROU Approved Product, Abound Flowable Fungicide (U.S. EPA #100-1098), GROU Equivalency Certificate #040 [expires December 31, 2019]

[Under Special Review] Princep Nine-T Herbicide (Pest Control Product # 16370) - Issuance of import certificates will not be considered at this time as the active ingredient is currently under special review

Elevate 50 WDG Fungicide (Pest Control Product #25900) - Canadian Registered Version of the GROU Approved Product, Elevate 50 WDG Fungicide (U.S. EPA #66330-35), GROU Equivalency Certificate #038 [expires December 31, 2017]

[Under Special Review] [Renewal Pending] Velpar L Herbicide (Pest Control Product #18197) - Issuance of import certificates will not be considered at this time as the active ingredient is currently under special review

FirstRate Herbicide (Pest Control Product #26697) - Canadian Registered Version of the GROU Approved Product, FirstRate (U.S. EPA #62719-275), GROU Equivalency Certificate #036 [expires December 31, 2019]

Pursuit 240 (Pest Control Product #23844) - Canadian Registered Version of the GROU Approved Product, Pursuit Herbicide (U.S. EPA #241-310), GROU Equivalency Certificate #026 [expires December 31, 2018]

Pursuit Herbicide (Pest Control Product #21537) - Canadian Registered Version of the GROU Approved Product, Pursuit Herbicide (U.S. EPA #241-310), GROU Equivalency Certificate #025 [expires December 31, 2018]

B-Nine WSG Plant Growth Regulator (Pest Control Product #17465) - Canadian Registered Version of the GROU Approved Product, B-Nine WSG (U.S. EPA #400-478), GROU Equivalency Certificate #023 [expires December 31, 2018]

SePRO A-Rest Solution (Pest Control Product #16393) - Canadian Registered Version of the GROU Approved Product, A-Rest Solution (U.S. EPA #67690-2), GROU Equivalency Certificate #022 [expires December 31, 2017]

SUMAGIC Plant Growth Regulator (Pest Control Product #25781) - Canadian Registered Version of the GROU Approved Product, SUMAGIC Plant Growth Regulator (U.S. EPA #59639-37), GROU Equivalency Certificate #020 [expires December 31, 2019]

Bonzi Plant Growth Regulator (Pest Control Product #25453) - Canadian Registered Version of the GROU Approved Product, Bonzi Ornamental Growth Regulator (U.S. EPA #100-996), GROU Equivalency Certificate #021 [expires December 31, 2017]

Assure II Herbicide (Pest Control Product #25462) - Canadian Registered Version of the GROU Approved Product, Assure II Herbicide (U.S. EPA #352-541), GROU Equivalency Certificate #017 [expires December 31, 2017]

Reglone Desiccant (Pest Control Product #26396) - Canadian Registered Version of the GROU Approved Product, Reglone Desiccant (U.S. EPA #100-1061), GROU Equivalency Certificate #016 [expires December 31, 2019]

[Under Special Review] [Renewal Pending] Aatrex Liquid 480(Pest Control Product #18450) - Issuance of import certificates will not be considered at this time as the active ingredient is currently under special review

Reflex Liquid Herbicide(Pest Control Product #24779) - Canadian Registered Version of the GROU Approved Product, Reflex Herbicide (U.S. EPA #100-993), GROU Equivalency Certificate #008 [expires December 31, 2018]

Roundup WeatherMAX with Transorb 2 Technology Liquid Herbicide (Pest Control Product #27487) - Canadian Registered Version of the GROU Approved Product, Roundup WeatherMAX Herbicide (U.S. EPA #524-537), GROU Equivalency Certificate #007 [expires December 31, 2018]

Basagran Liquid Herbicide (Pest Control Product #12221) - Canadian Registered Version of the GROU Approved Product, Basagran T&O Herbicide (U.S. EPA #7969-326), GROU Equivalency Certificate #005 [expires December 31, 2018]

TABLE 4 RE-EVALUATION/SPECIAL REVIEW DOCUMENTS PUBLISHED IN 2016–2017

Active Ingredient	Document Number	Summary of Decision or Proposed Decision
Final Decisions – Re-evaluations		
Boron cluster	RVD2016-01	Acceptable for continued registration for some uses. Mitigation includes cancellation of certain uses and new/revised label statements to further protect human health.
Imazamox	RVD2016-04	Acceptable for continued registration. Mitigation includes new/revised label statements to further protect human health and the environment.
d-Phenothrin	RVD2016-05	Acceptable for continued registration. Mitigation includes new/revised label statements to further protect human health and the environment.
4-aminopyridine	RVD2016-06	Acceptable for continued registration. Mitigation includes new/revised label statements to further protect human health and the environment.
Acrolein	RVD2016-07	Acceptable for continued registration. Mitigation includes new/revised label statements to further protect the environment.
Quinclorac	RVD2016-08	Acceptable for continued registration. Mitigation includes new/revised label statements to further protect human health and the environment.
Copper Pesticides	RVD2016-09	Acceptable for continued registration. Mitigation includes new/revised label statements to further protect human health and the environment.
Final Decisions – Special Reviews		
Trifluralin	REV2016-11	Acceptable for continued registration.
Fluazinam	REV2016-12	Acceptable for continued registration.
Fluazifop-p-butyl	REV2016-14	Acceptable for continued registration. Mitigation includes new/revised label statements to further protect human health.
Dichlobenil	REV2017-01	Acceptable for continued registration. Mitigation includes new/revised label statements to further protect the environment.
Simazine	REV2017-02	Acceptable for continued registration.
Atrazine	REV2017-09	Acceptable for continued registration.
Diazinon (17(1))	REV2017-12	Acceptable for continued registration. Mitigation includes new/revised label statements to further protect human health.
Diazinon (17(2))	REV2017-13	Acceptable for continued registration. Mitigation includes new/revised label statements to further protect human health.
Proposed Decisions for Public Consultation – Re-evaluations		
Copper Pesticides	PRVD2016-14	Proposed for continued registration with implementation of new/revised mitigation measures to further protect human health and the environment.
Quinclorac	PRVD2016-15	Proposed for continued registration with implementation of new/revised mitigation measures to further protect human health and the environment.
Acrolein	PRVD2016-16	Proposed for continued registration with implementation of new/revised mitigation measures to further protect the environment.

Active Ingredient	Document Number	Summary of Decision or Proposed Decision
Cyfluthrin	PRVD2016-17	Proposed for continued registration for certain uses with implementation of new/revised mitigation measures to further protect human health and the environment. Proposed cancellation of other uses due to health risk concerns.
Cypermethrin	PRVD2016-18	Proposed for continued registration with implementation of new/revised mitigation measures to further protect human health and the environment.
Antisapstain and Joinery use: Propiconazole	PRVD2016-19	Proposed for continued registration with implementation of new/revised mitigation measures to further protect human health and the environment.
Imidacloprid (general)	PRVD2016-20	Proposed for continued registration for certain uses with implementation of new/revised mitigation measures to further protect human health and the environment. Proposed cancellation of other uses due to environmental risk concerns.
Joinery use: Tebuconazole	PRVD2016-21	Proposed for continued registration with implementation of new/revised mitigation measures to further protect human health and the environment.
Antisapstain and Joinery use: Boron	PRVD2016-22	Proposed for continued registration with implementation of new/revised mitigation measures to further protect human health and the environment.
Antisapstain use: 2-(Thiocyanomethylthio) benzothiazole (TCMTB)	PRVD2016-23	Proposed for continued registration with implementation of new/revised mitigation measures to further protect human health and the environment.
Antisapstain and Joinery use: Didecyl Dimethyl Ammonium Chloride (DDAC)	PRVD2016-24	Proposed for continued registration with implementation of new/revised mitigation measures to further protect human health and the environment.
Antisapstain and Joinery use: Iodocarb	PRVD2016-25	Proposed for continued registration with implementation of new/revised mitigation measures to further protect human health and the environment.
Antisapstain use: Copper-8-quinolinolate	PRVD2016-26	Proposed for continued registration with implementation of new/revised mitigation measures to further protect human health and the environment.
Proposed Decisions for Public Consultation – Special Reviews		
Simazine	REV2016-09	Proposed for continued registration.
Chloropicrin	REV2016-10	Proposed for continued registration.
Carbaryl	REV2016-13	Proposed for continued registration.
Dichlobenil	REV2016-15	Proposed for continued registration with implementation of new/revised mitigation measures to further protect the environment.
Acephate	REV2016-16	Proposed for continued registration with implementation of new/revised mitigation measures to further protect human health and the environment.
Diazinon (17(1))	REV2016-18	Proposed for continued registration with implementation of new/revised mitigation measures to further protect human health.
Diazinon (17(2))	REV2016-19	Proposed for continued registration with implementation of new/revised mitigation measures to further protect human health.
Hexazinone	REV2017-11	Proposed for continued registration with implementation of new/revised mitigation measures to further protect the environment.

