Health Canada Santé Canada

Canada

Pest Management Regulatory Agency

2021–2022 Annual Report

Protecting human health and the environment

Protéger la santé humaine et l'environnement

Également offert en français sous le titre : Agence de réglementation de la lutte antiparasitaire Rapport annuel 2021–2022

This publication is also available on the Internet at Canada.ca/pesticides.

This publication can also be made available in alternate format(s) upon request.

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
2 Constellation Drive A.L. 2608

Telephone: 1-800-267-6315 Facsimile: 1-613-736-3758

ISSN: 1719-2358 (PDF version) Catalogue Number: H110-2023E-PDF

Contents

Message from the Executive Director

I am pleased to present to you the Pest Management Regulatory Agency (PMRA) Annual Report for 2021–2022.

The PMRA remains focused on regulating pesticides in Canada to minimize risks to human health and the environment. Our staff continue to conduct thorough scientific evaluations of new and currently registered pesticides according to the requirements of the *Pest Control Products Act*, as well as engage with Canadian stakeholders and collaborate with partners. While these core activities have continued, it has been a year of profound change.

At the beginning of the fiscal year, we began to plan the implementation of key aspects of our program renewal goals that were feasible with existing funding, while continuing to uphold the high standards of health and environmental protection that Canadians expect and deserve from us. This included improving and strengthening the work the PMRA has conducted in recent years, as it regulates pest control products.

As we continued to explore funding options, stakeholders continued to advocate for more pesticide program resources, and the public continued to voice their concerns about various aspects of how the PMRA makes decisions.

Then on 4 August 2021, the Government of Canada announced that $42 million in funding over 3 years would be allocated to Health Canada to further strengthen the capacity and transparency of the pesticide review process in Canada. This funding was intended to support, among other things, a targeted review of the *Pest Control Products Act*, improving the availability of independent data and advice to further inform pesticide review decisions, and increased transparency of decision-making.

In November, Dr. Manon Bombardier joined the PMRA in a new Assistant Deputy Minister role, to oversee the Agency's program transformation.

The change at the PMRA has been significant, with several new senior managers brought in to lead new teams, all of whom have had to get up to speed very quickly on the complexities of pesticide regulation, while working towards meeting our new commitments.

Dr. Bombardier and I have worked very closely from day one as anything done under transformation has to consider the critical day-to-day regulation of pesticides, which continues to form the bulk of our work as an agency.

Our workforce continues to be almost entirely remotely based, and while COVID-19 has continued to disrupt people's lives, PMRA staff have continued to do what needs to be done to protect Canadians from the health and environmental risks of pesticides.

While also making some progress in clearing a backlog from the previous years, a very substantial

volume of work was completed, on prescribed timelines, under circumstances that are still nowhere near normal or predictable. I am immensely proud of what they have achieved through these difficult times.

We continue to monitor shifts in policies and decision-making among our major trading partners. These shifts can potentially affect trade, as well as the confidence Canadians have in their government when regulatory decisions are different.

As you will see in Dr. Bombardier's message and the report that follows, the PMRA's transformation is well underway as we seek to reinforce the solid science-based regulatory framework we have built, while improving participation in our decision-making as we continue to protect the health of people in Canada and the environment around them.

Peter Brander

Executive Director
Pest Management
Regulatory Agency

Message from the Assistant Deputy Minister, Transformation

Health Canada is a world leader in health and safety regulation. Over the years, I have had the great privilege to lead several regulatory teams within the Government of Canada. I have seen firsthand here at the PMRA, the rigour of our work and our team's commitment to excellence in the health and safety of Canadians.

I was honoured last year when the Deputy Ministers of Health Canada asked me to step in to lead the PMRA's transformation effort. The Agency is well known for upholding high standards of health and environmental protection in the regulation of pesticides.

The announcement of 4 August 2021 was a turning point for the PMRA. The Government of Canada announced a $42 million investment over three years to strengthen the pesticide review process and improve transparency. To deliver on these commitments and advance the Minister's mandate to modernize and strengthen the *Pest Control Products Act* to ensure it supports transparency and use of independent scientific advice and input in the pesticide decision-making process, the PMRA established a Transformation Agenda.

The transformation is well underway and will bring significant changes in the way the PMRA delivers its regulatory activities. It has involved a good deal of hard work behind the scenes. By November 2022, we had completed several key steps in our transformation journey and had already begun implementing on a pilot basis some of our modernized business processes, collecting real-world data to inform the development of national pesticide monitoring programs, seeking independent scientific advice to better inform our decisions, and taking steps to improve transparency. This report shows that we still have long way to go as there is much more to be done, and that, based on what we have heard so far, we are headed in the right direction.

Reflecting on the past year, we have undoubtedly witnessed an unprecedented degree of stakeholder and partner engagement which has contributed to informing our transformation approach. I would like to thank PMRA stakeholders and partners from across Canada who have been sharing their insights with us, often under tight timelines, to help inform our path forward. I would also like to acknowledge the dedication, resiliency, and creativity of the PMRA's employees as they adjusted to an ever-changing environment while they continued to deliver on core regulatory activities. Peter and I take great pride in their commitment to protecting the health and safety of Canadians.

We have set a strong foundation for this Transformation Agenda, one that provides a clear path forward and expected outcomes that will result from its implementation. I will continue to work closely with

Peter and the Agency Executive Team to ensure a smooth implementation while sustaining our core regulatory activities. We will also be maintaining robust and meaningful engagement with provincial and territorial governments, and other federal departments, Indigenous organizations and other stakeholders to continue to inform and advance our efforts.

As we transform, we continue our unwavering commitment to evidence-based decision-making and our seasoned scientists will continue to provide their expertise and pledge to a strong regulatory system for pesticides in Canada. We will continue to draw upon the invaluable knowledge of our newly established independent science advisory committee to further inform some of our decisions.

I am proud of the collective achievements we have realized in this first year of our transformation journey. I look forward to continued collaboration in bringing changes that will contribute to better protecting Canadians and their environment. For more information on our Transformation activities, we invite you to visit the Protecting human health and the environment: Transforming the Pest Management Regulatory Agency portion on the Canada.ca website.

Dr. Manon Bombardier

Assistant Deputy Minister
Transformation
Pest Management Regulatory Agency

I would like to thank PMRA stakeholders and partners from across Canada who have been sharing their insights with us, often under tight timelines, to help inform our path forward.

2021–2022 Performance highlights

New active ingredients	10
New generic products (active ingredient and end-use)	299
New minor uses	351
Emergency registrations	8
Joint reviews	1
Final re-evaluation decisions	7
Proposed re-evaluation decisions	15
Final special review decisions	4
Proposed special review decisions	2
Pesticide incident reports received	1546
Scientific studies received through incident reporting	114
Compliance verifications	845
Enforcement actions taken	4393
Compliance promotion activities	65

About the Pest Management Regulatory Agency

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*. The PMRA's primary mandate is to prevent unacceptable risks to Canadians and the environment from the use of these products.

The 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.

Health Canada's Regulatory Operations and Enforcement Branch collaborates with the PMRA on promoting, monitoring and enforcing compliance with the *Pest Control Products Act* across Canada. Health Canada is committed to doing this in an open and transparent manner, in close collaboration with other federal departments as well as provinces and territories.

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, international collaboration, and information management.

Vision

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

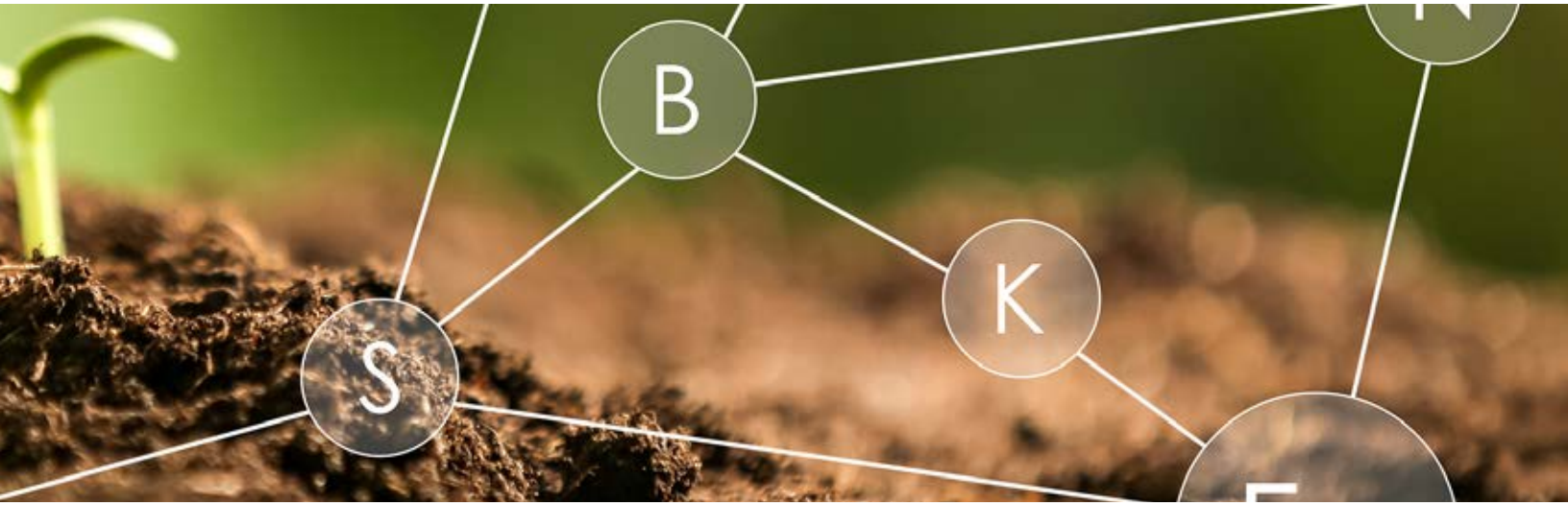
Mission

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

What are pesticides?

In general, pesticides are toxic chemicals intentionally released into the environment to control pests on crops, in homes and workplaces, and in industrial processes. These can include personal insect repellents, wood preservatives, and pool disinfectants. Pesticides also include biologicals (derived from natural sources such as bacteria, fungi, viruses, plants, animals and minerals) and devices.

There are more than 600 registered active ingredients in more than 7600 registered pesticide products in Canada.



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 regulated based on scientific risk assessment and risk management, before and after they are registered for use.

Before a pesticide can be registered for use in Canada, pesticide applicants are required to provide the PMRA with extensive scientific data to show that their product does not pose unacceptable risks to health and the environment, and that the product has value. The PMRA also seeks any relevant information from the scientific literature during the evaluation process. These data are reviewed by PMRA scientists to determine whether a product is acceptable for registration in Canada.

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

- an examination of all sources and routes (oral, dermal or 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 vulnerable populations such as 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 effects, 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, and aquatic organisms;
- 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.

For some currently registered pesticides, registrants may request changes to the use-pattern, in other words, how, when or for what purpose the pesticide is allowed to be used. For these types of registrations, the PMRA may also assess:

- additional environmental data, such as levels of pesticides detected through monitoring of pesticide concentrations in water across Canada or the United States;

- any incident reports from Canada or other jurisdictions where the pesticide is already registered;
- any other information needed to evaluate the health and environmental risks and the value of the pest control product.

Various factors determine which studies are required to be submitted by applicants for registration, such as the nature of the product, the intended use, and the type of registration (for an overview of product submission types, see Appendix Table A1). The PMRA follows established service standards, or defined timelines, for these evaluations as outlined in the Management of Submissions Policy (Regulatory Directive DIR2017-01). The PMRA's performance is measured against these service standards.

The PMRA continues to work to meet the review timelines across all submission categories. However, the additional challenges presented by the COVID-19 pandemic impacted our ability to meet the review timelines for certain submission categories (Appendix Figure A1).

The number and type of submissions reviewed by the PMRA can vary significantly by year, as shown in Appendix Figure A1.

New active ingredients and products registered in 2021–2022

In 2021–2022, 10 new active ingredients (the substance with the pesticidal effect) were registered for use in Canada, resulting in the registration of nine new related end-use products (different formulations of products containing the active ingredient). Of the 10 new active ingredients, six were biopesticides (derived from natural sources such as bacteria, fungi, viruses, plants, animals and minerals) and four were conventional chemical pesticides. Please see Appendix Table A2 for a full list of new active ingredients registered.

A total of 300 new end-use products were registered, containing new and existing registered active ingredients. Some examples of end-use products registered in 2021–2022 include:

- a biopesticide product for use against the invasive emerald ash borer;
- a biofumigant to protect cannabis and hemp from nematodes and soil-borne fungal diseases;
- a biopesticide seed treatment to protect corn and soybean against parasitic nematodes;
- fungicide and nematicide products with unique modes of action, which help with product stewardship by delaying resistance development;
- herbicide and growth regulator products based on naturally occurring plant hormones;
- a UV-generating sanitizer device.

PMRA performance results

In 2021–2022, the PMRA's performance results improved across the majority of pre-market evaluation categories compared to the previous year. Furthermore, more categories exceeded the 90% performance target in 2021–2022 (five) compared to the previous year (three).

The pre-market evaluation categories that missed the 90% performance target in 2021–2022 were Category A (new active ingredients, major new uses and import maximum residue limits) at 82%, Category L (data protection) at 88% and Category P (Pre-submission consultation requests) at 74%. See Appendix Figure A2 for full details on pre-market performance.

Category A performance was affected by a number of factors, including a large increase in the number of applications received (94 in 2021–2022 compared to 51 the previous year); an increasingly complex workload; and, a delay in the publication of consultation and final decision documents due to the prioritization of publishing COVID-19 related material.

Another area that experienced challenges in 2021–2022 was Category P (Pre-submission consultations). Despite being a free service, the PMRA assigns a service standard to this category and works to meet the 90% performance target. The PMRA failed to meet this target in 2021–2022 due to an exceptional surge in requests from applicants unfamiliar with the regulatory process, for pesticides and/or devices that were proposed to control, reduce, destroy or inactivate bacteria, viruses or other pathogens, relating to innovative products.

As part of its commitment to continuous improvement, the PMRA implemented changes to certain pre-market processes and tracking functions to improve workflow and workload management.

In addition, flexibilities were introduced to the processing of pre-market applications received for sanitizer products to address demands related to the COVID-19 pandemic.

On 1 April 2021, the PMRA began issuing remissions when pre-market performance targets were missed.

Joint reviews

Joint reviews are pesticide assessments conducted in cooperation with other jurisdictions. Registrants must apply to register their product in each participating jurisdiction at the same time for a joint review to be conducted.

In 2021–2022, of the 10 active ingredients registered, one was a joint review. The PMRA is continuing to pilot new joint review approaches with the United States Environmental Protection Agency to increase efficiencies of the review process. The pilot approaches have been shared with international partners with the aim of increasing international interest in joint reviews, potentially leading to more global joint reviews in the future.

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, has value, and poses no unacceptable health and environmental risks. The data supporting an innovation to Canada (in other words, 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. Data used subsequently to amend or maintain a registration or register a new product are given compensable protection, meaning the applicant must compensate the innovator to use the data.

This practice incentivizes innovation by allowing the innovator the opportunity to recover their investment, and 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.

The number of generic applications continued to increase and remain high. In 2021–2022, the PMRA received 299 applications to register generic products, 136 of which resulted in generic registrations (63 active ingredients and 73 end-use products). Of these registrations, 90% were agricultural products, among which 60% were herbicides, 30% were fungicides, and 10% were insecticides.

Minor uses

The term "minor use" describes a potential use for a pest control product whose anticipated volume of sales is not sufficient to persuade a manufacturer to register and sell the product in Canada. The definition emphasizes that it is the projected sales of the pest control product that is minor and not necessarily the size of the crop. A minor use may be registered on a major crop because the use may be needed only occasionally or is limited to a small percentage of the total area of the crop.

To help resolve these pesticide access issues for Canadian growers, the PMRA works with Agriculture and Agri-Food Canada's Pest Management Centre to support growers and grower associations in identifying priorities for new minor use registrations in Canada. The PMRA also works directly with the provinces to assist in addressing regional minor use needs.

In 2021–2022, the PMRA made 67 minor use regulatory decisions, of which 53 were from the provinces and 14 were from Agriculture and Agri-Food Canada. In addition, two were joint reviews with the United States Environmental Protection Agency. Final label reviews resulted in the registration of 351 new minor uses.

In March 2021, Health Canada's Office of Audit and Evaluation published a report regarding the PMRA's activities in support of the Minor Use Pesticides Program (2013–2014 to 2019–2020). The evaluation assessed activities delivered by the PMRA in support of the joint Health Canada – Agriculture and Agri-Food Canada program, and primarily focused on the effectiveness and efficiency of the program. The evaluation found that the PMRA has successfully met its objectives and contributed to an increase in the availability of minor use pesticides to growers. Several

In 2021–2022, the PMRA made 67 minor use regulatory decisions, of which 53 were from the provinces and 14 were from Agriculture and Agri-Food Canada. In addition, two were joint reviews with the United States Environmental Protection Agency. Final label reviews resulted in the registration of 351 new minor uses.

Emergency registrations for control of invasive species: zebra mussels

Zebra mussels are an invasive aquatic species that were introduced into the Great Lakes in the late 1980s. Since then, zebra mussels have spread throughout North America. Monitoring along the Nelson River in Manitoba has documented exponential zebra mussel growth since invasion in 2019. Manitoba Hydro's hydroelectricity infrastructure along the Nelson River was deemed at risk of high colonization rates with potential accumulation rates of 100 000 zebra mussel adults/m^2.

Manitoba Hydro focused zebra mussel control efforts on hydroelectric generating stations along the Nelson River, which generate power for Manitoba, Ontario, Saskatchewan and the United States. Small fires are not uncommon in an aging facility that uses high power switching devices. Colonization with mussels could lead to potentially disastrous consequences in the event of an uncontrolled fire in winter, when power demands are high.

Physical removal of zebra mussels is difficult and labour intensive on a large scale. Potash has been shown to be an effective molluscicide in both open water and closed system applications at water temperatures ≤15°C. Other authorized chemical products available were not viable options given the piping configuration, location, and risk associated with an incomplete treatment.

Manitoba Agriculture and Resource Development submitted an application for the emergency use of Potash Molluscicide on behalf of Manitoba Hydro to control mussels in the Henday fire suppression system, and the emergency registration was granted for temporary use.

areas of improvement were noted, including re-examination of performance targets and increased transparency and communication. For a full copy of the report, please visit Evaluation of PMRA's Activities in Support of the Minor Use Pesticide Program 2013–2014 to 2019–2020 page on Canada.ca.

Emergency registrations

A pest control product can be registered for up to one year for the emergency control of serious pest infestations, for example, to control or eliminate an invasive species and protect native biodiversity. The human health and environmental risks of the product must be acceptable, and the product must have value.

The number of emergency registration submissions that the PMRA receives can vary from year to year, depending on pest outbreaks, environmental conditions, and the availability of alternative products and control methods. If a submission is received late in the year, or if it requires significant risk assessment, the registration decision may occur in the following year. In 2021–2022, the PMRA granted eight emergency registrations.

Maximum residue limits (MRLs)

Pause on proposed increases to MRLs

The PMRA plays an active role in the World Health Organization (WHO)/Food and Agriculture Organization (FAO) Codex Committee on Pesticide Residues, which is responsible for setting international food standards. The Government of Canada also participates in the World Trade Organization (WTO) *Agreement on the Application of Sanitary and Phytosanitary Measures* (SPS Agreement), which sets out basic rules for food safety and animal and plant health standards. Member countries are encouraged to use international standards, although they can set their own standards based on science and an appropriate assessment of risks.

In May 2021, the PMRA published a proposal to increase Maximum Residue Limits (MRLs) for Glyphosate on several imported crops (for example, dry peas, beans, lentils) based on a review conducted for the Joint FAO/WHO Meeting on Pesticide Residues (JMPR).[1] At that time, approval of these same MRLs were also being proposed at the Codex Committee on Pesticide Residues (CCPR52) and were subsequently adopted at the annual meeting of the Codex Alimentarius Commission in July 2021.

In July 2021, there was increased interest in the PMRA's Glyphosate consultation, with media coverage and approximately 20 000 comments received by the PMRA. Concurrent proposals to increase MRLs for some other pesticides (Metalaxyl and Sulfoxaflor) also generated interest.

On 4 August 2021, the government announced a pause on all proposals seeking to increase MRLs while it strengthens capacity and transparency of the review process for pesticides. In particular, the announcement[2] stated:

"…Government of Canada is putting a pause on proposed increases to Maximum Residue Limits (MRLs), including for glyphosate. As a result, there will be no increases to MRLs until at least spring 2022. The Ministers also announced the Government of Canada will begin consulting on specific provisions of the *Pest Control Products Act* (2002) to consider, among other elements, ways to balance how pesticide review processes are initiated in Canada and increase transparency."

The new funding "…will also allow the creation of a new expert panel process to provide advice, as appropriate, prior to evidence-based decisions of the PMRA on pesticides, including on MRLs."

The media attention at the time highlighted several challenges with the way that the PMRA communicates the science that underpins its pesticide decisions, including on MRLs, and the process through which these decisions are made.

Reinforcing trust in the PMRA's regulatory decisions by improving transparency including plain language communication on how MRLs are established and their safety for Canadians, and increasing the use of independent data and advice were identified as some of the key objectives of the PMRA's transformation.

1 Food and Agriculture Organization. Joint FAO/WHO Meeting on Pesticide Residues – JMPR. https://www.fao.org/policy-support/mechanisms/mechanisms-details/en/c/428623/; accessed 11 April 2023.

2 Health Canada. Government of Canada pauses decision on Glyphosate as it strengthens the capacity and transparency of review process for pesticides. https://www.canada.ca/en/health-canada/news/2021/08/government-of-canada-pauses-decision-on-glyphosate-as-it-strengthens-the-capacity-and-transparency-of-review-process-for-pesticides.html; accessed 11 April 2023.

MRLs in 2021–2022

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 for each combination of pesticide and treated food crop.

The PMRA sets science-based MRLs to ensure the food Canadians eat is safe. As of December 2021, Canada had approximately 24 800 pesticide MRLs set (Figure 1), while 678 MRLs were set in 2021–2022. Typically, an MRL applies to the identified raw agricultural food commodity as well as to any processed food product derived from these raw commodities. If it is determined that an unacceptable risk exists based upon how the pesticide is intended to be used, the pesticide will not be permitted for sale or use in Canada.

The Canadian Food Inspection Agency (CFIA) is responsible for monitoring MRL compliance in foods in the Canadian marketplace. In two of their most recent reports from 2018–2019 surveys, the overall compliance rates for pesticide MRLs were 100% in products sampled for the Children's Food Project, and 99.3% of samples in CFIA's Pesticides and Metals in Selected Foods. The compliance rate from previous reports along with these recent surveys continues to indicate that the vast majority of food on the market meets Canadian pesticide standards.

Differences in MRLs between countries can lead to trade barriers. If an importing country's MRL for a given commodity is set lower than Canada's, this can lead to the importing country refusing entry to the Canadian commodity, despite the fact that the difference does not reflect a health risk.

International differences in MRLs can occur as a result of differences in both use patterns and data available to regulators at the time of MRL establishment, as well as other factors. Aligning MRLs globally has become increasingly important to reduce barriers to the movement of treated agricultural food products around the world. Domestic and international collaboration is critical in resolving these issues. This is especially important to help ensure that Canadian crops can be exported to international markets and that Canadians have access to foods they want and need at home.

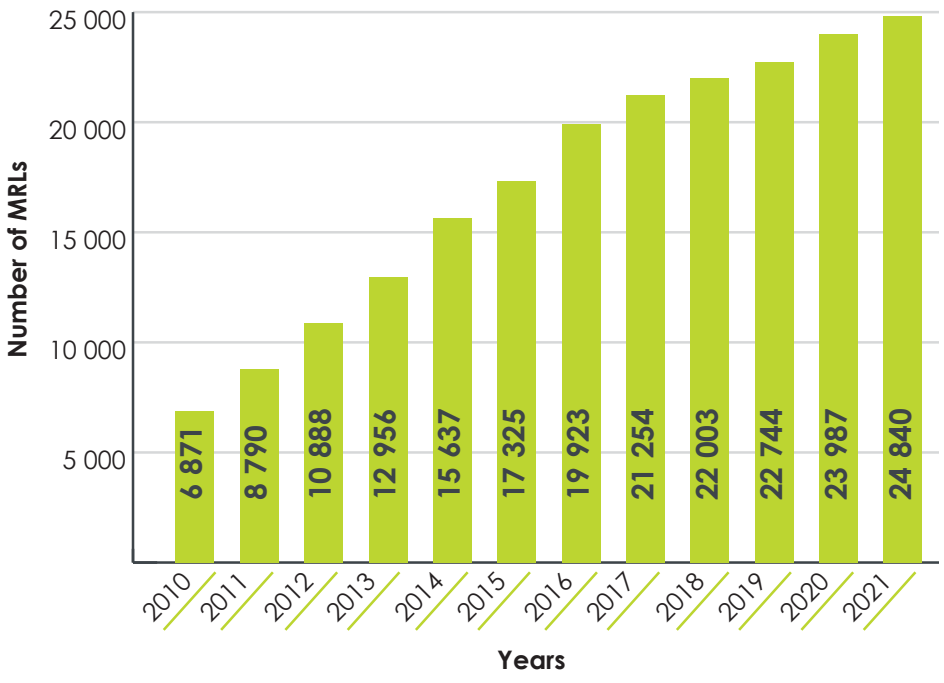
The PMRA continued work with its international partners under the Canada-United States-Mexico Agreement (CUSMA), the Organisation for Economic Co-operation and Development (OECD) and Codex Alimentarius Commission, on science policies relevant to establishing MRLs.

The PMRA is also continuing with an import MRL pilot project to explore the feasibility of specifying import MRLs using only foreign country reviews, if available, which is based on a similar pilot project conducted by the United States Environmental Protection Agency's Office

of Pesticide Programs. Preference is given to reviews prepared by the Joint Food and Agriculture Organization/World Health Organization Meeting on Pesticide Residues (Joint Meeting on Pesticide Residues), in which Canada actively participates, along with the European Food Safety Authority, the United States and other OECD countries such as Australia and New Zealand.

The absence of an MRL for a particular pesticide-crop combination in an export market (sometimes called a "missing MRL"), or MRL differences can also be a challenge for agricultural exporters. The PMRA continues to support Agriculture and Agri-Food Canada in efforts to address this challenge by providing policy and technical expertise to promote Canada's interests in international standard-setting for pesticide MRLs on agricultural commodities.

Figure 1.
Number of Canadian MRLs over time, including new MRLs



Regulation of pesticides on the market

Once a pesticide has been registered, 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, compliance and enforcement activities, and reporting of health and environmental incidents.

Re-evaluation and special review programs

Under the *Pest Control Products Act*, registered pesticides currently available on the market are subject to re-evaluations, which are initiated on a 15-year cycle based on the most recent major decision affecting the registration, including its initial registration. Pesticides registered after 1995 are referred to in the re-evaluation context as "cyclical pesticides".

Pesticides registered prior to 1995 are referred to as "older pesticides", and when the re-evaluation program was established, there were 401 of these older pesticides.

As of 31 March 2022, 395 of the original 401 were completed. The re-evaluation of older pesticides was scheduled to be completed by the end of 2020; however, delays due to the COVID-19 pandemic affected the timing of some final decisions.

Extensions of consultation periods for certain proposed re-evaluation decisions were granted to provide adequate opportunities for stakeholders impacted by the COVID-19 pandemic to provide comments. These extensions further delayed completion of the re-evaluation of the remaining older pesticides. Furthermore, these remaining older pesticides are complex re-evaluations based on their large use patterns, and require large volumes of scientific data, and in some cases data that may be complex to generate.

Under the re-evaluation 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. Unlike a re-evaluation, the intent of a special review is to address the specifically identified aspect(s) of concern, and may be triggered when:

- there are reasonable grounds to believe that the health or environmental risks of the product are, or its value is, unacceptable; or
- an OECD member country prohibits all uses of an active ingredient for health or environmental reasons.

In 2019, the *Pest Control Products Act* was amended to clarify that an identified aspect(s) of concern that would otherwise prompt a new special review can also be addressed through an ongoing re-evaluation or special review, reducing the need to duplicate work that is already being done.

Five-year re-evaluation and special review work plan

As part of its commitment to improve transparency, The PMRA published its five-year Re-evaluation and Special Review Work Plan 2021–2026 (Re-evaluation Note REV2021-03). This work plan includes the target timelines to publish proposed and final decisions for ongoing re-evaluations and special reviews, as well as the list of anticipated re-evaluation initiations in the next five years.

In 2021–2022, The PMRA made good progress on the re-evaluation of older pesticides. Completing these complex re-evaluations will continue to be a priority. As of 31 March 2022, 164 re-evaluations and special reviews were underway with a requirement to initiate 27 new re-evaluations later in fiscal year 2021–2022. As the PMRA focused its resources on completing older complex pesticide re-evaluations and special reviews, progress on the review of cyclicals re-evaluations was impacted.

Over the past five years, the PMRA has completed an average of 25 final decisions per year for re-evaluations and special reviews. Though this is an improvement over previous years, workload continues to increase as new re-evaluations and special reviews are initiated. Based on the projected number of re-evaluation initiations for the next five years, along with the average number of final decisions made per year, work on hand will continue to grow.

The PMRA continued to implement a risk-based triaging system to prioritize newer re-evaluation initiations to manage higher risks in a timely manner, and to manage the workload efficiently. Furthermore, in 2021–2022, the PMRA implemented a streamlined approach for lower priority actives. This is described in further detail in the Transformation section of this Annual Report.

Outreach and stakeholder engagement in re-evaluation and special review programs

The PMRA has increased outreach efforts with global regulators such as the United States Environmental Protection Agency, the Australian Pesticides and Veterinary Medicines Authority, and the European Food Safety Authority, to build awareness and potential opportunities for post-market collaboration.

The PMRA continued to offer stakeholders improved collaboration through the re-evaluation process. The agriculture stakeholder engagement unit continues to promote understanding of the PMRA's re-evaluation process and risk assessments. To meet these objectives, the unit has been giving presentations to stakeholders, responding to information requests and hosting stakeholder webinars related to specific re-evaluation decisions.

Pest control product sales information reporting

In 2021–2022, the PMRA published the annual sales report for the 2019 calendar year.

Sales of pest control products in Canada increased from 101.4 million kilograms of active ingredients (kg a.i.) in 2015 to 116.6 million kg a.i. in 2019 (Figure 2).

In 2019, 66.5% of pesticide sales in Canada were agricultural sector products (Figure 3), whereas 27.7% were non-agricultural sector products, and 5.8% were domestic sector products.

Glyphosate remained the top active ingredient sold in Canada in 2019 (Table 1). Six of the top 10 active ingredients sold in 2019 had been among the top 10 selling active ingredients since 2015. These top 10 active ingredients accounted for 71.1% of all pesticides sold in Canada in 2019.

Figure 2.
Quantity of pesticides sold in Canada (2015–2019)

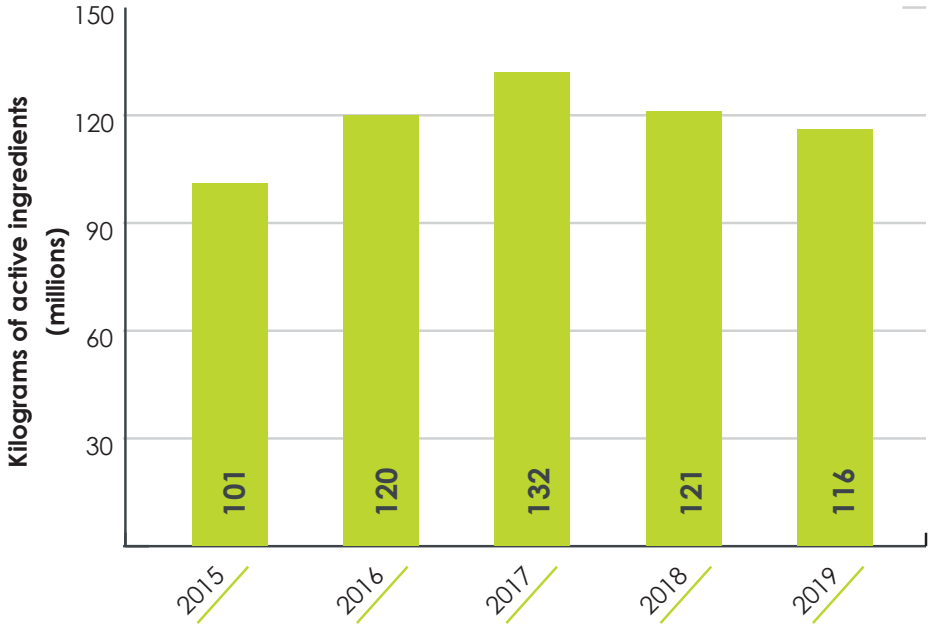


Figure 3.
Quantity of pesticides sold in Canada in 2019 by sector

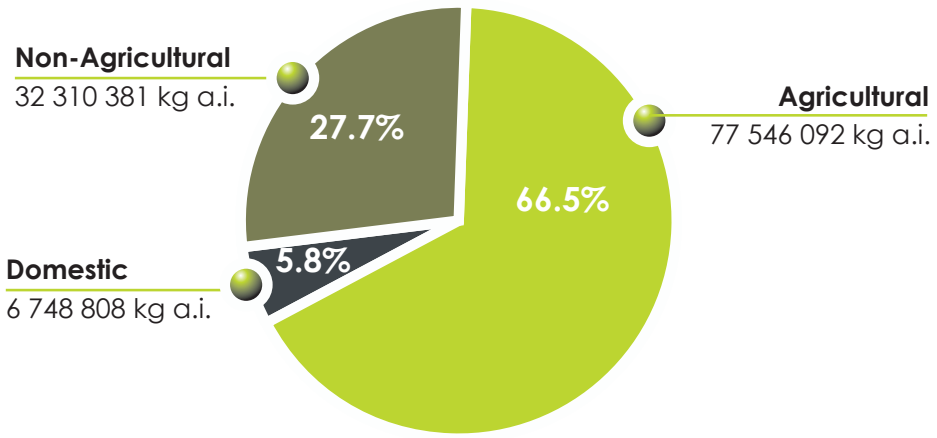


Table 1.

Top 10 active ingredients sold in Canada in 2019

Active ingredient	Product type
Glyphosate	Herbicide
Available chlorine, present as sodium hypochlorite	Antimicrobial
Creosote	Antimicrobial
Copper (as elemental)	Herbicide/Fungicide/Antimicrobial
Glufosinate ammonium	Herbicide
Borates	Insecticides/Fungicides/Antimicrobial
Surfactant blend	Other
2,4-D	Herbicide
MCPA	Herbicide
Corn gluten meal	Herbicide

Incident reporting

The PMRA uses incident reports to identify and characterize potential risks to humans or the environment from the use of pesticides, which were not evident during the initial registration of a pesticide.

A pesticide incident is a negative effect (adverse reaction) on humans, animals (pets, livestock or non-target wildlife) or plants that can result from exposure to a pesticide. Pesticide registrants are required by law to report all incidents related to their products to the PMRA. Canadians may also report pesticide incidents, either to registrants, or directly to the PMRA via the Public Engagement Portal Voluntary Incident Reporting Form.

Incident report assessments are prioritized based on the type of incident. Serious adverse effects such as death or life-threatening effects are evaluated immediately and mitigation 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 may be manufactured, packaged, labelled, or used.

Incident reports also inform risk assessments for new registrations and re-evaluations. New scientific studies must also be submitted as an incident report to the PMRA by registrants of a registered pesticide if the study demonstrates any new hazard, any risk that may be greater than the risk determined at the time of registration, or the presence of a previously undetected component or derivative of a pest control product.

Monitoring incidents for unanticipated effects is an ongoing process that includes re-assessing previous conclusions, as necessary. In cases where mitigation strategies have been adopted, the PMRA also monitors incident reports to determine if the post-incident mitigating actions were effective in managing the identified risk.

In 2021–2022, 1546 pesticide incident reports and 114 scientific studies were submitted to the PMRA. Details of these reports can be found through the Pesticide Incident Reporting Database, by visiting Canada.ca/pesticides and selecting the link for the "Pesticide product information database".

In 2021–2022, 1546 pesticide incident reports and 114 scientific studies were submitted to the PMRA.

Below is an overview of the incidents reported in 2021–2022:

- Domestic animal incidents were reported most frequently, followed by minor human incidents and packaging failures.
- The majority of reported Canadian domestic animal incidents involved spot-on pesticides used for flea, tick and mosquito control, and the majority of the reported health effects were minor in nature.
- A total of 882 incidents occurred in Canada and 664 incidents relevant to Canadian products occurred in the United States.
- Overall, Canadian incidents involved approximately 189 different pesticide products.
- The majority of products in reported incidents were domestic class pesticides, followed by commercial class pesticides.
- Only a very small number of products classified as restricted class or technical class were reported in incidents.

The PMRA took several risk reduction measures during the 2021–2022 period as a result of the incident report data received up to 2021. For example, the review of human and domestic animal incidents resulted in label improvements to new and existing products aimed at minimizing exposure to various active ingredients, including 98Sumithrin and difenaconazole. The required statements include human health precautionary label statements for structural pest control products and label statements on treated seed bags that direct the consumer to keep treated seed out of reach of children and animals.

To report a pesticide incident, visit Canada.ca/pesticides and select the link for "Report a pesticide incident".

Health Canada's compliance and enforcement activities on pesticides

Health Canada's Pesticide Compliance Program is responsible for promoting, verifying and enforcing compliance with the *Pest Control Products Act* and its Regulations. The primary objective of this legislation is to prevent unacceptable risks to the health and safety of Canadians and their environment from the use of pest control products. Compliance and enforcement functions and accountability are managed by Health Canada's Regulatory Operations and Enforcement Branch. Note that the Canadian Food Inspection Agency (CFIA) is responsible for monitoring MRL compliance in foods in the Canadian marketplace.

The Pesticide Compliance Program has oversight on all parties regulated by the *Pest Control Products Act* including pesticide registrants, manufacturers, importers, retailers, and users. The program conducts a variety of compliance verification and compliance promotion activities within all sectors.

- **Compliance promotion** activities include presentations, exhibits at trade shows, written articles, and the development and distribution of publications such as fact sheets. These activities increase the reach of the Pesticide Compliance Program and support overall levels of compliance by providing important information to regulated parties to foster compliance with the *Pest Control Products Act* and its Regulations.
- **Compliance verification** activities include conducting inspections and collecting samples to assess compliance. Compliance verification activities may be planned, or may be conducted in response to complaints or referrals from the Canada Border Services Agency.
- When required, **enforcement action** is taken against regulated parties to address identified non-compliance with the *Pest Control Products Act* and its Regulations. The Pesticide Compliance Program uses a range of enforcement tools including warning letters, compliance orders, notices of violation with warning or monetary penalty, prosecution, seizure, and partnering with the Canada Border Services Agency to refuse entry of unregistered pesticides into Canada.

The delivery of compliance activities is prioritized based on risk. Criteria used in the selection of priority areas for compliance activities includes potential risks to human health and the environment, compliance history, and outcomes of PMRA re-evaluation decisions. Considerations to assess risk include observations from the field, information from the PMRA and provincial regulators, and data analysis.

2021–2022 Results summary of compliance and enforcement activities

While public health measures implemented in response to the COVID-19 pandemic continued to impact how some Pesticide Compliance Program operations were delivered in 2021–2022, the program was able to resume on-site inspections and compliance promotion activities while complying with COVID-19 public health guidance.

The Pesticide Compliance Program contributed to the implementation of the Interim Order (IO) Respecting Ultraviolet Radiation Emitting Devices and Ozone-Generating Devices. The Pesticide Compliance Program provided support to inform users and industry about the new requirements, and conducted compliance verifications of manufacturers, distributors and major online selling platforms. The Pesticide Compliance Program also collaborated closely with Canada Border Services Agency to help prevent the importation of unauthorized UV-emitting and ozone-generating devices.

A total of 845 compliance verifications were conducted as a result of both planned and reactive activities (such as complaints) and 2132 admissibility recommendations were issued to the Canada Border Services Agency.

In 2021–2022, 1546 pesticide incident reports and 114 scientific studies were submitted to the PMRA.

A total of 4393 enforcement actions addressing single or multiple violations were issued to non-compliant parties, including:

- 2269 warning letters
- 11 compliance orders
- In partnership with the Canadian Border Services Agency, 2089 importations containing unauthorized products were refused entry into Canada
- 13 administrative monetary penalties under the Agriculture and *Agri-Food Administrative Monetary Penalties Act*, for a total value of $84 300 in penalties

Furthermore, 65 compliance promotion activities were delivered including presentations to associations, meetings and exhibit booths at trade shows, and distribution of communication materials on compliance risk mitigation measures.

About our transformation

The transformation mandate

In recent years, the PMRA has received feedback from Parliament, stakeholders, independent researchers, the Commissioner of the Environment and Sustainable Development, the public, and PMRA employees, identifying areas where the PMRA's pesticide regulatory activities could be improved to meet the expectations of Canadians, particularly in the areas of transparency and sustainability.

On 4 August 2021, the Government of Canada gave the PMRA a clear mandate, and $42 million in new funding over three years, to further strengthen oversight and protection of human health and the environment. This included undertaking a review of specific provisions of the *Pest Control Products Act*, increasing the use of independent data and scientific advice to further support pesticide regulatory decision-making, and improving transparency of decision-making.

This mandate was reaffirmed in the Minister of Health's December 2021 mandate letter, which included the following commitment: "To ensure Canadians are protected from risks associated with the use of pesticides and to better protect human health, wildlife and the environment, modernize and strengthen the *Pest Control Products Act* to ensure it supports transparency, use of independent scientific evidence and input to the decision-making process."

The feedback received from stakeholders in 2018–2020, together with extensive staff contributions and input, helped shape the PMRA's Transformation Agenda which was established in Fall 2021. It is probably the most comprehensive and wide-reaching change agenda the PMRA has ever embarked upon since its establishment in 1995.

Four pillars

The transformation effort is structured around four (4) major areas of work and their key objectives. First, we are modernizing our business (in other words, pesticide review) processes to strengthen the protection of human health and the environment, including wildlife. Second, we are improving transparency to enable more meaningful participation in the decision-making process. Third, we are increasing the use of real-world data and independent advice to better inform our decisions. Fourth, we are conducting a targeted review of the *Pest Control Products Act* to ensure the pesticide approval process meets the expectations of Canadians.

The first strategic objective of our Transformation is to strengthen protection of human health and the environment, including wildlife.

The four areas of work and their key initiatives are outlined below.

The first strategic objective of our Transformation is to **strengthen protection of human health and the environment, including wildlife**. This includes work to:

- Modernize from a point-in-time model to a **continuous oversight** approach, which includes expanding and formalizing use of emerging science and real-world data throughout the pesticide's regulatory lifecycle to better inform regulatory decisions
- Improve regulatory processes for **increased efficiency** and timely assessment and management of risks
- Introduce a **proportional effort** approach to allow the PMRA to direct resources where they are most needed to make timely decisions for overall improved health/environmental protection

The second strategic objective is to **enable more meaningful public participation in the regulatory review process by improving transparency** through the following measures:

- Providing information that is written in **clear, concise and plain language**, to enable Canadians and stakeholders to have informed participation in the process;
- Improving public access to **pesticide data and information** that form the basis of the PMRA's decisions;
- Improving web user experience to make it easier to search and find documents related to pesticide regulation, including consultation and decision documents.

The third strategic objective focuses on **increasing the use of real-world data on water monitoring and pesticide use, as well as independent scientific advice** to better inform the PMRA's pesticide decisions. This includes initiatives to:

- Develop a national water monitoring program for pesticides in Canada's lakes, rivers, wetlands and groundwater, in collaboration with other federal departments, provincial and territorial governments, academic experts, Indigenous groups, and various stakeholders;
- Pursue the development and implementation of a comprehensive pesticide use data program for agriculture and non-agriculture sectors through collaboration and partnerships with federal and provincial partners, crop specialists, grower and other user communities, and other stakeholders;
- Create an independent Science Advisory Committee on pest control products to provide the PMRA with advice in response to specific scientific questions.

Underpinning all of these objectives is the **targeted review of the *Pest Control Products Act*** to determine whether legislative changes would be needed as the PMRA further strengthens human health and environmental protection by modernizing business processes, improving transparency and stakeholder accessibility to information, and increases the use of real-world data and independent advice in the decision-making process.

To help coordinate the delivery of initiatives to meet federal commitments as laid out on 4 August 2021, an interdepartmental project governance committee comprised of senior leadership from the PMRA, Agriculture and Agri-food Canada and Environment and Climate Change Canada was established. The existing PMRA structure, governance, groups, and processes have also been leveraged to help coordinate the work, engage staff, and mobilize the management team across the Agency.

Stakeholder and partner engagement

A broad external engagement structure was established to consult with stakeholders and partners on the development and implementation of the Transformation Agenda.

In March 2022, the PMRA created a Transformation Steering Committee with over 40 members representing growers, academics, Indigenous groups and scientists, to provide feedback on strengthening and modernizing the *Pest Control Products Act* as well as other transformation initiatives.

Five technical working groups (TWG) were also established, each with their respective membership, terms of reference and mandate:

- Modernized Business Processes
- Pesticide Use Data and Information
- Transparency
- Water Monitoring Framework for Pesticides
- Maximum Residue Limits

Progress by pillar

Modernized business processes

The major objective of this pillar is to improve the protection of human health and the environment, including wildlife. In 2021–2022, the PMRA:

- Engaged with stakeholders on the proposed Continuous Oversight Approach;
- Developed active lifecycle documents (ALD) for 49 active ingredients to improve internal communication on activities related to specific pesticides, and to streamline evaluation processes;
- Initiated a pilot focused on requiring registrants to produce chemical data and supply an updated list of scientific literature studies as part of the registration renewal process;
- Developed an internal workload management tool to track and reduce the backlog of re-evaluations.

The PMRA also began to implement a new process to track and internally communicate key findings related to registered pesticides, integrating different streams of work and facilitating earlier risk identification. The PMRA introduced new checkpoints in the ongoing evaluation of registered pesticides at which key information is to be collected and considered (for example, published literature, international reviews) for further investigation or action. The PMRA has also begun to increase engagement with registrants on pesticides that meet criteria for a higher level of oversight.

The PMRA initiated stakeholder consultations on the development of a proportional effort framework to allow the PMRA to direct resources where they are most needed to make timely decisions about pesticides that are protective of health and the environment.

The PMRA introduced new checkpoints in the ongoing evaluation of registered pesticides at which key information is to be collected and considered (for example, published literature, international reviews) for further investigation or action.

Improved transparency

The major objective of this pillar is to enable more meaningful public participation in the PMRA's regulatory decision-making processes. In 2021–2022, the PMRA:

- Established a new Science Communication Unit to provide stakeholders and the public with a better understanding of the PMRA's decision-making processes and to improve the quality of the PMRA's scientific and communication materials
- Initiated a process to incorporate plain-language summaries into key regulatory decisions
- Consulted stakeholders and the public on:
  - Their information needs and interests
  - Whether independent review of scientific information could build trust and confidence in our decision-making
  - How access to pesticide-related information and data could be improved
  - Prototypes of plain language decision and public summary documents
  - Disclosure of applicant name at the time of submission

Increased use of real-world data and independent advice

The major objectives of this pillar are to increase the use of independent scientific advice and real-world data (for example, water monitoring and pesticide use information) in pesticide evaluations.

In 2021–2022, the PMRA:

- Worked with technical working groups, federal/provincial/territorial partners, manufacturers, academia, grower groups, and NGOs on the development of a National Water Monitoring Framework for Pesticides
- Worked with Health Canada's Regulatory Operations and Enforcement Branch (ROEB) Pesticide Laboratory to establish methods for measuring 185 currently registered pesticides and transformation products in water
- Worked with Environment and Climate Change Canada to ensure water monitoring data will be accessible to the public
- In partnership with Environment and Climate Change Canada and Agriculture and Agri-Food Canada, initiated water sampling across 89 sites in Canada
- Began to develop a systematic approach for gathering pesticide use information by identifying potential data sources and strategies to access pesticide use data in the agricultural crop production sector
- Launched a process to recruit members for the independent Science Advisory Committee (SAC)

Targeted review of the *Pest Control Products Act*

The objective of the targeted review of the *Pest Control Products Act* is to determine whether legislative changes would be needed as the PMRA further strengthens human health and environmental protection by modernizing business processes, improving transparency and stakeholder accessibility to information, and increases the use of real-world data and independent advice in the decision-making process.

In Spring 2021, the PMRA launched the most ambitious and extensive public and stakeholder engagement process in its history. The consultation process was intended to be open and transparent. The PMRA launched a transformation website to provide Canadians with information about the PMRA's transformation initiatives.

In 2021–2022, the PMRA:

- Published a discussion document to solicit input on specific questions to help inform the targeted legislative review
- Initiated stakeholder and public consultations on the *Pest Control Products Act*

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. The PMRA is continuously modernizing risk assessment and risk management approaches, refining business practices to help ensure the needs of all stakeholders are met, and responding to major scientific and environmental developments.

Evaluating new technologies

In addition to assessing the potential health and environmental risks of chemical and biological pesticides, the PMRA scientists monitor new developments such as machine learning, robotics and drones. While these technologies may have many benefits (for example, for precision agriculture), their potentially unique health and environmental risks must be identified and assessed carefully. The PMRA is working with manufacturers, other regulatory authorities globally, and international organizations such as the OECD and the World Health Organization Chemical Risk Assessment Network, to understand and assess new technologies and equipment that support modern agricultural practices.

Reducing animal testing

The PMRA also continues to be an active participant in various international activities aimed at reducing animal testing while ensuring the protection of human health. Recent collaborations include a project with scientists from the People for the Ethical Treatment of Animals (PETA) Science Consortium, North American government partners, and industry on Rethinking Carcinogenicity Assessment for Agrochemicals. This collaboration resulted in a framework for waiving cancer studies for when alternative methods or existing data are sufficient, published in Regulatory Toxicology and Pharmacology.

Improving scientific assessments

The PMRA's ongoing involvement with OECD in vitro initiatives include examining alternative in vitro tests and defining approaches for eye and skin irritation, dermal sensitization, immunotoxicity, and developmental neurotoxicity. The PMRA is a member of the Health and Environmental Sciences Institute (HESI) Transforming the Evaluation of Agrochemicals (TEA) Committee, which is developing a fit-for-purpose framework for the safety evaluation (health and environment) for agrochemicals.

A publication entitled "Canadian Regulatory Perspective on Next Generation Risk Assessments for Pest Control Products and Industrial Chemicals", summarizes a decade of completed and ongoing work through initiatives being led within Health Canada and externally (for example, the Canadian Centre for Alternatives to Animal Methods (CCAAM), the Canadian Centre for the Validation of Alternative Methods (CaCVAM), HESI, NICEATM).

Collaboration with a Department-wide community of experts on science-policy initiatives continues to be a priority for the PMRA, to explore further incorporation of race and gender considerations in exposure scenarios and risk assessments, as well as in the evaluation of incident reports.

Gene-edited organisms for pest control

Advances in gene editing tools and technologies have made the process of changing an organism's genome more efficient, opening up a range of potential applications. One such application is in pest control. By editing genomes of organisms, and introducing them to wild populations, it's now possible to control insect-borne disease and invasive species, or reverse insecticide resistance in pests. But the full implications of using these methods remains uncertain.

In February 2022, the PMRA partnered with Council of Canadian Academies (CCA) to sponsor an initiative to examine the scientific, bioethical, and regulatory challenges associated with the use of gene-edited organisms and technologies for pest control.

Remote piloted aircraft systems (drones) for pesticide application

The PMRA continues to receive inquiries related to the application of pesticides by Remote Piloted Aircraft Systems (RPAS, or drones). Currently, there are no registered uses of RPAS for pesticide application on Canadian pest control product labels. However, the PMRA is supporting a limited number of Research Authorizations in support of data generation for RPAS regulatory applications. Parties interested in adding the use of RPAS are encouraged to work with registrants using the PMRA Pre-Submission process to determine the kinds of data necessary to assess this new application technology.

In 2021–2022, the PMRA proceeded to work closely with two international working groups to coordinate information sharing on the health and environmental safety of this new application method, in support of regulatory reviews:

- **The OECD Working Group on Pesticides Drone Subgroup** – The PMRA assisted with coordinating a critical review of available global research related to environmental exposure (for example, spray deposition and drift), human health exposure (for example, operator/bystander exposure and crop residues), and product efficacy (for example, comparison to traditional application equipment). The final report was presented at the 2021 OECD Working Party on Pesticides and published on

the OECD website in November 2021 (Report on the State of the Knowledge – Literature Review on Unmanned Aerial Spray Systems in Agriculture, https://www.oecd.org/chemicalsafety/pesticides-biocides/literature-review-on-unmanned-aerial-spray-systems-in-agriculture.pdf). The PMRA is currently assisting the OECD with developing proposals for future work based on the recommendations set forward in the report.

- **The North American Remotely Piloted Aerial Application Systems (RPAAS) working group** – The PMRA provided an update on Canada's regulatory position on RPAS pesticide applications at the 2021 North American RPAAS Workshop and is engaged with the working group on developments in RPAS research.

The PMRA helped organize and participated in the 2021 Fall Meeting of the American Chemical Society's (ACS) "Unmanned Aerial Systems (UAS) (also known as Drones): Pesticide Spraying and Other Agricultural Applications" symposium. The symposium focused on technology development and applications of RPAS in agriculture, public health, and industrial vegetative management. Regulatory and policy development, and best management practices for UAS uses in these areas were also highlighted. The PMRA committed to helping organize and participate in the 2022 ACS Fall Meeting symposium.

The PMRA continues to move forward, in conjunction with international regulatory partners, on identifying regulatory data needs for this rapidly emerging spray technology.

International scientific and regulatory cooperation

Canada's internationally respected regulatory model has allowed Canada to form strong partnerships with other regulators, 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. These activities also involve bilateral information exchange to promote regulatory capacity building amongst other national and international pesticide regulatory authorities, thereby enhancing pesticide safety beyond our borders. In 2021–2022, technical meetings were held virtually.

Stockholm Convention

The Stockholm Convention is a legally binding international treaty with a focus on the elimination or restriction of the production and use of persistent organic pollutants (POPs). The PMRA is the responsible federal authority for meeting the obligations and for ongoing participation at the Stockholm Convention as it pertains to pesticides.

The PMRA collaborates with other federal partners by providing scientific experts to work with the Persistent Organic Pollutants Review Committee (POPRC) and the Conference of the Parties (COP) of the Stockholm Convention, and in the development of Canadian positions and submissions.

- At POPRC, the PMRA actively participates in the review of the scientific justification for identifying substances as POPs and making recommendations on how these substances can be managed globally.
- At the COP meetings, the PMRA provides experts to negotiate international decisions on restrictions working toward the elimination of each POP at the global level.

In 2021, at the 17th meeting of the POPRC, the committee finalized its evaluation of the pesticide methoxychlor and recommended that it be listed for elimination, without exemptions. This recommendation will be considered at the eleventh meeting of the COP in 2023. Methoxychlor is not a registered pesticide in Canada. The POPRC also found that a European Union proposal to nominate the pesticide chlorpyrifos as a POP met the convention's initial screening criteria. Therefore, chlorpyrifos advanced to the next evaluation stage, where a draft "risk profile" will be considered at the next meeting of the POPRC in 2022.

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. The Convention is a multilateral treaty to promote shared responsibilities in relation to importation of hazardous chemicals.

The Convention calls on exporters of hazardous chemicals to use proper labelling, include directions on safe handling, and inform purchasers of any known restrictions or bans.

The PMRA collaborates with other federal partners by providing scientific experts to work with the Chemical Review Committee (CRC) and the COP of the Rotterdam Convention, and in the development of Canadian positions and submissions.

For the CRC, the PMRA actively reviews submissions to the Rotterdam Convention against established Convention criteria and in 2021, the PMRA participated in the Seventeenth Meeting of the CRC (CRC.17). At the COP meetings, the PMRA provides experts to negotiate international decisions for each substance at the global level.

At CRC.17 the Committee recommended listing of the pesticides iprodione and terbufos in Annex III to the Convention. Annex III includes pesticides and industrial chemicals that have been banned or severely restricted for health or environmental reasons by two or more Parties and which the Conference of the Parties has decided to subject to the PIC procedure. Draft decision guidance documents for these

chemicals will be developed in the intersessional period for consideration at CRC.18 in 2023.

The previous meetings of the COPs for both the Rotterdam and Stockholm conventions had been delayed due to the pandemic. In 2021, "Part 1" of a rescheduled COP was held virtually. However, decisions on listing pesticides to the Rotterdam and Stockholm conventions were deferred until an in-person "Part 2", which was held after this annual report reporting cycle.

Organisation for Economic Co-operation and Development

The PMRA is involved with several OECD initiatives, including various OECD task forces and expert group projects. The PMRA routinely participates in meetings of both the OECD Working Party on Pesticides (WPP) as well as the OECD Working Group on Biocides. Both working groups function as vehicles for global cooperation, information exchange and alignment of approaches with respect to pesticides assessment.

The PMRA also contributes input (via the Canadian Delegation) to the OECD Joint Meeting of the Chemicals and Biotechnology Committee (CBC) as required. For example, the PMRA contributed to the development of the "OECD Possible Elements for an Updated Council Act and Best Practice Guide on Intellectual Property Rights Related to Chemical Safety Data" led by the CBC. After three years of participation in the ad hoc group, the draft revised Recommendation was endorsed by the CBC in spring/summer 2021 for final approval by the OECD Council. The PMRA routinely provides experts to participate in the OECD WPP Expert Groups on Residue Chemistry, Pollinator Safety, Bio-pesticides, and Electronic Exchange of Pesticide Data.

Some examples of OECD WPP initiatives include:

- development of a common approach to regulating novel pest control products, such as

The PMRA also plays a lead role on the OECD WPP e-label project to identify commonalities in pesticide labels that would support development of e-label solutions.

ribonucleic-acid-interference (RNAi) pesticides and new approach methods

- implementation of technical guidelines (for example, those that provide guidance on alternative approaches to animal testing)
- identification of residues, metabolites and degradation products
- development of a guidance document for regulating bacteriophages
- ongoing dialogue related to pollinator protection
- aligning risk assessment of new digital and mechanical technologies for applying pesticides such as innovative drone technology

The PMRA also plays a lead role on the OECD WPP e-label project to identify commonalities in pesticide labels that would support development of e-label solutions. Furthermore, the PMRA actively contributes to the Expert Group on Claims Development for Treated Articles.

In support of the OECD WPP's objectives, the PMRA has led discussions with global manufacturers of pesticides regarding new chemistries to broaden collaboration and promote global joint reviews and alignment between international regulatory partners. The PMRA has also initiated discussion with OECD partners on post-market review challenges and the potential benefit of having a greater collaboration in this area.

Codex

The PMRA plays an active role in the WHO/FAO Codex Committee on Pesticide Residues, which is responsible for setting international food standards. Codex participation enables the PMRA to:

- enhance Canada's influence on Codex deliberations and outcomes;
- promote the development of science-based standards that will result in fair practices in food trade (for example, establishment of MRLs);
- promote more effective work-planning by the committee (help ensure priorities include Canadian stakeholders' interests);
- promote the timely development of standards (for example, continue to explore opportunities for parallel reviews with the JMPR as described in the MRL section of this report).

This year's meeting of the CCPR52 was delayed due to the pandemic until 26 July to 30 July 2021.

Canada supported many of the actions that were put forward on the agenda, especially the involvement of the JMPR in a parallel review of a compound with at least two member countries. Canada leads the electronic working group for this pilot project. However, Canada raised concerns with the withdrawal of the clethodim MRL for rapeseed/canola, which could result in trade barriers for Canadian canola growers. As a result of Canada's intervention, the CCPR agreed to maintain the MRL until additional toxicology data can be submitted to JMPR by the manufacturer.

Canada also provides key contributions to the ongoing revisions of the classifications for food and feeds, and crop groupings, to promote alignment on a global level while respecting Canada's framework. Other achievements include Canada's contribution to the development of a discussion paper outlining guidelines for compounds of low public health concern that may be exempted from the establishment of Codex MRLs or do not give rise to residues. Important progress was made and the guidelines provide a foundation for international harmonization and help to outline a clear set of definitions and criterion for these compounds.

As one of the world's leading jurisdictions in the regulation of pesticides, Canada's contribution to the CCPR and to the JMPR is important to support the proper functioning of this multilateral effort to achieve greater harmonization of MRLs globally, while ensuring fair practices in the food trade and protecting human health.

Regulatory updates

In 2021–2022, the PMRA continued to take steps to modernize its legislative framework.

Due to the ongoing public health crisis and associated reprioritization of activities, certain regulatory proposals were delayed from their original anticipated delivery dates.

Regulating ultraviolet radiation-emitting and ozone-generating devices under the *Pest Control Products Act*

Ultraviolet radiation-emitting (UV) and ozone-generating devices that make claims to control or kill bacteria and viruses on surfaces, objects, in water, and in the air have been more widely and increasingly available for sale in Canada during the pandemic. Health Canada had not yet received sufficient evidence to demonstrate that all UV and ozone-generating devices can be used safely or work as claimed.

Devices that have not been evaluated against the requirements of the *Pest Control Products Act* may, therefore, pose a serious health and safety risk. Given this risk, the Minister made an Interim Order (IO) on 7 June 2021 to bring UV and ozone-generating devices used to control, reduce, destroy or inactivate bacteria, viruses or other microorganisms that are human pathogens, under the *Pest Control Products Act*. The Interim Order came into force immediately, with a 30-day transition period. The IO was approved by the Governor in Council on 18 June 2021, thereby extending its effective period for up to one year. To facilitate understanding of the requirements under the IO, Health Canada provided further details and clarifications on its webpage. The PMRA worked to amend the Pest Control Products Regulations before the IO expiry, to continue the protections established by the IO on a permanent basis.

Targeted regulatory reviews

The Government of Canada announced in Budget 2018 that it would fund, over three years, "targeted reviews of regulatory requirements and practices that are bottlenecks to economic growth and innovation."

Agri-food and aquaculture sector

As part of this initiative, in 2018, the PMRA participated in the targeted regulatory review of the agri-food and aquaculture sector. A central feature of the review was to invite input from businesses, Canadians,

academia and other stakeholders, on ways to make regulations more agile, transparent, and responsive.

In 2021–2022, the PMRA continued work on other regulatory modernization initiatives, including those related to the post-market review process, labelling, data compensation, and the authorization of pesticides not requiring registration.

Also in 2021–2022, as part of the implementation of the Agri-food and Aquaculture Regulatory Review Roadmap, the PMRA continued work on proposed statutory changes to:

- broaden the Minister's powers to make risk-based authorizations and exercise appropriate post-market oversight over authorized products; and,
- broaden the Minister's power to amend pest control product labels without an application in certain situations (for example, to clarify wording of an existing health or environmental protection requirement).

Pest Control Products Regulations review

Prior to the launch of regulatory reviews led by the Treasury Board Secretariat, the departments and agencies responsible for regulating the agri-food and aquaculture sector, including the PMRA, each had an ambitious regulatory modernization agenda that extended over several years.

In 2021–2022, the PMRA continued its comprehensive review of the Pest Control Products Regulations, the first such review since the regulations were established in 2006. The review is aimed at ensuring the regulations continue to meet program objectives (for example, of health and environmental protection) in an effective and efficient manner, while attempting to minimize regulatory burden on regulated parties.

In 2021–2022, the review included developing regulatory proposals to:

- Address certain aspects of the application and importation process for pest control products in Canada
- Clarify how the pest control product data compensation program functions in the post-market context

Regulatory guidance for sanitizers

Since the beginning of the pandemic, Health Canada's PMRA has faced a significant increase in requests for regulatory guidance from manufacturers, distributors and importers of sanitizers and similar type products (for example, UV radiation-emitting devices, self-sanitizing coatings) who wish to bring their products to market in Canada. The PMRA has facilitated timely responses through regular collaboration between

As part of this initiative, in 2018, the PMRA participated in the targeted regulatory review of the agri-food and aquaculture sector.

branches and international counterparts to ensure alignment of communications and consistency in regulatory requirements, where possible. By mid-year, the increased demand for regulatory guidance subsequently resulted in a five-fold increase in applications for registration for sanitizers and similar type products. The PMRA has communicated flexibilities to streamline applications for pest control products used to control or kill SARS-CoV-2 and requests for an expedited review are considered on a case-by-case basis, following confirmation that all required data and non-data elements have been submitted as part of the application to the PMRA.

Biocides have historically been regulated under separate regulatory frameworks in Canada, with surface sanitizers and disinfectants having different associated requirements, despite having similar risks, benefits, uses, and ingredients. In 2021–2022, Health Canada worked to develop new regulations under the *Food and Drugs Act* that would see the transfer of disinfectants that are currently regulated under the Food and Drug Regulations and surface sanitizers regulated under the *Pest Control Products Act* that meet the definition of a drug, to a single regulatory framework for biocides. Having harmonized regulations for both surface sanitizers and disinfectants as biocides that are modern and easy to understand would encourage industry to bring biocides to the Canadian market and would contribute to maintaining Canadians' access to safe, effective, and high-quality products.

The PMRA has communicated flexibilities to streamline applications for pest control products used to control or kill SARS-CoV-2

Stakeholder relations and outreach communications

The PMRA recognizes that transparency and openness is critical to strengthening trust in regulatory decisions about pesticides. The PMRA continually works to improve communication with the public, stakeholders and government partners through new and long-standing committees, events, outreach materials, and information and applications on the PMRA website.

Reading room process

The pandemic had a significant impact on the ability of the public to inspect confidential test data in the PMRA Reading Room, located at the Ottawa headquarters. An interim process was piloted as an alternative method to facilitate the secure remote sharing of data with requesters, using document protection software. This pilot was a success and this interim process will be continued while work on the transparency aspect of the Transformation Agenda continues.

Pest Management Information Service

During the 2021–2022 fiscal year, the PMRA received and responded to 3861 inquiries through the Information Service. Questions were predominantly from applicants and registrants (54%), the general public and consumers (18%), provincial and territorial governments (4%), the federal government (3%) and growers (2%).

Stakeholder engagement

In June and December 2021, the PMRA hosted its regular bilingual stakeholder information sessions virtually. In June, attendees received updates on pre- and post-market performance evaluation statistics, environmental assessment, and program renewal.

In December, in addition to the usual updates and an overview of the PMRA's Transformation Agenda, the event included a panel discussion with representatives from Agriculture and Agri-Food Canada and Environment and Climate Change Canada on the subject of water monitoring data and pesticide use data. This webcast provided a diverse group of stakeholders with updates on pesticide regulation, as well as an opportunity to ask questions.

Participation since the first event held in 2017 grew to 181 non-government participants at the December 2021 session. Feedback following the event was positive and helps inform future events.

Pest Management Advisory Council

The Minister of Health's Pest Management Advisory Council (PMAC) met virtually in April 2021.

The PMRA provided updates on: Re-evaluation and Special Reviews, Implementing the Program Renewal Integrated Approach, the proposed 2021-2026 Strategic Plan, policy and regulatory initiatives, labelling initiatives, the Reading Room, and national water monitoring.

The Council was supportive of the direction of the new Integrated Approach, and recommended that the PMRA be provided with additional core funding to proceed with its implementation, and to effectively deliver its legislative mandate.

Federal, Provincial, Territorial Committee on Pest Management and Pesticides

Members of the Federal, Provincial, Territorial Committee on Pest Management and Pesticides held five teleconferences to discuss issues of national interest, and met in virtual format for their annual meeting in June 2021. Co-chaired with the Government of Ontario, the meeting's theme was "Collaboration". Committee members discussed re-evaluation data submissions, online sales of pest control products, digital initiatives in field data management and publications, and national water monitoring for pesticides. Members also received updates on activities of the Sub-Committee on Pesticide Education, Training and Certification, and the Minor Use Working Group. The Committee was in support of the creation of a working group to address issues related to the sale of pesticides online, and a strategy for coordinating and sharing compliance and enforcement information that crosses jurisdictional boundaries.

Science Advisory Committee on Pest Control Products (SAC-PCP)

As described in the transformation section, as part of the 4 August 2021 Government of Canada announcement with respect to strengthening the capacity and transparency of the review process for pesticides, the government committed to the creation of a new science advisory committee to provide advice, as appropriate, prior to certain evidence-based decisions of on pesticides. This committee will act in an advisory role to the PMRA and provide expert, independent scientific advice to support the PMRA's science-based decision making on pesticides to better protect human health, wildlife and the environment. As with many of the PMRA's stakeholder advisory groups, the secretariat for this committee lies with the PMRA's core Stakeholder Relations and Outreach group.

The most up-to date information on Health Canada's Science Advisory Committee on Pest Control Products (SAC-PCP) on Canada.ca.

Financial profile

2021–2022 funding and revenue (in millions of dollars)	Total
A-Base	27.5
Revenue - application fees $5.2 and annual charge $7.8	13
Canadian Agricultural Partnership	3.3
Chemicals Management Plan	5.2
Departmental pressure funding	2.9
COVID-19 funding	0.9
Transformation - new TB submission funding	8.1
Total PMRA fiscal year 2021–2022	**$60.9**

- Financial profile includes employee benefit plan.
- A portion of revenues paid by regulated parties is allocated to support employee benefits plans (non-respendable revenue) and internal services. These amounts are not included in the $13 million reported above.
- Departmental pressure funding of $2.9 million and COVID-19 funding of $0.9 million was not included in PMRA main estimates (funding received as in-year funding).
- The PMRA received $3.3 million through the Canadian Agricultural Partnership 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, the PMRA received $5.2 million 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.
- Strengthening the capacity and transparency of the pesticide review process is the new TB submission funding approved total of $8.1M.

Appendices

Appendix Table A1.

Product submission categories and service standards for pre-market applications

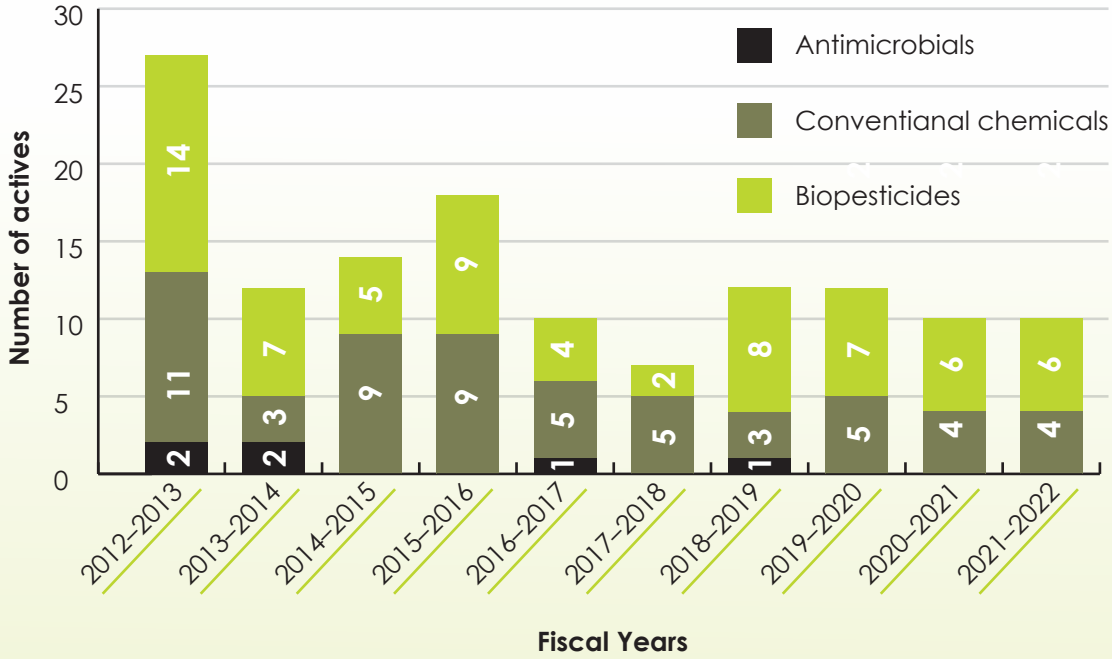
Submission category	Service standard in days
Category A New Active ingredients or integrated system products, their related end-use products and manufacturing-use products; major new use of registered pest control products; maximum residue limits for an unregistered active ingredient; and user requested minor use registrations (URMUR).	
Conventional Chemicals and import MRLs for an unregistered active ingredient	665
Reduced risk, other biopesticides, non-conventionals, non-straight chain lepidopteran pheromone (NSCLP)	555
Microbials, and URMUR for all pesticide types (conventional chemical, reduced risk, microbial, other biopesticides, non-conventionals, NSCLP)	470
Straight Chain Lepidopteran Pheromone (SCLP), including URMUR	285
Applications with atypical timelines (joint reviews, tailgaiters, renegotiated timelines, synchronized timelines, coordination with re-evaluations)	Variable
Category B New pest control products containing registered active ingredients; an amendment to existing pest control products (for example, product chemistry, labelling); emergency registration; the addition of import MRLs for previously assessed active ingredients.	
Conventional Chemicals (including emergency use) and new import MRL for previously assessed active ingredient	425
Reduced risk, other biopesticides, non-conventionals, NSCLP (including emergency use)	360
Microbials and SCLP (including emergency use)	240
Streamlined applications (application rate changes, tank mixes, new pests, or changes to level of control)	158
Applications with atypical timelines (joint reviews, tailgaiters, renegotiated timelines, synchronized timelines, coordination with re-evaluation)	Variable
Category C Product registrations and amendments with no data requirements. These applications involve minor label or formulation reviews, such as product registration based on registered precedent products.	
New/changes to product labels; addition of approved minor use; similar product	240
New/changes to technical grade active ingredient, integrated system product, manufacturing concentrate or end-use product chemistry; administrative changes; administrative re-instatement	180
Applications with atypical timelines (tailgaters, renegotiated/ synchronized timelines, coordination with re-evaluation)	Variable

Submission category	Service standard in days
Category D Submissions within particular programs.	
Registration renewal	253
Registration/amendment to registration of active ingredient to be used in pest control product manufactured for export only	46
Master copies	42
Private labels	10
Own Use Import Equivalency and Permits*	70 (Equivalency)
	30 (Permits)
Grower Requested Own Use Equivalency and Permits*	TBD (Equivalency)
	30 (Permits)
Discontinuations*	45
Category E Authorizations and notifications for research in Canada.	
Research authorization for new technical grade active ingredients	159
Research authorization for new uses of registered active ingredients	69
Research notification for research carried out in Canada	30
Category F Notification	
Registration and amendments to registered pest control products via notification	45
Category L Submissions to register or amend products where the applicant wishes to use or rely upon data provided by another registrant.	
Equivalency and data compensation assessment of end-use product and manufacturing concentrate with partial data package (conventional chemical)	425
Equivalency and data compensation assessment of active ingredient, end-use product and manufacturing concentrate with no data (all product types)	365
Equivalency and data compensation assessment of end-use product and manufacturing concentrate with partial data package (reduced risk, other biopesticide, non-conventional, NSCLP)	360
Equivalency and data compensation assessment of end-use product and manufacturing concentrate with partial data package (microbial and SCLP)	240
Applications with atypical timelines (tailgaters, renegotiated/ synchronized timelines, coordination with re-evaluation)	Variable
Regulatory Decision*	45
Requests to extend the exclusive use protection period based upon minor uses*	240
Category P Pre-submission consultations	
Pre-submission Consultations excluding those for Joint Reviews and Subject to Registration inquiries*	80

*Submissions not subject to the Service Fees Act (in other words, no fees)

Appendix Figure A1.

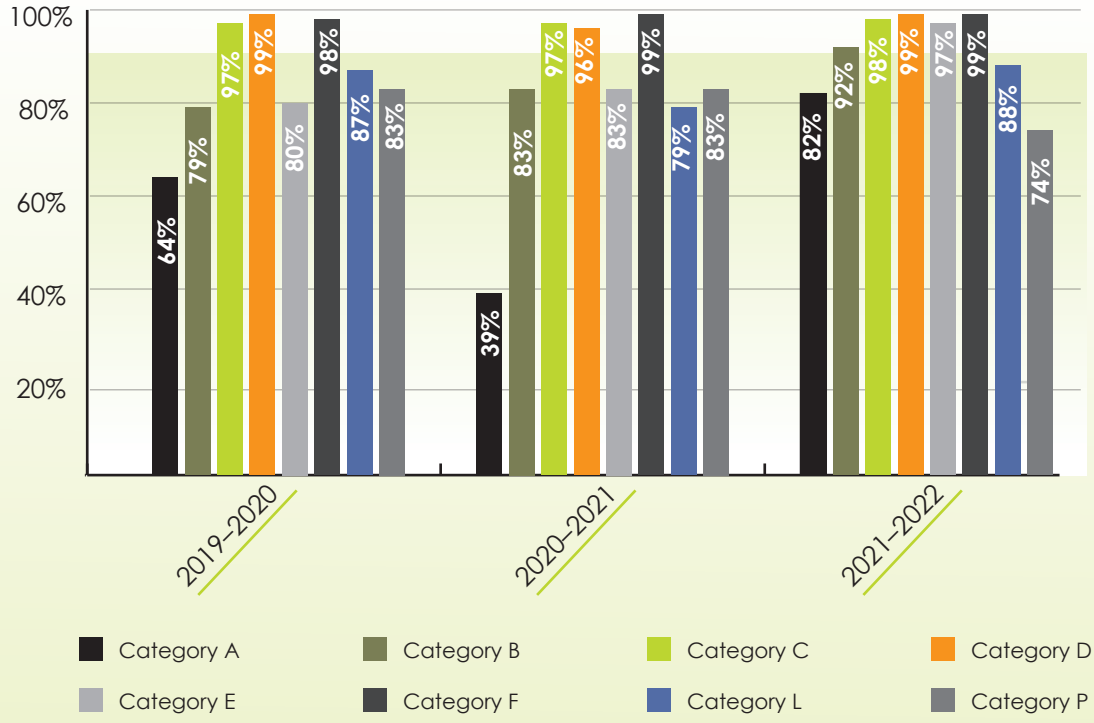
Number of new active ingredients registered by PMRA from 1 April 2012 to 31 March 2022



- This figure provides the number of new active ingredients registered over the course of the last ten 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.

Appendix Figure A2.

Performance against review timelines for Category A, B, C, D, E, F, L and P submissions completed from 1 April 2019 to 31 March 2022



- Effective 1 April 2017 categories F, L and P were added to the Management of Submissions Policy
- This figure shows the percentages of submissions by submission category that met the applicable review timelines outlined in the **Management of Submissions Policy** over the last three fiscal years.
- All categories of pre-market submissions have a performance standard of 90% against the established review timelines for the different submission categories.
- The PMRA continued to meet its performance targets on some pre-market evaluations (B, C, D, E, F), while for some categories of submissions (A, L, P), due to an increasingly complex workload and COVID-19 impacts on PMRA operations, performance targets were not met.

Appendix Table A2.
New active ingredients registered in 2021–2022

	New active ingredient	End-use	Product type	Product category	Uses/Sites
1	*Bacillus subtilis*, strain RTI477	Ataplan Biological Fungicide	Fungicide	Biopesticide	Corn (field, sweet, pop and corn grown for seed), soybean, sunflower
2	*Bacillus velezensis*, strain RTI301	Ataplan Biological Fungicide	Fungicide	Biopesticide	Corn (field, sweet, pop and corn grown for seed), soybean, sunflower
		Arolist Biological Fungicide	Fungicide	Biopesticide	Corn (field, sweet, pop and corn grown for seed), soybean, sunflower
3	*Beauveria bassiana*, strain CFL-A	FRAXIPROTEC	Insecticide	Biopesticide	Ash trees.
4	Calcium disodium EDTA hydrate	VNT Selective Herbicide Ready To Use	Herbicide	Biopesticide	Residential lawns.
5	Indole-3-butyric acid				
6	*Cydia pomonella* granulovirus isolate V-22	Madex HP	Insecticide	Biopesticide	Pome Fruits (Crop Group 11-09): apple, azarole, crabapple, mayhaw, medlar, pear, Asian pear, quince, Chinese quince, Japanese quince, tejocote, as well as cultivars, varieties and/or hybrids of these commodities. Stone Fruits (Crop Group 12-09): apricot, Japanese apricot, black cherry, Nanking cherry, sweet cherry, tart cherry, chokecherry, nectarine, peach, plum, American plum, beach plum, Canada plum, cherry plum, chicksaw plum, Damson plum, Japanese plum, Klamath plum, prune plum, plumcot, sloe, as well as cultivars, varieties and/or hybrids of these commodities.
7	Fluazaindolizine	Salibro Nematicide	Nematicide	Conventional Chemical	Tuberous and corm vegetables (crop subgroup 1C): (Arrowroot, chayote root, Chinese artichoke, Jerusalem artichoke, edible canna, chufa, dasheen, ginger, potato, sweet potato, and true yam); Carrot; Cucurbit vegetables (crop group 9): (Chayote, Chinese waxgourd, citron melon, cucumber, gherkin, edible gourd [hyotan, cucuzza, hechima and Chinese okra], Momordica spp. [balsam apple, balsam pear, bitter melon and Chinese cucumber], muskmelon [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 [crookneck squash, scallop squash, straightneck squash, vegetable marrow and zucchini], winter squash [butternut squash, calabaza, hubbard squash, acorn squash and spaghetti squash], and watermelon) Fruiting vegetables (crop group 8-09): (African eggplant, currant tomato, eggplant, garden huckleberry, goji berry, ground cherry, martynia, okra, pea eggplant, pepino, bell pepper, non-bell pepper, scarlet eggplant, sunberry, tomatillo and tomato)

	New active ingredient	End-use	Product type	Product category	Uses/Sites
8	Flutianil	GATTEN	Fungicide	Conventional Chemical	Cherries (Crop Subgroup 12-09A) including: Capulin Cherry, black Cherry, Nanking Cherry, sweet Cherry, tart Cultivars, varieties, and/or hybrids of These. Cucurbit vegetables (Crop Group 9) including: All types and hybrids of: Chayote Chinese waxgourd Citron melon Cucumber Gherkin Gourd, edible: Chinese okra, Cucuzza, Hechima, Hyotan Momordica spp.: Balsam apple, Balsam pear, Bitter melon, Chinese cucumber Muskmelon: Cantaloupe, Casaba, Crenshaw melon, Golden pershaw melon, Honeydew melon, Honey balls, Mango melon, Persian melon, Pineapple melon, Santa Claus melon, Snake melon. Pumpkin Squash, summer: Crookneck squash, Scallop squash, Straightneck squash, Vegetable marrow, Zucchini Squash, winter: Acorn squash, Butternut squash, Calabaza, Hubbard squash, Spaghetti squash Watermelon Grapes
9	Picarbutrazox	VAYANTIS Seed Treatment	Fungicide	Conventional Chemical	Field corn, sweet corn, popcorn, seed corn and soybeans.
10	Pyridate	Tough 600 EC Herbicide	Herbicide	Conventional Chemical	Corn (field and sweet), canola, chickpeas, dry peas, lentils and mint.

Appendix Table A3.
Re-evaluation/special review documents published in 2021–2022

Active ingredient	Document number	Summary of decision or proposed decision
Re-evaluation decisions		
Lambda-cyhalothrin	RVD2021-04	Acceptable for continued registration for certain uses. Mitigation includes new/revised label statements to further protect human health and the environment. Cancellation of other uses due to health risk concerns.
Imidacloprid	RVD2021-05	Acceptable for continued registration for certain uses. Mitigation includes new/revised label statements to further protect human health and the environment. Cancellation of other uses due to environmental risk concerns.
(S)-kinoprene	RVD2021-06	Cancellation of all uses due to human health risk concerns.
Cyromazine	RVD2021-08	Acceptable for continued registration for certain uses. Mitigation includes new/revised label statements to further protect human health and the environment. Cancellation of other uses due to health risk concerns.
Cymoxanil	RVD2021-09	Acceptable for continued registration. Mitigation includes new/revised label statements to further protect human health and the environment.
Kresoxim-methyl	RVD2022-01	Acceptable for continued registration. Mitigation includes new/revised label statements to further protect human health and the environment.
Triticonazole	RVD2022-02	Acceptable for continued registration. Mitigation includes new/revised label statements to further protect human health and the environment.
Special review decisions		
Pymetrozine (2)	SRD2021-05	Acceptable for continued registration for certain uses. Mitigation includes new/revised label statements to further protect human health and the environment. Cancellation of other uses due to health risk concerns.
Iprodione	SRD2021-06	Acceptable for continued registration.
Naled (2)	SRD2022-01	Acceptable for continued registration for certain uses. Mitigation includes new/revised label statements to further protect human health and the environment. Cancellation of other uses due to health risk concerns.
Clothianidin, Thiamethoxam, Imidacloprid (Squash Bees)	SRD2022-02	Acceptable for continued registration.
Proposed re-evaluation decisions		
Difenoconazole	PRVD2021-06	Proposed for continued registration. Mitigation includes new/revised label statements to further protect human health and the environment.
Straight Chain Lepidopteran Pheromones (11)	PRVD2021-07	Proposed for continued registration.
Tebuconazole	PRVD2021-08	Proposed for continued registration. Mitigation includes new/revised label statements to further protect human health and the environment.

Active ingredient	Document number	Summary of decision or proposed decision
Mustard Seed Powder (Brassica hirta) and Sodium Alpha-olefin Sulfonate	PRVD2021-09	Proposed for continued registration. Mitigation includes new/revised label statements to further protect human health and the environment.
Ancymidol	PRVD2021-10	Proposed for continued registration. Mitigation includes new/revised label statements to further protect human health and the environment.
Dried blood	PRVD2021-11	Proposed for continued registration.
Kaolin	PRVD2021-12	Proposed for continued registration.
Octadec-9-enoic Acid, Methyl Ester and Octadec-9-enoic Acid, Ethyl Ester	PRVD2021-13	Proposed for continued registration.
p-Menthane-3,8-diol	PRVD2021-14	Proposed for continued registration.
Trinexapac-ethyl	PRVD2022-01	Proposed for continued registration. Mitigation includes new/revised label statements to further protect human health and the environment.
Flucarbazone	PRVD2022-02	Proposed for continued registration. Mitigation includes new/revised label statements to further protect human health and the environment.
Chondrostereum purpureum strain PFC2139	PRVD2022-03	Proposed for continued registration.
Corn gluten meal	PRVD2022-04	Proposed for continued registration. Mitigation includes new/revised label statements to further protect human health and the environment.
1-Methylcyclopropene	PRVD2022-05	Proposed for continued registration.
Zoxamide	PRVD2022-06	Proposed for continued registration. Mitigation includes new/revised label statements to further protect the environment.
Proposed special review decisions		
Clothianidin, Thiamethoxam, Imidacloprid (Squash Bees)	PSRD2021-02	Proposed for continued registration.
Chlorothalonil	PSRD2022-01	Proposed continued registration for certain uses. Mitigation includes new/revised label statements to further protect the environment. Proposed cancellation of other uses due to health risk and environmental concerns.