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Proposed Maximum Residue Limit

PMRL2026-07

Spiropidion

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For more information, please contact:

Publications

Pesticides Regulatory Directorate
Healthy Environments and Consumer Safety Branch
Health Canada
2 Constellation Drive
8th floor, A.L. 2608 A
Ottawa, Ontario K1A 0K9

Internet:

canada.ca/pesticides
pmra.publications-arla@hc-sc.gc.ca

Information Service:

1-800-267-6315
pmra.info-arla@hc-sc.gc.ca



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Health Canada is consulting the public and seeking your feedback on:

- Proposed maximum residue limit (MRL) increases to support the registration of spiropidion on bell peppers, non-bell peppers, tomatoes, tomato paste, cantaloupes, cucumbers, muskmelons, pumpkins, watermelons and winter squash.
- Setting new MRLs on citrus oil, leafy vegetables (crop group 4-13, except watercress), *Brassica* head and stem vegetable group (crop group 5-13, except Brussels sprouts), wine, raisins, fruiting vegetables (crop group 8-09), oranges (crop subgroup 10A, revised), small fruits vine climbing except fuzzy kiwifruit (crop subgroup 13-07F), Brussels sprouts, pome fruits (crop group 11-09), tuberous and corm vegetables (crop subgroup 1C), cucurbit vegetables (crop group 9), lemons/limes (crop subgroup 10B, revised), cottonseeds (crop subgroup 20C) and grapefruits (crop subgroup 10C, revised).

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1.0 Pesticides in Canada

Pesticides provide both organic and conventional growers in Canada with a variety of options to help minimize damage from pests to their crops and livestock. Pesticides help protect crops from pests such as weeds, fungi, and insects. This allows people in Canada to access high-quality nutritious foods all year long.

All pesticides, for both organic and conventionally grown crops, that are **approved for use in Canada** are regulated by Health Canada's Pest Management Regulatory Agency (PMRA). This includes regulating pesticide residues that may be present on food commodities imported into Canada. Health Canada reviews all new pesticide applications and re-evaluates existing pesticides on a regular basis to help ensure the protection of human health.

Maximum residue limits

A maximum residue limit (MRL) is the highest amount of a specific pesticide residue allowed on a particular food commodity when a pesticide is used according to label directions.

Health Canada scientists set (or specify) MRLs after a robust scientific review of the pesticide, provided that the risks meet Health Canada's requirements for the protection of human health. This means that the scientists first make sure the amount of pesticide residue on or in food commodities is low enough that there are no effects on human health. Health Canada is responsible for setting MRLs on food commodities grown domestically or imported into Canada. Different food commodities can have different MRLs for the same pesticide due to differences in how the pesticide is used for each crop or food commodity.

An MRL is a scientific calculation that estimates the maximum potential concentration of residues on food commodities. It is **not** a measurement of pesticide toxicity or safety. It accounts for the highest potential amount of residue that may remain on a food commodity when label directions are followed. More information about these calculations is in Section 4.0 Calculating the proposed MRL. Often, the residues that remain are much lower than the MRL under typical use conditions. If the use directions change for a given pesticide, the MRL can also change. However, before any change to an MRL is proposed, the risks must meet Health Canada's requirements for the protection of human health.

MRLs are legal limits that are enforced by the Canadian Food Inspection Agency (CFIA). The latest National Chemical Residue Monitoring Program and Chemistry Food Safety report that uses MRLs to determine compliance rates can be requested on the Food safety testing reports and journal articles page on [Canada.ca](https://www.canada.ca).

When setting MRLs on related food commodities, Health Canada uses crop groups. Individual crops can be allocated to a crop group based on botanical or taxonomic criteria as well as on cultivation practices. Crop groups simplify the establishment of MRLs by using residue data for crops that are representative of the whole group to extend to all crops within the crop group. Crop groups can also contain smaller and more closely related crop subgroups

Food commodities grown in Canada

Before making any registration decision for a pesticide in Canada, Health Canada must evaluate the chemistry of a pesticide, how well a pesticide works, and the pesticide's potential impact on human health and the environment. This is the full pesticide assessment process as directed in the *Pest Control Products Act*. This is to ensure there are no health or environmental concerns from the potential pesticide exposure to Canadians through this use, and that the pesticide has value.

Imported food commodities

To set MRLs on imported food commodities, Health Canada evaluates multiple studies from various scientific disciplines on human health. As directed in Section 10(3) of the *Pest Control Products Act*, only health risks are assessed for imported food commodities, and only for potential exposure in the diet.

This is because the pesticide is applied in the country from which the food commodity is imported. People in Canada could only be exposed to the residue from that imported food commodity through their diet. Canadian workers, such as a grower will not be exposed, and no exposure to the Canadian environment is expected. An exporting country may have different pests, different climates, or regulate pesticides differently than Canada. After conducting a thorough scientific assessment and finding no health concerns, Health Canada may align the Canadian MRL with the established MRL or tolerance of the exporting country, to allow the imported food commodity to be sold in Canada.

However, if the pesticide is registered for other uses in Canada, Health Canada would conduct a full health, environment and value assessment before making any registration decision for those uses. This assessment sets the conditions for that pesticide in Canada to help ensure there are no health or environmental concerns, and confirms that the pesticide use has value.

2.0 Purpose of this consultation

Health Canada is consulting the public and seeking your feedback on proposed new and revised MRLs to address potential spiropidion residues on various food commodities that are either imported or grown in Canada.

Spiropidion is an insecticide not currently registered for use in Canada, and, as such, there are no associated Canadian labels or uses.

One proposal was submitted by Syngenta Canada Inc., to register Spiropidion Technical Insecticide and the end-use product A20262 Insecticide (*Pest Control Products Act* Registration Numbers 36010 and 36009, respectively), for use on leafy vegetables (except watercress; crop group 4-13), *Brassica* head and stem vegetable group (crop group 5-13), fruiting vegetables (crop group 8-09), cucurbit vegetables (crop group 9), pome fruits (crop group 11-09), grapes; and greenhouse tomatoes, peppers, eggplants and cucumbers. MRL changes, including new MRLs, are required to allow these treated commodities to be sold in Canada.

A second proposal was submitted by Syngenta Canada Inc., to establish new MRLs on tuberous and corm vegetables (crop subgroup 1C), citrus fruits (crop group 10, revised), small fruits vine climbing except fuzzy kiwifruit (crop subgroup 13-07F) and cottonseeds (crop subgroup 20C). These new MRLs would allow these food commodities, or any of their derived processed food commodities that may contain spiropidion residues, to be imported from the United States (U.S.) and sold in Canada.

Health Canada is proposing to accept these MRL changes (including new MRLs). This is because Health Canada conducted a thorough scientific assessment and found that the health risk from eating food commodities treated with spiropidion meets Health Canada's requirements for the protection of human health. The main health assessment required for this consultation was the dietary risk assessment, which was conducted in accordance with sections 10 and 11 of the *Pest Control Products Act*. This assessment involves a thorough evaluation of health risks that considered the toxicity and dietary exposure of spiropidion, and follows strict regulatory standards. Further details on the dietary risk assessment can be found in Section 3.0 Dietary risk assessment.

Proposed Canadian maximum residue limits for spiropidion

Table 1 summarizes the proposed new and revised MRLs for spiropidion, and the reason for each MRL.

MRLs are based on a residue definition that typically includes the pesticide itself and may also include one or more degradation products referred to as metabolites. A searchable residue definition table is available on the Residue Definitions for Chemicals with Maximum Residue Limits Regulated Under the Pest Control Products Act page on Canada.ca.

The following MRLs are based on the following residue definition: 3-(4-chloro-2,6-dimethylphenyl)-8-methoxy-1-methyl-2-oxo-1,8-diazaspiro[4.5]dec-3-en-4-yl ethyl carbonate and its metabolite 3-(4-chloro-2,6-dimethylphenyl)-4-hydroxy-8-methoxy-1-methyl-1,8-diazaspiro[4.5]dec-3-en-2-one, expressed as parent equivalents.

Table 1 Current and proposed maximum residue limits for spiropidion

Food commodity	Current MRL (ppm) ¹	Proposed MRL (ppm) ¹	Reason for the proposed MRL
Citrus oil	None	100	New MRL on citrus oil , based on the proposed use in the exporting country. The citrus oil may then be imported into Canada. The MRL is based on field trial and processing data on oranges.
Leafy vegetables (crop group 4-13, except watercress)	None	15	New MRLs on the leafy vegetables crop group (except watercress) , from field trial data on lettuce,

Food commodity	Current MRL (ppm) ¹	Proposed MRL (ppm) ¹	Reason for the proposed MRL
			spinach and mustard greens, for the new uses on leafy vegetables grown in Canada.
<i>Brassica</i> head and stem vegetable group (crop group 5-13, except Brussels sprouts)	None	15	New MRL on the <i>Brassica</i> head and stem vegetable crop group (except Brussels sprouts) , from field trial data on broccoli, cabbage and cauliflower, for the new uses on <i>Brassica</i> vegetables grown in Canada.
Wine	None	5.0	New MRL on wine , because of both the new use on grapes grown in Canada, and the proposed use in the exporting country. The wine may then be produced in or imported into Canada.
Raisins	None	4.0	New MRL on raisins , because of both the new use on grapes grown in Canada, and the proposed use in the exporting country. The raisins may then be produced in or imported into Canada.
Fruiting vegetables (crop group 8-09)	0.8 (tomatoes) 1.0 (bell peppers, non-bell peppers)	3.0	Increased MRL on tomatoes, bell peppers and non-bell peppers and new MRLs on all other commodities in the fruiting vegetables crop group , because of the new use on fruiting vegetables grown in Canada. The MRL is based on a re-assessment of data on field-grown tomatoes, bell peppers, non-bell peppers and eggplants; and assessment of new data on greenhouse-grown tomatoes, bell peppers and non-bell peppers.
Tomato paste	1.5	3.0	Increased MRL on tomato paste , based on increased residues in tomatoes. Residues in the paste will be covered by

Food commodity	Current MRL (ppm) ¹	Proposed MRL (ppm) ¹	Reason for the proposed MRL
			the new MRL on fruiting vegetables.
Oranges (crop subgroup 10A) (revised)	None	3.0	New MRL on the oranges crop subgroup , based on the proposed use in the exporting country. The fruits may then be imported into Canada. The MRL is based on field trial data on oranges.
Small fruits vine climbing, except fuzzy kiwifruit (crop subgroup 13-07F)	None	2.0	New MRL on the small fruits vine climbing crop subgroup (except fuzzy kiwifruit) , based on the proposed use in the exporting country. The fruits may then be imported into Canada. The MRL is based on field trial data on grapes.
Brussels sprouts	None	2.0	New MRL on Brussels sprouts , because of the new use on Brussels sprouts grown in Canada.
Tuberous and corm vegetables (crop subgroup 1C)	1.5 (potatoes)	1.5	New MRL on the tuberous and corm vegetables crop subgroup , based on the proposed use in the exporting country. The vegetables may then be imported into Canada. The MRL is based on field trial data on potatoes.
Cucurbit vegetables (crop group 9)	0.8 (cucumbers) 0.9 (cantaloupes, muskmelons (other than those listed in this item), pumpkins, watermelons, winter squash)	1.5	Increased MRLs on cucumbers, cantaloupes, muskmelons, pumpkins, watermelons and winter squash, and new MRLs on all other commodities in the cucurbit vegetables crop group , because of the new use on cucurbit vegetables. The MRL is based on a re-assessment of data on cucumbers, cantaloupes and summer squash; and assessment of new data on greenhouse-grown cucumbers.

Food commodity	Current MRL (ppm) ¹	Proposed MRL (ppm) ¹	Reason for the proposed MRL
Lemons/Limes (crop subgroup 10B) (revised)	None	0.9	New MRL on the lemons/limes crop subgroup , based on the proposed use in the exporting country. The fruits may then be imported into Canada. The MRL is based on field trial data on lemons.
Pome fruits (crop group 11-09)	None	0.6	New MRL on the pome fruits crop group , from field trial data on apples and pears, for the new uses on pome fruits grown in Canada.
Cottonseeds (crop subgroup 20C) (revised)	None	0.6	New MRL on the cottonseeds crop subgroup , based on the proposed use in the exporting country. The cottonseeds may then be imported into Canada. The MRL is based on field trial data on cottonseeds.
Grapefruits (crop subgroup 10C) (revised)	None	0.4	New MRL on the grapefruits crop subgroup , based on the proposed use in the exporting country. The fruits may then be imported into Canada. The MRL is based on field trial data on grapefruits.

¹ ppm = parts per million

Based on the results from the dietary risk assessment, Health Canada **is proposing to accept** the new and revised MRL requests for spiropidion. This is because these new and revised MRLs **meet Health Canada's requirements** for the protection of human health.

3.0 Dietary risk assessment

Before an MRL can be set, Health Canada scientists make sure the amount of pesticide residue on or in food commodities is low enough that there are no effects on human health. They evaluate the relevant scientific information on the toxicity and dietary exposure of the pesticide. This process is called a dietary risk assessment.

Overview of the dietary risk assessment process

The **dietary risk assessment** process involves four distinct steps:

1. Evaluate the relevant scientific data and information and then identify the toxicology hazards of the pesticide;
2. Determine the **acute reference dose (ARfD)** and the **acceptable daily intake (ADI)**, where applicable.

ARfD: the amount of a specific pesticide residue that a person can eat and drink **on any given day** without any negative health effects. The ARfD is used to estimate acute dietary risk, which considers the potential for health effects after a single day of exposure to the pesticide.

ADI: the amount of a specific pesticide residue a person could eat and drink **every day** over their entire lifetime without any negative health effects. The ADI is used to estimate chronic dietary risk, which considers the potential for health effects after a lifetime of exposure to the pesticide.

Health Canada scientists estimate both acute (single day) and chronic (lifetime) dietary intakes, where applicable, for the general population and several subpopulations such as pregnant people, infants, children and seniors.

3. Estimate the **potential daily intake (PDI)**.

PDI: the total amount of a specific pesticide residue that might be eaten. When determining the PDI for a pesticide, scientists consider **all** food commodities (both registered (domestic) and imported), drinking water (where applicable), and how diets can vary between people in Canada. The PDI is the potential dietary exposure to a specific pesticide.

4. Characterize the **acute dietary risk** by comparing the PDI with the ARfD, and characterize the **chronic dietary risk** by comparing the PDI with the ADI, where applicable.

If the PDI is lower than both the ARfD and the ADI (where applicable), Health Canada scientists conclude that all food commodities that could be treated with this pesticide are safe to eat.

Summary of the dietary risk assessment results for spiropidion

This summary focuses on key aspects of the dietary risk assessment that are potentially of greatest interest to people in Canada. It is intended to help improve the understanding of Health Canada's pesticide decisions. Technical details and how to request additional information about the dietary risk assessment can be found in Section 6.0 How to get involved.

The results from the dietary risk assessment show that when spiropidion is used according to the Canadian and American label directions for the proposed uses, the dietary risks from spiropidion on food commodities continue to meet Health Canada's requirements for the protection of human health. The toxicology information for spiropidion relevant to the dietary risk assessment is reported in PRD2026-09.

The acute dietary risk assessment results showed that exposure to spiropidion is **less than 78%** of the ARfD. **This means that acute exposure to spiropidion will not affect your health.** The dietary risk for each subpopulation is reported in PRD2026-09.

- Health Canada considers that acute risk may be of concern when exposure is greater than 100% of the ARfD. When the acute dietary risk assessment is lower than 100% of the ARfD, it means that on a given day there are no human health concerns from eating foods treated with spiropidion.

The chronic dietary risk assessment results showed that exposure to spiropidion is **less than 21%** of the ADI. **This means that chronic exposure to spiropidion will not affect your health.** The dietary risk for each subpopulation is reported in PRD2026-09.

- Health Canada considers that chronic risk may be of concern when exposure is greater than 100% of the ADI. When the chronic dietary risk assessment is lower than 100% of the ADI, it means that there are no human health concerns from eating foods treated with spiropidion every day over a person's lifetime.

For more information on how Health Canada assesses and manages risk from pesticides, refer to this guidance document:

- PMRA Guidance Document, A framework for risk assessment and risk management of pest control products

For more information on the MRL process, refer to Section 19, Maximum Residue Limits, found within this guideline:

- Residue chemistry guidelines: Revised 2022 PMRA guidance document - Canada.ca

The residue data used to calculate the proposed MRLs are reported in PRD2026-09.

4.0 Calculating the proposed maximum residue limits (MRLs)

Health Canada scientists calculated the proposed MRL for spiropidion using the residues observed in the residue trials, and the guidance provided in the OECD MRL Calculator. Many international regulatory authorities use this statistical calculator to set MRLs on food commodities that are either grown domestically or imported from different countries. Full residue datasets are required to run the OECD MRL calculator, not just the highest and lowest residues reported in PRD2026-09.

Pesticide MRLs established for each food commodity may be found using the Maximum Residue Limit Database. The database allows users to search for established MRLs, regulated under the *Pest Control Products Act*, for pesticides or food commodities.

5.0 International considerations

Internationally, MRLs are used to facilitate trade of food commodities between countries. Canadian MRLs are established or amended based on a robust scientific risk assessment that demonstrates safety for people in Canada. Table 2 compares the MRLs proposed for spiropidion in Canada with the corresponding proposed tolerances in the United States (U.S.) and international Codex MRLs. The Codex Alimentarius Commission is an international organization under the auspices of the United Nations that develops international food standards, including MRLs.

Once established, the U.S. tolerances for spiropidion will be listed in the Electronic Code of Federal Regulations, 40 CFR Part 180. The term “**tolerance**” is used in the U.S. as another name for MRLs.

The Codex MRLs are listed by pesticide or commodity on the Codex Alimentarius Pesticide Index webpage.

Table 2 Comparison of proposed Canadian maximum residue limits (MRLs), proposed U.S. tolerances and Codex MRLs

Food commodity	Proposed Canadian MRLs (ppm) ¹	Proposed US Tolerances (ppm) ¹	Established Codex MRLs (ppm) ¹
Citrus oil	100	100	Not established
Leafy vegetables (crop group 4-13, except watercress); <i>Brassica</i> head and stem vegetable group (crop group 5-13, except Brussels sprouts)	15	15	Not established
Wine	5.0	Not established	Not established
Raisins	4.0	4	Not established
Fruiting vegetables (crop group 8-09) ² ; tomato paste ² ; oranges (crop subgroup 10A) (revised)	3.0	3 (Vegetable, fruiting, group 8-10)	1.0 (peppers (subgroup; except martynia, okra, roselle)) 0.8 (tomato)

Food commodity	Proposed Canadian MRLs (ppm)¹	Proposed US Tolerances (ppm)¹	Established Codex MRLs (ppm)¹
Small fruits vine climbing, except fuzzy kiwifruit (crop subgroup 13-07F); Brussels sprouts	2.0	2	Not established
Tuberous and corm vegetables (crop subgroup 1C) ³ ; cucurbit vegetables (crop group 9) ⁴	1.5	1.5	1.5 (potato) 0.8 (cucumber) 0.9 (winter squash; watermelon; pumpkins; melons (except watermelon))
Lemons/limes (crop subgroup 10B) (revised)	0.9	0.9	Not established
Pome fruits (crop group 11-09); cottonseeds (crop group 20C) (revised)	0.6	0.6	Not established
Grapefruits (crop subgroup 10C) (revised)	0.4	0.4	Not established

¹ ppm = parts per million

² The proposed MRL for CG 8-09 (fruiting vegetables) is intended to replace the established MRLs of the individual commodities, tomatoes, bell peppers, non-bell peppers, and tomato paste.

³ The proposed MRL for CSG 1C (tuberous and corm vegetables) is intended to replace the established MRL for potatoes.

⁴ The proposed MRL for CG 9 (cucurbit vegetables) is intended to replace the established MRLs of the individual crops: cantaloupe, muskmelons, pumpkins, watermelons, winter squash, and cucumbers.

International consultation on the proposed MRLs also occur as a result of Canada notifying the World Trade Organization. This is coordinated by Canada's Notification Authority and Enquiry Point in order to comply with Canada's international trade obligations.

6.0 How to get involved

Health Canada invites the public to submit written comments that are directly related to this proposed MRL action for spiropidion, such as comments directed to the residue chemistry data and dietary exposure assessment, up to 75 days from the date of publication of this document (by 6 September 2026). Please forward your comments to the Pesticides Publications Section.

Health Canada will only consider comments received that are directly related to the residue chemistry data and dietary exposure assessment supporting the proposed MRL action, and a

science-based approach will be applied in making a final decision on the proposed MRL changes. Comments received will be addressed in a response to comments document found in Pesticides consultations. If no comments are received, or the comments do not result in a change to the proposed MRLs, the MRLs will be set and legally in effect on the date they are entered into the Maximum Residue Limit Database.

If you would like to request additional information on the supporting scientific documents for these proposed MRLs, here is the information you will need to identify the request:

Active ingredient:	Spiropidion
Published document number:	PMRL2026-07
Submission number:	2023-0631, 2023-0632, 2023-0633
Related registration decisions:	PRD2026-09