Proposed Maximum Residue Limit PMRL2023-06

Pyriproxyfen

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Purpose of consultation

A maximum residue limit (MRL)[1] for an **imported** commodity is being proposed for the pesticide pyriproxyfen as part of the following application under submission number 2021-4076, in order to permit the import and sale of food in Canada that could contain pyriproxyfen residues. This import MRL proposal does not result in a change of the current approved conditions of use in Canada.

Under the authority of the *Pest Control Products Act*, Health Canada's Pest Management Regulatory Agency (PMRA) is proposing acceptability of the request to specify a MRL for pyriproxyfen on the imported commodity of bananas to control or suppress certain insects.

Pyriproxyfen is an insecticide/insect growth regulator currently registered in Canada for use on greenhouse vegetables and ornamentals, flea control in cats and dogs, and pest control in indoor, non-food areas of structures.

Health Canada has determined the quantity of residues that may remain in or on the imported commodity when pyriproxyfen is used according to the label directions of the exporting country, and that such residues will not be a concern to human health. Therefore, the food containing residues resulting from this use is safe to eat, and an MRL is being proposed as a result of this assessment. A summary of the field trial data used to support the proposed MRL can be found in Appendix I.

Dietary health assessment

In assessing the risk of a pesticide, Health Canada combines information on pesticide toxicity with information on the degree and duration of dietary exposure to the pesticide residue from food. The risk assessment process involves four distinct steps:

1) Identifying the toxicology hazards posed by the pesticide;

2) Determining the "acceptable dietary level" for Canadians (including all vulnerable populations), which is protective of adverse health effects;

3) Estimating human dietary exposure to the pesticide from all applicable sources (domestic and imported commodities); and

4) Characterizing health risk by comparing the estimated human dietary exposure to the acceptable dietary level.

Health Canada must determine the quantity of residues that could remain in or on the imported food commodities when the pesticide is used according to label directions in the exporting country, and that such residues will not be a concern to human health (Steps 3 and 4 above). If estimated human exposure is less than or equal to the acceptable level (developed in Step 2

[1] A maximum residue limit (MRL) is the maximum amount of residue that may remain in or on food when a pesticide is used according to label directions.

above), Health Canada concludes that consuming residues resulting from use according to label directions approved in the foreign country is not a health concern. The proposed MRL is then subject to consultation to legally specify the MRL on the corresponding imported commodity. An MRL applies to the identified raw agricultural food commodity as well as to any processed food product that contains it, except in certain instances where different MRLs are specified for the raw agricultural commodity and its processed product(s).

Consultation on the proposed MRL for pyriproxyfen on the imported commodity is being conducted via this document. Health Canada invites the public to submit written comments on the proposed MRL for pyriproxyfen in accordance with the process outlined in the Next steps Section of this document.

To comply with Canada's international trade obligations, consultation on the proposed MRL is also being conducted internationally by notifying the World Trade Organization, as coordinated by Canada's Notification Authority and Enquiry Point.

Proposed MRL

The proposed MRL, to be added to the MRLs already established for pyriproxyfen, is summarized in Table 1.

Table 1 Proposed maximum residue limit for pyriproxyfen

Common name	Residue definition	MRL (ppm)[1]	Food commodity
Pyriproxyfen	2-[1-methyl-2-(4-phenoxyphenoxy)ethoxy]pyridine	0.2	Bananas

[1] ppm = parts per million

MRLs established in Canada may be found using the Maximum Residue Limit Database on the Maximum Residue Limits for Pesticides webpage. The database allows users to search for established MRLs, regulated under the *Pest Control Products Act*, both for pesticides or for food commodities.

International situation and trade implications

The MRL proposed for pyriproxyfen in Canada is the same as corresponding American tolerance as listed in the Electronic Code of Federal Regulations, 40 CFR Part 180, by pesticide. Currently, there are no Codex MRLs[2] listed for pyriproxyfen in or on the petitioned commodity on the Codex Alimentarius Pesticide Index webpage.

[2] The Codex Alimentarius Commission is an international organization under the auspices of the United Nations that develops international food standards, including MRLs.

Table 2 Comparison of proposed Canadian MRL, American tolerance and codex MRL

Food commodity	Canadian MRL (ppm)	American Tolerance (ppm)	Codex MRL (ppm)
Bananas	0.2	0.20	Not Established

Next steps

Health Canada invites the public to submit written comments on the proposed MRL for pyriproxyfen up to 75 days from the date of publication of this document. Please forward your comments to Publications (see the contact information on the cover page of this document). Health Canada will consider all comments received and a science-based approach will be applied in making a final decision on the proposed MRL. Comments received will be addressed in a separate document linked to this PMRL. The established MRL will be legally in effect as of the date that it is entered into the Maximum Residue Limit Database.

Appendix I

Summary of field trial data used to support the proposed maximum residue limit

Residue data for pyriproxyfen were submitted to support the maximum residue limit on imported bananas. Pyriproxyfen was applied to bananas at exaggerated rates and harvested according to label directions.

Dietary risk assessment results

Studies in laboratory animals showed no acute health effects. Consequently, a single dose of pyriproxyfen is not likely to cause acute health effects in the general population (including infants and children).

Chronic dietary (food only) intake estimates indicated that the general population and all population subgroups are exposed to less than 13% of the acceptable daily intake, and therefore there are no health concerns.

Maximum residue limit

The recommendation for a maximum residue limit (MRL) for pyriproxyfen on imported bananas was based upon the residues observed in the crop commodity treated at exaggerated rates in the exporting countries, and the guidance provided in the OECD MRL Calculator. Table A1 summarizes the residue data used to calculate the proposed MRL for imported bananas.

Table A1 Summary of field trial data used to support the MRL

Commodity	Application method/ Total application rate (g a.i./ha)[1]	Preharvest interval (days)	Minimum field trial residues (ppm)	Maximum field trial residues (ppm)
Bananas	Foliar applications/ 414–424	0	0.012	0.100

[1] g a.i./ha = grams of active ingredient per hectare

Following the review of all available data, the MRL proposed in Table 1 is recommended to cover residues of pyriproxyfen. Dietary risks from exposure to residues of pyriproxyfen in this imported crop commodity at the proposed MRL were shown to be acceptable for the general population and all subpopulations, including infants, children, adults and seniors. Thus the imported food that contains residues as listed in Table 1 is considered safe to eat.

References

PMRA#	Citation
3261462	2017, Pyriproxyfen: Magnitude of the residue on banana, DACO: 7.2.1,7.3,7.4.1,7.4.2