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Proposed Maximum Residue Limit

PMRL2022-15

Quizalofop-ethyl

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Purpose of consultation

Maximum residue limits (MRLs)¹ are being proposed for the pesticide quizalofop-ethyl,² as part of the following applications for Canadian use, under submission numbers 2019-6145, 2019-6146, and 2020-1244.

Under the authority of the *Pest Control Products Act*, Health Canada's Pest Management Regulatory Agency (PMRA) is proposing acceptability to establish new MRLs on pome fruits, stone fruits, and small fruits vine climbing (except fuzzy kiwifruit). This is based upon the requested applications to add various new commodities to the product label of Assure II Herbicide containing technical grade quizalofop-p-ethyl, for the control of labelled grassy weeds. The specific uses approved in Canada are detailed on this product label, *Pest Control Products Act* Registration Number 25462.

The evaluation of these quizalofop-p-ethyl applications indicated that the end-use product has value, and the human health and environmental risks associated with the new uses are acceptable. Dietary risks from the consumption of foods listed in Table 1 were shown to be acceptable when quizalofop-p-ethyl is used according to the supported label directions. Therefore, foods containing residues resulting from these uses are safe to eat, and MRLs are being proposed as a result of these assessments. A summary of the field trial data used to support the proposed MRLs 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.

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.

² Quizalofop-ethyl is the unresolved isomeric mixture (containing *R* and *S*-enantiomers) of the technical grade active quizalofop-p-ethyl (which contains the *R*-enantiomer only). As both quizalofop-ethyl and quizalofop-p-ethyl contain the pesticidally-active *R*-enantiomer, residues of quizalofop-p-ethyl will be covered by MRLs established for quizalofop-ethyl.

Before registering a pesticide for food use in Canada, Health Canada must determine the quantity of residues that could remain in or on the food when the pesticide is used according to label directions 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 above), Health Canada concludes that consuming residues resulting from use according to approved label directions is not a health concern. The proposed MRL is then subject to consultation to legally specify it as an MRL. An MRL applies to the identified raw agricultural food commodity as well as to any processed food product that contains it, except for certain instances where different MRLs are specified for the raw agricultural commodity and its processed product(s).

Residues of the resolved isomer quizalofop-p-ethyl are covered by MRLs established for quizalofop-ethyl, the unresolved isomeric mixture. Consultation on the proposed MRLs for quizalofop-ethyl is being conducted via this document. Health Canada invites the public to submit written comments on the proposed MRLs for quizalofop-ethyl 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 MRLs is also being conducted internationally by notifying the World Trade Organization, as coordinated by the Canada’s Notification Authority and Enquiry Point.

Proposed MRLs

The proposed MRLs, to be added to the MRLs already established for quizalofop-ethyl, are summarized in Table 1.

Table 1 Proposed maximum residue limits for quizalofop-ethyl

Common name	Residue definition	MRL (ppm) ¹	Food commodity
Quizalofop-ethyl	Ethyl 2-[4-[(6-chloro-2-quinoxalinyloxy)phenoxy]propanoate, including the acid metabolites of (RS)2-[4-(6-chloroquinoxalin-2-yloxy)phenoxy]propanoic acid, all expressed as quizalofop-ethyl	0.1	Pome fruits (crop group 11-09), stone fruits (crop group 12-09), small fruits vine climbing, except fuzzy kiwifruit (crop subgroup 13-07F)

¹ ppm = parts per million

An MRL is proposed for each commodity included in the listed crop groupings in accordance with the Residue Chemistry Crop Groups webpage in the Pesticides section of Canada.ca.

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 MRLs proposed for quizalofop-ethyl in Canada are the same as corresponding American tolerances as listed in the Electronic Code of Federal Regulations, 40 CFR Part 180, by pesticide. Currently, there are no Codex MRLs³ listed for quizalofop-ethyl in or on any commodity on the Codex Alimentarius Pesticide Index webpage.

Next steps

Health Canada invites the public to submit written comments on the proposed MRLs for quizalofop-ethyl 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 MRLs. Comments received will be addressed in a separate document linked to this PMRL. The established MRLs will be legally in effect as of the date that they are entered into the Maximum Residue Limit Database.

³ The Codex Alimentarius Commission is an international organization under the auspices of the United Nations that develops international food standards, including MRLs.

Appendix I

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

Residue data for quizalofop-p-ethyl on apples, pears, cherries, peaches, plums and grapes were submitted to support the use of Assure II Herbicide on crops within crop group 11-09 (pome fruits), crop group 12-09 (stone fruits) and crop subgroup 13-07F (small fruits vine climbing, except fuzzy kiwifruit). In addition, a processing study in treated apples, plums and grapes were reviewed to determine the potential for concentration of residues of quizalofop-p-ethyl in processed commodities.

Dietary risk assessment results

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

Chronic (non-cancer and cancer) dietary (food plus drinking water) intake estimates indicated that the general population and all population subgroups are exposed to less than 53% of the acceptable daily intake, and therefore there are no health concerns.

Maximum residue limits

The recommendation for maximum residue limits (MRLs) for quizalofop-ethyl was based upon the submitted field trial data, and the guidance provided in the OECD MRL Calculator. Table A1 summarizes the residue data used to calculate the proposed MRLs for pome fruits, stone fruits, and small fruits vine climbing (except fuzzy kiwifruit).

Table A1 Summary of field trial and processing data used to support the MRLs

Commodity	Application method/Total application rate (g a.i./ha) ¹	Preharvest interval (days)	Lowest average field trial residues (ppm)	Highest average field trial residues (ppm)	Experimental processing factor
Apples	Banded ground/ 178–196	13–15	<0.10	<0.10	No quantifiable residues observed at exaggerated rates
Pears	Banded ground/ 184–190	13–15	<0.10	<0.10	Not applicable
Cherries	Banded ground/ 183–193	8–15	<0.10	<0.10	Not applicable
Peaches	Banded ground/ 184–191	12–16	<0.10	<0.10	Not applicable

Commodity	Application method/Total application rate (g a.i./ha)¹	Preharvest interval (days)	Lowest average field trial residues (ppm)	Highest average field trial residues (ppm)	Experimental processing factor
Plums	Banded ground/ 180–193	13–15	<0.10	<0.10	No quantifiable residues observed at exaggerated rates
Grapes	Banded ground/ 75–81	6–15	<0.10	<0.10	No quantifiable residues observed at exaggerated rates

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

Following the review of all available data, the MRLs proposed in Table 1 are recommended to cover residues of quizalofop-ethyl. Dietary risks from exposure to residues of quizalofop-ethyl in these crop commodities at the proposed MRLs were shown to be acceptable for the general population and all subpopulations, including infants, children, adults and seniors. Thus the foods that contain residues as listed in Table 1 are considered safe to eat.

References

PMRA#	Citation
3049862	2018, Quizalofop: Magnitude of the Residue on Apple, DACO: 7.3,7.4.1, 7.4.5
3049863	2018, Quizalofop: Magnitude of the Residue on Pear, DACO: 7.4.1
3049874	2017, Quizalofop: Magnitude of the Residue on Peach, DACO: 7.3,7.4.1
3049875	2017, Quizalofop: Magnitude of the Residue on Plum, DACO: 7.3,7.4.1, 7.4.5
3049876	2017, Quizalofop: Magnitude of the Residue on Cherry, DACO: 7.3,7.4.1
3108713	2012, Final Report: Quizalofop: Magnitude of the residue on Grape, DACO: 7.3,7.4.1,7.4.5