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Proposed Maximum Residue Limit

PMRL2020-07

Glufosinate-Ammonium

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Under the authority of the *Pest Control Products Act*, Health Canada’s Pest Management Regulatory Agency (PMRA) is proposing to establish maximum residue limits (MRLs) for glufosinate-ammonium on stone fruits (crop group 12-09), tree nuts (crop group 14-11) and olives to permit the import and sale of foods containing such residues. The PMRA is also proposing to establish an MRL for the domestic use of glufosinate-ammonium on carrots. The specific uses approved in Canada are detailed on the label of Ignite 15 SN Herbicide and Crop Desiccant, *Pest Control Products Act* Registration Number 23180.

Glufosinate-ammonium is a herbicide currently registered in Canada for use on various commodities including carrots, stone fruits and tree nuts.

The PMRA must determine the quantity of residues that are likely to remain in or on the imported food commodities when glufosinate-ammonium is used according to label directions in the exporting country, and that such residues will not be a concern to human health. This quantity is then legally established as an 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 where separate MRLs are specified for the raw agricultural commodity and a processed product made from it.

Consultation on the proposed MRLs for glufosinate-ammonium is being conducted via this document (see Next Steps). A summary of the field trial data used to support the proposed MRLs can be found in Appendix I.

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 Canada’s Notification Authority and Enquiry Point.

The proposed MRLs, to replace or be added to the MRLs already established for glufosinate-ammonium, are as follows.

Table 1 Proposed Maximum Residue Limits for Glufosinate-ammonium

Common Name	Residue Definition	MRL (ppm) ¹	Food Commodity
Glufosinate-ammonium	2-amino-4-(hydroxymethylphosphinyl)butanoic acid monoammonium salt, including the metabolites propanoic acid, 3-(hydroxymethylphosphinyl) and 2-(acetylamino)-4-(hydroxymethylphosphinyl) butanoic acid (expressed as glufosinate free-acid equivalents) ²	0.5	Tree nuts (crop group 14-11) ³ ; olives ⁴
		0.3	Stone fruits (crop group 12-09) ⁵
		0.05	Carrot roots

¹ ppm = parts per million

² The residue definition was revised to include the metabolite *N*-acetyl glufosinate.

³ Replaces the currently established MRL of 0.1 ppm for tree nuts (crop group 14-11).

⁴ Replaces the currently established MRL of 0.1 ppm for olives.

⁵ Replaces the currently established MRL of 0.2 ppm for stone fruits (crop group 12-09). The currently established MRL of 0.25 ppm for dried prune plums will be removed as residues will be covered under the 0.3 ppm MRL for stone fruits (crop group 12-09).

MRLs are proposed for each commodity included in the listed crop groupings in accordance with the Residue Chemistry Crop Groups webpage in the Pesticides section of the Canada.ca website.

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

Table 2 compares the MRLs proposed for glufosinate-ammonium in Canada with corresponding American tolerances and Codex MRLs.¹ American tolerances are listed in the Electronic Code of Federal Regulations, 40 CFR Part 180, by pesticide. A listing of established Codex MRLs is available on the Codex Alimentarius Pesticide Index webpage, by pesticide or commodity.

Table 2 Comparison of Canadian MRLs, American Tolerances and Codex MRLs (where different)

Food Commodity	Canadian MRL (ppm)	American Tolerance (ppm)	Codex MRL (ppm)
Tree nuts	0.5 (crop group 14-11)	0.50 (crop group 14)	0.1
Olives	0.5	0.50	Not established
Stone fruits	0.3 (crop group 12-09) ¹	0.30 (crop group 12-12)	0.15 (stone, fruits) 0.3 (prunes, dried)
Carrot roots	0.05	Not established	0.05

¹ The current established MRL of 0.25 for dried prune plums will be removed as a result of this action given that residues in/on dried prune plums will be covered under the proposed revised MRL of 0.3 ppm for stone fruits.

Next Steps

The PMRA invites the public to submit written comments on the proposed MRLs for glufosinate-ammonium 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). The PMRA will consider all comments received before 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.

¹ 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 glufosinate-ammonium in olives, almonds, pistachios, nectarines, peaches and plums were submitted to support the maximum residue limits on imported olives, stone fruits and tree nuts. Additionally, residue data for glufosinate-ammonium in carrots were submitted to support the maximum residue limit for the domestic use on carrots. In addition, processing studies in treated plums and in treated olives were re-assessed to determine the potential for concentration of residues of glufosinate ammonium into processed commodities.

Maximum Residue Limits

The recommendation for maximum residue limits (MRLs) for glufosinate-ammonium was based upon the residues observed in crop commodities, and the guidance provided in the OECD MRL Calculator. In the residue decline trials, when a residue level was higher at a later PHI than the recommended one, the highest value was selected for MRL calculation. Table A1 summarizes the residue data used to calculate the proposed MRL(s).

Table A1 Summary of Field Trial and Processing Data Used to Support the MRLs

Commodity	Application Method/ Total Application Rate (kg a.i./ha) ¹	Preharvest Interval (days)	Lowest Average Field Trial Residues (ppm)	Highest Average Field Trial Residues (ppm)	Experimental Processing Factor
Carrot roots	Pre-emergence spray/ 0.724-0.765	77-104	<0.03	0.043	Not required
Plum fruit	Broadcast spray to the orchard floor/ 3.3-3.4	12-14 and 21	<0.03	0.102	Dried prune: <onefold for glufosinate-ammonium, 2.5-fold for glufosinate propanoic acid; could not be determined for <i>N</i> -acetyl glufosinate as residues were non-quantifiable in plum fruit and dried prune.
Peach fruit/ Nectarine fruit	Broadcast spray to the orchard floor/ 3.3-3.4	12-14 and 20-21	0.031	0.194	
Almond nutmeat	Broadcast spray to orchard floor/ 5.1	14	<0.03	0.034	Not required

Commodity	Application Method/ Total Application Rate (kg a.i./ha)¹	Preharvest Interval (days)	Lowest Average Field Trial Residues (ppm)	Highest Average Field Trial Residues (ppm)	Experimental Processing Factor
Pistachio nutmeat	Broadcast spray to orchard floor/ 5.0-5.1	14 and 21	<0.03	0.230	Not required
Olive fruit	Spray to the orchard floor/ 5.0-5.1	14 and 21	0.047	0.251	Olive oil: <1× for glufosinate propanoic acid; could not be determined for glufosinate-ammonium and <i>N</i> -acetyl glufosinate as residues were non-quantifiable in olive fruit and olive oil.

¹ kg a.i./ha = kilograms of active ingredient per hectare

Following the review of all available data, MRLs as proposed in Table 1 are recommended to cover residues of glufosinate-ammonium. Residues of glufosinate-ammonium in these crop commodities at the proposed MRLs will not pose any health risks of concern to any segment of the population, including infants, children, adults and seniors.