Health Canada Santé Canada

Evaluation Report for Category B, Subcategory 5.0 Application

Application Number: 2018-0111
Application: New maximum residue limit for previously assessed technical grade active ingredient
Product: Glufosinate Ammonium Technical Herbicide
Registration Number: 23178
Active ingredient (a.i.): Glufosinate-ammonium
PMRA Document Number : **2954307**

Purpose of Application

The purpose of this application was to establish a maximum residue limit (MRL) for glufosinate-ammonium in/on carrots and to amend the current MRLs for imported stone fruits (Crop Group 12-09), tree nuts (Crop Group 14-11) and olives. In addition, the residue definition for glufosinate-ammonium in plant commodities was revised.

Chemistry, Environmental and Value Assessments

Chemistry, environmental and value assessments were not required for this application.

Health Assessments

Toxicology and occupational exposure assessments were not required for this application.

Residue data from field trials conducted in Canada and the United States were submitted to support the domestic use of glufosinate-ammonium on carrots, and the importation of treated stone fruits, tree nuts and olives. Glufosinate-ammonium was applied to carrots, peaches, nectarines, plums, almonds, pistachios and olives at label rates, and harvested according to label directions. In addition, processing studies in treated plums and olives were reassessed to determine the potential for concentration of residues of glufosinate- ammonium into processed commodities.

Currently, the residue definition in Canada for enforcement of glufosinate-ammonium in all food commodities is defined as 2-amino-4-(hydroxymethylphosphinyl)butanoic acid monoammonium salt, including the metabolite propanoic acid, 3-(hydroxymethylphosphinyl) (https://www.canada.ca/en/health-canada/services/consumer-product-safety/pesticides-pest-management/public/protecting-your-health-environment/pesticides-food/residue-definitions-chemicals-maximum-residue-limits-regulated-under-pest-control-products-act.html). This residue definition is also used for risk assessment purposes.

The applicant has submitted a rationale requesting the revision of the residue definition for glufosinate-ammonium in plant commodities to include the metabolite *N*-acetyl glufosinate in order to be consistent with other regulatory agencies, including CODEX and

Canada

the US EPA. The basis of the rationale was considered acceptable, and as such, the residue definition for glufosinate-ammonium in plant commodities will be revised to: 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.

The recommendation for maximum residue limits (MRLs) for glufosinate-ammonium was based upon the submitted field trial data, 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. MRLs to cover residues of glufosinate-ammonium in/on crops and processed commodities are proposed as shown in Table 1. Residues in processed commodities not listed in Table 1 are covered under the proposed MRLs for the raw agricultural commodities (RACs).

TABLE 1. Summary of Field Trial and Processing Data Used to Support Maximum Residue Limits (MRLs)

Commodity	Application Method/ Total Application Rate (kg a.i./ha)	PHI (days)	Residues (ppm)[1]		Experimental Processing Factor	Currently Established MRL (ppm)	Recommended MRL (ppm)
			LAFT[3]	HAFT[3]			
Carrot roots	Preemergence spray/ 0.724-0.765	77-104	<0.03	0.043	Not applicable	None	0.05

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Commodity	Application Method/ Total Application Rate (kg a.i./ha)	PHI (days)	Residues (ppm)[1]		Experimental Processing Factor	Currently Established MRL (ppm)	Recommended MRL (ppm)
			LAFT[3]	HAFT[3]			

lum fruit	Broadcast spray to the orchard floor/ 3.3-3.4	12-14 and 21	<0.03	0.102	Dried prune: <1x for glufosinate-ammonium, 2.5x for glufosinate propanoic acid; could not be determined for *N*-acetyl glufosinate as residues were non-quantifiable in plum fruit and dried prune.	0.2 [Stone fruits, Crop Group 12-09]; 0.25[2] [Dried prune plums]	0.3 [Stone fruits, Crop Group 12-09]
Peach fruit/ Nectarine fruit	Broadcast spray to the orchard floor/ 3.3-3.4	12-14 and 20-21	0.031	0.194	Not applicable		
Almond nutmeat	Broadcast spray to orchard floor/ 5.1	14	<0.03	0.034	Not applicable	0.1 [Tree nuts, Crop Group 14-11]	0.5 [Tree nuts, Crop Group 14-11]
Pistachio nutmeat	Broadcast spray to orchard floor/ 5.0-5.1	14 and 21	<0.03	0.230	Not applicable		

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Commodity	**Application Method/ Total Application Rate (kg a.i./ha)**	**PHI (days)**	**Residues (ppm)[1]**		**Experimental Processing Factor**	**Currently Established MRL (ppm)**	**Recommended MRL (ppm)**
			LAFT 3	**LAFT 3**			

live fruit	Spray to the orchard floor/ 5.0-5.1	14 and 21	0.047	0.251	Olive oil: <1x for glufosinate propanoic acid; could not be determined for glufosinate-ammonium and *N*-acetyl glufosinate as residues were non-quantifiable in olive fruit and olive oil.	0.1 [Olives]	0.5 [Olives]

[1] Total glufosinate, calculated as the sum of glufosinate, glufosinate propanoic acid and *N*-acetyl glufosinate, expressed as glufosinate free-acid equivalents.
[2] It is recommend that the MRL for dried prune plums be removed given that residues will be covered under the proposed revised MRL of 0.3 ppm for stone fruits.
[3] LAFT = Lowest Average Field Trial; HAFT = Highest Average Field Trial

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

Conclusion

The Pest Management Regulatory Agency has completed an assessment of the information provided, and has found the information sufficient to establish MRLs for glufosinate-ammonium in/on carrots and imported stone fruits (Crop Group 12-09), tree nuts (Crop Group 14-11) and olives and to revise the residue definition in plant commodities.

References

PMRA Document Number **References**

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