



Health
Canada Santé
Canada

*Your health and
safety... our priority.*

*Votre santé et votre
sécurité... notre priorité.*

Proposed Maximum Residue Limit

PMRL2022-10

Dimethoate

(publié aussi en français)

2 June 2022

This document is published by the Health Canada Pest Management Regulatory Agency. For further information, please contact:

Publications
Pest Management Regulatory Agency
Health Canada
2720 Riverside Drive
A.L. 6607 D
Ottawa, Ontario K1A 0K9

Internet: canada.ca/pesticides
pmra.publications-arla@hc-sc.gc.ca
Facsimile: 613-736-3758
Information Service:
1-800-267-6315 or 613-736-3799
pmra.info-arla@hc-sc.gc.ca

Canada 

ISSN: 1925-0835 (print)
1925-0843 (online)

Catalogue number: H113-24/2022-10E (print version)
H113-24/2022-10E-PDF (PDF version)

© Her Majesty the Queen in Right of Canada, as represented by the Minister of Health Canada, 2022

All rights reserved. No part of this information (publication or product) may be reproduced or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, or stored in a retrieval system, without prior written permission of Health Canada, Ottawa, Ontario K1A 0K9.

Purpose of consultation

A maximum residue limit (MRL)¹ is being proposed for the pesticide dimethoate, as part of the following application for Canadian use, under submission number 2017-1918.

Under the authority of the [Pest Control Products Act](#), Health Canada's Pest Management Regulatory Agency (PMRA) has approved the requested application to add the new commodity of annual canarygrass grown for human consumption to the product label of LAGON 480 E Insecticide, containing technical grade dimethoate, to control aphids. The specific use approved in Canada is detailed on this product label, *Pest Control Products Act* Registration Number [9382](#).

The evaluation of this dimethoate application indicated that the end-use product has value and the human health and environmental risks associated with the new use are acceptable. Dietary risks from the consumption of food listed in Table 1 were shown to be acceptable when dimethoate is used according to the supported label directions. Therefore, 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 human risk by comparing the estimated human dietary exposure to the acceptable dietary level.

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).

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.

Consultation on the proposed MRL for dimethoate is being conducted via this document. Health Canada invites the public to submit written comments on the proposed MRL for dimethoate 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 the [Canada's Notification Authority and Enquiry Point](#).

Proposed MRL

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

Table 1 Proposed maximum residue limit for dimethoate

Common name	Residue definition	MRL (ppm) ¹	Food commodity
Dimethoate	<i>O,O</i> -dimethyl <i>S</i> -[2-(methylamino)-2-oxoethyl] phosphorodithioate, including the metabolite omethoate	0.04	Annual canarygrass grain

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

Currently there is no American tolerance for dimethoate in or on annual canarygrass grain listed in the [Electronic Code of Federal Regulations](#), 40 CFR Part 180, nor is there a Codex MRL² listed for dimethoate in or on annual canarygrass grain on the Codex Alimentarius [Pesticide Index](#) webpage.

Next steps

Health Canada invites the public to submit written comments on the proposed MRL for dimethoate 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](#).

² 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 limit

Previously reviewed residue data from field trials conducted in/on wheat were reassessed in the framework of this petition. In addition, a wheat metabolism study was re-assessed within the context of the current petition. A processing study in treated wheat was also re-assessed to determine the potential for concentration of residues of dimethoate into processed commodities.

Dietary risk assessment results

Acute dietary (food plus drinking water) intake estimates indicated that the general population and all population subgroups are exposed to less than 71% of the acute reference dose, and therefore are not a health concern.

Chronic dietary (food plus drinking water) intake estimates indicated that the general population and all population subgroups are exposed to less than 16% of the acceptable daily intake, and therefore are not a health concern.

Maximum residue limit

The recommendation for a maximum residue limit (MRL) for combined residues of dimethoate and omethoate was based upon the field trial data on file, and the guidance provided in the [OECD MRL Calculator](#). Table A1 summarizes the residue data used to calculate the proposed MRL for annual canarygrass grain.

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

Commodity	Application method/Total application rate (g a.i./ha) ¹	Preharvest interval (days)	Lowest average field trial residues (ppm) ²	Highest average field trial residues (ppm) ²	Experimental processing factor
Wheat grain	Foliar ground and aerial/ 740–1500	35–60	<0.04	<0.04	No quantifiable residues observed at exaggerated rates

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

² Combined residues of dimethoate and omethoate

Following the review of all available data, the MRL proposed in Table 1 is recommended to cover combined residues of dimethoate and omethoate. Dietary risks from exposure to residues of dimethoate and omethoate in this 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 food that contains residues as listed in Table 1 is considered safe to eat.

References

None.