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Re-evaluation Decision

RVD2024-03

Quizalofop-p-ethyl and Its Associated End-use Products

Final Decision

(publié aussi en français)

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Re-evaluation decision for Quizalofop-p-ethyl and associated end-use products

Under the authority of the *Pest Control Products Act*, all registered pesticides must be re-evaluated by Health Canada's Pest Management Regulatory Agency (PMRA) to ensure that they meet current health and environmental standards and have value. The re-evaluation considers data and information from pesticide manufacturers, published scientific reports and other regulatory agencies, as well as comments received during public consultations. Health Canada applies internationally accepted risk assessment methods as well as current risk management approaches and policies. More details, on the legislative framework, risk assessment and risk management approach, are provided under the Evaluation Approach section of this document.

Quizalofop-p-ethyl is a selective systemic, grass-controlling herbicide registered for postemergent control of annual and perennial grass weeds in a variety of crops such as major field crops, cucurbit vegetables, horticultural crops, forage crops for seed production and many minor specialty crops including industrial hemp grown for fibre, seed and oil. It is applied using ground or aerial equipment. Quizalofop-p-ethyl has value in providing effective control of perennial grass weeds and it is the only herbicide registered for use on hemp and Ethiopian mustard. Currently registered products containing quizalofop-p-ethyl can be found in the [Pesticide Product Information Database](#) and in Appendix I.

The Proposed Re-evaluation Decision PRVD2022-17, *Quizalofop-p-ethyl and Its Associated End-use Products*¹ containing the evaluation of quizalofop-p-ethyl and proposed decision, underwent a 90 day consultation period ending on 27 October 2022. PRVD2022-17 proposed that products containing quizalofop-p-ethyl are acceptable for continued registration in Canada, provided that the proposed risk mitigation measures are in place. The proposed risk mitigation measures included updates to personal protective equipment for mixers, loaders and applicators, standard restricted-entry intervals, re-treatment and preharvest intervals (PHIs), a best practice label statement to minimize the potential for spray drift, and precautionary environmental statements and spray buffer zones for the protection of terrestrial and aquatic habitats.

Four comments were received from the public indicating that pesticides, in general, harm human health and or the environment. No comments specific to the assessments and proposed risk mitigation measures presented in PRVD2022-17 were received. Therefore, this decision is consistent with the proposed re-evaluation decision stated in PRVD2022-17, which lists all information used as the basis for the re-evaluation decision.

A reference list of information used as the basis for the proposed re-evaluation decision is included in PRVD2022-17; no further information was used in the final re-evaluation decision. Therefore, the complete reference list of all information used in this final re-evaluation decision is set out in PRVD2022-17.

¹ "Consultation statement" as required by subsection 28(2) of the Pest Control Products Act.

This document (RVD2024-03) presents the final re-evaluation decision² for the re-evaluation of quizalofop-p-ethyl, including the required amendments (risk mitigation measures) to protect human health and the environment, as well as label amendments required to bring labels to current standards. All products containing quizalofop-p-ethyl that are registered in Canada are subject to this re-evaluation decision.

Re-evaluation decision for Quizalofop-p-ethyl

Health Canada has completed the re-evaluation of quizalofop-p-ethyl. Under the authority of the *Pest Control Products Act*, Health Canada has determined that continued registration of products containing quizalofop-p-ethyl is acceptable. An evaluation of available scientific information found that the uses of quizalofop-p-ethyl products meet current standards for protection of human health and the environment and have acceptable value when used according to revised conditions of registration which includes new mitigation measures. Label amendments, as summarized below and listed in Appendix II, are required.

Risk mitigation measures

Registered pesticide product labels include specific directions for use. Directions include risk mitigation measures to protect human health and the environment and must be followed by law. The required amendments as a result of the re-evaluation of quizalofop-p-ethyl, are summarized below. Refer to Appendix II for details.

Human health

Label improvements to meet current standards:

- A re-treatment interval of 14 days is required for the use on sugarbeets. Additionally, the registered uses on Oriental mustard (including canola quality *brassica juneca*) (condiment and oilseed type), yellow mustard, brown mustard, crambe, and chickpeas do not have specified PHIs on all current labels. New PHIs are indicated in Appendix II.

Risk mitigation:

To protect workers (mixer/loader/applicator), bystanders, and those entering treated areas from exposure, the following risk-reduction measures are required for continued registration of quizalofop-p-ethyl products in Canada:

- Updates to personal protective equipment (PPE) label statements as per current labeling standards.
- A standard restricted-entry interval (REI) of 12 hours is required to protect workers entering treated areas, unless a more restrictive REI is specified on the labels.
- A standard drift mitigation statement is required to minimize the potential for spray drift to bystanders.

² “Decision statement” as required by subsection 28(5) of the *Pest Control Products Act*.

Environment

Label improvements to meet current standards:

- Updated discharge of effluent statements.
- Updated disposal statements.
- Updated use directions and use precautions.
- Precautionary label statement to inform users of the presence of petroleum distillates in quizalofop-p-ethyl products, and their toxicity to aquatic organisms.

Risk mitigation:

To protect the environment, the following risk-reduction measures are required:

- Precautionary statements are required to inform users of the toxicity of quizalofop-p-ethyl to aquatic organisms and terrestrial plants.
- Updated spray buffer zones for the protection of non-target terrestrial and aquatic habitats.
- Precautionary label statements regarding the potential for runoff to adjacent aquatic habitats for sites with characteristics that may be conducive to runoff and when heavy rain is forecast.

Implementation of the Re-evaluation Decision

Regulatory Directive DIR2018-01, *Policy on Cancellations and Amendments Following Re-evaluation and Special Review* provides general timelines for implementation of post-market decisions.

Health considerations

When conducting human health risk assessments, risks from exposure to a pesticide are estimated by comparing potential exposures with the most relevant endpoint from toxicology studies, with standard protection factors incorporated to further protect human health, including the most sensitive population. These factors provide an inherent level of protection from exposures that could result in adverse effects to human health. Furthermore, Health Canada applies additional protection factors if warranted by the hazard profile of the pesticide or by the quality and completeness of the underlying data. When risks of concern are identified in the human health exposure scenarios, it does not necessarily mean that exposure will result in adverse effects, but mitigation measures to reduce potential risks would be required in order to support continued registration of the product/use.

Potential and relative health risks are thus considered acceptable during the general 2-year implementation period unless there is evidence from incident reports or other sources of real-world post-market surveillance data suggesting that there are adverse health effects occurring as a result of the use of the product(s) according to the currently approved label/use conditions. Other considerations may include how widely the product is used, the populations potentially exposed to the product and/or other factors.

Environmental considerations

The re-evaluation for quizalofop-p-ethyl did not identify any additional environmental risks and did not result in a recommendation for a reduction or change in any uses based on the environmental assessment.

Taking into consideration these factors, the general 2-year implementation timeline for label amendments for quizalofop-p-ethyl is considered appropriate from a human health and environmental perspective. Therefore, the required label updates will be implemented within 24 months following the publication of the re-evaluation decision document.

Refer to Appendix I for details on specific products impacted by this decision.

Next steps

To comply with this decision, the required amendments (mitigation measures and label updates) must be implemented on all product labels no later than 24 months after the publication date of this decision document. Accordingly, both registrants and retailers will have up to 24 months from the date of this decision document to transition to selling the product with the newly amended labels. Similarly, users will also have the same 24-month period from the date of this decision document to transition to using the newly amended labels, which will be available on the Public Registry.

Other information

Any person may file a notice of objection³ regarding this decision on quizalofop-p-ethyl and its associated end-use products within 60 days from the date of publication of this Re-evaluation Decision. For more information regarding the basis for objecting (which must be based on scientific grounds), please refer to the Pesticides section of the Canada.ca website (Request a Reconsideration of Decision) or contact PMRA's Pest Management Information Service.

The relevant confidential test data on which the decision is based (as referenced in PRVD2022-17) are available for public inspection, upon application, in PMRA's Reading Room. For more information, please contact the Pest Management Information Service.

³ As per subsection 35(1) of the *Pest Control Products Act*.

Evaluation Approach

Legislative framework

The Minister of Health's primary objective under the *Pest Control Products Act* (the Act) subsection 4(1) is to prevent unacceptable risks to individuals and the environment from the use of pest control products.

As noted in the preamble of the Act, it is in the national interest that the attainment of the objectives of the federal regulatory system continue to be pursued through a scientifically-based national registration system that addresses risks to human health, the environment and value both before and after registration and applies to the regulation of pest control products throughout Canada; and that pest control products with acceptable risk and value be registered for use only if it is shown that their use would be efficacious and if conditions of registration can be established to prevent unacceptable risks to human health and the environment.

For the purposes of the Act, the health or environmental risks of a pest control product are acceptable if there is reasonable certainty that no harm to human health, future generations or the environment will result from exposure to or use of the product, taking into account its conditions of registration as per subsection 2(2) of the *Pest Control Products Act*.

Risk for the human health and environment, and value are defined under the Act subsection 2(1) as follows:

Health risk, in respect of a pest control product, means the possibility of harm to human health resulting from exposure to or use of the product, taking into account its conditions or proposed conditions of registration.

Environmental risk, in respect of a pest control product, means the possibility of harm to the environment, including its biological diversity, resulting from exposure to or use of the product, taking into account its conditions or proposed conditions of registration

Value, in respect of a pest control product, means the product's actual or potential contribution to pest management, taking into account its conditions or proposed conditions of registration, and includes the product's (a) efficacy; (b) effect on host organisms in connection with which it is intended to be used; and (c) health, safety and environmental benefits and social and economic impact.

When evaluating the health and environmental risks of a pesticide and determining whether those risks are acceptable, subsection 19(2) of the *Pest Control Products Act* requires Health Canada to apply a scientifically-based approach. The science-based approach to assessing pesticides considers both the toxicity and the level of exposure of a pesticide in order to fully characterize risk.

Risk and value assessment framework

Health Canada uses a comprehensive body of modern scientific methods and evidence to determine the nature as well as the magnitude of potential risks posed by pesticides. This approach allows for the protection of human health and the environment through the application of appropriate and effective risk management strategies, consistent with the purpose described in the preambular text set out above.

Health Canada's approach to risk and value assessment is outlined in A Framework for Risk Assessment and Risk Management of Pest Control Products.⁴ A high-level overview is provided below.

i) Assessing potential health risks

With respect to the evaluation and management of potential health risks, Health Canada's risk assessments follow a structured, predictable process that is consistent with international approaches and the Health Canada Decision-Making Framework for Identifying, Assessing, and Managing Health Risks.⁵

The evaluation of potential health risks begins with a consideration of the toxicological profile of a pesticide to establish reference doses at which no adverse effect is expected and against which the expected exposure is assessed. This includes, where appropriate, the use of uncertainty (protection) factors to provide additional protection that accounts for the variation in sensitivity among members of human population and the uncertainty in extrapolating animal test data to humans. Under certain conditions, the *Pest Control Products Act* requires the use of another factor to provide additional protection to pregnant women, infants, and children. Other uncertainty factors, such as a database deficiency factor, are considered in specific cases. More details related to the application of the uncertainty factors are provided in SPN2008-01.⁶

Assessments estimate potential health risks to defined populations⁷ under specific exposure conditions. They are conducted in the context of the registered conditions of use, such as the use of a pesticide on a particular field crop using specified application rates, methods and equipment. Potential exposure scenarios consider exposures during and after application of the pesticide in occupational or residential settings, food and drinking water exposure, or exposure when

⁵ Health Canada Decision-Making Framework for Identifying, Assessing, and Managing Health Risks - August 1, 2000 (<https://www.canada.ca/en/health-canada/corporate/about-health-canada/reports-publications/health-products-food-branch/health-canada-decision-making-framework-identifying-assessing-managing-health-risks.html>)

⁶ Science Policy Note: The Application of Uncertainty Factors and the Pest Control Products Act Factor in the Human Health Risk Assessment of Pesticides (<https://www.canada.ca/en/health-canada/services/consumer-product-safety/reports-publications/pesticides-pest-management/policies-guidelines/science-policy-notes/2008/application-uncertainty-factors-pest-control-products-act-factor-human-health-risk-assessment-pesticides-spn2008-01.html>)

⁷ Consideration of Sex and Gender in Pesticide Risk Assessment (<https://www.canada.ca/en/health-canada/services/consumer-product-safety/reports-publications/pesticides-pest-management/fact-sheets-other-resources/consideration-sex-gender-pesticide-risk-assessment-infographic.html>)

interacting with treated pets. Also considered are the anticipated durations (short-, intermediate- or long-term) and routes of exposure (oral, inhalation, or skin contact). In addition, an assessment of health risks must consider available information on aggregate exposure and cumulative effects.

ii) Assessing risks to the environment

With respect to the evaluation of environmental risks, Health Canada's environmental risk assessments follow a structured, tiered approach to determine the likelihood that exposure to a pesticide can cause adverse effects on individual organisms, populations, or ecological systems. This involves screening assessments starting with simple methods, conservative exposure scenarios and sensitive toxicity effects metrics, then moving on, where required, to more refined assessments that can include exposure modelling, monitoring data, results from field or mesocosm studies, and probabilistic risk assessment methods.

The environmental assessment considers both the exposure (environmental fate, chemistry, and behaviour, along with the application rates and methods) and hazard (toxic effects on organisms) of a pesticide. The exposure assessment examines the movement of the pesticide in soil, water, sediments and air, as well as the potential for uptake by plants or animals and transfer through the food web. The possibility for the pesticide to move into sensitive environmental compartments such as groundwater or lakes and rivers, as well as the potential for atmospheric transport, is also examined. The hazard assessment examines effects on a large number of internationally recognized indicator species of plants and animals (terrestrial organisms include invertebrates such as bees, beneficial arthropods, and earthworms, birds, mammals, plants; aquatic organisms include invertebrates, amphibians, fish, plants and algae), and includes considering effects on biodiversity and the food chain. Acute and chronic effects endpoints are derived from laboratory and field studies that characterize the toxic response and the dose–effect relationship of the pesticide.

The characterization of environmental risk requires the integration of information on environmental exposure and effects to identify which, if any, organisms or environmental compartments may be at risk, as well as any uncertainties in characterizing the risk.

iii) Value assessment

Value assessments consist of two components: an assessment of the performance of a pest control product and its benefits.

During re-evaluation, value is examined under current conditions and in light of alternative pest control methods (both chemical and nonchemical) that may have been developed since the pesticide was first registered. An assessment of the benefits associated with the pesticide may also be conducted to demonstrate its value in the current context, and to identify potential alternatives.

Risk management

The outcomes of the assessments of risks to human health and the environment, and the assessment of value, form the basis for identifying risk management strategies. These include appropriate risk mitigation measures and are a key part of decision-making on whether health and environmental risks are acceptable. The development of risk management strategies take place within the context of the pesticide's conditions of registration. Conditions can relate to, among other things, the specific use (for example, application rates, timing, frequency and method of application), personal protective equipment, pre-harvest intervals, restricted-entry intervals, buffer zones, spray drift and runoff mitigation measures, handling, manufacture, storage or distribution of a pesticide. If feasible conditions of use that have acceptable risk and value cannot be identified, the pesticide use will not be eligible for registration.

The selected risk management strategy is then implemented as part of the re-evaluation decision. The pesticide registration conditions include legally-binding use directions on the label. Any use in contravention of the label or other specified conditions is illegal under the *Pest Control Products Act*. Implementation of post-market decisions follow the framework articulated in the *Policy on Cancellations and Amendments Following Re-evaluation and Special Review*.⁸

Following a decision, continuous oversight activities such as postmarket review, monitoring and surveillance, including incident reporting, all play an essential role to help ensure the continued acceptability of risks and value of registered pesticides.

⁸ PMRA Regulatory Directive DIR2018-01, *Policy on Cancellations and Amendments Following Re-evaluation and Special Review* (<https://www.canada.ca/en/health-canada/services/consumer-product-safety/reports-publications/pesticides-pest-management/policies-guidelines/regulatory-directive/2018/dir2018-01-policy-cancellations-amendments.html>).

Appendix I Registered products containing Quizalofop-p-ethyl in Canada

Table 1 Products containing Quizalofop-p-ethyl requiring (label) amendments¹

Registration number	Marketing class*	Registrant	Product name	Formulation type	Guarantee
25461	T	AMVAC Canada ULC	Quizalofop-p-ethyl Technical Herbicide	Solid	98%
29392	T	Nissan Chemical Corporation	Quizalofop-p-ethyl MUP Herbicide	Solid	98%
33269	T	Sharda Cropchem Limited	Sharda Quizalofop-p-ethyl Technical Herbicide	Solid	95.7%
33340	T	Adama Agricultural Solutions Canada Ltd.	Adama Quizalofop-p-ethyl Technical	Solid	95.67%
33374	T	NewAgco Inc.	Newagco Quizalofop-p-ethyl Technical	Solid	98%
33730	T	Agrocill Chemicals Pty Ltd.	Quizalofop-p-ethyl Agrogill Technical Grade Active Ingredient	Solid	98.8%
34910	T	Zhejiang Xinan Chemical Industrial Group Co., Ltd.	Wynca Quizalofop-p-ethyl Technical	Solid	98.5%
34944	T	Farmer's Business Network Canada Inc.	Quizalofop Technical	Solid	97.5%
30068	M	Nissan Chemical Corporation	Yuma™ Bulk Herbicide	Emulsifiable concentrate	96 g/L
34743	M	UPL Agrosolutions Canada Inc.	Select Plus Bulk	Emulsifiable concentrate	120 g/L
25462	C	AMVAC Canada ULC	Assure II Herbicide	Emulsifiable concentrate	96 g/L
29134	C	Nissan Chemical Corporation	Yuma Herbicide	Emulsifiable concentrate	96 g/L
30100	C	Nissan Chemical Corporation	Yuma® GL Liquid EC Herbicide	Emulsifiable concentrate	96 g/L

Registration number	Marketing class*	Registrant	Product name	Formulation type	Guarantee
32091	C	Nissan Chemical Corporation	IpcO Contender Herbicide	Emulsifiable concentrate	96 g/L
33481	C	NewAgo Inc.	Quiz Herbicide	Emulsifiable concentrate	96 g/L
33617	C	Sharda Cropchem Limited	Elegant10 EC	Emulsifiable concentrate	96 g/L
33681	C	Nissan Chemical Corporation	Marshall	Emulsifiable concentrate	96 g/L
33715	C	ADAMA Agricultural Solutions Canada Ltd.	Leopard	Emulsifiable concentrate	100 g/L
33835	C	Agrogill Chemicals Pty Ltd.	Agrogill Quizalofop-p-ethyl Herbicide	Emulsifiable concentrate	96 g/L
33906	C	Nufarm Agriculture Inc.	Idol Herbicide	Emulsifiable concentrate	96 g/L
33960	C	Interprovincial Cooperative Ltd.	IPCO Contender II Herbicide	Emulsifiable concentrate	96 g/L
33961	C	Interprovincial Cooperative Ltd.	Co-op Contender II Herbicide	Emulsifiable concentrate	96 g/L
34034	C	NewAgco Inc.	Quizalofop-p-ethyl 96 G/L Herbicide	Emulsifiable concentrate	96 g/L
34282	C	BASF Canada Inc.	Caziva™ Ultra Q	Emulsifiable concentrate	96 g/L
34744	C	UPL Agrosolutions Canada Inc.	Select Plus	Emulsifiable concentrate	120 g/L
34759	C	Viking Crop Production Partners Inc.	Viking Quizalofop Herbicide	Emulsifiable concentrate	96 g/L
34935	C	Adama Agricultural Solutions Canada Ltd.	Adama Quizalofop	Emulsifiable concentrate	100 g/L

¹ As of 23 November 2023, excluding discontinued products or products with a submission for discontinuation.

* T = Technical Grade Active Ingredient, M = Manufacturing Concentrate, C = Commercial

Appendix II Label amendments for products containing Quizalofop-p-ethyl

Information on approved labels of currently registered products should not be removed unless it contradicts the label statements provided below.

1.0 Label amendments for quizalofop-p-ethyl technical products

ENVIRONMENTAL PRECAUTIONS

The following statements are required to be added under **ENVIRONMENTAL PRECAUTIONS** for all technical grade products:

TOXIC to aquatic organisms.

DO NOT discharge effluent containing this product into sewer systems, lakes, streams, ponds, estuaries, oceans or other waters.

Disposal:

For information on the disposal of unused/unwanted product, contact the manufacturer or the provincial/territorial regulatory agency. Contact the manufacturer and the provincial/territorial regulatory agency in case of a spill, and for clean-up of spills.

2.0 Label amendments for quizalofop-p-ethyl commercial end-use products

1) For all end-use products, under the section entitled **PRECAUTIONS**:

Wear coveralls over a long-sleeved shirt, long pants, chemical-resistant gloves, socks and shoes during mixing, loading, application, clean-up and repair. Gloves are not required during application within a closed cab and/or cockpit.

2) For all end-use products, under the section entitled **PRECAUTIONS**, add the following statement unless a more restrictive REI is specified on the product label:

DO NOT enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours.

3) For all end-use products, under the section entitled **PRECAUTIONS**, add or update the following statement:

Apply only to agricultural crops when the potential for drift to areas of human habitation and human activity, such as houses, cottages, schools and recreational areas is minimal. Take into consideration wind speed, wind direction, temperature inversions, application equipment, and sprayer settings.

4) For Caziva Ultra Q, Registration no. 34282 only, add the following statement:

DO NOT apply by air.

5) For all end-use products, under the section entitled **ENVIRONMENTAL PRECAUTIONS**, add the following statements:

Toxic to aquatic organisms and non-target terrestrial plants. Observe spray buffer zones specified under DIRECTIONS FOR USE.

This product contains an active ingredient and aromatic petroleum distillates, which are toxic to aquatic organisms.

To reduce runoff from treated areas into aquatic habitats avoid application to areas with a moderate to steep slope, compacted soil, or clay.

Avoid application when heavy rain is forecast.

Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative filter strip between the treated area and the edge of the water body.

As this product is not registered for the control of pests in aquatic systems, DO NOT use to control aquatic pests.

DO NOT contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.

Store this product away from food or feed.

6) For all end-use products except CAZIVA ULTRA Q, Registration no. 34282, add to **DIRECTIONS FOR USE:**

Field sprayer application: DO NOT apply during periods of dead calm. Avoid application of this product when winds are gusty. DO NOT apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE S572.1) medium classification. Boom height must be 60 cm or less above the crop or ground.

Aerial application: DO NOT apply during periods of dead calm. Avoid application of this product when winds are gusty. DO NOT apply when wind speed is greater than 16 km/h at flying height at the site of application. DO NOT apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE S572.1) medium classification. Reduce drift caused by turbulent wingtip vortices. Nozzle distribution along the spray boom length MUST NOT exceed 65% of the wing- or rotorspan.

Apply only by fixed-wing or rotary aircraft equipment which has been functionally and operationally calibrated for the atmospheric conditions of the area and the application rates and conditions of this label.

Label rates, conditions and precautions are product specific. Read and understand the entire label before opening this product. Apply only at the rate recommended for aerial application on this label. Where no rate for aerial application appears for the specific use, this product cannot be applied by any type of aerial equipment.

Ensure uniform application. To avoid streaked, uneven or overlapped application, use appropriate marking devices.

Use precautions

Apply only when meteorological conditions at the treatment site allow for complete and even crop coverage. Apply only under conditions of good practice specific to aerial application as outlined in the National Aerial Pesticide Application Manual, developed by the Federal/Provincial/Territorial Committee on Pest Management and Pesticides.

Product specific precautions

Read and understand the entire label before opening this product. If you have questions, call the manufacturer at (XXX) YYY-ZZZZ or obtain technical advice from the distributor or your provincial agricultural representative. Application of this specific product must meet and/or conform to the following:

Volume: Apply the recommended rate in a minimum spray volume of 55 litres per hectare.

SPRAY BUFFER ZONES

A spray buffer zone is NOT required for:

- low-clearance hooded or shielded sprayers that prevent spray contact with crop, fruit or foliage,

The spray buffer zones specified in the table below are required between the point of direct application and the closest downwind edge of sensitive terrestrial habitats (such as grasslands, forested areas, shelter belts, woodlots, hedgerows, riparian areas and shrublands) and sensitive freshwater habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs and wetlands).

Method of application	Crop	Spray buffer zones (metres) required for the protection of:		
		Freshwater habitat of depths:		Terrestrial habitat:
		Less than 1 m	Greater than 1 m	
Field sprayer	Field crops at 0.38–0.5 L/ha	1	0	3
	Field crops at 0.75 L/ha	1	0	5
Aerial	Fixed wing	1	0	85

Method of application	Crop		Spray buffer zones (metres) required for the protection of:		
			Freshwater habitat of depths:		Terrestrial habitat:
			Less than 1 m	Greater than 1 m	
	Field crops at 0.38 L/ha	Rotary wing	1	0	70
	Field crops at 0.5 L/ha	Fixed wing	1	0	100
		Rotary wing	1	0	85
	Field crops at 0.75 L/ha	Fixed wing	1	0	150
		Rotary wing	1	0	125

When tank mixes are permitted, consult the labels of the tank-mix partners and observe the largest (most restrictive) spray buffer zone of the products involved in the tank mixture and apply using the coarsest spray (ASAE) category indicated on the labels for those tank mix partners.

The spray buffer zones for this product can be modified based on weather conditions and spray equipment configuration by accessing the Spray Buffer Zone Calculator on the Pesticides portion of the Canada.ca website.

7) For CAZIVA ULTRA Q, Registration no. 34282, add to **DIRECTIONS FOR USE:**

Field sprayer application: DO NOT apply during periods of dead calm. Avoid application of this product when winds are gusty. DO NOT apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE S572.1) medium classification. Boom height must be 60 cm or less above the crop or ground.

DO NOT apply by air.

Product specific precautions

Read and understand the entire label before opening this product. If you have questions, call the manufacturer at (XXX) YYY-ZZZZ or obtain technical advice from the distributor or your provincial agricultural representative. Application of this specific product must meet and/or conform to the following:

Volume: Apply the recommended rate in a minimum spray volume of 55 litres per hectare.

SPRAY BUFFER ZONES

A spray buffer zone is NOT required for:

- low-clearance hooded or shielded sprayers that prevent spray contact with crop, fruit or foliage,

The spray buffer zones specified in the table below are required between the point of direct application and the closest downwind edge of sensitive terrestrial habitats (such as grasslands, forested areas, shelter belts, woodlots, hedgerows, riparian areas and shrublands) and sensitive freshwater habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs and wetlands).

Method of application	Crop	Spray buffer zones (metres) required for the protection of:		
		Freshwater habitat of depths:		Terrestrial habitat:
		Less than 1 m	Greater than 1 m	
Field sprayer	Field crops at 0.38–0.5 L/ha	1	0	3
	Field crops at 0.75 L/ha	1	0	5

When tank mixes are permitted, consult the labels of the tank-mix partners and observe the largest (most restrictive) spray buffer zone of the products involved in the tank mixture and apply using the coarsest spray (ASAE) category indicated on the labels for those tank mix partners.

The spray buffer zones for this product can be modified based on weather conditions and spray equipment configuration by accessing the Spray Buffer Zone Calculator on the Pesticides portion of the Canada.ca website.

3.0 Additional label amendments

For all end-use products registered for use on sugarbeets, under the sub-section of “**Sugarbeets**” or “**FOR SALE FOR USE ON SUGARBEETS IN CANADA**” in the **DIRECTIONS FOR USE** section corresponding to the use on sugarbeets, add:

The minimal re-treatment interval (RTI) is 14 days.

Not all labels have the required preharvest intervals (PHIs), therefore, all end-use product labels must be updated to include the following PHIs:

- The PHI is 64 days for Oriental mustard (including canola quality *brassica juncea*) (condiment and oilseed type) (Western Canada only), yellow and brown mustard, and crambe.
- The PHI is 85 days for chickpeas.
- When tank mix partners are used, the most restricted PHIs must be observed.