Proposed Special Review Decision PSRD2025-01

Proposed Special Review Decision of Dicamba and Its Associated End-use Products

Consultation Document

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Proposed special review decision for dicamba and associated end-use products

Under the authority of the *Pest Control Products Act*, pesticides are regulated by Health Canada's Pest Management Regulatory Agency (PMRA) on behalf of the Minister of Health. The *Pest Control Products Act* prescribes both the pre-market and post-market assessment (re-evaluations and special reviews) of pesticides to determine the acceptability or continued acceptability of human health and environmental risks, and, acceptable value of a pesticide in Canada. Unlike a re-evaluation, a special review is triggered only under certain circumstances, as described in section 17 of the *Pest Control Products Act*, and the intent of a special review is to address specifically the identified aspect(s) of concern. The special review approach is described in the PMRA Guidance Document: *Approach to Special Reviews of Pesticides*. Dicamba is also under re-evaluation, where aspects related to human health, environment and value will be assessed.

Health Canada evaluates the aspect(s) of concern that prompted the special review in accordance with subsection 18(4) of the *Pest Control Products Act*. The internationally accepted science-based approach is used for the assessment of the aspect(s) of concern, similar to all other scientific assessments (for example, new product registrations and re-evaluations).

Pursuant to subsection 17(1) of the *Pest Control Products Act*, Health Canada initiated a special review of all registered pest control products containing dicamba, as applicable, based on the preliminary analysis of incident reports, as well as a new non-target plant toxicity study submitted through the Incident Reporting program (IRP). Since the initiation of the special review, the scope was expanded in 2022 and 2024 under subsection 17(7) of the *Pest Control Products Act*. The identified aspect of concern for the special review is:

- Risk to non-target terrestrial plants from the use of dicamba products (Over-The-Top and non-Over-The-Top).

For this special review, the registered uses of dicamba included Over-The-Top (OTT) uses and Non-Over-The-Top (Non-OTT) uses. Over-The-Top (OTT) uses of dicamba are defined as the registered uses of commercial dicamba products in DT field corn and in DT soybean. Non-Over-The-Top (Non-OTT) uses of dicamba are defined as all registered uses of commercial dicamba products except registered uses in DT field corn and DT soybean. All currently registered commercial-class products containing dicamba and their associated uses have been considered in this special review. Domestic-class dicamba products were determined to be out of scope as increased incidents were associated with commercial uses. Currently registered pest control products containing dicamba with OTT and non-OTT uses are listed in Appendix I.

Pursuant to subsection 18(4) of the *Pest Control Products Act,* Health Canada has evaluated the aspect of concern that prompted the special review of pest control products containing dicamba, which is relevant to the environment. To assess the aspect of concern, Health Canada considered the information that prompted the special review and other relevant information currently available, including information from international regulatory authorities such as the United States Environmental Protection Agency (USEPA) and Australian Pesticides and Veterinary

Medicines Authority (APVMA). New non-target plant toxicity studies received by the PMRA indicated increased risk to non-target terrestrial plants and warranted re-consideration of this risk from OTT and non-OTT outdoor uses.

Dicamba is a selective systemic herbicide that is absorbed through leaves, roots, and stems and moves throughout the plant. Dicamba belongs to the benzoic acid chemical family. Classified as a Group 4 herbicide, dicamba mimics the natural plant hormone indole-3-acetic acid (also known as synthetic auxin) and produces an "auxin overload", thereby causing susceptible plants to be injured and controlled. Dicamba OTT and non-OTT use are registered for the control of broadleaf weeds in dicamba-tolerant (DT) soybean, DT and non-DT field corn, other non-DT cereal crops, lowbush blueberries, grasses, turf, lawns, fallow, stubble, and non-agricultural areas (such as, roadsides, hydro, pipeline and railway rights-of-way, airports, military bases, wasteland, and turf).

The forms of dicamba registered in Canada include: dicamba acid, sodium (Na) salt of dicamba, potassium (K) salt of dicamba, dimethylamine (DMA) salt of dicamba, diglycolamine salt (DGA) salt of dicamba, N,N-Bis(3-aminopropyl)methylamine (BAPMA) salt of dicamba, isopropylamine (IPA) salt of dicamba, monoethanolamine (MEA) salt of dicamba, diethanolamine (DEA) salt of dicamba and N-(2-aminoethyl)-1,2-ethanediamine salt (DETA) salt of dicamba. End-use products are only formulated as a salt form of dicamba. Not all forms of dicamba registered in Canada have associated end-use products.

This document presents the proposed special review decision for dicamba, including the proposed amendments (risk mitigation measures) to protect the environment, as well as the science evaluation on which the proposed decision is based. This document is subject to a 45-day public consultation period,[1] during which the public (including the pesticide manufacturers and stakeholders) may submit written comments and additional information to PMRA Publications. The final special review decision will be published after taking into consideration the comments received during the consultation period that are directly related to the assessment of the aspect of concern for this proposed special review decision.

Proposed special review decision for dicamba

Health Canada, under the authority of the *Pest Control Products Act* has conducted an evaluation of available relevant scientific information related to the aspect of concern for the environment in accordance with subsection 18(4) of the *Pest Control Products Act*. Based on the evaluation of the aspect of concern, Health Canada is proposing for public consultation, pursuant to section 28 of the *Pest Control Products Act*, the continued registration of most uses of dicamba and associated end-use products registered for sale and use in Canada under section 21 of the *Pest Control Products Act*. Certain uses are proposed for cancellation.

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

The assessment of the aspect of concern from this special review indicated that risks to the environment for the following commercial uses of dicamba are considered to be acceptable provided that proposed label amendments are implemented:

- All non-OTT uses (such as, non-DT cereal crops, lowbush blueberries, and non-agricultural areas)
- OTT uses in DT field corn
- OTT uses in DT soybean excluding seed production

However, the following uses of dicamba are proposed for cancellation since risks to the environment are not shown to be acceptable when used according to the current conditions of registration, or when additional mitigation is considered:

- Seed production of DT soybeans

The proposed additional mitigation measures are summarized below, and details are outlined in Appendix II and Section 1.4: Risk mitigation measures.

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 to ensure the product has acceptable value which must be followed by law. The proposed label amendments including revised/updated label statements and/or mitigation measures, as a result of the special review of dicamba, are summarized below. Refer to Appendix II and Section 1.4: Risk mitigation measures, for details.

Environment

Commercial-class dicamba products with OTT and Non-OTT uses

To improve understanding of the risk of dicamba volatilization:

- Proposed best management practice statement regarding temperature:
- "Due to potential for increased volatility and off-target movement of dicamba at higher temperatures, which could result in adverse effects on non-target terrestrial plants, avoid application when temperatures exceed 25°C."

To mitigate the risks from spray drift:

- Updated spray buffer zones are proposed to protect terrestrial habitats, range proposed for field sprayer: 1–115 m and proposed for aerial: 45–800 m.

Commercial-class dicamba products with OTT uses

To mitigate risks from volatilization:

- Proposed reduction in the maximum height of DT field corn crop from 76 cm to 50 cm for post-emergence applications.
- Proposed a single pre-plant or pre-emergence application in DT soybean.
- Proposed cancellation of the use for DT soybean seed production.

Next steps

Health Canada will accept written comments on this proposal up to 45 days from the date of publication of this document ("consultation period"). Comments on the proposed decision can be submitted during the consultation period to the PMRA through PMRA Publications, or the Public Engagement Portal (Public Engagement Forms - Consultation Comment). For more information or if you have questions, contact the PMRA's Pest Management Information Service.

Before making a special review decision on dicamba under section 21 of the *Pest Control Products Act*, the comments received during the consultation period will be taken into consideration in preparation of the final special review decision document. A science-based approach will be applied in making a final decision on dicamba. In accordance with subsection 28(5) of the *Pest Control Products Act*, Health Canada will then publish a final special review decision document, which will include the decision, the reasons for it, a summary of the comments received on the proposed special review decision during the consultation period that are directly related to the assessment of the aspect(s) of concern for this proposed special review decision, and Health Canada's response to these comments.

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

Other information

The relevant confidential test data on which the proposed decision is based (see References section of this document) are available for public inspection, upon application, in PMRA's Reading Room. For more information, please contact the Pest Management Information Service.

Evaluation of the aspect of concern that prompted the special review

Following initiation of the special review, Health Canada requested information under section 19 of the *Pest Control Products Act* that were related to the aspect of concern.

To assess the aspects of concern, Health Canada considered the information that prompted the special review and other relevant information currently available, including information from incident reports, published literature, studies from registrants, and information from international regulatory authorities such as the United States Environmental Protection Agency (USEPA) and Australian Pesticides and Veterinary Medicines Authority (APVMA). Health Canada considers foreign reviews and decisions, including mitigation measures implemented by the USEPA and APVMA, to contribute to the assessment of Canadian pest control products.

1.0 Environmental risk assessment

1.1 Background: current uses

For non-DT crop and non-agricultural uses, dicamba may be applied up to three times per season in non-DT field corn as a pre-plant, pre-emergence, and post-emergence herbicide, and once per season post-emergence in other non-DT cereal crops (barley, spring barley, oats, spring rye, durum wheat, spring wheat, and winter wheat). Foliar applications to lowbush blueberries are permitted once per season in the fall after 90% of the blueberries have dropped their leaves. Dicamba may also be applied once or twice per season on fallow, stubble, grasses, turf, lawns, and other non-agricultural areas; some of these uses allow for applications in the summer or fall.

Currently, dicamba can be applied twice per season in DT field corn and up to three times per season in DT soybean as a pre-plant, pre-emergence, and post-emergence herbicide. There are no registered pre-plant or pre-emergence uses for DT soybean seed production.

Soybean is a broadleaf plant that is readily damaged by dicamba. In DT soybean, however, dicamba is broken down quickly to form the non-herbicidal metabolite 3,6-dichlorosalicylic acid (DCSA), which allowed DT soybean to become a registered crop for dicamba products. Soybean was not a registered crop for dicamba products prior to the development of DT soybean.

1.2 Risk assessment approach

In order to assess risk to non-target terrestrial plants from the use of dicamba products (OTT and non-OTT uses), the following approach was taken, with particular focus on injury to non-target terrestrial plants from volatilization of dicamba:

- Conduct a thorough examination of the available information (foreign reviews, submitted data, and the scientific literature) to obtain a better understanding of the fate of dicamba in the environment. This involved examination of the chemistries of dicamba acid and its associated salt forms, proprietary technologies for reducing the volatilization of dicamba (buffering systems), and additional factors that may influence the volatilization of

dicamba. Where appropriate, the PMRA relied on the analysis and assessment of studies as reported in foreign reviews.
- Conduct a review of environmental incidents reported in Canada, and incident data available from the United States.
- Compare the products registered and the effectiveness of mitigations proposed, or implemented, by the PMRA, the USEPA, and the APVMA to prevent off-target movement of dicamba and effects on non-target terrestrial plants. The feasibility of proposed and historical mitigations were examined from the viewpoint of the environmental fate and chemistry of dicamba. Incident data trends were also examined side-by-side with historical mitigations.
- Based on the information assessed, determine whether there are scientifically supported measures that can help to mitigate risks to non-target terrestrial plants.

1.3 Findings

The outcome of the risk assessment for this special review presents the findings on the main topics of the chemistry of dicamba (including forms of dicamba in registered products and in the environment following dicamba applications), factors that affect volatilization of dicamba (including temperature and pH), spray drift, and incident reports.

1.3.1 Forms of dicamba

Dicamba is a weak acid with a pK_a value of about 1.97 (PACR2007-02, PRVD2007-05). When dicamba is added to water at neutral pH, most of the acid form of dicamba (HDc; also called dicamba acid) will disassociate to the dicamba anion (Dc^-) and a proton (H^+), as follows in Equation (1):

$$HDc \rightleftharpoons Dc^- + H^+ \qquad (1)$$

As the pH increases, so too does the fraction of dicamba that is disassociated, and there is a concurrent decrease in the fraction of dicamba in the acid form. As examples:

- At pH 3, ~10% of dicamba is in the acid form.
- At pH 4.8, ~ 0.001% of dicamba is in the acid form.

Dicamba products are herbicidally active in the acid form, but are formulated as a salt (sodium, potassium, and amine-based salts) to enhance the ability of dicamba to enter into the plant. Dicamba is formulated in seven different salt forms among registered end-use products in Canada, as follows:

- Sodium (Na) salt of dicamba
- Potassium (K) salt of dicamba
- Dimethylamine (DMA) salt of dicamba
- Diglycolamine salt (DGA) salt of dicamba

- N,N-Bis(3-aminopropyl)methylamine (BAPMA) salt of dicamba
- Isopropylamine (IPA) salt of dicamba
- Monoethanolamine (MEA) salt of dicamba

Dicamba acid is the part of the formulation that binds to the target site in the plant resulting in herbicidal activity, while the sodium, potassium, or amine-based portion plays no direct role in herbicidal activity.

Once in the living part of the plant, all salt forms of dicamba are converted within the plant to the herbicidally active dicamba acid form. Differences in plant survival from exposure to dicamba are primarily due to differences in how plants metabolize dicamba. Tolerant species such as corn and other grasses (in other words, monocots) generally metabolize dicamba more rapidly (through a number of metabolic reaction pathways) than susceptible broadleaf species (in other words, dicots, including soybean).

1.3.2 Volatilization of dicamba

Dicamba acid is the volatile form of dicamba. The potential for volatilization of dicamba acid has long been recognized based on its vapour pressure and Henry's law constant.

The risk assessment approach undertaken during this special review recognizes that there is potential for off-site movement of dicamba related to volatilization throughout the entire growing season in Canada, to differing degrees. Numerous factors are expected to impact the extent of volatilization of dicamba acid in the field, including: weather and outdoor conditions, application method, timing of application including calendar date and time of day, temperature, the presence of plant matter, crop type and growth stage, soil type, product formulation, tank mix pH, and tank mix components.

Of these, temperature and pH have considerable impact on off-site movement of dicamba related to volatilization. The review of historical environment incidents reported in Canada, in addition to the available environment incident information from the United States, indicates that, to date, measures taken to mitigate volatilization by regulating temperature and pH did not appear to have sufficiently mitigated the potential for the formation and subsequent volatilization of dicamba acid during OTT uses.

Temperature

Volatilization of dicamba acid is more likely to occur as outdoor temperatures rise. Currently, post-emergence dicamba applications in DT field corn and DT soybean (OTT uses) can occur at later crop growth stages relative to post-emergence applications in non-DT crops such as non-DT field corn (non-OTT uses). Consequently, post-emergence dicamba applications in DT field corn and DT soybean (OTT uses) can occur later in the growing season when outdoor temperatures are higher.

In Canada, the risk to non-target terrestrial plants (from off-target movement of dicamba related to volatilization) does not appear to be mitigated by the following temperature statements that are currently included on all dicamba product labels that have registered OTT uses in DT field corn and DT soybean:

- "Apply <PRODUCT NAME> when air temperature is between 10 and 25°C [for best results]."
- "Do not spray when the temperature is expected to exceed 30°C."

As well, the PMRA has observed that mandatory application cut-off dates that were implemented in the United States on OTT dicamba product labels, which served as proxies for temperature caps, do not appear to have resulted in a reduction of reported incidents in the vicinity of dicamba applications to DT soybean and DT cotton crops.

pH

Acidic (lower pH) conditions are required for the formation, and therefore the subsequent volatilization, of dicamba acid. Reducing the availability of free hydrogen ion (in other words, proton, or H^+) sources is therefore critical for ensuring that the equilibrium in the acid-base reaction equation under Section 1.3.1 does not shift right-to-left to the formation of dicamba acid.

For dicamba products with registered OTT uses in DT crops, there has been an expectation that acidic conditions can be avoided by formulating dicamba in amine-based salt forms (that have lower volatility), adding a proprietary buffering system such as the VaporGrip Technology to some formulations, and requiring that the spray solution is not acidic. Despite the inclusions of these measures in dicamba product formulations, incidents reported in Canada and the United States indicate that there has been on-going damage to non-target crops and other non-target terrestrial plants following use of such dicamba products in DT crops.

Moreover, some potential free hydrogen ion (in other words, proton, or H^+) sources have been identified in the environment that may contribute to the formation of volatile dicamba acid. These sources, described below, include vegetation and soil.

The scientific literature (for example, Gilbert and Renner, 2021) describes that many plant species (including corn and soybean) will naturally acidify water droplets on the phylloplane (the outermost surface of the leaf), while other studies (for example, Behrens and Lueshen, 1979 and Mueller and Steckel, 2021) suggest that dicamba emissions are greater from living green plants, including soybean and corn, compared to bare soil or dead plants. The findings from these studies, when considered together using a weight of evidence approach, suggest that some living plants may participate in the process by which dicamba acid forms in the environment following the direct application of non-acidic dicamba salt formulations.

In Canada, post-emergence non-OTT uses in non-DT field corn and other cereal crops (monocots) are applications at fairly early growth stages, resulting in minimal crop canopy from which dicamba acid may volatilize. In contrast, OTT uses of dicamba are currently permitted post-emergence in DT soybean (dicot) up to the R1 growth stage (beginning bloom), when the crop has a much fuller canopy relative to post-emergence uses in cereal (monocot) crops.

When dicamba comes into contact with moist acidic soils, it is possible that free hydrogen ions (in other words, protons or H^+) in the soil may react with dicamba products and result in the formation of dicamba acid. However, microbial degradation of dicamba in the soil (DT_{50} = 2.9 to 21 days for aerobic soil; PACR2007-02, PRVD2007-05) will limit the extent of this interaction, thereby limiting the formation of dicamba acid in soil.

1.3.3 Spray drift for non-target terrestrial plants

Species sensitivity distribution analyses were conducted that considered nineteen non-target terrestrial plant ecotoxicity studies already in the PMRA database, received through IRP, and received from the data call-in for this special review. Relevant measures of effects in these studies examined effects such as, emergence, dry weight, height, survival, shoot length, and shoot weight. A new terrestrial plant effects metric of 0.75 g a.e./ha was calculated and has been used during spray buffer zone calculations for the protection of terrestrial habitats from all commercial dicamba product uses.

1.3.4 Incident reports for damage to non-target terrestrial plants

The first OTT uses of dicamba products were registered in December 2013. The first environment incident involving a dicamba product with OTT uses was submitted to PMRA's Incident Reporting Program (IRP) in 2015. Incident data trends were thus examined from 2007 (when the IRP was established) to 2014, and from 2015 onward.

Prior to the first reported environment incident involving a dicamba product with OTT uses (in 2015), no reported environment incidents involved terrestrial plants at a non-residential site. From 2015 to 15 April 2025, 101 cases involved terrestrial plants at a non-residential site, involving damage to soy or soybeans (95), tomato (1), lentils (1), beans (1), trees (1), lilac trees (1), and tobacco (1). Ninety of these cases (89% of incidents) involved just five commercial products with registered OTT uses in DT crops. In these cases, numerous effects were reported following dicamba applications at nearby areas, including visible injury (for example, extreme cupping, leaf crinkling, brown/grey discolouration), deformities, stunted vegetative growth, epinasty (for example, leaf wilt), and/or death to herbaceous plants (for example, soybeans).

In Canada, damage to non-DT soybean was not reported prior to the registration of dicamba OTT uses in DT field corn and DT soybean.

1.4 Risk mitigation measures

1.4.1 Non-OTT uses

Mitigation requirements for non-OTT uses of dicamba products are limited to the proposed spray buffer zone updates (see Section 1.3.3) to mitigate the risks from spray drift and a proposed best management practice statement regarding temperature during application (see Section 1.3.2) to mitigate risks from volatilization. The potential risks to non-target terrestrial plants for non-OTT uses are viewed as acceptable with the proposed label updates. For non-OTT uses of dicamba products, existing measures appear to have been protective of non-target non-DT soybean with low incidents. These measures are also expected to be protective of other sensitive non-target terrestrial plants in the environment.

1.4.2 OTT uses

For OTT uses of dicamba products, a strategy is proposed to mitigate, in tandem, the potential formation and subsequent volatilization of dicamba acid related to direct applications of non-acidic dicamba salt formulations for OTT uses. This strategy aims to reduce the potential formation of dicamba acid by reducing the role that emerged DT crops may have in converting the non-acidic salt forms of dicamba to dicamba acid. This is achieved by reducing the height of the DT field corn crop (as described below) during post-emergence OTT uses, and by applying dicamba pre-plant or pre-emergence to DT soybean before the crop has emerged.

In addition to reducing the potential formation of dicamba acid, as above, applying dicamba earlier in the growing season in emerged DT crops also aims to reduce the temperature at which these applications occur, which will help to minimize the potential volatilization of any dicamba acid that is present or formed.

DT field corn

Two dicamba products have registered uses in DT field corn (Reg. No. 31896 and 32220). These products also have registered uses in non-DT field corn.

Currently, when used alone, these two dicamba products may be used post-emergence in non-DT field corn up to 50 cm standing height; or, depending on the tank mix, these products may also be applied post-emergence up to the 8-leaf stage. In DT field corn, these two dicamba products are currently used up to the 8-leaf stage or 76 cm in height of the crop, whichever comes first.

Reducing the maximum height of DT field corn from 76 cm to 50 cm during post-emergence applications of these two dicamba products is proposed to mitigate the risk from volatilization, thereby aligning post-emergence applications of dicamba in non-DT and DT field corn.

Under the proposed mitigation, all non-OTT and OTT post-emergence uses of dicamba in field corn are expected to occur no later than early July, taking into account geographic location and expectations for plant growth in different regions of Canada.

DT soybean (excluding DT soybean seed production)

Six dicamba products have registered uses in DT soybean (Reg. No. 31896, 32220, 32274, 33268, 33501 and 33502). Currently, one application can be made either pre-plant or pre-emergence, followed by up to two post-emergence applications (with respect to the crop). There are no registered uses in non-DT soybean.

Limiting the use pattern to a single pre-plant or pre-emergence application to DT soybean is proposed to mitigate the risk of volatilization.

Currently, for single planting, post-emergence uses in DT soybean may occur up to late July depending on growing region in Canada. Under the proposed mitigation, the single pre-plant or pre-emergence application to DT soybean is expected to occur up to one month sooner, that is, by early July.

It is noted that "double planting" of soybean can occur in some growing regions of Canada, where some producers may attempt to grow soybean immediately following the harvest of a winter crop. In these cases, the single pre-plant or pre-emergence application of dicamba to DT soybean may be reserved for use on this later planting of soybean in the growing season.

However, for both single and double planting, the proposed mitigation is expected to result in minimal contact between dicamba and any DT soybean leaves that may have emerged from the soil following the single pre-plant or pre-emergence application. Instead, dicamba is more likely to be applied directly onto target weeds and the surrounding soil, where biodegradation of dicamba by soil microbes may occur.

DT soybean seed production

Two dicamba products have registered uses for DT soybean seed production (Reg. No. 31896 and 33501) to control non-tolerant (off-type) soybean lines. Two applications can be made post-emergence (with respect to the crop). There are no registered pre-plant or pre-emergence uses registered for DT soybean seed production. The proposed mitigation is to cancel the use due to risk of volatilization.

The proposed mitigation for OTT uses in DT soybean, above, is to limit the use pattern to a single pre-plant or pre-emergence application. As the DT soybean seed production use pattern is post-emergence only, the mitigation for DT soybean allowing only pre-plant or pre-emergence application is not compatible with this use. The proposed mitigation is, therefore, to cancel the use during DT soybean seed production.

1.4.3 Temperature

In addition to applying dicamba earlier in the growing season when the overall temperature is expected to be lower, an additional best management practice statement to advise the user to avoid application at higher temperatures to improve the understanding of the risk of dicamba volatilization is also required on all commercial class product labels with OTT and non-OTT uses:

- "Due to potential for increased volatility and off-target movement of dicamba at higher temperatures, which could result in adverse effects on non-target terrestrial plants, avoid application when temperatures exceed 25°C."

1.4.4 Spray buffer zones

In order to reduce the potential risk from spray drift to non-target terrestrial plants, updated terrestrial spray buffer zones are proposed to be included on all commercial product labels of dicamba (non-OTT and OTT uses). Based on the risk identified to off-target sensitive habitats, spray buffer zones of 1 to 800 m are required to protect terrestrial habitats. This range includes both ground and aerial uses for cropland and non-cropland, as summarized in Appendix II.

Fixed-wing aerial applications to non-cropland areas resulted in capped terrestrial spray buffer zones of 800 m for every product with non-cropland uses on the label. The percent risk mitigated at 800 m for all products with non-cropland uses was ≥ 99.9% (with RQs ≤ 2.1 remaining at 800 m), meaning that if the wind speed was at the maximum of 16 km/h, blowing directly towards terrestrial habitat, 0.1% of the remaining risk may go unmitigated.

The risk to non-target terrestrial plants from spray drift is considered to be acceptable with these proposed mitigation measures (spray buffer zones).

List of abbreviations

°C	celsius
a.e.	acid equivalent
APVMA	Australian Pesticides and Veterinary Medicines Authority
cm	centimetres
DT	dicamba tolerant
DT_{50}	dissipation time to 50%
g	grams
ha	hectares
IRP	incident reporting program
m	metres
Non-OTT	Non-Over-The-Top
OTT	Over-The-Top
PACR	Proposed Acceptability for Continuing Registration
pK_a	acid dissociation constant
PMRA	Pest Management Regulatory Agency
PRVD	Proposed Re-evaluation Decision
PSRD	Proposed Special Review Decision
RQ	risk quotient
USEPA	United States Environmental Protection Agency

Appendix I Registered products containing dicamba in Canada

Table 1 Commercial Products containing dicamba subject to proposed label amendments[1]

Registration number	Marketing class	Registrant	Product name	Formulation type	Active ingredient (%, g/L)
16545	C	BASF Agricultural Solutions Canada Inc.	Dyvel Herbicide (Agricultural)	Solution	MAS-336; DIC-84;
18837	C	BASF Agricultural Solutions Canada Inc.	Banvel Herbicide	Solution	DIC-480;
19349	C	BASF Agricultural Solutions Canada Inc.	Marksman Herbicide	Suspension	DIC-132; ATR-261;
20423	C	Bayer CropScience Inc.	Mocan 943 Water Soluble Herbicide	Solution	GPI-120; DIC-86;
23957	C	BASF Agricultural Solutions Canada Inc.	Banvel II Herbicide	Solution	DIC-480;
24362	C	BASF Agricultural Solutions Canada Inc.	Banvel Dry EG Herbicide	Wettable Granules	DIC-70;
25811	C	BASF Agricultural Solutions Canada Inc.	Distinct Herbicide	Wettable Granules	DIC-50; DFS-20;
26722	C	Gharda Chemicals International Inc.	Oracle Dicamba Agricultural Herbicide	Solution	DIC-480;
26980	C	Syngenta Canada Inc.	Vanquish Herbicide	Solution	DIC-480;
27200	C	Bayer CropScience Inc.	Rustler Liquid Herbicide	Solution	GPI-194; DIC-46;
27790	C	Interprovincial Cooperative Limited	IPCO Tracker XP Liquid Herbicide	Solution	MEQ-62.5; MAB-275; DIC-62.5;
27846	C	Interprovincial Cooperative Limited	IPCO Premium 3-Way XP Herbicide	Solution	MEQ-100; DXB-190; DIC-18;

Registration number	Marketing class	Registrant	Product name	Formulation type	Active ingredient (%, g/L)
27848	C	Interprovincial Cooperative Limited	Weedaway Premium 3-Way XP Turf Herbicide	Solution	MEQ-100; DXB-190; DIC-18;
27856	C	BASF Agricultural Solutions Canada Inc.	Dyvel Dsp Liquid Herbicide	Solution	MEQ-80; DXB-295; DIC-110;
27884	C	Loveland Products Canada, Inc.	Par III Turf Herbicide	Solution	MEQ-100; DXB-190; DIC-18;
27892	C	Loveland Products Canada, Inc.	Sword Commercial Herbicide	Solution	MEQ-62.5; MAB-275; DIC-62.5;
27972	C	Nufarm Agriculture Inc.	Trillion OS	Solution	MEQ-100; DXB-190; DIC-18;
27975	C	Scotts Canada Ltd.	Green Cross Killex 500 Liquid Turf Herbicide Concentrate	Solution	MEQ-75.0; DXB-385.25; DIC-18.75;
27976	C	Scotts Canada Ltd.	Green Cross Killex Liquid Turf Herbicide Concentrate	Solution	MEQ-100; DXB-190; DIC-18;
28894	C	FMC of Canada Limited	Db-8454 Herbicide	Wettable Granules	MMM-7.7; MEX-3.9; DIC-53.8;
29223	C	Gharda Chemicals International Inc.	Hawkeye(TM) Power	Solution	DIC-480;
29249	C	BASF Agricultural Solutions Canada Inc.	Banvel VM Herbicide	Solution	DIC-480;
29251	C	Gharda Chemicals International Inc.	VMD 480 Dicamba Herbicide	Solution	DIC-480;
29515	C	FMC of Canada Limited	DB-1254 Herbicide	Wettable Granules	MMM-11.6; DIC-53.8;
29556	C	FMC of Canada Limited	DB-6654 Herbicide	Wettable Granules	MMM-5.77; MEX-5.77; DIC-53.8;

Registration number	Marketing class	Registrant	Product name	Formulation type	Active ingredient (%, g/L)
30065	C	BASF Agricultural Solutions Canada Inc.	Overdrive Herbicide	Wettable Granules	DIC-50; DFS-20;
30532	C	Intelligro	Civitas Weedfree Brand Concentrate	Emulsifiable Concentrate Or Emulsion	MEQ-4.04; DXB-6.33; DIC-0.78;
31205	C	Corteva Agriscience Canada Company	Korrex B Herbicide	Solution	DIC-480;
31536	C	FMC of Canada Limited	Dicamba L Herbicide	Solution	DIC-480;
31745	C	Gharda Chemicals International Inc.	G7840 Herbicide	Solution	DIC-480;
31896	C	Bayer CropScience Inc.	Xtendimax With Vaporgrip Technology	Solution	DIC-350;
32220	C	BASF Agricultural Solutions Canada Inc.	Engenia	Solution	DCN-600;
32221	C	BASF Agricultural Solutions Canada Inc.	Banvel VM Pro	Solution	DCN-600;
32252	C	Gharda Chemicals International Inc.	Gharda Dicamba Sodium SG Herbicide	Soluble Granules	DIC-70.00;
32274	C	Bayer CropScience Inc.	Roundup Xtend With Vaporgrip Technology Herbicide	Solution	DIC-120; GPI-240;
32603	C	Bayer CropScience Inc.	Diflexx	Suspension	DIC-480;
32604	C	Bayer CropScience Inc.	Diflexx Duo	Suspension	LAD-32; DIC-151;
32955	C	FMC of Canada Limited	DB-878 Herbicide	Wettable Granules	MEX-6.52; DIC-60.87;
33039	C	FMC of Canada Limited	Express FX Herbicide	Wettable Granules	DIC-60.87; MEX-6.52;
33268	C	Syngenta Canada Inc.	Tavium Plus Vaporgrip Technology Herbicide	Microcapsule Suspension	DIC-134; AME-271;
33462	C	FMC of Canada Limited	Intruvix A	Wettable Granules	MEX-6.52; DIC-60.87;

Registration number	Marketing class	Registrant	Product name	Formulation type	Active ingredient (%, g/L)
33501	C	Bayer CropScience Inc.	Xtendimax 2 With Vaporgrip Technology	Solution	DCM-474;
33502	C	Bayer CropScience Inc.	Roundup Xtend® 2 With Vaporgrip® Technology	Solution	GPI-317; DCM-159;
33851	C	Sharda Cropchem Limited	Disha 480 Herbicide	Solution	DIC-480;
33868	C	FMC of Canada Limited	DB-878 Pro Herbicide	Wettable Granules	MEX-6.38; MEM-1.28; DIC-59.57;
33988	C	Sharda Cropchem Limited	Diflux Herbicide	Emulsifiable Concentrate Or Emulsion	FLR-113.3; DIC-86.9;
34024	C	Newagco Inc.	Ammo Herbicide	Solution	DIC-480;
34475	C	FMC of Canada Limited	CF-09-878 Herbicide	Wettable Granules	MEX-5.48; DIC-51.09; CAE-6.42;
34476	C	FMC of Canada Limited	CF-18-878 Herbicide	Wettable Granules	MEX-4.69; DIC-43.75; CAE-11.25;
34737	C	Viking Crop Production Partners Inc.	Viking Dicamba Herbicide	Solution	DIC-480;
34803	C	FMC of Canada Limited	CF-14-878 Herbicide	Wettable Granules	MEX-5.0; CAE-9.34; DIC-46.66;
34898	C	FMC of Canada Limited	Intruvix II Herbicide	Wettable Granules	MEX-4.69; DIC-43.75; CAE-11.25;
35366	C	Interprovincial Cooperative Limited	IPCO Dicamba	Solution	DIC-480;
35431	C	Adama Agricultural Solutions Canada Ltd.	Adama Dicamba 480	Solution	DIC-480;
35478	C	FMC of Canada Limited	CF-18-878 Pro Herbicide	Wettable Granules	MEX-4.62; MEM-0.91; DIC-43.09; CAE-11.08;

Registration number	Marketing class	Registrant	Product name	Formulation type	Active ingredient (%, g/L)
35535	C	FMC of Canada Limited	Express FT Herbicide	Wettable Granules	MEX-6.38; MEM-1.28; DIC-59.57;

[1] as of 18 July 2025, excluding discontinued products or products with a submission for discontinuation.

AME: S-Metolachlor And R-Enantiomer; ATR: Atrazine; CAE: Carfentrazone-Ethyl; DCM: Dicamba (Present As Monoethanolamine Salt); DCN: Dicamba (Present As N,N-Bis(3-Aminopropyl)Methylamine Salt); DFS: Diflufenzopyr (Present As Sodium Salt); DIC: Dicamba (Present As Acid, Ester, Salts); DXB: 2,4-D (Present As Amine Salts : Dimethylamine Salt, Diethanolamine Salt, Or Other Amine Salts); FLR: Fluroxypyr (Present As 1-Methylheptyl Ester); GPI: Glyphosate (Present As Isopropylamine Salt Or Ethanolamine Salt); LAD: Tembotrione; MAB: MCPA (Present As Amine Salts: Diethanolamine, Dimethylamine, Or Mixed Amines); MAS: MCPA (Present As Potassium Salt Or As Sodium Salt); MEM: Metsulfuron-Methyl; MEQ: Mecoprop-P (Present As Dimethylamine Salt); MEX: Tribenuron-Methyl; MMM: Thifensulfuron-Methyl

Appendix II Proposed label amendments for products containing dicamba

The proposed label amendments presented below do not include all label requirements for individual end-use products, such as first aid statements, disposal statements, precautionary statements and supplementary protective equipment. Information on labels of currently registered products should not be removed unless it contradicts the label statements below.

For commercial dicamba products with uses for dicamba-tolerant soybean seed production (for example, Roundup Ready 2 Xtend Soybean seed production and Xtendflex Soybean seed production):

Remove seed production use including all associated instructions and references.

For all commercial dicamba products:

Under the sections titled “PRECAUTIONS” and/or “GENERAL PRECAUTIONS” :

Add the statement: “Due to potential for increased volatility and off-target movement of dicamba at higher temperatures, which could result in adverse effects on non-target terrestrial plants, avoid application when temperatures exceed 25°C.”

For commercial dicamba products with uses for dicamba-tolerant field corn (for example, MON 87419 field corn):

Reduce the maximum post-emergence dicamba-tolerant field corn standing height to 50 cm, where applicable, including the statements below:

Under the section titled “TREATMENT NOTES”:

Replace the statement: “Apply <PRODUCT NAME> in MON 87419 corn either Preplant, At-planting, Pre-emergence and/or Post-emergence up to 8-leaf stage or 76 cm in height of the crop, whichever comes first.”
With : “Apply <PRODUCT NAME> in MON 87419 corn either Preplant, At-planting, Pre-emergence and/or Post-emergence up to 8-leaf stage or 50 cm in height of the crop, whichever comes first.”

Under the section titled “CROP STAGE”:

Replace the statement: “Post-emergence to the crop once or twice up to the 8-leaf stage or 76 cm in height of MON 87419 corn, whichever comes first.”
With: “Post-emergence to the crop once or twice up to the 8-leaf stage or 50 cm in height of MON 87419 corn, whichever comes first.”

Replace the statement: “A second application may be applied up to the 8-leaf stage or 76 cm in height of MON 87419 corn to control new flushes of broadleaf weeds.”
With: “A second application may be applied up to the 8-leaf stage or 50 cm in height of MON 87419 corn to control new flushes of broadleaf weeds.”

For commercial dicamba products with uses for dicamba-tolerant soybean (for example, Roundup Ready 2 Xtend Soybean and Xtendflex Soybean):

Reduce the maximum number of applications to a single pre-plant or pre-emergence application per season (year), where applicable.

Remove post-emergence applications including all associated instructions and references.

Limit the maximum total amount of product or active ingredient(s) applied in a single growing season (year) to the maximum existing label rate for a single pre-plant or pre-emergence application (i.e., the maximum amount of product or active ingredient(s) will correspond to the rate of a single pre-plant or pre-emergence application for each applicable product).

For all commercial dicamba products:

Replace section title "Buffer Zones" with "Spray Buffer Zones"

For terrestrial spray buffer zones only, replace or add the statements and information below for the applications specified on the product label. No spray buffer zone updates are required for aquatic, freshwater and/or estuarine/marine habitats.

For products with Field Sprayer Applications, add or update the following statements:

"Field sprayer application: DO NOT apply when wind speed is less than 1 km/h. Avoid application of this product when winds are gusty. DO NOT apply with spray droplets smaller than the American Society of Agricultural and Biological Engineers (ASABE) S572 (572.1 to 572.3) Medium classification. Boom height must be 60 cm or less above the crop or ground.

Product Specific Precautions

Read and understand the entire label before opening this product. If you have questions, call the registrant at <REGISTRANT CANADIAN TELEPHONE NUMBER> or obtain technical advice from the distributor or your provincial or territorial agricultural representative.

Spray buffer zones

A spray buffer zone is NOT required for uses with hand-held application equipment permitted on this label.

The spray buffer zones specified in the tables 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), sensitive freshwater habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs and wetlands) and estuarine/marine habitats."

If product with Field Sprayer applications has applications to rights-of-way, add or update the statement:

"For application to rights-of-way, spray buffer zones for protection of sensitive terrestrial habitats are not required; however, the best available application strategies which minimize off-site drift, including meteorological conditions (e.g., wind direction, low wind speed) and spray equipment (e.g., coarser droplet sizes, minimizing height above canopy), should be used. Applicators must, however, observe the specified spray buffer zones for protection of sensitive aquatic habitats."

Spray buffer zone for dicamba table products with field sprayer applications, except those co-formulated with glyphosate

Method of application	***Pest Control Products Act* registration number and crop**	**Spray buffer zones (metres) required for the protection of terrestrial habitat**
Field sprayer*	24362, 32252, 33501; Stubble; Summerfallow 29249, 29251, 32221; 1-2 meter wide roadside shoulders 33851, 29223, 26722; 1-2 meter wide roadside shoulders; Stubble; Summerfallow 18837, 34024, 23957, 31745, 31896, 31205, 31536, 34737, 32220; Stubble; Summerfallow	20
	27790; Annual canary grass; Barley; Canary seed (*Phalaris canariensis*); Durum wheat; Oats; Spring wheat; Winter wheat 27892; Canary sed (*Phalaris canariensis*); Durum wheat; Established forage grasses; Oats; Seedling grasses for seed and forage (In the year of establishment); Spring barley; Spring wheat; Winter wheat 33868; Chemfallow; Durum wheat; Post-harvest treatment; Spring barley; Spring wheat; Winter wheat 34803; Fallow cropping systems; Oats; Post-harvest Treatment; Spring barley; Spring wheat, including durum wheat; Winter wheat 27975, 30532; Established turf, except Bent grass lawns 32955, 33039, 33462; Chemfallow; Durum wheat; Oats; Post-harvest treatment; Spring barley; Spring wheat; Winter wheat 34475, 34476, 34898; Fallow cropping systems; Oats; Spring barley; Spring wheat, including Durum wheat; Winter wheat 27846, 27848, 27884, 27972, 27976; Bent grass lawns	2

Method of application	*Pest Control Products Act* registration number and crop	Spray buffer zones (metres) required for the protection of terrestrial habitat
	27790; Annual canary grass; Barley; Canary seed (*Phalaris canariensis*); Durum wheat; Oats; Spring wheat; Winter wheat 27892; Canary sed (*Phalaris canariensis*); Durum wheat; Established forage grasses; Oats; Seedling grasses for seed and forage (In the year of establishment); Spring barley; Spring wheat; Winter wheat 33868; Chemfallow; Durum wheat; Post-harvest treatment; Spring barley; Spring wheat; Winter wheat 34803; Fallow cropping systems; Oats; Post-harvest Treatment; Spring barley; Spring wheat, including durum wheat; Winter wheat 27975, 30532; Established turf, except Bent grass lawns 32955, 33039, 33462; Chemfallow; Durum wheat; Oats; Post-harvest treatment; Spring barley; Spring wheat; Winter wheat 34475, 34476, 34898; Fallow cropping systems; Oats; Spring barley; Spring wheat, including Durum wheat; Winter wheat 27846, 27848, 27884, 27972, 27976; Bent grass lawns	2
	16545; Oats; Spring barley; Spring wheat; Winter wheat 25811; Chemfallow; Field corn, except seed or sweet corn; Post-harvest treatment 27200; Barley in reduced tillage systems; Field corn except sweet corn, in reduced tillage systems; Oats, in reduced tillage systems; Rye, in reduced tillage systems; Summerfallow; Wheat, in reduced tillage systems 30065; Non-cropland areas*; Pastures, except residential areas; Rangeland, except residential areas 31896; Canary seed (*Phalaris canariensis*); Field corn, except sweet corn; MON 87419 Field corn, except seed corn or sweet corn; Oats; Reduced tillage (Prior to seeding and Prior to seeding cereals); Seedling grasses for seed and forage production; Spring barley; Spring rye; Spring wheat; Winter wheat 32220; Canary Seed (*Phalaris canariensis*); MON 87419 Field corn, except seed corn or sweet corn; Oats; Reduced tillage (Prior to Seeding); Seedling grasses for seed and forage production; Spring barley, Spring rye; Spring wheat, excluding durum wheat;	3

Method of application	*Pest Control Products Act* registration number and crop	Spray buffer zones (metres) required for the protection of terrestrial habitat
	Winter wheat 33501; Canary seed (*Phalaris canariensis*); Field corn except sweet corn; Oats; Reduced tillage (Prior to seeding); Seedling gasses for seed and forage production; Spring barley; Spring rye; Spring wheat; Winter wheat 24362, 32252; Canary seed (*Phalaris canariensis*); Oats; Reduced tillage fallow; Spring barley; Spring rye; Spring wheat; Winter wheat 27846, 27848, 27976; Established turf, except Bent grass lawns 18837, 33851, 34024, 23957, 31745, 31536, 26722, 29223, 34737, Canary seed (*Phalaris canariensis*); Oats; Reduced tillage (Prior to seeding and Prior to seeding cereals); Seedling grasses for seed and forage production; Spring barley; Spring rye; Spring wheat; Winter wheat	
	32604; Field corn (grown for grain, silage or seed), except sweet corn	15
	20423; Summerfallow 31745; Corn, field, except sweet corn; Established grass pasture; Reduced tillage fallow; Red fescue, New/Established stands for seed production 24362, 32252; Red fescue, New/Established stands for seed production 18837, 33851, 34024, 23957, 31536, 26722, 29223, 34737, 31896, 33501, 32220; Established grass Pasture; Reduced Tillage Fallow; Red fescue, New/Established stands for seed production	10
	19349; Field corn, except sweet corn	5
	29515; Durum wheat; Oats; Spring barley; Spring wheat 33988; Durum wheat; Spring barley; Spring wheat 27790, 27892; Stubble; Summerfallow 27884, 27972; Established turf, except Bent grass lawns 28894, 29556; Durum wheat, except Belvedere wheat; Spring barley, except Leger spring barley; Spring wheat, except Belvedere wheat	20

Method of application	*Pest Control Products Act* registration number and crop	Spray buffer zones (metres) required for the protection of terrestrial habitat
	26722; Established turf, except Bent grass lawns; Farmstead non-crop areas; Pastures; Rangeland 32221; Established turf, except Bent grass lawns 33851, 29223, 29251; Established turf, except Bent grass lawns; Pastures; Rangeland 18837, 34024, 23957, 31745, 31896, 34737, 33501, 32220; Non-cropland areas*; Pastures; Rangeland	4
	18837, 33851, 34024, 23957, 31745, 31536, 26722, 29223, 34737, 32220, 31896, 33501; Lowbush blueberries	30
	24362, 32252; Non-cropland areas*; Pastures; Rangeland	45
	29249, 32221; Non-cropland areas*; Pastures; Rangeland	35
	33851, 26722, 29223, 29251; Non-cropland areas*	35
	26980; Non-cropland areas*	60
	26980; 1-2 meter wide roadside shoulders	115
	27975; Bent grass lawns	40
	32220, 31896; MON 87419 Field corn, except seed corn or sweet corn 18837, 33851, 34024, 23957, 31745, 34737, 32220, 26722, 29223, 31536, 33501; Field corn, except sweet corn	1
	26980, 29249; Established turf, except Bent grass lawns	15
	32221; Established turf, except Bent grass Lawns	10

* Spray buffer zones for the protection of terrestrial habitats are not required for use on railroad ballast, rail and hydro rights-of-way, utility easements, roads, and training grounds and firing ranges on military bases.

Spray buffer zone for table dicamba products co-formulated with glyphosate (Registration Nos. 32274 and 33501)

Method of application	*Pest Control Products Act* registration number and crop	Spray buffer zones (metres) required for the protection of terrestrial habitat
Field sprayer	Roundup Ready 2 Xtend soybeans; XtendFlex soybeans	10
	Corn hybrids with Roundup Ready 2 Technology, except sweet corn, corn grown for seed production, or corn without Roundup Ready 2 Technology	15

"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 (ASABE) category indicated on the labels for those tank mix partners.

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

For products with Aerial Applications, add or update the following statements:

"Conventionally piloted aircraft application: DO NOT apply when wind speed is less than 1 km/h. 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 and Biological Engineers (ASABE) S572 (572.1 to 572.3) 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 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 specified 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 or a Global Positioning System (GPS).

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 <REGISTRANT NAME> at <REGISTRANT CANADIAN TELEPHONE NUMBER> or obtain technical advice from the distributor or your provincial or territorial agricultural representative.

Spray Buffer Zones

"The spray buffer zones specified in the tables 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), sensitive freshwater habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs and wetlands) and estuarine/marine habitats."

If product with Aerial applications has applications to rights-of-way, add or update the statement:

"For application to rights-of-way, spray buffer zones for protection of sensitive terrestrial habitats are not required; however, the best available application strategies which minimize off-site drift, including meteorological conditions (e.g., wind direction, low wind speed) and spray equipment (e.g., coarser droplet sizes, minimizing height above canopy), should be used. Applicators must, however, observe the specified spray buffer zones for protection of sensitive aquatic habitats."

Spray buffer zone for table dicamba products with aerial applications

Method of application	*Pest Control Products Act* registration number and crop	Spray buffer zones (metres) required for the protection of terrestrial habitat	
Aerial	32252; 24362; Spring barley	Fixed wing	80
	27790; Barley; Durum wheat; Oats; Spring wheat; Winter Wheat 27892; Canary seed (*Phalaris canariensis*); Durum wheat; Oats; Spring barley; Spring wheat; Winter wheat, Seedling grasses grown for forage (in the year of establishment): Creeping red fescue, Crested wheatgrass, Intermediate wheatgrass, Meadow foxtail, Orchard grass, Smooth bromegrass, Timothy	Rotary wing	55
	32252, 24362; Oats; Spring rye; Spring wheat; Winter wheat	Fixed wing	95
		Rotary wing	65
	23957; Oats; Spring barley; Spring rye; Spring wheat; Winter wheat	Fixed wing	100
	31745; Oats; Spring barley; Spring rye; Spring wheat; Winter wheat	Rotary wing	75
	26722, 29223, 31536, 33851, 34024, 34737; Oats; Spring barley; Spring rye; Spring wheat; Winter wheat	Fixed wing	100
	18837; Oats; Spring barley; Spring rye; Spring wheat; Winter wheat	Rotary wing	70
	16545; Oats; Spring barley; Spring wheat; Winter wheat	Fixed wing	90
		Rotary wing	70
	33501; Oats; Spring barley; Spring rye; Spring wheat; Winter wheat	Fixed wing	100
		Rotary wing	80
	28894; Durum wheat, except Belvedere wheat; Spring barley, except Leger spring barley; Spring wheat, except Belvedere wheat	Fixed wing	60
		Rotary wing	45
	27790; Canary Seed (*Phalaris canariensis*)	Fixed wing	80
		Rotary wing	60
	27790, 27892; Stubble; Summerfallow	Fixed wing	125
		Rotary wing	90

Method of application	*Pest Control Products Act* registration number and crop	Spray buffer zones (metres) required for the protection of terrestrial habitat	
	26980; Non crop areas* such as rights-of-way, utility, roadsides, hydro, pipeline and railway rights-of-way, airports, military bases, wasteland and similar non crop areas	Fixed wing	800
		Rotary wing	575
	26722, 29223, 29251; Non-cropland areas* such as roadsides, hydro, pipeline and railway rights-of-way, airports, military bases, wasteland and turf	Fixed wing	800
		Rotary wing	625
	33851; Non crop areas* such as rights-of-way, utility, roadsides, hydro, pipeline and railway rights-of-way, airports, military bases, turf, wasteland and similar non crop areas 32221; Non crop areas* such as rights-of-way, utility, roadsides, hydro, pipeline and railway rights-of-way, airports, military bases, turf, wasteland and similar non crop areas	Fixed wing	800
		Rotary wing	600
	29249; Non-cropland areas* such as roadsides, hydro, pipeline and railway rights-of-way, airports, military bases, wasteland and turf	Fixed wing	800
		Rotary wing	575

* Spray buffer zones for the protection of terrestrial habitats are not required for use on railroad ballast, rail and hydro rights-of-way, utility easements, roads, and training grounds and firing ranges on military bases.

"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 (ASABE) category indicated on the labels for those tank mix partners.

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

References

List of studies/Information submitted by registrant

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1430996	1994, Vapor Pressure of Dicamba Using the Thermal Evolution Analyzer, DACO: 2.14.9
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2649480	2015, Determination of Vapour Pressure of Dicamba Technical, DACO: 2.14.9,2.5,2.6
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3170630	2016, Determination of a No Effect Crop Response as a Function of Dicamba Vapor Conc in a Closed Dome System, DACO: 9.8.6
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3170610	2016, Field Volatility of Dicamba Formulation MON 76832 Following a Post-Emerge Application Under Field Conditions in Texas, DACO: 9.8.7
3170608	2016, Field Volatility of Dicamba Formulation MON119096 Following a Pre-Emerge App Under Field Conditions in Texas, DACO: 9.8.7

PMRA Document Number	Reference
3170607	2016, Field Volatility of Dicamba Formulation MON119096 Following a Pre-Emerge App Under Field Conditions in the Southeastern USA, DACO: 9.8.7
3170609	2016, Field Volatility of Dicamba Formulation Roundup Xtend Following a Pre-Emerge App Under Field Conditions in the Southeastern USA, DACO: 9.8.7
3170627	2016, MON 76832: A Toxicity Test to Determine the Effects on Vegetative Vigor of Tomatoes and Soybeans, DACO: 9.8.6
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