Proposed Registration Decision PRD2026-08

GATTEN Fungicide, containing Flutianil

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Overview

Proposed Registration Decision for Flutianil

Health Canada, pursuant to subsection 28(1) of the *Pest Control Products Act*, is proposing registration for the sale and use of GATTEN Fungicide, containing the technical grade active ingredient flutianil, to control powdery mildew species on greenhouse vegetables (pepper, eggplant, cucumber and tomato) and greenhouse ornamentals. This evaluation was completed under the User Requested Minor Use Label Expansion program, which is a cooperative program between Agriculture and Agri-Food Canada and Health Canada and includes participation by sponsor groups, manufacturers, and both provincial and federal governments.

Flutianil is a narrow spectrum, conventional fungicide that targets certain species of powdery mildew. Flutianil is classified as a Group U13 fungicide by the Fungicide Resistance Action Committee (FRAC); however, the mode of action of flutianil is not definitively known. It has been observed to disrupt the formation of haustoria, which are structures that initiate powdery mildew infection. It is applied as a foliar spray using broadcast or airblast ground equipment against certain species of powdery mildew on cherries (Crop Subgroup 12-09A), cucurbit vegetables (Crop Group 9) and grapes. For details, see Proposed Registration Decision PRD2021-09, *Flutianil and GATTEN*, Registration Decision RD2022-03, *Flutianil and GATTEN*.

An evaluation of available scientific information found that, under the approved conditions of use, the health and environmental risks and the value of the pest control product is acceptable.

This Overview describes the key points of the evaluation, while the Science evaluation provides detailed technical information on the human health, environmental and value assessments of GATTEN Fungicide, containing flutianil.

What does Health Canada consider when making a registration decision?

The primary objective of the *Pest Control Products Act* is to prevent unacceptable risks to individuals and the environment from the use of pest control products. Health or environmental risk is considered acceptable[1] if there is reasonable certainty that no harm to human health, future generations or the environment will result from use or exposure to the product under its proposed conditions of registration. The Act also requires that products have value[2] when used according to the label directions. Conditions of registration may include precautionary measures on the product label to further reduce risk.

To reach its decisions, Health Canada applies modern, rigorous risk-assessment methods and policies. These methods consider the unique characteristics of sensitive subpopulations in humans (for example, children). They also consider the unique characteristics of organisms in

[1] "Acceptable risks" as defined by subsection 2(2) of the *Pest Control Products Act*

[2] "Value" as defined by subsection 2(1) of the *Pest Control Products Act*: "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."

the environment. These methods and policies also consider the nature of the effects observed and the uncertainties when predicting the impact of pesticides. For more information on how Health Canada regulates pesticides, the assessment process and risk-reduction programs, please visit the Pesticides and Pest Management portion of Canada.ca.

Before making a final registration decision on GATTEN Fungicide, containing flutianil, Health Canada will consider any written comments received from the public directly related to the proposed decision in this consultation document.[3] Health Canada will then publish a Registration Decision[4] on GATTEN Fungicide, containing flutianil, which will include the decision, the reasons for it, a summary of comments received on the proposed registration decision and Health Canada's response to these comments.

For more details on the information presented in this Overview, please refer to the Science evaluation of this consultation document.

What is flutianil?

Flutianil is a narrow spectrum fungicide that has shown activity towards certain powdery mildew plant pathogens. Application of flutianil as a foliar spray makes it difficult for powdery mildew disease to establish and spread to other plants. Flutianil is used to manage powdery mildew diseases on various labelled fruit, vegetable and ornamental crops.

Health considerations

Can approved uses of flutianil affect human health?

GATTEN, containing flutianil, is unlikely to affect your health when used according to label directions.

Potential exposure to flutianil may occur through the diet (food and drinking water), when handling and applying the end-use product, or when coming into contact with treated surfaces. When assessing health risks, two key factors are considered:

- the levels at which no health effects occur, and
- the levels to which people may be exposed.

The dose levels used to assess risks are established to protect the most sensitive human population (for example, children and nursing mothers). As such, sex and gender are taken into account in the risk assessment. Only uses for which the exposure is well below levels that cause no effects in animal testing are considered acceptable for registration.

Toxicology studies in laboratory animals describe potential health effects from varying levels of exposure to a chemical and identify the dose level at which no effects are observed. The health effects noted in animals occur at doses more than 100-times higher (and often much higher) than

[3] "Consultation statement" as required by subsection 28(2) of the *Pest Control Products Act*.
[4] "Decision statement" as required by subsection 28(5) of the *Pest Control Products Act*.

levels to which humans are normally exposed when pesticide products are used according to label directions.

In laboratory animals, the acute toxicity of the technical grade active ingredient flutianil was low via the oral, dermal and inhalation routes of exposure. Flutianil was non-irritating to the eyes and skin. It did not cause an allergic skin reaction.

In laboratory animals, the acute toxicity of the end-use product GATTEN Fungicide was low via the oral, dermal and inhalation routes of exposure. It was moderately irritating to the eyes and mildly irritating to the skin, and caused an allergic skin reaction.

Prior to the initial registration of flutianil, registrant-supplied short- and long-term (lifetime) animal toxicity tests, as well as information from the published scientific literature, were assessed for the potential of flutianil to cause neurotoxicity, immunotoxicity, chronic toxicity, cancer, reproductive and developmental toxicity, and various other effects. No new toxicology data were received for these proposed new uses. As described in PRD2021-09, the most sensitive endpoints for risk assessment were effects on the liver, delayed bone development and the respiratory tract. There was an indication that the young were more sensitive than the adult animals. The risk assessment protects against the effects noted above and other potential effects by ensuring that the level of exposure to humans is well below the lowest dose at which these effects occurred in animal tests.

Occupational risks from handling GATTEN Fungicide

Occupational risks are not of concern when GATTEN Fungicide is used according to the proposed label directions, which include protective measures.

Workers mixing, loading or applying GATTEN Fungicide, and workers entering recently treated greenhouses can be exposed to flutianil residues through direct skin contact and through inhalation. Therefore, the label specifies that anyone mixing, loading and applying GATTEN Fungicide must wear a long-sleeved shirt, long pants, chemical-resistant gloves, socks and shoes, and protective eyewear (goggles or face shield) during mixing, loading, application, clean-up and repair. Eye, head and respiratory protective equipment are required when applying GATTEN Fungicide above waist height using handheld equipment. The label also requires that workers do not enter or be allowed into treated areas during the restricted-entry interval (REI) of 12 hours. Taking into consideration the label statements, the number of applications and the duration of exposure for handlers and postapplication workers, the health risks to these individuals from exposure to GATTEN Fungicide are not of health concern.

Risks in residential and other non-occupational environments

Risks in residential and other non-occupational environments are not of concern when GATTEN Fungicide is used according to the proposed label directions.

GATTEN Fungicide is not a domestic-class product and is not intended for residential use. As there is no potential exposure to homeowners mixing, loading, and applying flutianil, a residential risk assessment was not required. Furthermore, exposure to flutianil residues on treated ornamental plants that are subsequently purchased at retail locations is considered negligible.

Health risks to bystanders

Bystander risks are not of health concern when GATTEN Fungicide is used according to the proposed label directions and spray drift restrictions are observed.

Bystander exposure is considered negligible since application is limited to a greenhouse environment where there is no potential for drift. Therefore, bystander exposure and risk are not of health concern.

Aggregate health risks from dietary and residential exposures

Aggregate risks from exposures to flutianil are not of health concern when GATTEN Fungicide is used according to the proposed label directions.

GATTEN Fungicide is a commercial-class product and therefore no residential use is expected. Exposure to flutianil when individuals come into contact with treated greenhouse ornamental plants purchased from retail locations is expected to be negligible. As such, the aggregate assessment for flutianil considered only food and drinking water exposure. Chronic dietary exposure to flutianil from food and drinking water were considered in the determination of aggregate risks. The aggregate risks to adults and children are not of health concern when the end-use product is used according to the label directions.

Residues in food and drinking water

Dietary risks from food and drinking water are not of health concern.

Studies in laboratory animals showed no acute health effects. Consequently, a single dose of flutianil is not likely to cause acute health effects in the general population (including infants and children). Therefore, an acute risk assessment was not necessary.

Aggregate chronic dietary (food plus drinking water) intake estimates indicated that the general population and all population subgroups are exposed to less than 3% of the acceptable daily intake and therefore are not of health concern.

There was no evidence of tumorigenicity and, therefore, a cancer risk assessment was not necessary.

The *Food and Drugs Act* prohibits the sale of adulterated food, that is, food containing a pesticide residue that exceeds the established maximum residue limit (MRL). Pesticide MRLs are established for *Food and Drugs Act* purposes through the evaluation of scientific data under the *Pest Control Products Act*. Given that dietary risks from the consumption of foods are shown to be acceptable when flutianil is used according to the supported label directions, MRLs are being proposed as a result of this assessment (refer to Appendix II).

MRLs for flutianil determined from the acceptable residue trials conducted throughout Canada and the United States on greenhouse vegetables can be found in the Science evaluation of this document.

Environmental considerations

What happens when flutianil is introduced into the environment?

When GATTEN Fungicide is used according to label directions, the environmental risk associated with the new uses are acceptable.

The properties and environmental characterization of flutianil have been previously reviewed and reported in PRD2021-09 and RD2022-03.

Exposure to non-target organisms in the environment is expected to be minimal from greenhouse uses of pesticide products. Exposure may occur to pollinators and beneficial arthropods if used in managed greenhouse production. A risk assessment considering the proposed application rates determined negligible risks to these organisms is expected.

Value considerations

What is the value of GATTEN Fungicide?

GATTEN Fungicide contains a fungicide with a new mode of action to manage powdery mildew on greenhouse pepper, eggplant, tomato, cucumber and ornamental crops and delay the development of fungicide resistance.

The greenhouse environment is favourable to powdery mildew disease, which can result in severe outbreaks. Many greenhouse food and ornamental crops are susceptible. Because powdery mildew has been observed to rapidly develop resistance, multiple fungicide modes of action are needed for sustained disease management. GATTEN Fungicide provides a new mode of action that has been shown to control or suppress a broad range of powdery mildew species on pepper, eggplant, tomato, cucumber, and ornamental crops.

Measures to minimize risk

Labels of registered pesticide products include specific instructions for use. Directions include risk-reduction measures to protect human health and the environment. These directions must be followed by law.

The key risk-reduction measures being proposed on the label of GATTEN Fungicide, containing flutianil to address the potential risks identified in this assessment are as follows.

Key risk-reduction measures

Human health

To reduce the potential exposure of workers to flutianil through direct contact or inhalation of sprays, workers mixing, loading and applying GATTEN Fungicide and performing cleaning and repair activities must wear long-sleeved shirt, long pants, chemical-resistant gloves, socks and shoes, and protective eyewear (goggles or face shield). Eye, head and respiratory protective equipment are required when applying GATTEN Fungicide above waist height using handheld

equipment. The label also requires that workers do not enter or be allowed entry into treated areas during the REI of 12 hours.

Environment

A label statement prohibiting the discharge of effluent or runoff containing flutianil from greenhouses to water is required.

Next steps

Before making a final registration decision on GATTEN Fungicide, containing flutianil, Health Canada will consider any written comments received from the public that are directly related to this proposed decision, such as comments directed to the Science evaluation, in response to this consultation document up to 45 days from the date of publication (by 14 June 2026) of this document. Please forward all comments to Pesticides Regulatory Directorate Publications, through the Public Engagement Portal (Public Engagement Forms – Consultation Comment). Health Canada will then publish a Registration Decision, which will include its decision, the reasons for it, a summary of comments received on the proposed decision and Health Canada's response to these comments.

Other information

When Health Canada makes its registration decision, it will publish a Registration Decision on GATTEN Fungicide, containing flutianil (based on the Science evaluation of this consultation document). In addition, the test data referenced in this consultation document will be available for public inspection, upon application, in the Pesticides Regulatory Directorate's Reading Room. For more information or if you have questions, please contact the Pest Management Information Service.

Science evaluation

Flutianil, GATTEN Fungicide

1.0 The active ingredient, its properties and uses

1.1 Directions for use

For all greenhouse crops, GATTEN treatments are applied a maximum of three times per crop cycle with a re-application interval of 7–14 days using a high or low volume handgun, an overhead boom or a backpack spray applicator.

To suppress powdery mildew on greenhouse pepper and eggplant and tomato, GATTEN Fungicide is applied preventatively as a foliar spray at 400–935 mL product/ha (20–47 g a.i./ha) (plus a non-ionic surfactant at 0.02% v/v on tomato) in a spray volume of 281–1871 L water/ha, ensuring thorough coverage to the point of drip. The maximum active ingredient application rate per crop cycle is 141 g a.i. per hectare of crop.

To control powdery mildew species on greenhouse cucumber, GATTEN Fungicide is applied preventatively as a foliar spray at 400–496 mL product/ha (20–25 g a.i./ha) in a spray volume of 281–1871 L water/ha, ensuring thorough coverage to the point of drip. The maximum active ingredient application rate per crop cycle is 75 g a.i. per hectare of crop.

To control powdery mildew species on greenhouse ornamentals, GATTEN Fungicide is applied as a foliar spray at 400–690 mL product/ha (20–35 g a.i./ha) with a non-ionic surfactant at 0.02% v/v in a spray volume of 281–1000 L water/ha, starting when conditions are favourable for disease development or at the first sign of disease symptoms. The maximum active ingredient application rate per crop cycle is 105 g a.i. per hectare of crop.

1.2 Mode of action

While the specific mode of action is not known, flutianil affects powdery mildew pathogens directly by inhibiting the production of spores, hyphae and feeding structures that absorb nutrients from the plant, making it difficult for the pathogen to grow and reproduce. To protect plants from powdery mildew, it can be applied preventatively, or on some of the labelled crops, curatively at the first sign of infection.

2.0 Impact on human and animal health

2.1 Toxicology summary

A detailed review of the toxicological database for flutianil was conducted previously and is summarized in PRD2021-09. An extensive toxicology database is available for the assessment of human health risks of flutianil and is considered adequate to define potential health hazards associated with flutianil. No new toxicology data were received for these proposed new uses. Results of toxicology data summarized by other regulatory authorities (EC 2023, USEPA 2019, JMPR 2021) subsequent to the 2021 assessment were also considered, which did not impact the

previous assessment. A literature search was conducted in October 2025, and no relevant journal articles were identified since 2018; therefore, the hazard assessment relied on the previous assessment. Selected toxicology reference values for use in the human health risk assessment were established previously and are reported in PRD2021-09. Reference values relevant to the proposed major new uses are established and summarized below in Appendix I, Table 1 of this document.

The results of acute toxicity studies conducted with the technical grade active ingredient flutianil are summarized in Appendix I, Table 3 of PRD2021-09. Flutianil was of low acute toxicity via the oral, dermal, and inhalation routes of exposure in rats. Flutianil was non-irritating to the eyes and skin of rabbits. It did not cause an allergic skin reaction using the Maximization method in guinea pigs.

The results of acute toxicity studies conducted with the end-use product GATTEN Fungicide are summarized in Appendix I, Table 4 of PRD2021-09. GATTEN Fungicide was of low acute toxicity by the oral, dermal, and inhalation routes of exposure in rats. It was moderately irritating to the eyes, mildly irritating to the skin in rabbits, and caused an allergic skin reaction using the Buehler method in guinea pigs.

2.2 Route and duration of exposure

Occupational exposure to GATTEN Fungicide for the proposed new uses includes a greenhouse use, which is anticipated to have a long-term dermal exposure for greenhouse workers. For short- and intermediate-term dermal and inhalation risk assessment, toxicology reference values for use in the human health risk assessment were established previously and are reported in PRD2021-09.

2.3 Long-term dermal

For long-term dermal risk assessment, the NOAEL of 82 mg/kg bw/day from the 2-year dietary chronic toxicity/oncogenicity study in the rat was selected. Liver toxicity was observed in the form of increased incidence of hepatic foci of cellular alteration in males at a LOAEL of 249 mg/kg bw/day.

The target margin of exposure (MOE) for this dermal scenario is 300, which includes uncertainty factors of 10-fold for interspecies extrapolation and 10-fold for intraspecies variability, and a threefold uncertainty factor to account for residual uncertainty with respect to differences in absorption when extrapolating from an oral toxicity study to the dermal route of exposure. This latter uncertainty stems from the fact that the oral absorption of flutianil was demonstrated to be quite low at the dose levels tested in the oral toxicity studies, while absorption via the dermal route is not known, and therefore assumed to be 100% (default value). The selection of this study and target MOE is considered protective of all populations, including nursing infants and the unborn children of exposed female workers.

2.4 Occupational and residential risk assessment

2.4.1 Acute Hazards of GATTEN Fungicide Product and Mitigation Measures

The results of acute toxicity studies conducted with GATTEN Fungicide are summarized in Appendix I, Table 4 of PRD2021-09. GATTEN Fungicide is of low acute oral, dermal and inhalation toxicity in rats. It is moderately irritating to the eyes, mildly irritating to the skin of rabbits, and caused an allergic skin reaction using the Buehler method in guinea pigs. Based on these acute hazards, workers are required to wear a long-sleeved shirt, long pants, chemical-resistant gloves, socks and shoes, and protective eyewear (goggles or face shield) during mixing, loading, application, clean-up and repair.

2.4.2 Occupational exposure and risk assessment

2.4.2.1 Mixer, loader and applicator exposure and risk assessment

Individuals have the potential for exposure to flutianil during mixing, loading, application, clean-up and repair activities.

Exposure estimates were derived for workers mixing and loading a liquid with an open-transfer system. Dermal and inhalation exposure estimates were generated from the Agricultural Handlers Exposure Task Force (AHETF) database and/or the Pesticide Handlers Database (PHED, v1.1) for mixers, loaders and applicators applying GATTEN Fungicide greenhouse peppers, greenhouse eggplant, greenhouse tomato, greenhouse cucumber, and greenhouse ornamentals using automated and/or conventional handheld application equipment. The unit exposure values in the risk assessment are based on handlers wearing a long-sleeved shirt, long pants, chemical-resistant gloves, socks, and shoes (Appendix I, Table 2).

Dermal exposure was estimated using the unit exposure values, the amount of product handled per day (derived from the maximum application rate and the default area treated per day), and the dermal absorption value of 100%.

Inhalation exposure was estimated by coupling the unit exposure values with the amount of product handled per day and with 100% inhalation absorption. Dermal and inhalation exposures were normalized to mg/kg bw/day by using 80 kg adult body weight.

Exposure estimates were compared to the selected toxicology reference value to obtain the MOE; the target MOEs are 300 and 100 for dermal and inhalation exposure respectively (short- to intermediate-term duration). Dermal and inhalation MOEs were not combined, since the dermal and inhalation endpoints are based on different toxicological effects. Calculated MOEs are greater than the target MOEs for all chemical handler scenarios for greenhouse peppers, greenhouse eggplant, greenhouse tomato, greenhouse cucumber, and greenhouse ornamentals, and are therefore not of health concern (Appendix I, Table 3).

Taking into account both the acute toxicity of the end-use product and the risk assessment of flutianil, workers are required to wear a long-sleeved shirt, long pants, chemical-resistant gloves, socks and shoes, and protective eyewear (goggles or face shield) while mixing, loading, and applying GATTEN Fungicide.

2.4.2.2 Postapplication exposure and risk assessment

There is potential for long-term exposure to workers entering greenhouses treated with GATTEN Fungicide to complete tasks such as hand harvesting, disbudding, and hand pruning. Given the nature of activities performed, exposure should be primarily via the dermal route based on dermal contact with treated foliage.

Postapplication inhalation exposure is not considered to be a significant route of exposure as flutianil is relatively non-volatile with a low vapour pressure of 1.53×10^{-10} kPa at 20°C, which is less than the North American Free Trade Agreement (NAFTA) criterion for a non-volatile product for greenhouse scenarios (1×10^{-5} kPa at 20–30 °C) and the specified restricted-entry interval (REI) will allow residues to dry, suspended particles to settle and vapours to dissipate.

Dermal exposure to workers entering treated areas is estimated by coupling dislodgeable foliar residue (DFR) values with activity-specific transfer coefficients (TCs). Activity TCs are based on data from the Agricultural Re-entry Task Force (ARTF). As chemical-specific DFR data were not submitted, a standard DFR value of 25% of the application rate coupled with 2% daily dissipation of residues for greenhouse uses were used in the exposure assessment.

Exposure estimates were compared to the toxicology reference value (NOAEL = 82 mg/kg bw/day) to obtain the MOE; the target MOE is 300. Only exposures and risks to the activities with the highest TCs are presented, as MOEs for these activities exceed the target MOE of 300, and are thus, not of health concern (Appendix I, Table 4).

2.4.3 Residential exposure and risk assessment

2.4.3.1 Handler exposure and risk assessment

GATTEN Fungicide is not a domestic class product and is not intended for use in residential settings; therefore, a residential handler exposure assessment is not required.

2.4.3.2 Postapplication exposure and risk assessment

GATTEN Fungicide is not a domestic class product and is not intended for use in residential settings. Furthermore, exposure to flutianil residues on treated ornamental plants that are subsequently purchased at retail locations is considered negligible. Residues are anticipated to decline from the time of application to the time of consumer purchase. In addition, the postapplication occupational exposure risk mitigation measures would also protect the consumer purchasing treated retail plants from dermal exposure. Therefore, a quantitative residential postapplication exposure assessment is not required.

2.4.4 Bystander exposure and risk assessment

Bystander exposure is considered negligible as application is limited to within greenhouses only, where drift is expected to be minimal. Therefore, health risks to bystanders are not of concern when the end-use product is used according to the proposed label directions.

2.5 Dietary exposure and risk assessment

2.5.1 Exposure from residues in food of plant and animal origin

Please refer to PRD2021-09, Flutianil and GATTEN for the complete review of residues of flutianil in foods of plant origin.

In the context of the current submissions, supervised residue trials conducted throughout Canada and the United States using end-use products containing flutianil at approved and exaggerated rates in or on greenhouse peppers, greenhouse tomatoes, and greenhouse cucumbers are sufficient to support the proposed/established maximum residue limits.

2.5.2 Dietary risk assessment

Chronic dietary risk assessments were conducted using the Dietary Exposure Evaluation Model (DEEM–FCID™, Version 4.02, 05-10-c), which incorporates consumption data from the National Health and Nutrition Examination Survey/What We Eat in America (NHANES/WWEIA) for the year 2005-2010.

2.5.2.1 Acute dietary exposure results and risk characterization

No appropriate toxicological reference value attributable to a single dose for the general population (including children and infants) was identified. Therefore, an acute risk assessment was not necessary.

2.5.2.2 Chronic dietary exposure results and risk characterization

The following assumptions were applied to the basic chronic analysis for flutianil: 100% crop treated, default processing factors, proposed and established Canadian MRLs and American tolerances for imported commodities. The basic chronic dietary exposure (food alone) from all supported flutianil food commodities and imported commodities for the total population, including infants and children, and all representative population subgroups is less than 1% of the acceptable daily intake (ADI). Aggregate exposure from food and drinking water is considered acceptable. Health Canada estimates that chronic dietary exposure to flutianil from food and drinking water is 0.7% (0.005443 mg/kg bw/day) of the ADI for the total population. The highest exposure and risk estimate is for all infants (< 1 year) at 2.2% (0.017951 mg/kg bw/day) of the ADI.

2.6 Aggregate exposure and risk assessment

For flutianil, the aggregate assessment consisted of combining food and drinking water exposure only, since residential exposure through purchased retail plants is expected to be negligible.

2.7 Cumulative assessment

The *Pest Control Products Act* requires that Health Canada consider the cumulative effects of pest control products that have a common mechanism of toxicity. Accordingly, an assessment of a potential common mechanism of toxicity with other pesticides was undertaken for flutianil. Based on its chemical structure, flutianil has been classified as a thiazolidine fungicide.

Currently, flutianil and thiadifluor are the only members of that class. Thiadifluor is not currently registered in Canada or the United States, and there are no American import tolerances or Codex MRLs. For the current evaluation, Health Canada did not identify information indicating that flutianil shares a common mechanism of toxicity with other pesticides to which Canadians are exposed. Therefore, no cumulative health risk assessment is required at this time.

2.8 Maximum residue limit

Dietary risks from the consumption of food commodities listed in Table 2.8.1 were shown to be acceptable when flutianil is used according to the supported label directions. Therefore, foods containing residues at these levels are safe to eat, and Health Canada recommends that the following maximum residue limit (MRL) be specified for residues of flutianil.

Table 2.8.1 Recommended maximum residue limit

MRL (ppm)	Food commodity
0.3	Currant tomatoes, tomatoes, bell peppers, non-bell peppers, African eggplants, eggplants, pea eggplants, and scarlet eggplants

The current established MRL of 0.2 ppm for residues of flutianil in/on cucumbers is considered adequate to cover residues of flutianil in/on greenhouse cucumbers as a result of the proposed use.

For additional information on MRLs in terms of the international situation and trade implications, refer to Appendix II.

Please refer to PRD2021-09, Flutianil and GATTEN for a summary of the nature of the residues in plant matrices, analytical methodologies, and freezer storage stability data. Supervised residue trial data and chronic dietary risk estimates are summarized in Appendix I, Tables 5 and 6.

3.0 Impact on the environment

Exposure to non-target organisms from greenhouse uses of pesticide products is expected to be minimal. The exception is pollinators and beneficial arthropods, which may be used in greenhouse production. However, the screening level risk assessment indicates risks are acceptable for these organisms.

Flutianil is toxic to non-target terrestrial plants. The precautionary label statement regarding toxicity currently on the label is applicable to these uses and informs growers that this product may be toxic to the other crops that may be growing in the greenhouse.

Flutianil is toxic to aquatic organisms. A label statement prohibiting the discharge of effluent or runoff from greenhouses to waterbodies is required.

3.1 Fate and behaviour in the environment

The fate and behaviour of flutianil has been reviewed in PRD2021-09 and RD2022-03.

3.2 Environmental risk characterization

With the exception of pollinators and beneficial arthropods, most taxa would not be exposed to flutianil applied in greenhouses when label directions are followed. Pollinators and beneficial arthropods can be exposed when they are used in greenhouse production. As such, risk to these organisms needs to be considered when adding greenhouse uses to the label of flutianil products.

The proposed application rate on greenhouse crops are within the yearly maximum rates for applications to field crops. As a result, the estimated environmental concentrations (EECs) as presented in PRD2021-09 for beneficial arthropods will be equivalent or greater than those that would be determined from greenhouse uses. The same conclusion, which is negligible risk, therefore applies.

However, for pollinators, the EEC is determined based on the maximum single application rate. The proposed maximum single application rate is greater than the registered field uses. As such, a new pollinator risk assessment was conducted.

The risk assessment is conducted according to the *Guidance for Assessing Pesticide Risks to Bees*. Initially, a screening-level risk assessment was performed using simple methods, conservative exposure scenarios and sensitive effects metrics. A risk quotient (RQ) was calculated by dividing the EEC by the effects metric and was then compared to the level of concern (LOC). When the screening level RQ was below the LOC, the risk was considered to be acceptable, and no further risk characterization was necessary.

As all screening level RQs were below the LOC, the risk was considered to be acceptable, and no further risk characterization was necessary.

3.2.1 Risks to terrestrial organisms

Pollinators

The endpoints considered in the risk assessment can be found in PRD2021-09. However, the pollinator risk assessment has been updated since the original registration of flutianil to include concentration-based endpoints. Concentration-based endpoints are considered more reliable than dose for repeat exposure scenarios as intake can vary over the study duration. Additionally, as larva gain weight over the exposure period and are exposed through contact and ingestion, concentration is more reflective of exposure than dose for larvae.

Note that the proposed crops are all pollinator attractive (to varying degrees) and use of bees in greenhouse production is therefore possible.

The assessment is presented in Appendix I, Table 7. The assessment reaches the same conclusion as PRD2021-09, in which negligible risk to pollinators is expected.

3.2.2 Risks to aquatic organisms

Flutianil is toxic to aquatic organisms. Although their exposure is negligible from greenhouse uses, the proposed use may pose a risk to aquatic organisms if effluent or runoff from the greenhouse is discharged to water. A label statement prohibiting the discharge of effluent or runoff from greenhouses to water is required.

4.0 Incident reports

Health incident reports

As of 30 October 2025, no human or domestic animal incident reports involving the active ingredient flutianil were submitted to Health Canada.

Environment incident reports

As of 27 November 2025, no environmental incident reports involving the active ingredient flutianil were submitted to Health Canada.

5.0 Value

In greenhouse efficacy trials, GATTEN Fungicide applied according to use directions suppressed powdery mildew on pepper under moderate disease pressure and was well tolerated by treated plants. A rationale extrapolating the results of pepper efficacy trial results to greenhouse-grown eggplant was reasonable because pepper and eggplant are from the same family, morphologically similar and both are equally susceptible to the targeted disease.

Since first reported in Canada in 1999, powdery mildew caused by the species *Leveillula taurica* has become one of the most damaging diseases in greenhouse pepper production. The use of fungicides in conjunction with cultural controls are necessary to manage disease outbreaks. Because the active ingredient in GATTEN Fungicide attacks powdery mildew with a unique mode of action, it will provide greenhouse pepper and eggplant growers with an effective tool to suppress powdery mildew disease and delay the development of fungicide resistance.

In greenhouse efficacy trials, GATTEN Fungicide applied according to use directions controlled a type of powdery mildew on tomato and cucumber plants. A rationale extrapolating the efficacy of GATTEN Fungicide to other types of powdery mildew that infect tomato and cucumber in the greenhouse was considered reasonable based on the established efficacy of GATTEN Fungicide towards a diversity of powdery mildew pathogens on a range of crops.

Powdery mildew is an aggressive disease of tomato and cucumber that thrives in the greenhouse environment. The leaves of infected plants die prematurely and fewer fruit of lower quality are produced. Most cultivars are highly susceptible. Because the active ingredient in GATTEN Fungicide attacks powdery mildew with a unique mode of action, it will provide greenhouse tomato and cucumber growers with an effective tool to control powdery mildew disease and delay the development of fungicide resistance.

In greenhouse efficacy trials, GATTEN Fungicide applied according to use directions provided high levels of disease control, between 90–100% disease reduction, against a diversity of powdery mildew pathogens on a range of ornamental crop species. The directions for use to control powdery mildew on greenhouse ornamentals are also aligned with those registered to control the same groups of powdery mildew on other crops on the GATTEN Fungicide label. Based on the submitted information and the registered label, it is expected that GATTEN Fungicide can control powdery mildew disease on a diversity of greenhouse ornamental crops.

The value of greenhouse flower and plant sales and resales in Canada was 1.98 billion dollars in 2022. Consumers purchase ornamental plants for their aesthetic value and, consequently, damage produced by powdery mildew disease can render plants unmarketable. For these reasons, the use of GATTEN Fungicide to manage this disease on greenhouse ornamentals was attributed the highest priority level at the Agriculture and Agri-food Canada Minor Use Priority Setting Workshop in 2019.

Further details of the supported uses of GATTEN Fungicide are listed in Appendix I, Tables 8-11.

6.0 Proposed regulatory decision

Health Canada, pursuant to subsection 28(1) of the *Pest Control Products Act*, is proposing registration for the sale and use of GATTEN Fungicide, containing the technical grade active ingredient flutianil, to control powdery mildew species on greenhouse vegetables (pepper, eggplant, cucumber and tomato) and greenhouse ornamentals.

An evaluation of available scientific information found that, under the approved conditions of use, the health and environmental risks and the value of the pest control products are acceptable.

List of abbreviations

µg	microgram(s)
ADI	acceptable daily intake
AHETF	Agricultural Handler Exposure Task Force
a.i.	active ingredient
ARTF	Agricultural Re-entry Task Force
ATPD	area treated per day
bw	body weight
CAF	composite assessment factor
cm	centimetre
DFR	dislodgeable Foliar Residue
EEC	estimated environmental concentration
g	gram(s)
ha	hectare(s)
hr	hour
HAFT	highest average field trial
kg	kilogram(s)
kPa	kilopascal
L	litre(s)
LC_{50}	lethal concentration causing 50% mortality
LD_{50}	lethal dose causing 50% mortality
LAFT	lowest average field trial
LOC	level of concern
mg	milligram(s)
mL	millilitre(s)
MOE	margin of exposure
MRL	maximum residue limit
NAFTA	North American Free Trade Agreement
NOAEC	no observed adverse effect concentration
NOEC	no observed effect concentration
NOAEL	no observed adverse effect level
PCPA	*Pest Control Products Act*
PHED	Pesticide Handler Exposure Database
PPE	personal protective equipment
PHI	preharvest interval
PMRA	Pest Management Regulatory Agency
ppm	parts per million
PRD	Proposed Registration Decision
RD	Registration Decision
REI	restricted-entry interval
RQ	risk quotient
RTI	retreatment interval
SDEV	standard deviation
TC	transfer coefficient
TGAI	technical grade active ingredient
USEPA	United Stated Environmental Protection Agency
v/v	volume/volume

Appendix I Tables and figures

Table 1 Toxicology reference values for use in health risk assessment for flutianil

Exposure scenario	Study	Point of departure and endpoint	CAF[1] or Target MOE
Acute dietary general population	Not required, as an endpoint of concern attributable to a single exposure was not identified.		
Repeated (chronic) dietary	2-year dietary chronic toxicity/oncogenicity study in rats	NOAEL = 82 mg/kg bw/day Liver toxicity	100
	ADI = 0.8 mg/kg bw/day		
Short- and intermediate term dermal[2]	Developmental toxicity study in rats	Developmental NOAEL = 333 mg/kg bw/day Delayed bone development	300
Short- and intermediate term inhalation	28-day inhalation toxicity study in rats	NOAEC = 0.1 mg/L (~26 mg/kg bw/day) Effects in the liver, nasal cavity and lung as well as decreased body weight	100
Long-term dermal[2]	2-year dietary chronic toxicity/oncogenicity study in rats	NOAEL = 82 mg/kg bw/day Liver toxicity	300
Cancer	No treatment-related tumours were observed; therefore, a cancer risk assessment is not required		

[1] CAF (composite assessment factor) refers to a total of uncertainty and PCPA factors for dietary assessments; MOE (margin of exposure) refers to a target MOE for occupational and residential assessments.

[2] Since an oral NOAEL was selected, a dermal absorption factor of 100% (default value) was used in a route-to-route extrapolation.

Table 2 Unit exposure estimates for mixers, loaders and applicators handling GATTEN (µg/kg a.i. handled)

Exposure scenario and PPE		Dermal	Inhalation[1]
PPE: Single layer and chemical-resistant gloves			
Mixer/loader AHETF estimates			
A	Open Mix/Load Liquids (Automated greenhouse applications)	58.5	0.63
Mixer/loader/applicator PHED estimates			
B	Liquid/Open Pour/Backpack	5445.85	62.10
C	Liquid/Open Pour/Manually Pressurized Handwand (MPHW)	943.37	45.20
D	Liquid/Open Pour/Mechanically Pressurized Handgun (MPHG)	5585.49	151.0

[1] Light inhalation rate except for backpack, which has a moderate inhalation rate

Table 3 Mixer/Loader/Applicator risk assessment for flutianil

Exposure scenario[1]	Dermal unit exposure (µg/kg a.i. handled)[1]	Inhalation unit exposure (µg/kg a.i. handled)[1]	ATPD[2] (ha/day)	Rate (kg a.i./ha)	Dermal daily exposure (mg/kg bw/day)[3]	Inhalation daily exposure (mg/kg bw/day)[3]	Dermal MOE[4]	Inhalation MOE[5]
Automated equipment								
A	58.5	0.63	3.6	0.047	1.2×10^{-4}	1.3×10^{-6}	2 691 398	19 512 927
Handheld equipment								
B	5445.85	62.1	0.53	0.047	1.7×10^{-3}	1.9×10^{-5}	196 379	1 344 615
C	943.37	45.2	0.53	0.047	2.9×10^{-4}	1.4×10^{-5}	1 133 649	1 847 358
D	5585.49	151.0	13.5	0.047	4.4×10^{-2}	1.2×10^{-3}	7517	21 710

1 Unit exposure based on AHETF/PHED from Appendix I, Table 2

2 Standard area treated per day (ATPD) values for greenhouse vegetables. For Scenarios B, C, D: Calculations are based on (150 L/day ÷ 281 L/ha spray volume = 0.53 for backpack and handwand; 3800 L/day ÷ 281 L/ha spray volume = 13.5 for handgun). The calculated area of 13.5 ha is considered an overestimate based on the assumed greenhouse size of 3.6 ha.

3 Daily exposure = (Unit exposure × ATPD × Rate) / (80 kg bw × 1000 µg/mg)

4 Based on NOAEL = 333 mg/kg bw/day; Target MOE = 300 (see Table 1)

5 Based on NOAEL = 26 mg/kg bw/day; Target MOE = 100 (see Table 1)

Table 4 Postapplication exposure and risk estimates to workers for flutianil on day 0 after the last application

Crop[1]	Re-entry activity	TC[2] (cm^2/hr)	Peak DFR[3] (µg/cm^2)	Dermal exposure[4] (mg/kg bw/day)	MOE[5]	REI[6]
Greenhouse ornamentals	Hand harvesting, disbudding, hand pruning	4000	0.2294	0.0918	894	12 h
Greenhouse vegetables	All activities	1400	0.3081	0.0431	1901	12 h

1 Max application rate of 35 g a.i./ha for greenhouse ornamentals, and 47 g a.i./ha for greenhouse vegetables (specifically greenhouse pepper/eggplant/tomato), both for 3 applications/crop cycle and a 7-day RTI (see use pattern in Tables 8–11)

2 Transfer coefficients obtained from PRO2014-02

3 Calculated using the default 25% of the application rate on the day of application and 2% dissipation per day in greenhouses

4 Exposure = (Peak DFR [µg/cm^2] × TC [cm^2/hr] × 8 hours/day) / (80 kg bw × 1000 µg/mg)

5 Based on a NOAEL of 82 mg/kg bw/day for long-term dermal exposure, target MOE = 300 (Table 1)

6 Minimum REI is 12 hours to allow residues to dry, suspended particles to settle and vapours to dissipate.

Table 5 Integrated food residue chemistry summary

Crop residue trials and residue decline on greenhouse pepper and greenhouse tomato									**PMRA No. 3668811, 3668844**
Greenhouse trials were conducted on bell peppers, non-bell peppers, cherry tomatoes and large tomatoes in 2019 and 2020 in Canada and the Unites States. Trials were conducted in separate greenhouses. An emulsifiable concentrate (EC) formulation of flutianil was applied three times as a foliar application at total rates of 142–149 g a.i./ha for peppers and 136–143 g a.i./ha for tomatoes. The applications were made at 5 to 7-day retreatment intervals (RTIs) with a preharvest interval (PHI) of 0 days. Residue decline data show that residues of flutianil generally decreased in greenhouse peppers and greenhouse tomatoes with increasing PHIs.									
Crop	**Total application rate (g a.i./ha)**	**PHI (days)**	**Analyte**	**Residue levels (ppm)**					
				n	**LAFT**	**HAFT**	**Median**	**Mean**	**SDEV**
Greenhouse bell and non-bell peppers	142–149	0	Flutianil	4	0.032	0.12	0.094	0.084	0.036
Greenhouse cherry and large tomatoes	136–143	0	Flutianil	5	0.026	0.14	0.057	0.070	0.045
Crop residue trials and residue decline on greenhouse cucumber									**PMRA No. 3668795**
Greenhouse trials were conducted on cucumbers in 2019 in Canada and the Unites States. Trials were conducted independently in greenhouses. An EC formulation of flutianil was applied five times as a foliar application at total rates of 218–229 g a.i./ha. The applications were made at 6 to 10-day RTIs with a PHI of 0 days. Residue decline data show that residues of flutianil decreased in greenhouse cucumbers with increasing PHIs.									
Crop	**Total application rate (g a.i/.ha)**	**PHI (days)**	**Analyte**	**Residue levels (ppm)**					
				n	**LAFT**	**HAFT**	**Median**	**Mean**	**SDEV**
Greenhouse cucumber	218–229	0	Flutianil	4	0.021	0.038	0.031	0.030	0.008
n = number of independent trials.									

Table 6 Risk assessment

Dietary risk from food and drinking water			
	Population	**Estimated risk % of acceptable daily intake (ADI)**	
		Food alone	**Food and drinking water**
Basic chronic dietary exposure analysis **ADI = 0.8 mg/kg bw/day** **Estimated chronic drinking water concentration = 0.21 ppm**	All infants <1 year	0.3	2.2
	Children 1–2 years	0.7	1.4
	Children 3–5 years	0.4	1.0
	Children 6–12 years	0.2	0.6
	Youth 13–19 years	0.1	0.5
	Adults 20–49 years	0.1	0.6
	Adults 50+ years	0.1	0.6
	Females 13–49 years	0.1	0.6
	Total population	0.2	0.7

Table 7 Risk assessment for pollinators

Exposure	Test substance	Endpoint	EEC[1]	RQ	LOC exceeded[2]
48-h oral, adult	Flutianil TGAI	48-hr LD_{50} > 100 µg a.i./bee	1.345 µg a.i./bee	<0.01	No
	GATTEN (4.99% w/w)	48-hr LD_{50} > 21.7 µg a.i./bee	1.345 µg a.i./bee	<0.06	No
48-h contact, adult	Flutianil TGAI	48-hr LD_{50} > 100 µg a.i./bee	0.113 µg a.i./bee	<0.01	No
	GATTEN (4.99% w/w)	48-hr LD_{50} > 50 µg a.i./bee	0.113 µg a.i./bee	<0.01	No
10-d oral, adult	GATTEN (4.99% w/w)	LC_{50} > 93.3 mg a.i./kg diet	4.606 mg a.i./kg diet	0.05	No
72-h oral larva single exposure	GATTEN (4.99% w/w)	LD_{50} = 8.19 µg a.i./larvae	0.571 µg a.i./bee	0.07	No
22-d larvae repeat exposure	Flutianil TGAI	NOEC = 290.0 mg a.i./kg diet	4.606 mg a.i./kg diet	0.02	No

[1] EEC is based on the proposed single maximum application rate of 47 g a.i./ha

Dose-based exposure estimate for bees = application rate (kg a.i./ha) × adjustment factor

Adult adjustment factor: 28.6 µg a.i./bee per kg a.i./ha = food consumption 0.292 g/bee per day × default tall grass residues 98.21 µg a.i./g per kg a.i./ha

Larvae adjustment factor: 12.15 µg a.i./bee per kg a.i./ha = food consumption 0.124 g/bee per day × default tall grass residues: 98.21 µg a.i./g per kg a.i./ha = 2.15 µg a.i./bee per kg a.i./ha

Estimated contact exposure (µg a.i./bee) adjustment factor = 2.4 µg a.i./bee
Concentration-based exposure estimate = application rate (kg a.i./ha) × default tall grass residues 98.21 µg a.i./g per kg a.i./ha
[2] LOC is 0.4 for acute exposure and 1 for chronic/repeat exposure

Table 8 List of supported uses for GATTEN Fungicide on greenhouse pepper and eggplant

Host or crop group	Greenhouse pepper Greenhouse eggplant
Disease suppressed	Powdery mildew (*Leveillula taurica*) (Suppression)
Application rate	400–935 mL product/ha (20–47 g ai/ha)
Number of applications	A maximum of three applications per crop cycle
Timing of application or application interval	Begin applications prior to disease development, when conditions are favourable for disease development, with a re-application interval of 7–14 days.
Spray volume	281–1871 L/ha
Additional use directions	Under conditions that are conducive to high disease pressure, use the highest rate and the shortest re-application interval. Ensure thorough coverage to the point of drip. Applications can be made via foliar spray, using high and low volume handguns, overhead booms and backpack spray applicators.

Table 9 List of supported uses for GATTEN Fungicide on greenhouse tomato

Host or crop group	Greenhouse tomato
Disease controlled	Powdery mildew (*Oidium neolycopersici*, *Leveillula taurica, Erysiphe orontii*)
Application rate	400–935 mL product/ha (20–47 g ai/ha) + a non-ionic surfactant at 0.02% v/v
Number of applications	A maximum of three applications per crop cycle.
Timing of application or application interval	Begin applications prior to disease development, when conditions are favourable for disease development, with a re-application interval of 7–14 days.
Spray volume	281–1871 L/ha
Additional use directions	Under conditions that are conducive to high disease pressure, use the highest rate and the shortest re-application interval. Ensure thorough coverage to the point of drip. Applications can be made via foliar spray, using high and low volume handguns, overhead booms and backpack spray applicators.

Table 10 List of Supported Uses for GATTEN Fungicide on Greenhouse Cucumber

Host or crop group	Greenhouse cucumber
Disease controlled	Powdery mildew (*Podosphaera fuliginea* syn. *Podosphaera xanthii, Erysiphe cichoracearum*)
Application rate	400–496 mL product/ha (20–25 g ai/ha)
Number of applications	Maximum of three applications per crop cycle
Timing of application or application interval	Begin prior to disease development, when conditions are favourable for disease development, with a re-application interval of 7–14 days
Spray volume	281–1871 L/ha
Additional use directions	Within the stated ranges, use a higher rate and shorter interval under conditions that are conducive to high disease pressure. Ensure thorough coverage to the point of drip. Applications can be made via foliar spray, using high and low volume handguns, overhead booms and backpack spray applicators.

Table 11 List of supported uses for GATTEN Fungicide on greenhouse ornamentals

Host or crop group	Ornamentals, greenhouse
Disease controlled	Powdery mildew (*Erysiphe* spp., *Podosphaera* spp., *Golovinomyces* spp.)
Application rate	400–690 mL product/ha (20–35 g a.i./ha)
Number of applications	Do not apply more than three applications per crop cycle. Do not exceed a maximum of 105 g a.i. per ha per crop cycle.
Timing of application or application interval	Begin applications of GATTEN Fungicide only as a foliar spray when conditions are favourable for disease development or at the first sign of disease symptoms. Repeat applications at 7–14-day intervals, depending on the disease pressure.
Spray volume	Spray volume from 281–1000 L/ha. Use higher spray volumes for large plants and dense crop canopies.

Additional use directions	A non-ionic surfactant is recommended at 0.02% v/v. Applications can be made via foliar spray, using high and low volume handguns, overhead booms and backpack spray applicators. Ensure thorough coverage to the point of drip. Crop tolerance: Crop tolerance (phytotoxicity) has not been assessed under all environmental conditions or for all ornamental crop species or varieties when used in accordance with the label. The user should test the product on a small area of the crop first, under local conditions and using standard practices, to confirm the product is suitable for widespread application.

Appendix II Supplemental maximum residue limit information - International situation and trade implications

Flutianil is an active ingredient that is being registered in Canada for use on greenhouse peppers, greenhouse eggplants, greenhouse tomatoes, and greenhouse cucumbers. The residue data that support these uses were reviewed jointly by Canada and the United States. The MRLs proposed for flutianil in/on currant tomatoes, tomatoes, bell peppers, non-bell peppers, African eggplants, eggplants, pea eggplants, and scarlet eggplants in Canada are the same as the corresponding tolerance to be promulgated in the United States for Crop Group 8-10 (Fruiting Vegetables). The current established MRL of 0.2 ppm for residues of flutianil in/on cucumbers is considered adequate to cover residues of flutianil in/on greenhouse cucumbers as a result of the proposed use.

Once established, the American tolerance for flutianil will be listed in the Electronic Code of Federal Regulations, 40 CFR Part 180, by pesticide.

Currently, there are no Codex MRLs[5] listed for flutianil in or on any of the proposed commodities on the Codex Alimentarius Pesticide Index website.

[5] The Codex Alimentarius Commission is an international organization under the auspices of the United Nations that develops international food standards, including MRLs.

References

A. List of studies/information submitted by registrant

1.0 Human and animal health

PMRA Document Number	Reference
3668811	2021, FLUTIANIL: MAGNITUDE OF THE RESIDUE ON TOMATO (GREENHOUSE), DACO 7.4.1,7.4.2
668844	2022, Flutianil: Magnitude of the Residue on Pepper, Greenhouse, DACO 7.3, 7.4.1,7.4.2
3668795	2021, FLUTIANIL: MAGNITUDE OF THE RESIDUE ON CUCUMBER (GREENHOUSE), DACO 7.3, 7.4.1,7.4.2

2.0 Value

PMRA Document Number	Reference
2024-6737	2024, A value report on AAFC19-028E- Efficacy and Tolerance of
3668845	GATTEN Fungicide (flutianil) for the suppression of Powdery mildew (*Leveillula taurica*) on Greenhouse Pepper and efficacy rationale on Greenhouse Eggplant, DACO: 10.1
3668847	2022, Associated field trial reports for AAFC19-028E, DACO: 10.2.3.3
2024-6739	2024, A value report on AAFC19-055E- Efficacy and Tolerance of
3668812	GATTEN Fungicide (flutianil) for the Control of Powdery Mildew (*Leveillula taurica*, *Oidium neolycopersici* and *Erysiphe orontii*) on Greenhouse Tomato, DACO: 10.1
3668814	2022, Associated field trial reports for AAFC19-055E, DACO: 10.2.3.3
2024-6741	2024, A value report on AAFC19-056E- Efficacy and Tolerance of GATTEN Fungicide (flutianil) Powdery mildew (*Sphaerotheca fuliginea*,
3668796	*Erysiphe cichoracearum*, *Podosphaera xanthii*) on Greenhouse Cucumber, DACO: 10.1
3668798	2019, Associated field trial reports for AAFC19-056E, DACO: 10.2.3.3
2024-6743	2024, A value summary report, AAFC20-013E: Efficacy of and Tolerance to GATTEN(r) Fungicide (flutianil, PCP No. 34297), for control of Powdery
3668784	Mildew caused by *Erysiphe* spp., *Golovinomyces* spp., and *Podosphaera* spp. on greenhouse ornamentals, DACO: 10.1
3668785	2024, Associated value data summary tables, DACO: 10.2.3.1
3668786	2024, Efficacy field trial reports, DACO: 10.2.3.3
3668787	2024, References cited 1, DACO: 10.6
3668788	2024, References Cited 2, DACO: 10.6
3668789	2024, References Cited 3, DACO: 10.6

B. Additional information considered

Published information

1.0 Human and animal health

PMRA Document Number	Reference
3779722	EC, 2023. Amended Flutianil Review Report 2023; Final Review report for the active substance Flutianil Finalised in the Standing Committee on Plants, Animals, Food and Feed. European Commission, July 11, 2023.
3779724	USEPA, 2019. Flutianil. Human Health Risk Assessment for Section 3 Registration on Hops and Crop Group Expansions of Vegetable, Cucurbit, Group 9; Cherry Subgroup 12-12A; Berry, Low Growing Subgroup 13-07G; Fruit, Small, Vine Climbing, Except Fuzzy Kiwifruit, Subgroup 13-07F. EPA-HQ-OPP-2019-0205-0007, United States Environmental Protection Agency, December 02, 2019.
3779726	WHO and FAO, 2022. Pesticide residues in food 2021. Joint FAO/WHO meeting on pesticide residues. Evaluation Part II – Toxicological. Geneva: World Health Organization and Food and Agriculture Organization of the United Nations; 2022. Licence: CC BY-NC-SA 3.0 IGO.