Registration Decision RD2014-29

Ethaboxam

(publié aussi en français)

4 November 2014

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

Publications
Pest Management Regulatory Agency
Health Canada
2720 Riverside Drive
A.L. 6604-E2
Ottawa, Ontario K1A 0K9

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

Canada

ISSN: 1925-0932 (print)
1925-0940 (online)

Catalogue number: H113-25/2014-29E (print version)
H113-25/2014-29E-PDF (PDF version)

Registration Decision for Ethaboxam

Health Canada's Pest Management Regulatory Agency (PMRA), under the authority of the *Pest Control Products Act* and Regulations, is granting full registration for the sale and use of Ethaboxam Technical and Intego Solo Fungicide, containing the technical grade active ingredient ethaboxam, to control or suppress seed and seedling diseases caused by oomycetes on cereal grains, legume vegetables and oilseed crops.

An evaluation of available scientific information found that, under the approved conditions of use, the product has value and does not present an unacceptable risk to human health or the environment.

These products were first proposed for registration in the consultation document[1] Proposed Registration Decision PRD2014-13, *Ethaboxam*. This Registration Decision[2] describes this stage of the PMRA's regulatory process for ethaboxam and summarizes the Agency's decision, the reasons for it and provides, in Appendix I, a summary of comments received during the consultation process as well as the PMRA's response to these comments. This decision is consistent with the proposed registration decision stated in PRD2014-13.

For more details on the information presented in this Registration Decision, please refer to the Proposed Registration Decision PRD2014-13, *Ethaboxam* that contains a detailed evaluation of the information submitted in support of this registration.

What Does Health Canada Consider When Making a Registration Decision?

The key objective of the *Pest Control Products Act* is to prevent unacceptable risks to people and the environment from the use of pest control products. Health or environmental risk is considered acceptable[3] 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 conditions of registration. The Act also requires that products have value[4] when used according to label directions. Conditions of registration may include special precautionary measures on the product label to further reduce risk.

To reach its decisions, the PMRA applies modern, rigorous risk-assessment methods and policies. These methods consider the unique characteristics of sensitive subpopulations in humans (for example, children) as well as organisms in the environment (for example, those most sensitive to environmental contaminants). These methods and policies also consider the

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

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

3 "Acceptable risks" as defined by subsection 2(2) of *Pest Control Products Act.*

4 "Value" as defined by subsection 2(1) of *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".

nature of the effects observed and the uncertainties when predicting the impact of pesticides. For more information on how the PMRA regulates pesticides, the assessment process and risk-reduction programs, please visit the Pesticides and Pest Management portion of Health Canada's website at healthcanada.gc.ca/pmra.

What is Ethaboxam?

Ethaboxam is a new fungicide with systemic properties used in the formulation of Intego Solo Fungicide. Intego Solo Fungicide will be used as a seed treatment to control or suppress seed and seedling diseases caused by oomycetes on cereal grains, legume vegetables and oilseed crops.

Health Considerations

Can Approved Uses of Ethaboxam Affect Human Health?

Intego Solo Fungicide, containing Ethaboxam Technical, is unlikely to affect your health when used according to label directions.

Potential exposure to ethaboxam may occur through the diet (food and water), or when handling and applying the end-use product Intego Solo Fungicide, or when planting seeds treated with this product. When assessing health risks, two key factors are considered: the levels where 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). 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 where no effects are observed. The health effects noted in animals occur at doses more than 100-times higher (and often much higher) than levels to which humans are normally exposed when pesticide products are used according to label directions.

In laboratory animals, technical grade ethaboxam was of low acute toxicity by the oral, dermal and inhalation routes of exposure. It was minimally irritating to the eyes, non-irritating to the skin, and did not cause an allergic skin reaction. Similarly, the acute toxicity of the end-use product, Intego Solo Fungicide, was low by the oral, dermal and inhalation routes of exposure. It was non-irritating to the eyes, minimally irritating to the skin, and did not cause an allergic skin reaction. Consequently, no hazard signal words are required on the labels.

Health effects in animals given repeated doses of ethaboxam included effects on the blood, liver, lungs and thymus, as well as on male reproductive organs and the spermatogenic cycle. Ethaboxam reduced fertility, and there was evidence that it interferes with cell division. There was no evidence to suggest that it interacts directly with DNA. Ethaboxam also caused testicular cell tumours in the rat. The immune system was adversely affected, as evidenced by decreases in thymus weight and effects on white blood cells. There was no indication that ethaboxam caused damage to the nervous system.

When ethaboxam was given to pregnant or nursing animals, effects on the offspring (birth defects, decreased survival and delayed maturation) were observed at doses that were toxic to the mother, indicating that the young do not appear to be more sensitive than the adult animal.

The risk assessment protects against the effects of ethaboxam by ensuring that the level of human exposure is well below the lowest dose at which these effects occurred in animal tests.

Residues in Water and Food

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

Aggregate dietary intake estimates (food plus drinking water) revealed that the general population and children 3-5 years old, the subpopulation which would ingest the most ethaboxam relative to body weight, are expected to be exposed to less than 1% of the acceptable daily intake. Based on these estimates, the chronic dietary risk from ethaboxam is not of health concern for all population subgroups.

The lifetime cancer risk from the use of ethaboxam on Legume Vegetables (Succulent or Dried) (Crop Group 6), except dry cowpea seeds, dry field peas, and succulent shelled cowpeas; Cereal Grains (Crop Group 15), except rice, sorghum, and wild rice; and Rapeseed (Crop Subgroup 20A) is not of health concern.

Acute dietary (food plus drinking water) intake estimates for the general population and all population subgroups were less than 1% of the acute reference dose, and are not of health concern.

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*. Food containing a pesticide residue that does not exceed the established MRL does not pose an unacceptable health risk.

The uptake study on canola, corn, sorghum, wheat and soybeans, and soybean residue trials conducted in the United States, including Canadian representative growing zones, using ethaboxam are acceptable. The MRLs for this active ingredient can be found in the Proposed Maximum Residue Limit Document PMRL2014-76, *Ethaboxam*.

Occupational Risks From Handling Intego Solo Fungicide

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

Workers treating seed with Intego Solo Fungicide in commercial facilities, by commercial mobile systems and with on-farm seed treatment equipment, and workers planting Intego Solo Fungicide treated seed can come into direct contact with ethaboxam residues on the skin and through inhalation. Therefore, the label specifies that workers treating and handling treated seed must wear the following personal protective equipment: in commercial seed treatment facilities and for commercial mobile treaters, workers must wear a long-sleeved shirt, long pants, chemical resistant gloves, socks and shoes or boots during mixing, loading and application. In addition, coveralls are required during clean-up, maintenance and repair activities. Workers bagging, sewing, stacking or performing other activities not involving direct contact with treated seed must wear a long-sleeved shirt, long pants, gloves, socks and shoes or boots. At on-farm locations, workers must wear a long-sleeved shirt, long pants, chemical resistant gloves, socks and shoes or boots during mixing, loading, application, clean-up and repair and during planting of treated seed. Closed transfer is required for treating seeds in commercial seed treatment facilities and for mobile treaters. Taking into consideration these label statements, the number of applications and the expectation of the exposure period for handlers and workers, the risk to these individuals is not a concern.

For bystanders, exposure is expected to be much less than that for workers and is considered negligible. Therefore, health risks to bystanders are not of concern.

Environmental Considerations

What Happens When Ethaboxam Is Introduced Into the Environment?

When used as a seed treatment, ethaboxam poses a negligible risk to terrestrial and aquatic organisms.

Ethaboxam can enter the environment by dislodging from treated seed surfaces during and after seeding. Once in the environment, ethaboxam breaks down quickly in soil but more slowly in water. It is unlikely to evaporate from soil or water. Ethaboxam has medium to low mobility in soil and has a low potential to leach to groundwater. Ethaboxam is not expected to reach surface waters in any appreciable amounts under the current use pattern, as exposure of surface waters through soil runoff and leaching is expected to be minimal. Risk to terrestrial and aquatic organisms is negligible based on low potential for exposure.

Value Considerations

What Is the Value of Intego Solo Fungicide?

Intego Solo Fungicide is a new mode of action seed treatment with systemic properties that controls or suppresses seed and seedling diseases caused by oomycetes on cereal grains, legume vegetables and oilseed crops. Intego Solo Fungicide provides growers with a valuable alternative to metalaxyl, for which resistance is well documented on various crops. The integration of Intego Solo Fungicide into pest management programs may contribute to delaying resistance development to existing products in pathogen populations.

Measures to Minimize Risk

Registered pesticide product labels include specific instructions for use. Directions include risk-reduction measures to protect human and environmental health. These directions must be followed by law.

The key risk-reduction measures on the label of Intego Solo Fungicide to address the potential risks identified in this assessment are as follows:

Key Risk-Reduction Measures

Human Health

Because there is a concern with users coming into direct contact with ethaboxam on the skin or through inhalation of spray mists, anyone mixing, loading and applying Intego Solo Fungicide must wear the following personal protective equipment: In commercial seed treatment facilities and for commercial mobile treaters, workers must wear a long-sleeved shirt, long pants, chemical resistant gloves, socks and shoes or boots during mixing, loading and application. In addition, coveralls are required during clean-up, maintenance and repair activities. Workers bagging, sewing, stacking or performing other activities not involving direct contact with treated seed must wear a long-sleeved shirt, long pants, gloves, socks and shoes or boots. At on-farm locations, workers must wear a long-sleeved shirt, long pants, chemical resistant gloves, socks and shoes or boots during mixing, loading, application, clean-up and repair and during planting of treated seed. Closed transfer is required for treating seeds in commercial seed treatment facilities and for mobile treaters.

Environment

Although the risk of ethaboxam exposure to aquatic organisms is negligible, a statement on the toxicity of ethaboxam to aquatic organisms is required on the product label based on its inherent toxicity.

Other Information

The relevant test data on which the decision is based (as referenced in PRD2014-13, *Ethaboxam*) are available for public inspection, upon application, in the PMRA's Reading Room (located in Ottawa). For more information, please contact the PMRA's Pest Management Information Service by phone (1-800-267-6315) or by e-mail (pmra.infoserv@hc-sc.gc.ca).

Any person may file a notice of objection[5] regarding this registration decision within 60 days from the date of publication of this Registration Decision. For more information regarding the basis for objecting (which must be based on scientific grounds), please refer to the Pesticides and Pest Management portion of the Health Canada's website (Request a Reconsideration of Decision) or contact the PMRA's Pest Management Information Service.

[5] As per subsection 35(1) of the *Pest Control Products Act.*

Appendix I Comments and Responses

1. Comment

In response to the proposed maximum residue limits (PMRLs) for ethaboxam (PMRL2014-35 and PRD2014-13), a comment was received regarding the use of the enforcement method and corresponding limit of quantitation (LOQ) used to specify the proposed MRLs of 0.02 ppm.

1. PMRA Response

In PMRL2014-35, PMRA is proposing to specify MRLs in/on Legume Vegetables (Succulent or Dried) (Crop Group 6), except dry cowpea seeds, dry field peas, and succulent shelled cowpeas; Cereal Grains (Crop Group 15), except rice, sorghum, and wild rice; and Rapeseed (Crop Subgroup 20A) at 0.02 ppm, which corresponds to the LOQ of the enforcement method RM-49C-1. Method RM-49C, which was also proposed as an enforcement method, has a LOQ of 0.01 ppm for the analysis of ethaboxam in food crop matrices; however, during the review, this method was not considered valid due to concerns with the Independent Laboratory Validation (ILV) process.

Through the consultation on PMRL2014-35 (and PRD2014-13), the applicant has provided information to address the concerns. As the comment received has an impact on the proposed ethaboxam MRLs in PMRL2014-35 (and PRD2014-13), the proposed MRLs of 0.02 ppm will no longer be specified. In turn, a new PMRL document (PMRL2014-76) has been posted for consultation with proposed ethaboxam MRLs of 0.01 ppm in/on Legume Vegetables (Succulent or Dried) (Crop Group 6), except dry cowpea seeds, dry field peas, and succulent shelled cowpeas; Cereal Grains (Crop Group 15), except rice, sorghum, and wild rice; and Rapeseed (Crop Subgroup 20A).