Health Canada Santé Canada

Evaluation Report for Category B, Subcategory 2.6 Application

Application Number: 2020-4277
Application: New End-Use Product: Chemistry-New combination of Technical Grade Active Ingredients
Product: Corvus
Registration Number: 34325
Active ingredients (a.i.): Isoxaflutole and thiencarbazone-methyl
PMRA Document Number : 3282909

Purpose of Application

The purpose of this application was to register a new herbicide end-use product, Corvus, for pre-plant surface, pre-emergent, pre-plant incorporated and early post-emergence use in corn grown for grain, silage and seed.

Chemistry Assessment

Corvus is formulated as a suspension containing 225 g/L isoxaflutole and 90 g/L thiencarbazone-methyl. This end-use product has a density of 1.174 g/mL and pH of 3.9. The required chemistry data for Corvus have been provided, reviewed and found to be acceptable.

Health Assessments

Corvus is of low acute toxicity via the oral, dermal and inhalation routes. It is minimally irritating to the eyes, not irritating to the skin, and is not a dermal sensitizer.

Corvus for use as a preplant or preemergence treatment to field and seed corn, as well as early postemergence treatment to field corn only, represents an expansion of the use pattern for thiencarbazone-methyl. Updated quantitative mixer/loader/applicator and postapplication risk assessments were conducted for thiencarbazone-methyl. The registered use pattern of isoxaflutole encompass the use pattern of Corvus for application to field and seed corn, and risk assessments on file are adequate. No health risks of concern are expected for workers handling Corvus provided that the appropriate PPE is worn and all label directions are followed.

No new residue data for thiencarbazone-methyl on the proposed crops field or seed corn were submitted to support the registration of Corvus. Rather, previously reviewed residue data on field corn were re-assessed in the framework of this petition.

New isoxaflutole residue data from field trials conducted in the United States, including growing regions representative of Canada, were submitted to support the Canadian use of Corvus on field and seed corn. Isoxaflutole was applied to field corn at exaggerated rates, and harvested according to label directions. In addition, previously reviewed residue data from field trials conducted on field corn were re-assessed in the framework of this petition.

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Based on this assessment, residues of thiencarbazone-methyl and isoxaflutole will be covered by the established MRLs. Consequently, the registration of Corvus will not pose health risks of concern to any segment of the population, including infants, children, adults and seniors.

Environmental Assessment

The risks from the environmental perspective resulting from the use of Corvus on field corn are acceptable provided that the environmental precautions and mitigation measures are observed according to the label.

Value Assessment

The registration of Corvus provides growers a new option, which contains two active ingredients from different herbicide modes of action groups, for pre-plant (surface or incorporated), pre-emergence, or early post-emergence use in corn (grain, silage, and/or seed) for broad-spectrum weed control including herbicide-resistant biotypes of those labeled species.

Information provided in support of the value of Corvus included scientific rationales, precedent registrations, and data from 67 replicated small-scale field trials. This information was submitted to support the registration of the surface pre-plant, pre-plant incorporated and pre-emergence in field corn and seed corn; and early post-emergence use in field corn with Corvus. Of the 67 trials, efficacy data were recorded in 65 trials, non-safety adverse-effects (crop tolerance) data were recorded in 66 trials, and rotational crop tolerance data were recorded in 13 trials. The field trials were conducted in the USA, mostly across the Corn Belt, between 2004 and 2017.

The information provided support the value of Corvus in terms of 1) the efficacy on labeled weeds with the addition of a non-ionic surfactant, crop oil concentrate or methylated seed oil as recommended, 2) the tolerance of corn (grain, silage, and/or seed) to applications of the herbicide and 3) the tolerance of rotational crops.

Conclusion

The Pest Management Regulatory Agency has completed an assessment of the information provided, and has found the information sufficient to register Corvus for pre-plant surface, pre-emergent, pre-plant incorporated and early post-emergence use in corn.

References

PMRA Document Number	**Reference References**
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3154159	2018, Adengo - Validation of analytical method to determination of active: Isoxaflutole; thiencarbazone-methyl; [CBI Removed], DACO: 3.4.1 CBI
3154160	2018, Extended shelf life (3 years) of isoxaflutole + thiencarbazone-methyl [CBI Removed] - Packaging material: HDPE - Final report, DACO: 3.5.10,3.5.14 CBI

3154130 2020, Value Assessment: Thiencarbazone-methyl Use Expansions in Corn; Part 2. Value Assessment of Corvus Herbicide in Corn, DACO: 10, 10.1, 10.2, 10.2.1, 10.2.2, 10.2.3, 10.2.3.1, 10.3, 10.3.1, 10.3.3, 10.4, 10.5, 10.5.1, 10.5.2, 10.5.3, 10.5.4, 10.5.5

3154131 2020, CBI Reference Document: Thiencarbazone-methyl Use Expansions in Corn; Part 2. Value Assessment of Corvus Herbicide, DACO: 10, 10.1, 10.2, 10.2.1, 10.2.2, 10.2.3, 10.2.3.1, 10.3, 10.3.1, 10.3.3, 10.4, 10.5, 10.5.1, 10.5.2, 10.5.3, 10.5.4, 10.5.5 CBI

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1420549 2007, Toxicity to the predatory mite *Typhlodromus pyri* Scheuten (Acari, Phytoseiidae) in the laboratory - BYH 18636 & Isoxaflutole & AE 0001789 - SC 90 + 225 + 150 g/l, DACO 9.2.5, IIIA 10.5.1, 9.2.8.

1420548 2007, Toxicity to the parasitoid wasp *Aphidius rhopalosiphi* (DeStephani-Perez) (Hymenoptera: Braconidae) in the laboratory BYH 18636 & Isoxaflutole & AE 0001789 SC 90 + 225 + 150 g/l, DACO 9.2.6, IIIA 10.5.1, 9.2.8.

1420559 2006, BYH 18636 + AE 0001789 + IFT SC 465 - Effects on eleven species of non-target terrestrial plants - seedling emergence and seedling growth test (Tier 2), DACO 9.8.4, IIIA 10.8.1.3, 9.8.6.

1420561 2007, Higher tier non target terrestrial plant study on the seedling emergence and growth of 3 plant species under semi-field conditions. The phytotoxic effects of BYH 18636 + Isoxaflutole + AE 0001789 SC 90+225+150 (TCM+IFT+CSA SC 90+225+150 G), DACO 9.8.4, IIIA 10.8.1.3, 9.8.6.

1420557 2006, BYH 18636 + AE 0001789 + IFT SC 465 - Effects on eleven species of non-target terrestrial plants - vegetative vigour test (tier 2), DACO 9.8.4, IIIA 10.8.1.2, 9.8.6.

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1420566 Toxicity of thiencarbazone-methyl + isoxaflutole + [CBI Removed] SC (90 + 225 + [CBI Removed] g/L) formulation to the aquatic plant *Lemna gibba* in a growth inhibition test, DACO 9.8.7, IIIA 10.8.2.1, 9.8.6, 9.8.5.

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