

Evaluation Report for Category B, Subcategory 2.1, 2.3, 2.4, 2.6, 3.2, 3.5, 3.10, 3.12 Application

Application Number: 2024-0657
Application: New End Use Product Chemistry-Guarantee, Identity and Proportion of Formulants, and New Combination of Technical Grade Active Ingredients.
New Product Labels- Application Timing, Rotational Crops\Plantback Interval, New Site or Host, and Tank Mixes.
Applicant: Nufarm Agriculture Inc.
Product: Thunderhawk EZ
Registration Number: 35502
Active ingredients (a.i.): Florasulam, MCPA (present as esters), and pyraflufen-ethyl
PMRA Document Number: 3710351

Purpose of Application

The purpose of this application was to register a new herbicide, Thunderhawk EZ, containing florasulam, MCPA (present as esters), and pyraflufen-ethyl for control of emerged broadleaf weeds prior to the emergence of spring wheat (including durum wheat), winter wheat, spring barley, and oats.

Chemistry Assessment

Thunderhawk EZ is formulated as an emulsifiable concentrate containing MCPA (present as 2-ethylhexyl ester) at a concentration of 210 g/L, pyraflufen-ethyl at a concentration of 6.75 g/L, and florasulam at a concentration of 5.63 g/L. This end-use product has a density of 1.030 g/mL and pH of 4.13. The required chemistry data for Thunderhawk EZ have been provided, reviewed and found to be acceptable.

Health Assessments

Thunderhawk EZ is of low acute toxicity via the oral, dermal, and inhalation routes of exposure. It is mildly irritating to the eyes and slightly irritating to the skin. It is a potential dermal sensitizer.

The use of Thunderhawk EZ on spring (including durum) wheat, winter wheat, spring barley, and oats to control labelled weeds is not expected to result in potential occupational or bystander exposure over the registered uses of florasulam, MCPA (present as esters), and pyraflufen-ethyl. No risks of concern are expected when workers follow label directions and wear personal protective equipment as stated on the label.

No new residue data for pyraflufen-ethyl, MCPA or florasulam in wheat, spring barley or oats were submitted or required to support the registration of Thunderhawk EZ. Previously reviewed residue data from field trials conducted in/on cereal grains were reassessed in the framework of this application. In addition, processing studies in treated wheat were re-assessed.

The use directions on the Thunderhawk EZ label, including the target crops, method (ground), rate and timing of application, preharvest intervals, feeding restrictions, and crop rotation restrictions were compared to those on the label of the precedent products and were found to be comparable.

Based on this assessment, residues are not expected to be greater than those from the currently registered uses and will be covered by the established maximum residue limits (MRLs). Consequently, dietary exposure to residues of pyraflufen-ethyl, MCPA and florasulam is not expected to increase with the registration of Thunderhawk EZ and will not pose health risks of concern to any segment of the population, including infants, children, adults and seniors

Environmental Assessment

The use of Thunderhawk EZ to control broadleaf weeds in spring wheat (including durum), winter wheat, spring barley, and oats is within the currently registered use pattern for MCPA ester, florasulam, and pyraflufen-ethyl. Therefore, the risk is acceptable when Thunderhawk EZ is used in accordance with the label, which includes statements to mitigate risks to the environment.

Value Assessment

The registration of Thunderhawk EZ provides users with a co-formulation of three active ingredients, pyraflufen-ethyl, MCPA ester, and florasulam, for early-season control of a broad spectrum of emerged broadleaf weeds prior to emergence of wheat (spring, durum and winter), spring barley and oat.

Value information consisted of scientific rationales, precedent registrations, and data from efficacy and dedicated crop tolerance trials, conducted in the Canadian Prairies. This information collectively demonstrated that Thunderhawk EZ, applied as per the label, can be expected to control or suppress listed weed species while being safe to labelled crops. Furthermore, as pyraflufen-ethyl, MCPA ester, and florasulam each have a different mode of action, the use of Thunderhawk EZ may also serve to mitigate the development of resistance for weed species that are susceptible to at least two of these active ingredients.

Conclusion

The Pest Management Regulatory Agency has completed an assessment of the information provided, and has found the information acceptable to support the registration of Thunderhawk EZ.

References

PMRA

Document

Number	Reference
3556671	2024, Thunderhawk Premix Supplemental Chemistry Document, DACO: 3.1, 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.5.12, 3.5.13, 3.5.15, 3.5.4, 3.5.5 CBI
3556672	2023, Thunderhawk Premix Manufacturing manual, DACO: 3.2.1, 3.2.2 CBI
3556673	2022, Thunderhawk Premix EAM, DACO: 3.4.1 CBI
3556674	2023, Thunderhawk Premix Physical and Chemical Characteristics: Color, Physical State, Odor, Oxidation/Reduction, Flammability, pH, Viscosity, and Density/Relative Density, DACO: 3.5, 3.5.1, 3.5.11, 3.5.2, 3.5.3, 3.5.6, 3.5.7, 3.5.8, 3.5.9 CBI
3556675	2022, Thunderhawk Premix Accelerated Storage Stability, DACO: 3.5.10, 3.5.14 CBI
3556676	2023, ThunderHawk Premix Acute Oral toxicity – Up-And-Down Procedure in Rats, DACO 4.6.1
3556677	2022, ThunderHawk Premix Acute Dermal Toxicity in rats, DACO 4.6.2
3556678	2022, ThunderHawk Premix Acute Inhalation Toxicity in Rats, DACO 4.6.3
3556679	2022, ThunderHawk Premix Primary Eye Irritation in Rabbits, DACO 4.6.4
3556680	2022, ThunderHawk Premix Primary Skin Irritation in Rabbits, DACO 4.6.5
3556681	2022, ThunderHawk Premix Local Lymph Node Assay (LLNA) in Mice, DACO 4.6.6
3556685	2023, Thunderhawk Premix DACO 10.3.2 Value summary, DACO: 10.1 and 10.3.2.
3556686	2022, Evaluate the Crop Tolerance of Multiple Formulations Applied in the Spring Pre-Seed Ahead of Cereals, DACO: 10.2.3.3.
3556688	2022, Evaluate the Efficacy of Pre-Seed Herbicides for the Control of Broadleaved Weeds in a Spring Application. DACO: 10.2.3.3.
3556689	2022, Evaluate the Crop Tolerance of Multiple Formulations Applied in the Spring Pre-Seed Ahead of Cereals. DACO: 10.2.3.3.
3556691	2022, Evaluate the Efficacy of Pre-Seed Herbicides for the Control of Broadleaved Weeds in a Spring Burndown Application. DACO: 10.2.3.3.
3556693	2022, Evaluate the Efficacy of Pre-Seed Herbicides for the Control of Broadleaved Weeds in a Spring Application. DACO: 10.2.3.3.
3556695	2023, Evaluate the Efficacy of Pre-Seed Herbicides for the Control of Broadleaved Weeds in a Spring Burndown Application. DACO: 10.2.3.3.
3556700	2022, Evaluate the Efficacy of Pre-Seed Herbicides for the Control of Broadleaved Weeds in a Spring Application. DACO: 10.2.3.3.
3556702	2022, Evaluate the Efficacy of Pre-Seed Herbicides for the Control of Broadleaved Weeds in a Spring Burndown Application. DACO: 10.2.3.3.
3556703	2022, Evaluate The Crop Tolerance of Multiple Formulations Applied in the Spring Pre-Seed Ahead of Cereals. DACO: 10.2.3.3.
3556704	2022, Evaluate the Efficacy of Pre-Seed Herbicides for the Control of Broadleaved Weeds in a Spring Burndown Application. DACO: 10.2.3.3
3556705	2022, Evaluate the Efficacy of Pre-Seed Herbicides for the Control of Broadleaved Weeds in a Spring Burndown Application. DACO: 10.2.3.3.
3556706	2022, Evaluate the Efficacy of Pre-Seed Herbicides for the Control of Broadleaved

3556707 Weeds in a Spring Burndown Application. DACO: 10.2.3.3.
2022, Evaluate The Crop Tolerance of Multiple Formulations Applied in the Spring
Pre-Seed Ahead of Cereals. DACO: 10.2.3.3.

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