

Evaluation Report for Category B, Subcategory 3.1, 3.11, 3.12, 3.2, 3.5 Application

Application Number: 2014-3711
Application: New or Changes to Product Labels-Application Rate Increase or Decrease,
New or Changes to Product Labels-New Pests, New or Changes to Product Labels-New Site or Host,
New or Changes to Product Labels-Application Timing,
New or Changes to Product Labels-Rotational Crops\Plantback Intrvl
Product: Pyroxasulfone 85 WG
Registration Number: 30572
Active ingredients (a.i.): Pyroxasulfone
PMRA Document Number : 2621894

Purpose of Application

The purpose of this application was to the amend use pattern of Pyroxasulfone 85 WG to include the control of additional weeds, to add host crops, and to change the rotational crops and plantback intervals.

Chemistry Assessment

A chemistry assessment was not required for this application.

Health Assessments

The exposure from the use of Pyroxasulfone 85 WG for weed control on spring and winter wheat is not expected to increase over the registered use in field corn and soybeans. No risks of concern were identified or are expected when workers follow the label directions and wear the personal protective equipment stated on the label.

Residue data from field trials conducted in Canada and the United States were submitted to support the use of Pyroxasulfone 85 WG on spring and winter wheat in Canada. Pyroxasulfone was applied to spring and winter wheat at label rates, and harvested according to label directions. In addition, residue data from studies conducted at exaggerated rates in treated wheat and corn were assessed to determine the potential for concentration of residues of pyroxasulfone into processed commodities.

Maximum Residue Limit

The recommendation for the maximum residue limit (MRL) for pyroxasulfone was based upon the submitted field trial data, and the guidance provided in the [OECD MRL Calculator](#). An MRL to cover residues of pyroxasulfone and metabolite M-3 in/on wheat is proposed as shown in Table 1. Residues in processed commodities not listed in Table 1 are covered under the proposed MRL for the raw agricultural commodity (RAC).

TABLE 1. Summary of Field Trial and Processing Data Used to Support the Maximum Residue Limit (MRL).							
Commodity	Application Method/ Total Application Rate (g a.i./ha)	PHI (days)	Residues* (ppm)		Experimental Processing Factor	Currently Established MRL (ppm)	Recommended MRL (ppm)
			Min	Max			
Wheat grain	Ground spray/ 148-158 (Early postemergence)	40-104	<0.02 5	<0.02 5	No quantifiable residues observed when treated at exaggerated rates	None	0.03
	Ground spray/ 153 (Pre-emergence)	79	<0.02 5	<0.02 5			

* Total residues of pyroxasulfone and metabolite M-3

Following the review of all available data, an MRL as proposed in Table 1 is recommended to cover residues of pyroxasulfone and metabolite M-3. Residues in these crop commodities at the proposed MRL will not pose an unacceptable risk to any segment of the population, including infants, children, adults and seniors.

Environmental Assessment

Pyroxasulfone 85 WG is currently registered for use on corn and soybean at a higher maximum application rate than is proposed for use on wheat. Therefore, the exposure of non-target organisms to Pyroxasulfone 85 WG is not expected to be greater than the currently registered use pattern. As such, the risk to non-target organisms in the environment is expected to be acceptable if used according to the label statement.

Value Assessment

Value information submitted included data from 22 field trials conducted in spring or winter wheat in the Prairie Provinces and five US states in 2010 and 2012. Efficacy of Pyroxasulfone 85 WG applied alone at lower rates (i.e., 125 g a.i./ha in coarse to medium textured soils and 150 g a.i./ha in medium-fine to fine textured soils) or in tank mix with glyphosate herbicide or glyphosate herbicide plus Aim Herbicide (carfentrazone-ethyl) was assessed for control of a number of weed species, including representatives of labelled weeds and downy brome, Japanese brome, stinkweed, cleavers, wild oats, and lamb's-quarters.

Data from the field trials demonstrated that the application of Pyroxasulfone 85 WG at the lower rates provided acceptable control or suppression of downy brome, Japanese brome, stinkweed, cleavers, wild oats, and lamb's-quarters and as well the representatives of the labelled weeds. Therefore, the inclusion of claims for control or suppression of these weeds in spring and winter wheat at lower rates are supported for labelling.

Given that Pyroxasulfone 85 WG at lower rates provided acceptable control of downy brome, Japanese brome, stinkweed, and cleavers and suppression of wild oats and lamb's-quarters in spring wheat and winter wheat, the inclusion of control or suppression of these weeds at higher rates in field corn and soybeans are also supported for labelling. Application of Pyroxasulfone 85 WG at higher rates in field corn and soybeans will improve consistency and duration of weed control.

Crop injury was reported for spring wheat following spring applications of the same herbicide treatments in 13 trials. Injury to spring wheat was observed in the early and middle season, but declined in the late season. Yield data collected in seven trials indicated that Pyroxasulfone 85 WG when applied in accordance with the label instructions would not negatively impact spring wheat yield. Crop injury was reported for winter wheat following fall applications of the same herbicide treatments in nine trials. Injury to winter wheat was also observed, but yield was not negatively impacted with the treatment of Pyroxasulfone 85 WG.

The "Rotational Crop Restriction" statement was updated only in accordance with the available host crop tolerance information. Based on the weight of evidence, the amendments to the use patterns of Pyroxasulfone 85 WG have value.

Conclusion

The Pest Management Regulatory Agency has completed an assessment of the information provided in support of the product, Pyroxasulfone 85 WG, and has found the information sufficient to amend the use pattern of the product.

References

- | PMRA # | References |
|---------|--|
| 2455162 | 2014, Ref 21 212-2011-12 Scott, DACO: 10.2.3.4(B). |
| 2455163 | 2014, Ref 22 Winter wheat 225 (12-WW-2) Scott, DACO: 10.2.3.4(B). |
| 2455164 | 2014, Ref 23 Winter wheat 225 (12-WW-3) Scott, DACO: 10.2.3.4(B). |
| 2455166 | 2012, Weed efficacy and crop tolerance for the herbicide Pyroxasulfone 85WG (850 g/Kg), in spring wheat and winter wheat, DACO: 10.1, 10.2, 10.2.1, 10.2.2, 10.2.3, 10.2.3.1, 10.2.3.3, 10.2.3.3(B), 10.2.3.4, 10.2.3.4(B), 10.3, 10.3.1, 10.3.2, 10.3.2(A), 10.3.3, 10.4, 10.5, 10.5.1, 10.5.2, 10.5.3, 10.5.4, 10.5.5, 10.7.1, and 10.7.2. |
| 2455167 | 2012, Magnitude of the Residue of Pyroxasulfone 85WG Herbicide in Wheat Raw Agricultural and Processed Commodities, DACO: 7.4.1,7.4.2,7.4.5 |

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