

Evaluation Report for Category B, Subcategory 2.1, 3.3, 3.12 and 3.14 Application

Application Number: 2014-3069

Application: New End-Use Product Chemistry – Guarantee,

New End-Use Product Label – Application number, new site, and

classification

Product: Regalia Liquid Fungicide Concentrate

Registration Number: #####

Active ingredients (a.i.): Extract of Reynoutria sachalinensis

PMRA Document Number: 2508259

Purpose of Application

The purpose of this application was to register a domestic fungicide, Regalia Liquid Fungicide Concentrate, for use on turf and on various food and ornamental crops grown outdoors and in greenhouses.

Chemistry Assessment

Regalia Liquid Fungicide Concentrate is formulated as a suspension containing extract of *Reynoutria sachalinensis* at a nominal concentration of 5%. This end-use product has a density of 1.05 g/mL and pH of 5.9. The chemistry requirements for Regalia Liquid Fungicide Concentrate have been fulfilled.

Health Assessments

The submitted toxicology studies indicate that the end-use product is of low acute toxicity by the oral, dermal, and inhalation routes, mildly irritating to the eyes, slightly irritating to the skin, and is not a dermal sensitizer.

Bystander exposure is expected to be low if label directions are followed. Post-application exposure is low with the restricted entry.

The dietary risk due to exposure to extract of *Reynoutria sachalinensis* from the uses of the enduse product is considered to be low. An MRL for extract of *Reynoutria sachalinensis* is not required.

Environmental Assessment

The uses of the end-use product are not expected to increase the environmental exposure relative to other approved products containing the extract *Reynoutria sachalinensis*. Therefore, negligible



risk is expected. Environmental concerns have been mitigated through adequate statements on the product label.

Value Assessment

Value information to support the label claims was submitted in the form of greenhouse and field efficacy data along with a scientific rationale based on disease development and the product's putative mode of action as an elicitor of induced systemic resistance in plants. Much of the support for the domestic product claims was obtained from comparable precedent claims on currently registered end-use products.

The value of labeled disease claims was deemed to have been adequately demonstrated. All uses were supported. When evidence of efficacy from trial data or scientific rationale to support claims was limited, consideration of the relative scarcity of non-conventional domestic products and the socio-economic context of their use were important considerations in the comprehensive assessment of their value. Registration of Regalia Liquid Fungicide Concentrate will provide domestic users with a new product option. Through a unique mode of action that relies on a plant's natural defense mechanisms, the active ingredient in this product will be useful in suppressing or partially suppressing common plant diseases for which relatively few alternatives are currently available for the domestic market.

Conclusion

The Pest Management Regulatory Agency has completed an assessment of the information provided and has found the information sufficient to support registration of Regalia Liquid Fungicide Concentrate.

References

A. List of Studies/Information Submitted by the Registrant

PMRA Document Number	Reference
2445171	2014, 3.1.1-3.1.4, DACO: 3.1.1, 3.1.2, 3.1.3, 3.1.4 CBI
2445172	2013, Regalia: Product Chemistry and Composition, DACO: 3.2.1, 3.2.2, 3.2.3, 3.4.1, 3.4.2, 3.5.1, 3.5.13, 3.5.2, 3.5.3, 3.5.9 CBI
2445173	2014, DACO 3.5.11 Flammability, DACO 3.5.12 Explodability, DACO: 3.5.11, 3.5.12 CBI
2445175	2014, DACO 3.5.15 Dielectric Breakdown Voltage, DACO: 3.5.15 CBI
2445176	2014, DACO 3.5.4 Formulation Type, DACO: 3.5.4 CBI
2445177	2014, DACO 3.5.5 Container Material and Description, DACO: 3.5.5 CBI
2445178	2013, Regalia: Storage Stability and Corrosion Characteristics at 25°C, DACO:
	3.5.10, 3.5.14, 3.5.6, 3.5.7, 3.5.9 CBI
2445179	2014, Oxidizing and Reducing Action (Chemical Incompatibility) of Regalia
	Fungicide Liquid Concentrate, DACO: 3.5.8 CBI

2539172	2015, Description of Starting Materials, DACO: 3.2.1 CBI
2539178	2015, Description of Starting Materials, DACO: 3.2.1 CBI
2539184	2015, Description of Starting Materials, DACO: 3.2.1 CBI
2445180	2014, Toxicology Summary, DACO: 4.1
2445181	2009, Acute Oral Toxicity Up And Down Procedure in Rats of MOI 106-5%
	Organic Formulation, DACO: 4.6.1
2445182	2008, Acute Dermal Toxicity Study in Rats-Limit Test of MOI 106-5% Organic
21.0102	Formulation, DACO: 4.6.2
2445183	2009, Acute Inhalation Toxicity Study in Rats of MOI 106-5% Organic
2110100	Formulation, DACO: 4.6.3
2445184	2008, Primary Eye Irritation Study in Rabbits of MOI 106-5% Organic
2113101	Formulation, DACO: 4.6.4
2445185	2008, Primary Skin Irritation Study in Rabbits of MOI 106-5% Organic
2113103	Formulation, DACO: 4.6.5
2445186	2009, Dermal Sensitization Study in Guinea Pigs (Buehler Method) of MOI 106-
2110100	5% Organic Formulation, DACO: 4.6.6
2445112	2014, Use Description / Exposure Scenarios, DACO 5.2
2445120	2014, 10.1 Value Summary for Regalia, DACO: 10.1
2596630	2013, Fungicide Efficacy and Selectivity of MBI 106020, DACO: 10.1, 10.2
2596631	2015, Efficacy of MBI106020 Against <i>Monilinia</i> sp. In Apricot Orchards, DACO:
	10.1, 10.2
2596632	2011, IR-4 Ornamental Horticulture Program Bacterial Disease Efficacy, DACO:
	10.1, 10.2
2596633	2011, Evaluate the efficacy of MBI-106020 Against <i>Phytophtora infestans</i> on
	yomato (indoor), DACO: 10.1, 10.2
2596634	2011, Evaluate the Efficacy of MBI-106020 Against <i>Phytophtora infestans</i> on
	Tomato (outdoor), DACO: 10.1, 10.2
2596636	2015, Mode of Action of Regalia (Reynoutria sachalinensis), DACO: 10.1, 10.2
2596637	2015, Determination of Efficacy of MBI 106020 Against <i>Monolinia</i> in Stone
	Fruit, 2 Sites in EU Southern Zone 2011, DACO: 10.1, 10.2
2596638	2015, Determination of Efficacy of MBI 106020 Against Monolinia in Stone
	Fruit, 2 Sites in EU Southern Zone 2011, DACO: 10.1, 10.2
2596639	2011, Determination of Efficacy of MBI 106020 Against Phytophthora infestans
	in Protected Tomato, 1 Site in EU Central Zone 2011, DACO: 10.1, 10.2
2596640	2011, Determination of Efficacy of MBI 106020 Against Powdery Protected
	Tomato, 1 Site in EU Central Zone 2011, DACO: 10.1, 10.2
2596641	2013, MBI 106020: Determination of the Efficacy of MBI 106020 for the Control
	of Powdery Mildew in Protected Tomato, 4 sites in EU Central Zone 2012,
	DACO: 10.1, 10.2
2596642	2013, MBI 106020: Determination of the Efficacy of MBI 106020 for the Control
	of Powdery Mildew in Protected Tomato, 4 sites in EU Central Zone 2012,
	DACO: 10.1, 10.2
2596643	2013, MBI 106020: Determination of the Efficacy of MBI 106020 for the Control
	of Powdery Mildew in Protected Tomato, 4 sites in EU Central Zone 2012,
	DACO: 10.1, 10.2
2445123	2013, Raspberry Botrytis Trial, 3 Application Efficacy Screening Trial, DACO:
	10.2.3.3
	2

2445124 2010, Efficacy of Regalia Alone and in Tank Mixes to Control Powdery Mildew in Gerbera Daisies (Gerbera jamesonii L.), DACO: 10.2.3.3 2010, Efficacy of Fungicides on Sphaerotheca pannosa on Rose, DACO: 10.2.3.3 2445125 2010, Efficacy of Regalia and Regalia Maxx to Prevent Powdery Mildew 2445126 Infection in Gerbera Daisies (Gerbera jamesonii L.), DACO: 10.2.3.3 2010, Evaluation of Fungicides for the Control of Downy Mildew on Coleus, 2445127 DACO: 10.2.3.3 2012, Fungicides for Mummy Berry Control on "Powderblue", "Vernon" and 2445128 "Ochlockonee" in North Carolina, DACO: 10.2.3.3 2011, Control of Powdery Mildew and Other Diseases by Experimental 2445129 Fungicides and Mixed Schedules on Ida Red Apples, DACO: 10.2.3.3 2009, Evaluation of Compounds for Management of Late Blight in Tomato, Fall 2445130 DACO: 10.2.3.3 2445131 2010, Evaluation of Compounds for Management of Late Blight in Tomato, Spring DACO: 10.2.3.3 2011, FSSB Fungicide Field Trial - New England Fruit Consultants, DACO: 2445132 10.2.3.3 2012, Comparison of Fungicides for Management of Cherry Powdery Mildew and 2445133 Leaf Spot, 2012, DACO: 10.2.3.3 2012, Evaluate the Efficacy of MBI-10605, for Control of Brown Rot (Monilinia 2445134 fructicola) of Fruit on Peaches Under Field Conditions, DACO: 10.2.3.3 2011, Fungicide Evaluation for *Phytophthora* Blight of Bell Pepper Percent Dead 2445135 and Wilted Plants Due to Phytophthora, DACO: 10.2.3.3 2445136 2013, Marrone Bio Innovations Canola White Mold Trial, DACO: 10.2.3.3 2010, Foliar Anthracnose (Colletotrichum cereale), DACO: 10.2.3.3, 10.3.2 2445137 2010, Safety of Regalia on Eight Rose Cultivars, DACO: 10.2.3.3, 10.3.2 2445138 2009, IR-4 Ornamental Horticulture Program Research Report Form, DACO: 2445139 10.2.3.3, 10.3.2 2013, Turfgrass Pathology Report, Part 1 Michigan State University, DACO: 2445140 10.2.3.3, 10.3.2 2011, Crown Rot Anthracnose Report, DACO: 10.2.3.3, 10.3.2 2445141 2445142 2011, Brown Patch (Rhizoctonia solani), DACO: 10.2.3.3, 10.3.2 2010, Preventive Dollar Spot (Sclerotinia homoeocarpa/Rutstroemia floccosum), 2445143 DACO: 10.2.3.3, 10.3.2 2445144 2011, Michigan State University 2010 - 2011 Turfgrass Pathology Report, Part II, DACO: 10.2.3.3,10.3.2 2010, IR-4 Ornamental Horticulture Program Research Report, Efficacy of 2445146 Management Tools for Downy Mildew, DACO: 10.2.3.3, 10.3.2 2008, Effect of Fungicides and Biorational Products on Brown Patch on a 2445147 Colonial Bentgrass Fairway: Rutgers University, DACO: 10.2.3.3, 10.3.2 2008, Preventive Control of Dollar Spot with Fungicides and Biorational Products 2445148 on a Creeping Bentgrass Green: Rutgers University, DACO: 10.2.3.3, 10.3.2 2008, Effect of Fungicides and Biorational Products on Brown Patch on a 2445149 Colonial Bentgrass Fairway: Rutgers University, DACO: 10.2.3.3, 10.3.2 2008, Preventive Control of Dollar Spot with Fungicides and Biorational Products 2445150 on a Creeping Bentgrass Green: Rutgers University, DACO: 10.2.3.3, 10.3.2

2445151	2008, Effect of Fungicides and Biorational Products on Brown Patch on a
	Colonial Bentgrass Fairway: Rutgers University, DACO: 10.2.3.3, 10.3.2
2445152	2012, Fungicide Efficacy and Selectivity of MBI 106020 and MBI 106005 on
	Powdery Mildew (Sphaerotheca fuliginea) on Protected Cucurbits (greenhouse) in
	Spain, DACO: 10.2.3.3,10.3.2
2445153	2013, An Evaluation Of The Efficacy Of MBI-106020 And MBI-106005 Against
	Botrytis Cinerea On Grapevine, DACO: 10.2.3.3, 10.3.2
2445154	2012, An Evaluation Of The Efficacy Of MBI-106020 And MBI-106005 Against
	Botrytis Cinerea On Grapevine, DACO: 10.2.3.3, 10.3.2
2445155	2012, An Evaluation Of The Efficacy Of MBI-106020 And MBI-106005 Against
	Botrytis Cinerea On Grapevine, DACO: 10.2.3.3, 10.3.2
2445156	2013, An Evaluation Of The Efficacy Of MBI-106020 And MBI-106005 Against
	Botrytis Cinerea On Grapevine, DACO: 10.2.3.3, 10.3.2
2445157	2011, Efficacy of Regalia as Compared to Other Organically Certified Products
	for Control of Erysiphe necator in Grape, DACO: 10.2.3.3, 10.3.2
2445158	2012, Evaluation of the Efficacy of MBI-106005 Against <i>Uncinula necator</i> on
	Grapevine, DACO: 10.2.3.3, 10.3.2
2445159	2013, Evaluate the Efficacy of MBI-106020 and MBI-106005 Against <i>Botrytis</i>
	cinerea on Grapevine, DACO: 10.2.3.3,10.3.2
2445160	2013, MBI 106020: Determination of the Efficacy of MBI 106020 for the Control
	of Powdery Mildew in Protected Cucurbits, 3 sites in EU Southern Zone 2012,
	DACO: 10.2.3.3, 10.3.2
2445161	2013, MBI 106020: Determination of the Efficacy of MBI 106020 for the Control
	of Powdery Mildew in Protected Cucurbits, 3 sites in EU Southern Zone 2012,
	DACO: 10.2.3.3, 10.3.2
2445162	2013, MBI 106020: Determination of the Efficacy of MBI 106020 for the Control
	of Powdery Mildew in Protected Cucurbits, 3 sites in EU Southern Zone 2012,
	DACO: 10.2.3.3, 10.3.2
2445163	2010, Efficacy of MBI-106050 for Control of Sphaerotheca macularis and
	Botrytis cinerea in Strawberry, DACO: 10.2.3.3, 10.3.2
2445165	2012, Control of White Mold in Potatoes, DACO: 10.2.3.3, 10.3.2
2445166	2012, Regalia for Control of White Mold in Canola, DACO: 10.2.3.3, 10.3.2
2445167	2013, Plant Heath on Soybeans 1, DACO: 10.2.3.3, 10.3.2
2445168	2011, Regalia Alone and with Endura for White Mold Control in Potatoes,
	DACO: 10.2.3.3, 10.3.2
2445169	2013, Evaluate Registered and Candidate Fungicides for the Control of Early Rot
	in Wisconsin Cranberries - Goodwin Marsh, DACO: 10.2.3.3, 10.3.2
2445170	2013, Evaluate Registered and Candidate Fungicides for the Control of Fruit Rot
	in Wisconsin Cranberries - Prehn Marsh Marrone, DACO: 10.2.3.3, 10.3.2

B. Additional Information Used

Published Information

Canadian Council of Ministers of the Environment, April 26, 2016, Canadian Water Quality Guidelines for the Protection of Aquatic Life, 1, 4-Dioxane. http://ceqg-rcqe.ccme.ca/download/en/321

Chemical Substances. Government of Canada, April 26, 2016, (1,4-Dioxane,). http://www.chemicalsubstanceschimiques.gc.ca/challenge-defi/summary-sommaire/batch-lot-7/123-91-1-eng.php

Air & Radiation, United States Environmental Protection Agency, April 26, 2016, Technical Fact Sheet, 1,4-Dioxane. http://www3.epa.gov/airtoxics/hlthef/dioxane.html

Scientific Committee on Food, European Commission, April 26, 2016, Opinion of the Scientific Committee on Food on impurities of ethylene oxide in food additives. http://ec.europa.eu/food/fs/sc/scf/out127_en.pdf

ISSN: 1911-8082

8 Her Majesty the Queen in Right of Canada, represented by the Minister of Public Works and Government Services Canada 2016

All rights reserved. No part of this information (publication or product) may be reproduced or transmitted in any form or by any means, electronic, mechanical photocopying, recording or otherwise, or stored in a retrieval system, without prior written permission of the Minister of Public Works and Government Services Canada, Ottawa, Ontario K1A 0S5.