



Evaluation Report for Category B, Subcategory 3.1, 3.11, 3.4 Application

Application Number: 2014-2242
Application: Changes to Product Labels – Application Rate Increase or Decrease, New Pests and Application Method
Product: Lacto-San
Registration Number: 30110
Active ingredients (a.i.): Citric Acid and Lactic Acid
PMRA Document Number : 2484536

Background

The end-use product Lacto-San is currently registered in Canada as a commercial fungicide and bactericide on various field and greenhouse crops and ornamentals.

Purpose of Application

The purpose of this application was to reduce the application rate for some uses, to change the expression of the application rate for some uses, and to expand the use of squashes/pumpkins to the entire Crop Group 9B for Lacto-San. Lacto-San contains citric acid and lactic acid, present as fermentation products of *Lactobacillus casei strain LPT-111*, hereby referred to as citric acid and lactic acid.

Chemistry Assessment

As there were no changes to the formulation, a chemistry assessment was not required.

Health Assessments

The changes to the use pattern involve a decrease in application rates and expansion to crops related to those which are part of the current use pattern for Lacto-San.

Based on the evaluation of information previously submitted by the registrant in support of Lacto-San, there is no concern for chronic risks posed by the dietary exposure of the general population and sensitive subpopulations, such as infants and children. Existing label statements instruct users not to contaminate irrigation and drinking water supplies during use or disposal. Furthermore, the level of citric acid and lactic acid in drinking water from the use of Lacto-San is expected to be much lower than levels already consumed in the Canadian diet from other sources given that citric acid and lactic acid are routinely used in food production. Municipal treatment of drinking water will also reduce the transfer of residues to drinking water. Therefore, potential exposure to citric acid and lactic acid in surface and drinking water is also negligible.

The existing precautionary statements, including personal protective equipment, are adequate to

mitigate the risks from exposure to citric acid and lactic acid from the use of Lacto-San and no revisions to the product labels are required to accommodate the changes to the use pattern.

Therefore, the PMRA is satisfied that the changes to the use pattern of Lacto-San will not pose an unacceptable risk to human health.

Environmental Assessment

Based on the evaluation of information previously submitted by the registrant in support of Lacto-San, the PMRA is satisfied that the changes to the use pattern of Lacto-San will not pose an unacceptable risk to the environment. The appropriate precautionary statements have been included on the label and no revisions are required to accommodate the requested changes.

Value Assessment

Based on the value information submitted in the form of efficacy data and rationales, the following uses and claims were supported:

- Suppression of powdery mildew on greenhouse cucumbers (*Podosphaera xanthii*; *Erysiphe cichoracearum*, synonym *Golovinomyces cichoracearum*) at a reduced rate of 1.2–2.4% solution, apply to run-off, based on efficacy data from two trials;
- Suppression of powdery mildew (*Podosphaera xanthii*) on squashes and pumpkins, at a reduced rate of 8.4-16.8 L/ha, in a spray volume of 500-700 L/ha, based on a scientific rationale where the similarity of these crops with greenhouse cucumber and a common disease pathogen was addressed;
- Expansion of the use of Lacto-San on the entire Crop Group 9B, field cucurbits, based on a scientific rationale addressing the use on squashes and pumpkins.

For the suppression of powdery mildew (*Sphaerotheca macularis* f. sp. *fragariae*) on strawberries an increase in the spray volume from 200 L/ha to 600-800 L/ha was supported, while for the suppression of angular leaf spot (*Xanthomonas fragariae*) on strawberries an increase in the spray volume from 200 L/ha to 600-800 L/ha was supported.

The value of expanding the crop list for field cucurbits will be to provide growers with another tool in managing powdery mildew (*Podosphaera xanthii*) for crops not currently listed.

Conclusion

The Pest Management Regulatory Agency has completed an assessment of the available information and is able to support the amendments to the product label for Lacto-San.

References

PMRA Document Number	References
2436042	2012, Determination of biologically acceptable activity, of different hydrolyzate liquid garlic formulation compared and mixed with lacto-fermented residue and a

- formulation based on potassium bicarbonate on the fungus *Podosphaera xanthii* in cucumber (*Cucumis sativus*), DACO: 10.2.2.
- 2436043 2012, Determination of biologically acceptable activity of different concentrations of lacto-fermented residue on the fungus *Podosphaera xanthii* (powdery mildew) in the culture of cucumber (*Cucumis sativus*), DACO: 10.2.2.
- 2436045 2013, Effectiveness of AEF-11-14 (Tivano) against *Sphaerotheca macularis* f. sp. *fragariae*, causal agent of powdery mildew in strawberry, DACO: 10.2.2.
- 2436046 2013, Efficacité d'AEF-11-14 (lacto-fermenté) seul ou en mélange avec un surfactant non ionique en comparaison de l'AEF-13-01 (huile de pin) pour le contrôle du blanc (*Sphaerotheca macularis*) dans la culture de la fraise (*Fragaria*), DACO: 10.2.2.
- 2436047 2008, Évaluation de l'efficacité du biofongicide Lacto-San pour atténuer le blanc (*Sphaerotheca macularis* f. sp. *Fragariae*) chez le fraisier (*fragaria x ananassa*), DACO: 10.2.2.
- 2436048 2013, Efficacité du AEF-11-14 (Tivano) contre *Xanthomonas fragariae*, agent de la tache angulaire du fraisier, DACO: 10.2.2.
- 2472595 2014, Efficacy: Small-scale Trials (Field and Greenhouse) answer to deficiency, DACO: 10.2.3.3.
- 2472596 2014, Efficiency evaluation of various active ingredients against *Sphaerotheca macularis* f. sp. *fragariae*, causal agent of Powdery mildew in strawberries, DACO: 10.2.3.3.
- 2472597 2014, Évaluation de différentes matières actives contre la tache angulaire dans la culture de la fraise, DACO: 10.2.3.3.

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