



Evaluation Report for Category B, Subcategory 3.11 Application

Application Number: 2013-5440
Application: New Pest
Product: Raxil Pro Concentrate Seed Treatment Fungicide
Registration Number: 30687
Active ingredients (a.i.): Tebuconazole, prothioconazole, metalaxyl
PMRA Document Number : 2384037

Background

Raxil Pro Concentrate Seed Treatment Fungicide, containing 15.5 g/L tebuconazole, 77.0 g/L prothioconazole and 6.2 g/L metalaxyl, was first registered December 6, 2012. Raxil Pro Concentrate Seed Treatment Fungicide is registered for application at the rate of 65 ml (1 g tebuconazole + 2 g prothioconazole + 1 g metalaxyl)/100 kg seed of wheat, barley and oats for control or suppression of numerous soil and/or seed-borne diseases, such as seed rot, pre-emergent damping off and crown rot by seed and soil-borne *Fusarium* spp., *Cochliobolus sativus* and soil-borne *Pythium*. For specific details of uses, application rates and methods, precautions, restrictions, and personal protective equipment requirements, refer to the product label.

Purpose of Application

The purpose of this application was to add a claim of suppression of seed rot, pre-emergent damping off and root rot caused by *Rhizoctonia solani* to the registration of Raxil Pro Concentrate Seed Treatment Fungicide to seed at the labelled rate of 8 g a.i./100 kg seed of wheat, barley and oats. An application (App. No. 2013-5438) to similarly expand the registration of the related product, Raxil Pro Fungicide, was concurrently submitted and reviewed.

Chemistry, Health and Environmental Assessments

A chemistry assessment was not required since there was no change to product chemistry. Health and environmental assessments were not required since the use pattern, including host crops, application rate and timing, remained unchanged.

Value Assessment

Reports of two field trials conducted in Montana in 2008 and 2012, and one of a greenhouse trial conducted in Washington State in 2008, were submitted in which the efficacy of Raxil Pro or Raxil Pro Concentrate was evaluated for suppression of root rot of spring wheat caused by *Rhizoctonia solani*. All three trials were artificially inoculated with *R. solani*.

In the trials conducted in 2008, all treatments, including the untreated inoculated check (IC) and

the untreated non-inoculated check (NIC), included metalaxyl to control seed rots or damping off due to oomycete pathogens, such as *Pythium* species. In the field trial, the total seedling count 14 days after planting (DAP) in the Raxil Pro treatment was greater than that of the IC and similar to that for the NIC and the commercial standard treatment of Evergol Energy (Reg. No. 30364) applied at the labelled rate of 2.5 g penflufen + 5 g prothioconazole + 4 g metalaxyl/100 kg seed; the registration of Evergol Energy includes a claim of control of early season root rot and seedling blight caused by *R. solani*, but only in peas, beans and soybeans. Root rot damage, as determined 45 DAP by a visual examination of root mass and degree of discolouration and rated on a scale of 1 (poor root growth) to 3 (very good root growth), observed in the Raxil Pro treatment was similar to that for Evergol Energy and the NIC, and lower than that observed in the IC. In the greenhouse trial, at three weeks after planting, the percentage of seminal roots infected with *R. solani* in the Raxil Pro treatment was similar to that for Evergol Energy and lower (i.e., more effective) than that for the IC. The mean root rot damage, visually assessed on a scale of 0 (no rot) to 8 (almost no roots remaining), in the Raxil Pro treatment was similar to that for Evergol Energy and numerically lower than that for the IC.

The field trial conducted in 2012 included a treatment of Raxil Pro Concentrate applied at the same labelled rate as Raxil Pro, on an active ingredient basis. This trial also included a treatment of Evergol Energy. There was a significant difference between the IC and the NIC at 58 days after planting in terms of *Rhizoctonia*-caused root rot as determined by a visual examination of root mass and degree of discolouration. Raxil Pro Concentrate had the same root rot rating as Evergol Energy, in between that of the IC and the NIC.

A claim of suppression of *Rhizoctonia solani*-caused diseases, specifically seed rot, pre-emergent damping off and root rot in spring wheat is consistent with the data generated in the three trials discussed above. The claims were also extrapolated to winter wheat, durum wheat, barley and oats since *Rhizoctonia solani* is considered a non-host-specific soil pathogen, as it has a wide host range, and the root and seedling diseases caused by this pathogen are common on the listed cereal crops.

The availability of Raxil Pro Concentrate for suppression of seed rot, pre-emergent damping off and root rot caused by *Rhizoctonia solani* in wheat, barley and oats will provide growers an alternative product that is also of a different mode of action (i.e. FRAC Group 3) than sedaxane (FRAC Group 7), the only other active ingredient available for control of *Rhizoctonia solani*-caused seed decay, seedling blight and damping off in these crops.

Conclusions

The PMRA has completed an evaluation of the subject application and has found the submitted information sufficient to amend the registration of Raxil Pro Concentrate Seed Treatment Fungicide to include a claim of suppression of seed rot, pre-emergent damping off and root rot caused by *Rhizoctonia solani* when applied to seed of wheat (spring, durum winter), barley and oats at the labelled rate of 65 ml per 100 kg seed.

References

List of Studies/Information Submitted by Registrant

Value Assessment

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| 2351181 | 2013, Raxil Pro and Raxil Pro Concentrate Seed Treatment Fungicides - Suppression of Seed Rot / Pre-emergence Damping-off and Root Rot caused by Rhizoctonia solani, DACO: 10.1,10.2.2,10.2.3.1,10.2.3.3(D) |
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