

US EPA ARCHIVE DOCUMENT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

11-7-85

NOV 7 1985

OFFICE OF  
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: EPA: SLN TX 850018: Iprodione (Rovral), Aerial  
Application to Dry Bulb Onions. Access. No. 259411  
RCB No. 135

FROM: J. Garbus, Chemist <sup>\$</sup>  
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Hazard Evaluation Division (TS-769)

THRU: A. Rathman, Section Head  
Special Registration Section I  
Residue Chemistry Branch  
Hazard Evaluation Division (TS-769)

TO: H. Jacoby, PM-21  
Registration Division (TS-767C)

The Department of Agriculture of the State of Texas has approved an application from Rhone-Poulenc Inc. for a special local need registration for the aerial application of iprodione (Rovral, EPA No. 359-685) to dry bulb onions and for changes in application rates and usage patterns. The special local need was approved by the Texas Department of Agriculture as of 8/28/85 and is due to expire 8/27/90.

Rovral® is Rhone-Poulenc's designation for its fungicide iprodione, 3-(3,5-dichlorophenyl)-N-(1-methylethyl)-2,4-dioxo-1-imidazolidinecarboxamide. The wettable powder formulation for use on dry bulb onions consists of 50% iprodione and 50% cleared inerts.

A tolerance of 0.5 ppm is established for the combined residue, consisting of the parent compound and the metabolites of iprodione, 3-(1-methylethyl)-N-(3,5-dichlorophenyl)-2,4-dioxo-1-imidazolidinecarboxamide (also designated as RP 30228), and 3-(3,5-dichlorophenyl)-2,4-dioxo-1-imidazolidinecarbamide (RP 32490) in or on dry bulb onions (40 CFR 180.399).

The present registered use of iprodione on dry bulb onions allows for ground application of 0.75 lbs a.i./A in 50 to 100 gallons of water. Iprodione is applied as a foliar spray at 7 day intervals to control Botrytis leaf blight (Botrytis squamosa) and purple blotch (Alternaria porii) when conditions favor disease development. Up to 10 applications can be made per season (7.5 lb a.i. total) with a 7 day PHI after the last application.

The SLN label for Texas increases the rate to 1.0 lb a.i./A

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allows for aerial application in a minimum of 6 gallons/A, and reduces the PHI to 4 days. Four applications may be made per season (4 lb a.i. total). The restrictions on worker reentry remain unchanged.

Radiolabel studies carried out on other plants, i. e., strawberries, wheat, peaches, and lettuce, have shown a common pathway in the metabolism of iprodione. Based on these studies, RCB, (E. Haeberer, memo 11/28/84), has concluded that the metabolism by dry bulb onions would be similar, and that the residue of concern would consist of iprodione, per se, its isomer 3-(1-methylethyl)-N-(3,5-dichlorophenyl)-2,4-dioxo-1-imidazolidinecarboxide (RP 30228), and the metabolite 3-(3,5-dichlorophenyl)-2,4-dioxo-1-imidazolidinecarboxamide (RP 32490).

The analytical method (Rhone-Poulenc No.151) determines the parent compound and the metabolites. Samples are extracted with aqueous acetone, partitioned into ethyl acetate/dichloromethane, and cleaned up by gel permeation chromatography. The parent iprodione and its isomer RP 30228 are separated as one fraction from the metabolite RP 32490 on a Florisil column. The separated fractions are individually subjected to GLC under different conditions for the parent, the RP 30228 isomer and the metabolite RP 32490. The level of sensitivity is given as 0.05 ppm. Recoveries ranged from 83.9% to 111.8% for onion samples spiked with each of the three compounds.

Two residue trials were conducted on one acre plots of bulb onions in Texas. Four aerial applications were made at a rate of 1.0 lb a.i./A in a 6 gallons of water with 5 to 13 days between applications. Four days after the last application, samples were randomly collected, composited, and frozen for storage and analysis by Rhone-Poulenc Method 151.

All samples of onions treated according to the proposed SLN usage had residues levels given as 0.00 ppm (<0.05 ppm) of the parent compound and the two other metabolites. Check samples are reported as N.D., i.e., no detectable peak at the relevant retention time.

Prior residue studies of iprodione on bulb onions were conducted with ground application with a greater number of applications but at a lower rate per application. The cumulative total applied per growing season in these trials was greater than the total in the present trials (7.5 lbs a.i. vs 4 lbs a.i.) At a PHI slightly longer than that of the current trials, (7 days vs 4 days), combined residue levels also were reported as 0.00 ppm (W. Anthony, memo of 9/9/84 reviewing Section 18 request 84-WA-12)

We conclude that the proposed usage of the Texas SLN label will not result in combined residues of iprodione, RP 30228, and RP 32490 in or on dry bulb onions greater than the established tolerance of 0.5 ppm.

As onions are not considered a feed item for livestock, we do not anticipate problems with secondary residues.

Conclusions

The metabolic fate of iprodione applied to bulb onions is adequately delineated. The residue of concern consists of iprodione, per se, its isomer 3-(1-methylethyl)-N-(3,5-dichlorophenyl)-2,4-dioxo-1-imidazolidinecarboxide (RP 30228), and the metabolite 3-(3,5-dichlorophenyl)-2,4-dioxo-1-imidazolidinecarboxamide (RP 32490).

An adequate analytical method is available for enforcement.

The usage pattern proposed for the Texas SLN label will not result in combined residues of iprodione, RP 30228, and RP 32490 in or on dry bulb onions greater than the established tolerance of 0.5 ppm.

Recommendation

We recommend that the proposed Special Local Need registration under Section 24(c) be approved.

cc: Section 24 (c) F., S.F., R. F., Circ., Reviewer, PMSD/ISB  
RDI:ARR: 11/7/85:RDS:11/7/85  
TS-769C:RCB:JG:jg:557-1864:CM#2:Rm.708:11/7/85