DP Barcode: D161214
Shaughnessy No.: 109801
Date Out of EFGWB: SEP 5 1991

TO: Susan Lewis/James Stone
Product Manager #21
Registration Division (H7505C)

FROM: Emil Regelman
Supervisory Chemist, Review Section #2
OPP/EFED/EFGWB (H7507C)

THROUGH: Henry Jacoby, Chief
OPP/EFED/EFGWB (H7507C)

Attached, please find the EFGWB review of:

Reg./File #(s) : 000264-00453

Common Name : Iprodione Technical

Chemical Name : 3-(3,5-Dichlorophenyl)-N-(1-methylethyl)-2,4-dioxo-1-imidazolidinecarboxamide or 3-(3,5-dichlorophenyl)-N-isopropyl-2,4-dioxoimidazolidine-1-carboxamide

Product Type : Fungicide

Product Name : Rovral Fungicide

Company Name : Rhône-Poulenc Agricultural Company

Purpose : Provide comments on Rotational Crop statement in current label.

Date Received: 2/11/91 **Action Code:** 305

Date Completed: 9/5/91 **EFGWB #(s):** 91-0402

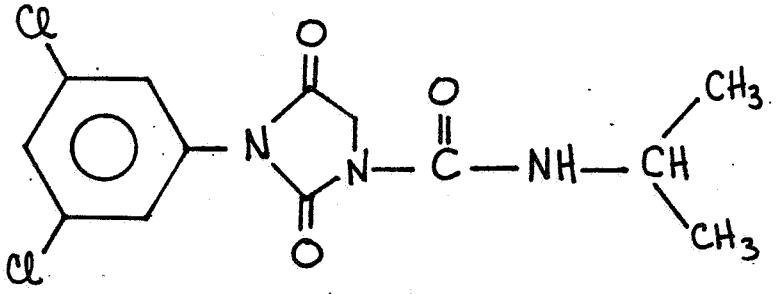
Total Reviewing Time: 1 day

Deferrals to:

_____Ecological Effects Branch/EFED
_____Science Integration & Policy Staff/EFED
_____Non-Dietary Exposure Branch/HED
_____Dietary Exposure Branch/HED
_____Toxicology Branch I, II/HED

1. **CHEMICAL:**

Chemical Name: 3-(3,5-Dichlorophenyl)-N-(1-methylethyl)-2,4-dioxo-1-imidazolidinecarboxamide or 3-(3,5-dichlorophenyl)-N-isopropyl-2,4-dioxoimidazolidine-1-carboxamide
CAS No.: 36734-19-7
Common Name: Iprodione
Trade Names: Rovral, RP 26019, Glycophene, Chipco 26019, LFA 2043, NCR 910, ROP 500 F.
Chemical Structure:



Molecular Formula: $C_{13}H_{13}Cl_2N_3O_3$
Molecular weight: 330.15 g/mol
Physical/Chemical Properties of Active Ingredient:

Physical state: Non-hygroscopic crystals
Color: White
Odor: Odorless
Solubility at 20 °C: 13 mg/L water; 300 mg/L acetone, acetophenone, anisole; 500 g/L methylene chloride, dimethylformamide, 1-methyl-2-pyrrolidone; 25 g/l ethanol, methanol; 200 mg/L benzene.
Vapor pressure (at 20 °C): $< 1.0 \times 10^{-5}$ mm Hg (< 0.133 mPa)
Melting point: ca. 136 °C
Formulations: 50% WP

Active ingredient	50%
Inert ingredients	50%

2. **TEST MATERIAL:**

Not applicable; no studies were submitted for review.

3. **STUDY/ACTION TYPE:**

Provide comments on Rotational Crop statement in current label.

4. **STUDY IDENTIFICATION:**

Not applicable; only labels were submitted for review.

5. **REVIEWED BY:**

María Isabel Rodríguez
Chemist, Review Section #2
OPP/EFED/EFWGB

Signature: María Isabel Rodríguez
Date: September 5, 1991.

6. **APPROVED BY:**

Emil Regelman
Supervisory Chemist
Review Section #2
OPP/EFED/EFWGB

Signature:
Date: SEP 5 1991

7. **CONCLUSIONS:**

After reviewing Rovral Fungicide's amended label, the EFGWB has several comments.

Not all the possible degradates/metabolites for iprodione are known. If these degradates are uptaken by crops, they would not be covered by the current tolerance expression.

The statement on "root crops" is too general. There are no rotational crop data on all the crops included under "root crops."

8. **RECOMMENDATIONS:**

The company should be informed that the EFGWB does not have adequate data to support the rotational crops statement on the current label. They should be informed that based on submission of an acceptable Confined Rotational Crop study, the possibility exists for the need of rotational crop tolerances and revisions or deletions to their present rotational crop statement.

Only those commodities with established tolerances or not showing residues of the parent compound and/or its degradates, can be rotated. Since degradates, other than those listed in the current tolerance regulation, could arise and be taken up at level considered toxicologically significant in rotational crops, the possibility exists that present tolerance expression is not adequate to support the present rotational crop statement. No determination can be made until the EFGWB reviews and evaluates the results of adequate Confined Rotational Crop studies. These studies must be carried out in a manner that allows for identification of all moieties that are present at 10% of the total ^{14}C taken up in the rotated crop.

The registrant should also be informed that if they want to add specific root crops to the label, Confined Rotational Crop studies have to be conducted and tolerances have to be established for them.

9. **BACKGROUND**:

A. Introduction:

On 12/17/87, EAB concurred with rotation of garlic, dry bulb onions, lettuce and peanuts after harvest since tolerances had previously been established. (EAB Review #71005 dated 12/17/87)

On 12/31/87, EAB concurred with rotation of tomatoes, cotton, and root crops one month after the last iprodione treatment since no residues of parent, its isomer, or degradates showed up in the experiments. The tests were based on a limit of detection of 0.05 ppm. (EAB Review #80036 dated 12/31/87)

During the years 1983 to 1987, several (7) reviewers from the EFGWB had requested from the registrant, Rhône-Poulenc Agricultural Company, rotational crops data in 13 different environmental-fate data reviews and Radiolabeled, Confined-Rotational Crop studies for root crops, small grains, and leafy vegetables in order to establish the need for a rotational crop statement or rotational crop tolerances covering the use of Iprodione for Terrestrial Food Crops.

On 11/21/88, the registrant submitted a study to fulfill the data-requirements for Field-Rotational Crops (Guidelines Reference #165-2) (MRID # 408818-01), and the study was found to be unacceptable. The EFGWB did not concur with an EUP Application for aerial spraying of Rovral 4F on beans, potatoes, and dry bulb onions pending submission of a Confined-Rotational Crops Study (Guidelines Reference #165-1) (EFGWB Review #90-0324 dated 7/12/89)

On 1/2/90, the registrant requested an EUP for aerial spraying of Rovral 4F on beans, potatoes, and dry bulb onions prior to submission/review of previously requested Confined-Rotational Crops study (EFGWB Review #90-0005 dated 1/2/90)

At that time, the registrant argued that tolerances and registrations have already been obtained on these crops, that ground application to these crops has already been allowed and, that some states have granted 24(c) registrations for aerial application on these crops. The registrant did not mention which states granted the 24(c) registrations and no evidence could be found in the EFGWB files.

On 10/1/90, the registrant submitted a Confined-Rotational Crops study (165-1) (MRID #412471-01) for review and it was found to be unacceptable. At that time, the EFGWB strongly recommended that a protocol be submitted prior to a new study. (EFGWB Review #90-0373 dated 10/1/90)

On 5/8/91, Confined Rotational Crops study protocol was submitted for review and the EFGWB conluded that it was complete and could be performed as described. (EFGWB Review #91-0398)

Evidence indicates that iprodione and its major degradate, RP-

30228, are fairly persistent (one to 12 weeks) in soil and that iprodione would have a low potential to leach to groundwater. (EAB Review #71007 dated 12/12/87)

B. Directions for Use

Iprodione is a contact fungicide active against a broad spectrum of diseases including Botrytis, Sclerotinia, Monilinia, Alternaria, Helminthosporium, Fusarium, and Rhizoctonia. According to the label, it is registered for use on field and vegetable (lettuce, broccoli, carrots, onions, garlic, beans, peanuts, potatoes, caneberries, and ginseng) and orchard (apricots, cherries, nectarines, peaches, plums, prunes, almonds, and grapes) crops. The maximum application rates are 4.0 lb ai/A on field and vegetable crops and 2.0 lb ai/A on orchard crops.

10. DISCUSSION OF INDIVIDUAL STUDIES:

Only the product label was submitted for review. The current rotational crop statements in the label are as follows:

> "The following crops may be rotated after harvest: Garlic, Dry Bulb Onions, Broccoli, Lettuce, Peanuts, Carrots, Beans, and Potatoes."
>
> "The following crops may be rotated 1 month following the last Iprodione application: Root crops, Tomatoes, and Cotton."

According to the 40 CFR § 180.399 the following tolerances have been established for the combined residues of iprodione [3-(3,5-dichlorophenyl)-N-(1-methylethyl)-2,4-dioxo-1-imidazolidinecarboxamide], its isomer 3-(1-methylethyl)-N-(3,5-dichlorophenyl)-2,4-dioxo-1-imidazolidinecarboxamide, and its metabolite 3-(3,5-dichlorophenyl)-2,4-dioxo-1-imidazolidinecarboxamide:

Commodities	Parts per million (ppm)
Garlic	0.1
Dry Bulb Onions	0.5
Broccoli	25.0
Lettuce	25.0
Peanuts	0.5
Carrots	5.0
Beans	
-Dried, vine hay	90.0
-Dry	2.0
-Forage	90.0
-Succulent	2.0
Potatoes	0.5

No tolerances have yet been established for tomatoes, cotton and other root crops besides garlic, onions and carrots.

11. COMPLETION OF ONE-LINER:

Not applicable; the One-liner data-base was last updated on 8/14/91.

12. CBI INDEX:

Not applicable.

ATTACHMENTS

DP BARCODE: D161214

CASE: 002908
SUBMISSION: S390597

DATA PACKAGE RECORD
BEAN SHEET

DATE: 02/11/91

* * * CASE/SUBMISSION INFORMATION * * *

CASE TYPE: REGISTRATION ACTION: 305 TECH-LBL REV AMND DATA RE
CHEMICAL: 109801
ID#: 000264-00453 ~~ROVRAL~~ FUNGICIDE
COMPANY: 000264 RHONE-POULENC AG COMPANY
PRODUCT MANAGER: 21 SUSAN LEWIS
PM TEAM REVIEWER: JAMES STONE 703-557-1900 ROOM: CM-2 227
RECEIVED DATE: 02/11/91 DUE OUT DATE: 05/12/91 703-557-7391 ROOM: CM-2 247

* * * DATA PACKAGE INFORMATION * * *

DP BARCODE: 161214 EXPEDITE: N DATE SENT: 02/11/91 DATE RET.: / /
DP TYPE: 001 Submission Related Data Package
ADMIN DUE DATE: 03/28/91 CSF: N LABEL: Y

ASSIGNED TO	DATE IN	DATE OUT
DIV : EFED	02/14/91	/ /
BRAN: EFGB	/ /	/ /
SECT:	/ /	/ /
REVR :	/ /	/ /
CONTR:	/ /	/ /

* * * DATA PACKAGE REVIEW INSTRUCTIONS * * *

Does EFGWB have any comment on current Rotational Crop Statement? See page 2 of 12/13/90 label. BEAD which is looking for EDBC replacements where rye can be rotated in Wisconsin says current statement is impractical. Change was required by 2/8/88 Lois Rossi letter but we can not locate a reason for the language change. See Herb Manning's review dated 12/31/87.

* * * ADDITIONAL DATA PACKAGES FOR THIS SUBMISSION * * *

DP BC	BRANCH/SECTION	DATE OUT	DUE BACK	INS	CSF	LABEL

ROVRAL® Fungicide

ACTIVE INGREDIENT:
Iprodione: 3-(3,5-dichlorophenyl)-N-(1-methylethyl)-2,4-dioxo-1-imidazolidinecarboxamide.....50.0%
INERT INGREDIENTS: 50.0%
EPA Reg. No. 264-453 **EPA Est. No.:**

KEEP OUT OF REACH OF CHILDREN
CAUTION

STATEMENT OF PRACTICAL TREATMENT

IN CASE OF CONTACT: Wash skin with soap and water.

IF IN EYES: Flush with water for 15 minutes and get medical attention.

For PRODUCT USE Information Call 1-800-334-9745

For MEDICAL And TRANSPORTATION Emergencies ONLY Call 24 Hours A Day 1-800-334-7577

PRECAUTIONARY STATEMENTS

CAUTION

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Harmful if swallowed, inhaled or absorbed through skin. Avoid breathing vapor or spray mist, or contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling. Get medical attention if irritation persists. Remove contaminated clothing and wash before reuse.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to aquatic invertebrates. Do not apply directly to water or wetlands. Do not contaminate water when disposing of equipment washwater. Drift or run-off from treated areas are hazardous to aquatic invertebrates in neighboring areas.

DIRECTIONS FOR USE

IT IS A VIOLATION OF FEDERAL LAW TO USE THIS PRODUCT IN ANY MANNER INCONSISTENT WITH ITS LABELING.

REENTRY STATEMENT

Do not apply this product in such a manner as to directly or through drift expose workers or other persons. The area being treated must be vacated by unprotected persons. Do not enter treated areas without protective clothing until sprays have dried.

Because certain states may require more restrictive reentry intervals for various crops treated with this product, consult your State Department of Agriculture for further information. Written or oral warnings must be given to workers who are expected to be in a treated area or in an area about to be treated with this product. Oral warnings must be given if there is reason to believe that written warnings cannot be understood by workers and given in a language customarily understood by the workers. Oral and written warning must include the STATEMENT OF PRACTICAL TREATMENT and REENTRY STATEMENTS as they appear on the label.

STORAGE AND DISPOSAL

STORAGE

Do not contaminate water, food, or feed by storage or disposal.

PESTICIDE DISPOSAL

Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL

Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or if allowed by State and local authorities, burning. If burned, stay out of the smoke.

GENERAL CAUTIONS AND RESTRICTIONS

CROP ROTATION RESTRICTIONS FOR BEANS, BROCCOLI, CARROTS, CHINESE MUSTARD, DRY BULB ONIONS, GARLIC LETTUCE, POTATOES AND PEANUTS.

The following crops may be rotated after harvest: Garlic, Dry Bulb Onions, Broccoli, Lettuce, Peanuts, Carrots, Beans, and Potatoes.

The following crops may be rotated 1 month following the last Iprodione application: Root crops, Tomatoes, and Cotton.

GRAZING RESTRICTIONS FOR STONE FRUIT, ALMONDS AND GRAPES.

Do not graze animals in treated orchards. Do not feed cover crops grown in treated orchards to livestock.

FUNGICIDE RESISTANCE STATEMENT

ROVRAL® Brand Fungicide is a dicarboximide fungicide. Resistance developed to other dicarboximide, such as Ronilan® may result in resistance to ROVRAL®. Therefore, DO NOT EXTEND THE TOTAL NUMBER OF APPLICATIONS PER CROP ON THIS LABEL WITH Ronilan®.

HOW TO USE ROVRAL® BRAND FUNGICIDE

Partially fill the spray tank with clean water. Measure the required amount of ROVRAL® Brand Fungicide and pre-mix with a small volume of water, add this to the tank. Agitate to ensure thorough mixing while filling tank with remaining water. Maintain agitation during application and apply with properly calibrated application equipment. Do not allow spray mixture to stand overnight or for prolonged periods, as some chemical breakdown may occur, particularly in water with a high pH. The spray solution should be buffered to a PH of 5.0 - 7.0. A high quality, nonionic spreader can be used as a spray tank additive for every application with the exception of in-furrow sprays. ROVRAL® should be added to the tank prior to the addition of any adjuvant. Consult the adjuvant label or manufacturer for crop tolerance and safety information when used with ROVRAL®.

ROVRAL® BRAND FUNGICIDE IS REGISTERED FOR USE ON THE FOLLOWING:

Field and Row Crops
- Peanuts
- Rice (not registered for use in California)

Fruit Trees and Nuts
- Almonds
- Stone Fruits
  - Apricots
  - Cherries
  - Nectarines
  - Peaches
  - Plums
  - Prunes

Ginseng

Small Fruit
- Caneberries
- Grapes
- Strawberries

Vegetables
- Beans (Snap, Dry, and Lima)
- Broccoli
- Carrots
- Chinese Mustard (Florida Only)
- Dry Bulb Onions
- Garlic
- Lettuce (Head & Leaf types)
- Potatoes

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

FEB - 8 1988

Mr. Nick Somma
Rhone-Poulenc, Inc.
2 T.W. Alexander Drive
P.O. Box 12014
Research Triangle Park, N.C. 27709

Subject: Rovral Pesticide
EPA Registration Number 359-685
Your Submission Dated September 25, 1986

Dear Mr. Somma:

The amendmend referred to above, submitted in connection with registration under FIFRA sec 3(c)(7)(B), is acceptable, provided that you:

1. Submit and/or cite all data required for registration/ reregistration of your product under FIFRA sec. 3(c)(5) when the Agency requires all registrants of simiar products to submit such data.

2. Submit production information (pounds or gallons produced) for this product for the fiscal year in which the use on lettuce is conditionally registered, in accordance with FIFRA sec. 29. The fiscal year begins on October 1 and ends September 30. The production information will be submitted to the Agency no later than Novbember 15, following the end of the preceding fical year.

This information should be submitted to:

Process Coordination Branch
Registration Division (TS-767C)
Environmental Protection Agency
Washington, D.C. 20460

CONCURRENCES								
SYMBOL								
SURNAME								
DATE								

EPA Form 1320-1 (12-70) OFFICIAL FILE COPY

*U.S. GPO : 1985-467-853

3. Make the following label changes prior to releasing the product for shipment:

a. In "NOTE TO USER:" section, change "leafy vegetables" to "lettuce."

b. Change the second sentence from:

"The following crops may be rotated the year following treatment: Root Crops; Cereal Grains; Soybeans and Tomatoes" to:

"The following crops may be rotated one month following the last iprodione treatment: Root Crops, Tomatoes and Cotton."

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec 6(e) Your release for shipment of the product bearing the amended labeling constitutes acceptance of these conditions.

A stamped copy of the labeling is enclosed for your records.

Sincerely yours,

Lois A. Rossi
Product Manager (21)
Fungicide-Herbicide Branch
Registration Division (TS-767C)

SUPPLEMENTAL LABELING
EPA Reg. No. 359-685

Product Number
3357

ROVRAL® FUNGICIDE

RHONE POULENC

HOW TO USE ROVRAL ON LETTUCE

Apply as a foliar spray in sufficient water to obtain thorough coverage (50 - 100 gallons per acre).

HOW TO APPLY ROVRAL

DISEASE	DOSAGE RATE LBS. PRODUCT/ ACRE
Lettuce Drop *(Sclerotinia spp.)* Bottom Rot *(Rhizoctonia solani)*	1.5 - 2.0

ACCEPTED with COMMENTS In EPA Letter Dated:

FEB 8 1988

Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 359-685

Application should be made with tractor mounted boom sprayers equipped with flat fan or hollow cone nozzles directed to insure thorough coverage of the lower portion of the plants and the surrounding soil surface. Do not drench.

The higher rate should be used under severe disease conditions.

WHEN TO USE ROVRAL

Apply at the 3 leaf stage of growth and again 10 days later. If conditions still favor disease development a third application should be made 10 days after the second spray. Do not apply within 14 days of harvest.

NOTE TO USER: The following crops may be rotated after harvest:
Garlic, Dry Bulb Onions, Leafy Vegetables and Peanuts.

The following crops may be rotated the year following treatment:
Root Crops; Cereal Grains; Soybeans and Tomatoes.

Do not make more than 3 applications of Rovral per season.

This labeling must be in the possession of the user at the time of pesticide application.

All applicable directions, restrictions, and precautions on the EPA-registered label are to be followed.

0986

RHÔNE-POULENC INC.
AGROCHEMICAL DIVISION
Monmouth Junction, N.J. 08852

Shaughnessy No.: 109801

Date Out of EAB: DEC 31 1987

To: Lois Rossi
Product Manager # 21
Registration Division (TS-767)

From: Therese M. Dougherty, Chief
Environmental Chemistry Review Section 1
Exposure Assessment Branch
Hazard Evaluation Division (TS-769-C)

THRU: Paul F. Schuda, Chief
Exposure Assessment Branch/HED (TS-769C)

Attached, please find the EAB review of...

Reg./File # : 359-685

Chemical Name: Iprodione

Type Product : Fungicide

Product Name : Rovral Fungicide

Company Name : Rhone-Poulenc Inc.

Purpose : Review request to amend label to add tomatoes, sugar beets, and cotton as crops to be rotated after harvest (study submitted).

Date Received: 10/16/87

Date Completed: DEC 31 1987

Monitoring study requested: ____

Monitoring study voluntarily: ____

Action Code: 305

EAB #(s): 80036

Total Reviewing Time: 0.7 day

Deferrals to : ____ Ecological Effects Branch

____ Residue Chemistry Branch

____ Toxicology Branch

1. CHEMICAL:

Common name:

Iprodione

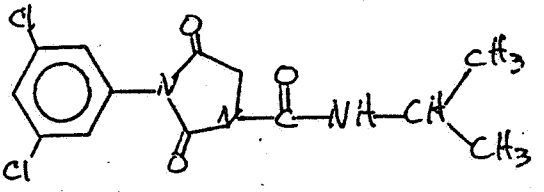
Chemical name:

3-(3,5-Dichlorophenyl)-N-(1-methylethyl)-2,4-dioxo-1-imidazolidinecarboxamide.

Trade name(s):

Rovral, RP 26019, Glycophene

Structure:



Formulations:

50% WP

Physical/Chemical properties:

Molecular formula: $C_{13}H_{13}Cl_2N_3O_3$.
Molecular weight: 329.9
Physical state: White, odorless, nonhygroscopic crystals.
Solubility: Soluble in acetone and benzene. Almost insoluble in water (13 mg/L).

2. TEST MATERIAL:

Not applicable. No data were sumbitted.

3. STUDY/ACTION TYPE:

The registrant is requesting the addition to the label of tomatoes, sugar beets, and cotton as crops that may be rotated after harvest and has submitted a rotational crop study to be reviewed.

4. STUDY IDENTIFICATION:

- Residue data on California sugar beets, cotton, and tomatoes grown in soil following sequential treatments of Rovral, Report No. ASD 87/231, Acc. # 401592-01.

5. REVIEWED BY:

Herbert L. Manning, Ph.D.
Microbiologist
EAB/HED

Signature: Herbert L. Manning
Date: DEC 31 1987

6. APPROVED BY:

Therese M. Dougherty, Chief
Section 1
EAB/HED

Signature: Therese M. Dougherty
Date: DEC 31 1987

7. CONCLUSION:

EAB reviewed the rotational crop study designed to support their proposed label amendment that would allow rotating tomatoes, cotton, and root crops (based on no residues in sugar beets) after harvest, and agree with their findings of no detectable residues in these crops.

8. RECOMMENDATIONS:

The field rotational crop studies submitted are acceptable in satisfying this data requirement and allows tomatoes, cotton, and root crops (based on no residues in sugar beets) to be added to the label as crops that may be rotated one month after the last iprodione (Rovral) treatment.

It must be stated again, however, that the "crop" listed as Leafy Vegetables (see Note to User on label) should be replaced by Head Lettuce, since only this leafy vegetable has an established tolerance. Other leafy vegetables that do not have tolerances would require a confined rotational crop study.

The second line in the NOTE TO USER statement refers to rotating cereal grains, and soybeans, one year after treatment. We cannot support these rotations. We have no rotational crop data on these crop groupings/crops, therefore, radiolabeled, confined rotational crop studies are required for them.

9. BACKGROUND:

A. Introduction- Rhone-Poulenc requests amending their Rovral label to add tomatoes, sugar beets, and cotton as crops to be rotated after harvest and to eliminate the word "tomatoes" as a crop to be rotated the year following treatment (located under Note to User on label). Tomatoes were the subject of a previous amendment (review of 12/17/87) to add them to the label with the restriction not to rotate before one year after treatment.

B. Direction for Use- See attached label.

10. DISCUSSION OF INDIVIDUAL STUDY:

A. Study Identification- Residue data on California sugar beets, cotton, and tomatoes grown in soil following sequential treatments of Rovral.

B. Materials and Methods- The "rotated" crops (tomatoes, sugar beets, and cotton) were planted to bare ground one-month after the last of 10-one pound ai/A, weekly treatments. The one pound ai/A treatment is the maximum label rate.

C. Results- Table 1 summarizes the results of the study. Pages 25 and 41 show the computer printout of the plant and recovery analyses, for sugar beets and tomatoes/cotton, respectively. Residues of parent (RP-26019), its isomer (RP-30228), and metabolite (RP-32490) were not detected (sensitivity of GLC method was 0.05 ppm) in the plant parts analyzed. See Figure 1 for structures of residues.

D. Author's Conclusions- Residues of iprodione did not accumulate in tomatoes, sugar beets, and cotton when they were planted one month after 10-one pound ai/A, weekly treatments. The residues analyzed for were parent (RP-26019), an isomer (RP-30228), and a metabolite (RP-32490), all of which were significant residues in a ^{14}C confined rotational crop study.

E. Reviewer' Comments- EAB agrees with the author's conclusions. The study follows our guidelines and is acceptable in satisfying the field rotational crop data requirement for tomatoes, cotton, and root crops (sugar beets).

11. COMPLETION OF ONE-LINER:

Not applicable.

12. CONFIDENTIAL APPENDIX:

Contains supporting information.