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EFFICACY REVIEW

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TYPE PRODUCT(S): I, D, H, (F), N, R, S \_\_\_\_\_

DATA ACCESSION NO(S). \_\_\_\_\_

PRODUCT MGR. NO. 21

PRODUCT NAME(S) Ridomil<sup>(R)</sup> 2E Fungicide

COMPANY NAME Ciba-Geigy Corporation

SUBMISSION PURPOSE Add: foliar applications in tobacco plant beds  
for blue mold control and use on nonbearing citrus  
to control Phytophthora root and foot rot

CHEMICAL & FORMULATION metalaxyl . . . . . 25.11%  
[2 lbs. active/gallon]

## EFFICACY REVIEW - Fungicide

### 200.0 INTRODUCTION

The purpose of this submission is to add two additional use patterns to the registered labeling (accepted March 17, 1981).

### 200.1 USES

Tobacco (plant beds) ---- Blue mold: Apply 1 pint (0.25 lb. active) in 125 to 250 gallons of water per acre [1/2 fl. oz. (1T) per 150 sq. yards] as a foliar spray tank mixed with a protectant fungicide (unspecified). Begin when symptoms appear and repeat no closer than 14-day intervals. Use only with Dithane M-22 Special (maneb) or Dithane Z-78 (zineb). Consult your State Agricultural Experiment Station or Extension Agent for guidance on which of these fungicides to use in your area. Do not apply within 70 days of the preplant soil application of Ridomil(R). Note: If symptoms of blue mold appear sooner than 70 days after soil application, or sooner than 14 days after the first foliar application, or after the second foliar application, apply a protectant fungicide at the rates and intervals recommended on their respective product labels. Do not use Ridomil(R) 2E alone in foliar sprays. Many plant pathologists propose that the use of Ridomil(R) in combination with a protectant fungicide is an effective means of delaying the potential appearance of Ridomil(R) resistant strains of fungi.

Citrus (nonbearing)---- <sup>h</sup>Pytophthora foot rot and root rot: (1) Soil Drench in Nurseries - Apply 4 to 6 fl. oz. per 100 gal. of water over the row at the rate of 100 to 250 gals. per 1,000 feet of row. Band width should be wide enough to cover the root systems of the plants. Make first application at time of planting and repeat at 3-month intervals during the period when trees are actively growing.

(2) Soil Surface Spray in Nurseries - Apply 2 gals. ( 4 lbs. active) per acre of soil treated as a broadcast or banded surface spray to seedbeds, liners, or bedded stock in sufficient water to obtain uniform coverage. Band width should be wide enough to cover the root systems of plants. Follow immediately with 1/2 inch irrigation.

(3) Water Ring Drench in Field Plantings - Mix 4 to 6 fl. oz. with 100 gals. of water. Apply 5 gals. of mix around the base of each tree within the watering ring.

(4) Soil Surface Spray in Field Plantings - Apply 1 to 2 gals. per acre (3 to 6 fl. oz. per 1,000 sq. ft.) in sufficient water to obtain uniform coverage of the soil surface beneath the tree canopy. Note: Use only on trees which will not bear harvestable fruit within 12 months after application.

201.0 DATA SUMMARY - Submittal of efficacy data is waived for these uses.

202.0 CONCLUSIONS AND RECOMMENDATIONS - The proposed labeling associated with the tobacco plant bed foliar application and the nonbearing citrus treatments is unacceptable until the following comments are resolved:

(1) Under "Tobacco Plant Bed, Foliar Application" directions:

- a) The recommendation to only use tank mixes in foliar applications for the purpose of delaying the potential appearance of resistant fungal strains is unacceptable. We have found the available data in the public literature to be inconclusive (i.e., circumstantial, of a preliminary nature, or hypothetical) on the subject of delaying pest resistance. The most that can be concluded from these data is that an application regimen which utilizes tank-mixtures or the alternate/intermittent substitution of other fungicides for the resistance-prone fungicide, may possibly delay the development of resistant strains. Since tank-mixtures are the most environmentally burdensome option, we can only accept labeling which assumes that both options are equally effective in delaying pest resistance development. Accordingly, we can accept labeling which: (a) recommends the use of both approaches; (b) only recommends the alternate/intermittent approach; (c) only recommends that the users contact their State Agricultural Experiment Station or Cooperative Extension Specialist for guidance on how to possibly delay resistance; or (d) only recommends reduced rate tank mixes which reflect significant reductions in the amounts of the respective chemicals used (compared with the rates needed when used alone).
- b) The first paragraph must be revised to clearly indicate when the second foliar application is intended to be applied. ~~It is not clear whether the second application is intended to be applied.~~ It is not clear whether the second application is only intended to be applied if additional symptoms appear after the first application, or some other factors are involved.
- c) The first two paragraphs and the footnote must be revised to clearly indicate that the two fungicides listed are the only ones being recommended for use with Ridomil<sup>R</sup>, and are not presented to serve as examples of "protectant" fungicides.
- d) Under "Notes", the statement "Many plant pathologists .... strains of fungi." is misleading since many plant pathologist also propose approaches other than full strength tank mixtures. Accordingly, this statement must be deleted.

- (2) Under "Field planted Tobacco, Blue Mold," it appears that the first three sentences pertain only to flue-cured tobacco. If this is so, the paragraph should be revised to reflect this limitation.
- (3) Under "Nonbearing Citrus," make the following changes:
- a) In the calculation formula, change "row width in inches" to "row spacing in inches";
  - b) In the first paragraph, change "Phytophthora sp." to "Phytophthora spp.," since several species are involved;
  - c) Under the Soil Surface Spray directions for citrus in nurseries, modify the directions to clearly indicate that the dosage rate relates to an acre of treated soil surface and not an acre of cropland for band treatments.

Note: If in the future, resistant fungal strains develop for any of the labeled pests, the label should periodically be revised as necessary to advise the users which pests have shown this capability. Additionally, when resistant strains develop the label must include a statement advising the user to discontinue use of Ridomil<sup>R</sup> when the product becomes ineffective.

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*I- 6/4/81*

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