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MEMORANDUM

SUBJECT: Fenbuconazole - New Uses

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Fenbuconazole is a new fungicide presently proposed for use on pecans and stone fruits (apricots, cherries, nectarines, peaches, plums, and prunes). The EFGWB science chapter for the Fenbuconazole New Chemical Registration Standard was submitted to RD on 02/18/93.

EFGWB received requests to review proposed new uses on almonds, apples, bananas, greenhouse and field-grown ornamentals, and wheat (seed and foliar treatment). Application through sprinkler irrigation equipment is allowed on the proposed label for ornamentals. The maximum use rate for apples and ornamentals is is 1 lb a.i./A/yr. Maximum rates for the other new uses is less than 1 lb a.i./A/yr (see proposed labels attached). All original and proposed new uses are in the terrestrial food, terrestrial nonfood, and greenhouse nonfood categories.

Conclusions

1. With the exception of terrestrial field dissipation (164-1), all environmental fate data requirements needed at this time to support use on stone fruits and pecans have been fulfilled. This also applies to the proposed new uses on almonds, apples, bananas, and greenhouse and field-grown ornamentals.

2. To support all proposed uses on terrestrial food and nonfood crops, the terrestrial field dissipation data requirement should be fulfilled. The registrant (Rohm and Haas) has acknowledged that additional data regarding terrestrial field dissipation are needed to assess more completely the behavior of fenbuconazole under field conditions (see EFGWB's memorandum of 02/18/93 for details).

3. To support the proposed new use on wheat, confined rotational crops data (165-1) are needed to assess the potential for fenbuconazole residues to accumulate in crops which follow wheat in the cropping system. Also, the terrestrial field dissipation data requirement should be fulfilled to support use on wheat. Responsibility for reviewing rotational crops studies has been transferred from EFGWB to HED. A confined rotational crops study was submitted to EFGWB and has been returned to RD for transmittal to HED.

Environmental Fate Assessment

Fenbuconazole is moderately persistent with surface degradation half-lives ranging from 79 days for soil photolysis to 367 days for aerobic soil metabolism. Degradation of fenbuconazole at depth will also occur slowly as the compound was stable to hydrolysis at Ph 5, 7, and 9 and degraded in soil under anaerobic conditions with half-lives of 451-655 days. Fenbuconazole and its degradates appear to be slightly mobile to immobile in soil with K_d's ranging from 5 to 115. The principal route of dissipation appears to be adsorption to soil, with increased adsorption associated with higher soil organic matter content. Because of its adsorption to soil, the potential for fenbuconazole to leach to ground water appears to be slight. However, the potential to contaminate ground water may be greater at vulnerable sites, i.e. where soils are low in organic matter where ground water is relatively close to the surface. Mineralization to CO_2 and soil photolysis appear to be less important routes of dissipation.

Because of its persistence in the field, EFGWB believes that fenbuconazole residues may accumulate in soil with repeated applications over multiple growing seasons. Its persistence and relative lack of mobility indicate that it could reach surface water via runoff following rainfall or irrigation. If its use is extended to field crops, fenbuconazole residues may be available for uptake by rotated crops because of the persistent nature of the compound. Fenbuconazole did not bioaccumulate in bluegill sunfish (maximum bioaccumulation factors were 170X, 50X, and 330X in whole fish, fillet, and viscera tissue, respectively) and 95-98% of accumulated residues were eliminated during a 14-day depuration period.

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Fenbuconazole

Page_____ is not included in this copy.

Pages 3 through 15 are not included.

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____ Identity of product inert ingredients.

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