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

APR 18 1990

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OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Propanil Registration Standard
Magnitude of the Residue in/on Rice, Processed Products of Rice, Irrigation water and Crayfish; Field Study Protocols, dated 2/12/90

ID NO(S). 028201
DEB NO(S). 6442
MRID NO(S). N/A

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TO: B. Baker, RM 74
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and

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THRU: W. Boodee, Section Head
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Propanil, 3',4'-dichloropropionanilide, is a broad spectrum postemergence herbicide used for control of various members of broadleaf, sedge and annual grasses. The pesticide has been registered for use on a variety of grains including barely, oat, wheat, and rice.

On behalf of Propanil Task Force John M. Wise Associates has submitted protocols for conducting field studies for generation of requested residue data on rice and irrigation water. In addition, a protocol for exposure of crayfish to the herbicide under actual field conditions has been provided.

CONCLUSIONS/RECOMMENDATIONS

1. Since the herbicide may be applied more than once per season, the appropriate label(s) must be revised whereby a minimum treatment interval is proposed for multiple applications. It should be noted that, the maximum single and seasonal application rates are 6 and 8 lb ai/A, respectively. In addition, since the Task Force will reportedly support only the EC formulations using aerial application techniques, this use pattern of other formulations (SC) must be cancelled and the pertinent labels must be revised to prohibit the use of ground application techniques.

2. The field trials must be conducted such that preharvest intervals would be equal or lower than that reflected on the label. The proposed multiple application schedule (4 + 4 lb ai/A) may result in a PHI longer than the established preharvest interval (56 days). The field trials must support the established PHI, maximum application rates, and the minimum treatment interval, refer to the aforementioned conclusion 1.

3. Given the maximum registered application rates, the proposed field trials for rice at a rate of 4 lb ai/A are not required by DEB.

4. Separate field trials for production of rough rice to generate residue data on processed fractions are not required. The collected samples from the raw agricultural commodity residue field trials, which contain measurable residues, could also be used for generating the residue data for processed commodities.

5. The field samples/processed fractions should not be analyzed until the Agency evaluates the requested metabolism studies on rice and determines the adequacy of analytical method(s).

6. Since the maximum application rate per season is 8 lb ai/A, The Task Force should employ this rate instead of the proposed 4 lb ai/A to generate the residue data for crayfish and irrigation water. A multiple application schedule utilizing the maximum application rate per season should be used, refer to the aforementioned conclusion 1.

7. DEB does not require sampling and/or analysis of soil and vegetation samples in conjunction with the required residue data on fish.

NOTE TO RM

1. The submission includes protocols for aquatic field dissipation and irrigation water studies. Since the irrigation studies are in the purview of both DEB and the Environmental Fate and Effects

Division and field dissipation studies are in the purview of the latter division, the pertinent protocols (271/021590/b/SPM, 271/021590/c/SPM)) are to be submitted to the EF & ED for evaluation.

2. DEB recommends submission of this memorandum to the Task Force.

DETAILED CONSIDERATIONS

171-4 Magnitude of the Residue in Rice and Rice Processed Fractions
Protocol NO(s): 271/021290/4R/SPM, 271/021290/6R/SPM, 271/021290/44R/SPM, 271/021290/e/SPM

The herbicide (propanil 4 EC) will be applied reportedly at the rates of 4, 6, and 4 + 4 lb ai/A, in three separate studies, to fields in the major rice growing states including Arkansas, California, Texas, and Louisiana using aerial application techniques. Rice varieties prevalent to the study regions will be employed. Two control and treatment sites will be used in each state. The paddies will be flooded using well water. In studies involving a single application, the herbicide is to be applied 30 (4 lb ai/A) and 60 days (6 lb ai/A) after planting, while multiple applications will be made 30 and 45 days after planting. Paddies, if necessary, will be drained prior to application and reflooded approximately 24 hours after the treatment. The crop is to be harvested by hand at maturity. Samples (rough rice and straw) will be shipped on dry ice to the designated analytical laboratory.

In addition, a protocol for conducting field studies to generate residue data on processed products of rice has been provided. The studies are to be performed in Arkansas and Louisiana. Two applications at a rate of 4 lb ai/A will be made analogous to the procedure described above. The collected samples will be dried to 12% final moisture by air drying (7-10 days) or use of a sack dryer and shipped to the processing laboratory.

Crop and pesticide history (covering 3 years) will be obtained for each paddy and various information/data including dates of initiation and termination of studies, meteorological data, and identity of the test substance will be recorded.

Comment(s):
1. Since the herbicide may be applied more than once per season, the appropriate label(s) must be revised whereby a minimum treatment interval is proposed for multiple applications. It should be noted that, the maximum single and seasonal application rates are 6 and 8 lb ai/A, respectively. In addition, since the Task Force will reportedly support only the EC formulations using aerial application techniques, this use pattern of other formulations (SC) must be cancelled and the pertinent labels should be revised to prohibit the use of ground application techniques.

2. The field trials must be conducted such that preharvest intervals would be equal or lower than that reflected on the label. The proposed multiple application schedule (4 + 4 lb ai/A) may result in a PHI longer than the established preharvest interval (56 days). The field trials must support the established PHI, maximum application rates, and minimum treatment intervals, refer to the aforementioned conclusion 1.

3. Given the maximum registered application rates, the proposed field trials for rice at a rate of 4 lb ai/A are not required by DEB.

4. Separate field trials for production of rough rice to generate residue data on processed fractions are not required. The collected samples, from the raw agricultural commodity residue field trials, which contain measurable residues could also be used for generating the residue data for processed commodities.

171-4 Magnitude of the Residue in Crayfish
Protocol NO(s): 271/021390/a/SPM1

The herbicide will be applied at a rate of 4 lb ai/A to two fields containing crayfish in Southern Louisiana using aerial application techniques. Paddies ranging from 10 to 40 acres which have not been treated with propanil for the last two years will be used. Well water will be employed for flooding the paddies. the herbicide will be applied 30 days after planting. The paddies, if necessary, will be drained prior to treatment and reflooded 24 hours following the application. Samples of soil and vegetation will be collected prior and immediately after application. Rough rice and straw will be collected at maturity and adult crayfish will be harvested in early December 1990-January 1991.

Cultural practices typical of rice/crayfish rotation in Southern Louisiana will be employed. The unplanted paddies, without sufficient brood stock from previous year are stocked in early April. The fields are slowly drained so that they are dry by early May. They are then planted with rice and are flooded as rice grows but are drained and allowed to dry in August for the rice harvest in September. The fields are reflooded in late September or October and crayfish harvesting may occur as early as November depending on the weather and growth conditions.

Comment(s):
1. Since the maximum application rate per season is 8 lb ai/A, The Task Force should employ this rate instead of the proposed 4 lb ai/A to generate the residue data for crayfish. A multiple application schedule utilizing the maximum application rate per season should be used, refer to the aforementioned conclusion 1.

2. DEB does not require sampling and/or analysis of soil and vegetation samples in conjunction with the required residue data on fish.

171-4 Irrigated Crop Studies
Protocol No(s): 271/021590/b/SPM, 271/021590/c/SPM

Aerial applications analogous to those described previously (Magnitude of Residue) will be made at two sites in Arkansas and Louisiana at a rate of 4 lb ai/A, thirty days after planting. Water samples are to be collected at a depth <0.5 m, sealed in a container, and shipped frozen to the appropriate analytical laboratory. In addition soil samples are to be collected to generate information/data on the field dissipation characteristics of the herbicide.

Comment(s):
1. Since the maximum application rate per season is 8 lb ai/A, The Task Force should employ this rate instead of the proposed 4 lb ai/A to generate the residue data for irrigation water.

2. Since the irrigation studies are in the purview of both DEB and the Environmental Fate and Effects Division and field dissipation studies are in the purview of the latter division, the pertinent protocols (271/021590/b/SPM and 271/021590/c/SPM) are to be submitted to the EF & ED for evaluation.

cc: Propanil R.S., S.F., R.F., PIB/FOD (C. Furlow), DEB (R. Schmitt), Circu.
RDI: Section Head: B. Boodee: 4/16/90
H7509: DEB: Reviewer (H. Fonouni): CM#2: Rm. 803:
557-7561: 3/19/90.