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DATA ACCESSION NO(S).

PRODUCT MANAGER NO. Mountfort (23)

PRODUCT NAME(S) Goal

COMPANY NAME Rohm and Haas

SUBMISSION PURPOSE Revised Protocol: 96-hour sediment bioassay with benthic organism

SHAUGHNESSEY NO.	CHEMICAL, & FORMULATION	% A.I.
111601	oxyfluorfen	

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ECOLOGICAL EFFECTS BRANCH
REVIEW

GOAL

100 Submission Purpose

The registrant, Rohm and Haas, has resubmitted a sediment bound toxicity test protocol for review. See the 4/28/86 review for background information on previous protocol.

101 Discussion of Protocol

The protocol includes the following basic components. This information is not only from the attached protocol, but also from a 7/10/86 meeting Norm Cook and Dan Rieder attended with Richard Mountfort and the Registrant.

1. The test organism will be either a chironomid or hexagenia, whichever is more sensitive to Goal. This will be determined in a 48-hour clear water toxicity test.

2. Goal would be added to two types of soil, a high organic (3%) content and a low organic (0.5%) content soil. The soil would be purchased and characterized thoroughly. The test levels would be based on the clear water LC50. See attached protocol.

3. The test soil would be aged for 24 hours, mixed thoroughly and placed in a 40-liter glass aquaria to a depth of 7.6 cm (3"). The water:soil ratio would be 7:1. The test containers would be allowed to settle 24 hours before adding the test organisms.

4. The protocol did not specify how many test organisms per container; however, each test level/soil type would be replicated.

5. The test would be conducted for 96 hours, with a determination of mortality at 48 hours if possible. The test concentrations in soil and water would be measured.

6. The 48-hour sediment LC50 would allow determination of a "factor" between sediment and clear water toxicity. This factor would then be applicable to other organisms for which clear water LC50's are available.

Reviewer Analysis

Originally, the test was intended to determine the toxicity of sediment bound Goal to 3 different test organisms; a fish, water flea and a benthic organism. The test levels were to have been based on actual exposure as determined by measured residues. These levels would have been 276, 1380 and 6900 ppb which was one-fifth, equal to, and five times an expected level in pond sediment.

The registrant is proposing to use the 48-hour LC50 as the basis for the test levels; i.e. 1X, 5X and 10X the clear water LC50. This approach is acceptable providing the highest test level in sediment is equal to or higher than 6900 ppb. This is because if the test levels are lower than the expected levels, the question of risk will not have been addressed. Further, it is questionable whether the 48-hour mortality will be measureable without actually sifting the sediment which would preclude continuing the test for 96 hours. Therefore, an exact ratio can not be determined, even though the ratio from comparing a 48-hour clear water LC50 to a 96-hour sediment LC50 would provide a conservative application factor.

The ability to calculate an application factor precludes the need for the other two species in the laboratory test.

The sediment and water residues must be measured each 24 hours, beginning with 0 hours and ending with 96 hours.

A minimum of ten organisms of each species must be tested per test container; more benthic organisms would be preferable.

The proposed protocol, with the above additions, is acceptable and will provide useful information on the hazard of Goal to nontarget aquatic organisms.

104 Conclusion

The conclusion concerning the proposed protocol has been previously stated. However, in the meeting, Rohm and Haas representatives indicated that they considered this test to be the only impediment to registration of Goal on noncrop areas. EEB must point out that the problem of risk to endangered species is substantial and requires more consideration. The U.S. Fish and Wildlife Service has indicated that 171 endangered species would be jeopardized by the use of Goal on noncropland. Their proposed "reasonable and prudent" alternative is to prohibit the application of Goal within a quarter mile of the habitat of the listed plants and within a quarter mile of the streams or bodies of water where the aquatic species occur.

The USFWS also recommends that in-depth laboratory and field studies be conducted to measure the toxicity and bioaccumulation of Goal on the species listed in this opinion. They recommend using surrogate species and the primary food items of the listed species. EEB has been in contact with USFWS for clarification and further information on the species listed in the opinion. The opinion (November 13, 1985) and follow-up letter (July 14, 1986) are attached.

The EEB is continuing their communication with the USFWS concerning the locations of these endangered species and will provide the Registration Division with labeling guidance as soon as possible.

Furthermore, there are other data requirements outstanding including:

1. A 21-day chronic invertebrate life cycle toxicity test, Section 72-4.

2. The missing information from previously submitted field studies.

3. Residue monitoring at various sites representing different types of non-cropland. The residue studies must include sampling and analysis of receiving water, receiving sediment and benthic organisms. The registrant is encouraged to contact EEB before initiating any field monitoring studies. This monitoring is necessary before EEB could complete a risk assessment for the proposed use of Goal on noncropland areas. Such monitoring could be conducted under temporary registrations such as Experimental Use Permits.

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