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

COPY

SEP 16 1993

MEMORANDUM

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

Subject: D192285; D192281; D194892; EEB needs a quantitative model run by EFGWB that will defend or refute the registrant's use mitigation proposals for avermectin registration.

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The Ecological Effects Branch (EEB) has received a request for a Section 3 registration on strawberries, tomatoes, celery and lettuce (D192281), peppers and eggplants (D194892), as well as, cotton, citrus and pears (D192285). In order to complete our risk assessment of these crops, EEB needs to develop an exposure scenario that can provide an estimate of the expected environmental concentrations of this compound to aquatic organisms. The previous runoff model output from EFGWB (1990) showed that avermectin was expected to persist at 0.1-0.3 ug/L for several days in a pond littoral compartment (Pond-Stream-Stream) and decrease to 0.05 ug/L after 21 days (EXAMS II). Since aquatic toxicity values for fish and invertebrates ranged from 0.02-9.6 ug/L in acute testing and 0.0035-0.96 in chronic studies, EEB concluded that the pesticide residue values could pose a threat to aquatic organisms, especially early life stages.

However, in answer to these concerns, the registrant has recently initiated certain product use restrictions in order to mitigate the potential for avermectin exposure to aquatic and terrestrial life. These restrictions include the following:

A) Cotton:

1) Reduce total seasonal application from 48 fl oz/acre to 32 fl oz/acre.

2) Restrict use only to areas west of the Mississippi.

3) 21-day retreatment interval.

B) Citrus:

1) Reduce applications from 60 fl oz/acre to 40 fl oz/acre (2 applications per season).

2) Restrict aerial applications.

3) 30-day treatment intervals.

C) Celery, Lettuce, Tomatoes, Peppers, Eggplants, Strawberries:

1) Reduce application from 60 fl oz/acre to 48 fl oz/acre/season.

2) No aerial application (ground boom).

D) Almonds, Walnuts, Pears:

1) Reduce applications from 60 fl oz/acre to 40 fl oz/acre/season.

2) Restriction from aerial use (air blast application).

Although, EEB can appreciate these mitigation efforts by the registrant, we still need quantitative input from EFGWB (via their fate model) with regard to expected environmental residues. The latest Review Action (1993) produced by EFGWB evaluated these claims but did not include quantitative analysis that could be used by EEB in developing a risk assessment to refute or support the Agency's concerns for potential exposure of avermectin to aquatic life. Although EFGWB stated that "avermectin B_{1a} may be used without causing excessive loading by runoff to bodies of water", EEB needs quantitative information that defines "excessive loading". Therefore, EEB is requesting that the (EFGWB) review the new mitigation proposal that has been submitted by the registrant (Merck & Co.) and run the appropriate models (Pond-Stream-Stream) so that EEB can better assess these claims and their affects on the environment (Rexrode 305-5578).

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