MEMORANDUM

SUBJECT: Fenoxycarb – Request for Quarantine Exemption
Under Section 18 for One-Time Use of Logic® (EPA
Registration No. 35977-4) Against Fire Ants – EPA
ID No. 87-AZ-03 – TB Project No. 7-0311

TO: James Tompkins, PM Team 41
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THRU: Marcia van Gemert, Ph.D., Head, Section III
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and

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Recommendation:

TB approves the subject section 18 request for the
spring season of 1987: one-time aerial application of Logic®
(1% fenoxycarb) for control of fire ants.

The Arizona Commission of Agriculture and Horticulture
has requested a section 18 Quarantine Exemption for use of
Logic®, a 1% fenoxycarb (ai) formulation to control fire ants. The pesticide

*NOTE: INGREDIENT INFORMATION IS NOT INCLUDED*
would be applied by a one-time aerial application at a rate of 0.015 lb/ai/A to sites as follows:

<table>
<thead>
<tr>
<th>Crop Type</th>
<th>Acres</th>
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</thead>
<tbody>
<tr>
<td>Citrus</td>
<td>650</td>
</tr>
<tr>
<td>Pasture and rangeland</td>
<td>120</td>
</tr>
<tr>
<td>Dairy feed lots</td>
<td>60</td>
</tr>
</tbody>
</table>

RCB has stated (memorandum of February 6, 1987) that available data do not show a difference between plant and animal metabolism. RCB states, furthermore, that maximum residues likely to be found as a result of the proposed use are < 0.05 ppm in citrus (and citrus processed commodities) and < 0.1 ppm in milk.

Fenoxycarb residues are not likely to be found in animal products as a result of the proposed use, according to RCB.

By memorandum of August 20, 1985, TB approved registration of Logic® 1% Fire Ant Bait for use on nonagricultural turf (including residential sites). By memorandums of June 14 and July 22, 1985, TB approved an amendment of EUP 35977-EUP-2 to include treatment of pasture and rangeland with 1% fenoxycarb formulation (50.25 lb; 3350 acres) for a 1-year period. For this latter approval TB required data as follows:

1. All uses: Acute, irritation, and sensitization studies (6 studies total, performed on formulation).

2. Food uses (performed on technical material):
   a. 90-day oral toxicity, rodent, and nonrodent;
   b. Teratogenicity; and
   c. Mutagenicity battery:
      (1) Gene mutation,
      (2) Chromosome aberration, and
      (3) Primary DNA damage.

All of the above studies, or equivalent studies, were accepted by TB as a satisfactory EUP data base for application of fenoxycarb to residential sites and pasture/rangeland. Aerial application was not approved at that time.
Data Results Applicable to the Subject Request:

1. Acute studies show results in Toxicity Categories III and IV (technical and 0.6%/10.3% formulations).

2. Subchronic studies

   a. 6-Month Oral – dog
      (Hoffmann-LaRoche
      No. B-104-927; 1983)
      NOEL

      150 mg/kg/day

   b. 1-Year Interim Report, rat feeding study
      (Hazleton, Europe
      No. 4342-161/123;
      1985; adequate for
      90-day study)

      200 ppm = 10.0
      mg/kg/day

   c. 90-Day Feeding – mouse
      (Hoffmann-LaRoche
      No. B-104-802; 1983)

      100 mg/kg/day

   d. 21-Day Dermal – rat
      (Hazleton Labs, Ltd.,
      No. 4552-161/157; 1985)

      200 mg/kg/day

3. Teratogenicity

   a. Rat
      (Hoffmann-LaRoche
      No. B-104-875; 1983)

      150 mg/kg/day
      (embryotoxicity;
      not teratogenic)

   b. Rabbit
      (Hoffmann-LaRoche
      No. B-104-700; 1984)

      Neither terata
      nor embryotoxicity
      at 300 mg/kg/day
      (HDT)

4. Mutagenicity battery:
   Negative in all tests
   (all 3 mutagenicity
   categories)

5. Cholinesterase (housefly)
   Inhibition: No inhibition
   by fenoxycarb (a carba-
   mate) at highest in vitro
   concentration tested
   (2.5 x 10^-4 M)
Residue Contributions:

An estimated TMRC for the requested one-time use would be 0.00033 mg/kg/day for the U.S. population (memorandum, D.S. Saunders, RCB, March 27, 1987). The most exposed subgroup would be nonnursing infants, having an estimated TMRC of 0.00156 mg/kg/day.

PADI Calculation:

Based on a NOEL of 10.0 mg/kg/day (interim report, rat feeding study) the PADI for fenoxy carb is as follows:

\[
PADI = \frac{10.0}{1000} = 0.01 \text{ mg/kg/day}
\]

Conclusion:

Thus the estimated TMRC for the general population is 3.3% of the PADI, while for nonnursing infants it is 15.6% of the PADI.

TB approves the subject (section 18) request for the spring season of 1987: one-time use of Logic® by aerial application. For the proposed one-time use, aerial application is permitted, in view of the low acute inhalation toxicity of fenoxy carb: Toxicity Category III for a 0.6% formulation.

The label Precautionary Statements are satisfactory.