

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE: September 12, 1978

SUBJECT: Experimental Use Permit application for evaluation of TALON anticoagulant rodenticide for use against Microtus in orchards. Caswell No. 114AA # 10108-EUP-12

FROM: John Doherty, Ph.D. *John Doherty*  
Toxicology Branch

TO: Daniel Peacock

Registrant: ICI AMERICAS, INC.,  
Concord Pike & New Murphy Rd.  
Wilmington, Del. 19879

Product: TALON Anticoagulant Rodenticide

Fellets and/or Place Packs	
Active Ingredient	
Brodifacoum	0.005%
Inerts (Bait)	99.995%
	<u>100%</u>

Recommendation:

- 1.) The experimental use permit may be granted.
- 2.) Several deficiencies in the toxicity tests must be corrected before <sup>this</sup> product or other products containing Brodifacoum are registered (see remarks).

Remarks

1.) The following reports are unsigned and are INVALID until signed by those who were responsible for conducting and evaluating these studies.

1C, 2C, 3C, 4C, 5C, 6C, 7C, 8C, 9C, 10C, 11C, 12C, 13C, 14C, 15C, 16C, and 19C.

(Refer to section C of the EUP package submitted to EPA).

2.) Studies with a 0.005% (or 50 ppm) formulation are reviewed and discussed as follows.

a.) the occurrence of corneal opacity in rabbits do not support a CAUTION label. The label should be changed to WARNING. This is waived and the single occurrence is considered incidental.

b.) No acute oral LD 50 was determined because the suspension could not be intubated. Extrapolation from other technical data indicate that a 0.005% preparation would have an LD 50 of 7.6 gm/kg or sufficient to support a CAUTION label.

c.) An LD 50 by dermal application could not be determined, but extrapolation supports a CAUTION label.

3. Brodifacoum is a more toxic anticoagulant than Warfarin. For example the oral LD 50 is about .35 mg/kg for brodifacoum, the oral LD 50 for warfarin is 3 mg/kg.

The very dilute preparation of brodifacoum bait .005% is still effective because the toxicity of toxicity of this chemical cumulative with the LD 50 being in the range of .03 mg/kg/day X 5 days.

Review of Acute Studies with pellet formulation containing brodifacoum.

All studies by ICI Std. Central Toxicology Laboratory issued 25 Nov. 1977, by G.R. Parkinson. [This report is signed].

Substance tested: JFU 5072 is a 50 ppm pellet formulation of brodifacoum, it was beige colored and corresponds to .005% active ingredient.

#### A. Acute oral LD 50

Rats, both male and female, were fasted for 16-20 hours, before an attempt was made to dose these animals by means of a stomach tube, with a polyethylene glycol suspension of the test material. The suspension was not fine enough to pass through the nozzle of the syringe. Several attempts to prepare or run the acute oral LD 50 were unsuccessful.

This test is CORE supplementary. It is absurd that this group cannot determine the LD 50 in rats of a rat poison.

#### B. Acute Dermal Toxicity

4 male and 4 female rabbits were used that were prepared for testing by clipping their backs and some rabbits were further abraded. 2 ml/kg of a 25% (w/v) dilution of the test material was applied to the backs and held in contact with the skin for 24 hours.

Results: The test dose was the maximum that could be applied. No deaths or signs of toxicity developed.

This test is CORE SUPPLEMENTARY . The LD 50 is greater than 500 mg/kg.

#### C. Skin irritation

0.25 ml of a 25% (w/v) suspension in PEG was applied to a group of six male rabbits and allowed to stay in place for 24 hours. Both clipped and abraded skin areas were examined.

Some of the rabbits showed erythema that did not persist through 2 days. The product is not irritating to the skin.

This test is CORE MINIMUM.

2

D. Eye Irritation

100 mg of test material was placed into the conjunctival sac of the right eyes of a group of six female and three male rabbits. The three male rabbits were washed with 20 ml of lukewarm water four seconds after instillation.

Results: One rabbit (unwashed) developed corneal opacity that lasted only 2 days. All signs of irritation were reversed within 7 days.

This test is CORE MINIMUM. The opacity is probably related to the abrasive inerts and since only 1 instance occurred it is considered incidental. Thus a CAUTION Label is acceptable.

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13