Rec'd Team 16
9/22/81

REVIEW NO.

ESSEY NO.

EEB BRANCH REVIEW

DATE: IN 7/14/81 OUT SEP 18 1981

REG. NO. 3125-GGR, - GGN

ON OR EXP. PERMIT NO.

SUBMISSION 6/15/81

CEIVED BY HED 7/13/81

ESTED COMPLETION DATE 9/23/81

TIMATED COMPLETION DATE

ION CODE/TYPE OF REVIEW 1/6/Old Chemical

PRODUCT(S): I, D, H, F, N, R, S Insecticide

ACCESSION NO(S).

CT MANAGER NO. W. Miller (16)

CT NAME(S) Oftanol 1.5% Granular: 3125 - GGR

Oftanol 5% Granular: 3125 - GGN

ANY NAME Mobay Chemical Corporation

ISSION PURPOSE Registrant Response to Previous EEB/EFB Review

GHNESSEY NO.	CHEMICAL, & FORMULATION	% A.I.

263

3125-66R

EP 18 1981

PIC: Oftanol data submission regarding EEC value, turf and bare soil runoff

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This is a response to Mobay's request for completion of the Amaze (Oftanol) review on turf. The Ecological Effects Branch (EEB) has reviewed the data, submitted by Mobay, regarding the Estimated Environmental Concentration (EEC) for corn, and the runoff studies on turf and bare soil plots.

A new corn scenario was developed producing an EEC of 1 ppb, similar in range to Mobay's calculation of 12 ppb. Estimated Environmental Concentrations for turf and rights-of-way were calculated at 0.21-0.23 ppm and .009-.011 ppm, respectively (scenarios and assumption are included). These values suggest that the levels resulting from runoff have exceeded acute toxicity levels (Daphnia LC_{50} = 3.9 ppb), as well as, chronic toxicity levels. [illegible]'s (including Mobay's) are greater than 0.01 of the acute aquatic LC_{50}, impiying that chronic risk may occur to aquatic organism.

Mobay contends that Oftanol, with a one-half life of 13 days in water, is non-persistent. However, Section 163.72-4 Subsection C of the guidelines, specifically states that a pesticide is considered persistent in water if the one-half life is greater than 4 days.

The hazard potential to aquatic organisms is reinforced by physicochemical data that indicates bio-accumulation. Oftanol's water solubility is less than 0.5 mg/l (0.02 mg/l) and the octanol/water partition coefficient is greater than 1000 (4230). These values, and the preceding information, strongly suggest that Oftanol is potentially hazardous to aquatic organisms.

Mobay submitted the results of two runoff studies, one on turf plots and one on bare soil plots. A protocol on the turf plots was reviewed by this office, as well as, the Environmental Fate Branch (EFB), and EPA's Environmental Research Laboratory, Atlantic, Georgia (Charles Smith). All consulting parties agreed that this runoff study had several inadequacies and would not meet registration requirements.

Mobay's bare soil runoff study was never approved by this office, and appeared to have similar inadequacies as found in the turf study (i.e. plot size; analysis of frozen samples; etc.). However, the reported runoff value of 0.5 ppm is greater than 0.01 of the acute aquatic LC_{50}'s, suggesting that a runoff from bare soil could impact aquatic organisms.

264

Mobay has not submitted an acceptable runoff study. However, EEB concludes from the recalculated estimated environmental concentrations (EEC) that Oftanol will reach an aquatic environment through runoff and that a chronic hazard to aquatic organisms may occur. Because, of this potential risk, a fish embryolarvae study will be required prior to registration. Rationale for this requirement are as follows (EPA proposed Guidelines, 1978, Section 163.72-4):

1) Pesticide product is expected to transport to water from the intended use site.

2) The estimated pesticide concentration in water is greater than 0.01 of the LC_{50} (0.018 ppm and .000039 ppm).

3) Acute aquatic LC_{50} is less than 1 mg/l (Trout LC_{50} = 1.8 ppm; Daphnia LC_{50} = 3.9 ppb).

4) Reproductive impairment as demonstrated by mammalian or avian studies. (The Toxicology Branch concluded 11/15/79 that Oftanol depressed rat pregnancy rates for first and second matings).

5) Physiocochemical properties indicating cumulative effects (water solubility is less than 0.5 mg/l and octanol/water partition coefficient is greater than 1000).

6) Pesticide is persistent in water (one-half life in water is greater than 4 days).