10-24-94

MEMORANDUM

Subject: EEC Request for Trifluralin

To: Hank Jacoby
Branch Chief
Environmental Fate and Effects Branch, 7507C

From: Anthony F. Maciorowski
Branch Chief
Ecological Effects Branch, 7507C

10/24/94

EEB is requesting an EEC Model to be run for trifluralin. Based on the groundwater review, trifluralin has an affinity to bind tightly to soil, which may lead to runoff to aquatic environments.

The PM states that "the rates are dependent on soil texture and range from 0.4 lbs. ai per acre to 2 lbs ai per acre for all crops except sugarcane use in Hawaii. The use on sugarcane is 3 to 4 lbs. ai per acre". The major use for trifluralin is on soybeans. In a meeting with DOW, it was mentioned that ornamentals have a higher rate than other crops; no labels for ornamentals have been submitted to EEB.

In closing, I would like to request EEC models on trifluralin for soybeans and sugarcane and if feasibly possible, ornamentals (Dana Lateulere, the EEB reviewer, can meet with the modeler to determine what crops to substitute for ornamentals, or if in fact they are needed).

Questions regarding this matter should be directed to Dana Lateulere of my staff at 308-2856.

EEC Calculation Sheet
for Trifluralin
H20 Solubility = .3

Note: H20 Solubility of:
<1.0 ppm = 1% Runoff
1-100 ppm = 2% Runoff
≥ 100 ppm = 5% Runoff
Pyrethroids = 0.1% Runoff

I. Un-incorporated ground application.

Runoff

4 lb(s) a.i./A x 0.0 1 (%runoff) x 10A (from 10A drainage basin) = .4 lb(s)

EEC of 1 lb. a.i. direct application to 1A pond 6-foot deep = 61 ppb, 6-inch deep = 734 ppb. Therefore:

6 foot EEC = 61 ppb x .4 (lb) = 24.4 ppb. ÷ 1000 = .0244 ppm

6 inch EEC = 734 ppb x ____(lb) = _____ppb. ÷ 1000 = _____ppm

II. For incorporated ground application

Runoff

4 lb(s) a.i./A ÷ 2.54 (cm) (depth of incorp.) x 0.0 1 (% runoff) x 10A = .16 lb(s)

Therefore:
6 foot EEC = 61 ppb x .16 (lb) = 9.6 ppb. ÷ 1000 = .0096 ppm

6 inch EEC = 734 ppb x ____(lb) = _____ppb. ÷ 1000 = _____ppm

III. For aerial application (or mist blower).

A. Runoff

4 lb(s) a.i./A x 0.6 (appl. efficiency) x 0.0 1 (%runoff) x 10 A (basin) = .24 (total runoff) lb(s)

B. Drift

4 lb(s) a.i./A x 0.05 (5% drift) = .2 lb(s) total drift

Tot. loading = .24 (total runoff) lb(s) + .2 (total drift) lb(s) = .44 lb(s)

Therefore:
6 foot EEC = 61 ppb x .44 (lb) = 26.84 ppb. ÷ 1000 = .0268 ppm

6 inch EEC = 734 ppb x ____(lb) = _____ppb. ÷ 1000 = _____ppm

26.84 ppb (ug/L) [redacted] ug/L

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