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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
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001017

OFFICE OF  
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

TO: Reto Engler

FROM: Herbert Lacayo, Jr. *Herbert Lacayo Jr. 11/21/84*

THRU: Bertram Litt *Bertram Litt 7/1/84*

SUBJECT: Preliminary Risk Assessment for Acifluorfen  
(Tackle/Blazer)

This is a preliminary quantitative risk assessment for acifluorfen and is intended only for inhouse EPA use. A more detailed memo will follow.

The present analysis of acifluorfen is primarily based on the Rhone-Poulenc 18-month feeding study of Tackle in mice dated December 17, 1982. This study exhibits a statistically elevated proportion of animals with liver adenomas and/or carcinomas and, in the higher dose, stomach papillomas. This is interpreted by the EPA weight of evidence classification as B2 (i.e., probable human carcinogen). Specifically, when the data for both sexes are time-adjusted by Druckery's formula<sup>(1)</sup>, the lifetime estimates of cancer risk in humans for soybean exposure and for the TMRC<sup>(2)</sup> are  $1.3 \times 10^{-6}$  and  $1.2 \times 10^{-5}$  respectively. These risks were estimated from the sum of the RAC residues in parts per million multiplied by the appropriate food factor, multiplied by 1.5 kg diet, divided by 60 kg average human body weight and the Tackle potency factor  $Q_1^* = 5.7 \times 10^{-2}$  [B2] (where exposure level is expressed in mg/kg/day)<sup>(3)</sup>.

- (1).  $(L_o/L_e)^{1/2}$  There  $L_o = 2$  year mouse life-time and  $L_e = 1 \frac{1}{2}$  year experiment. From Druckery 1967 in Truhart, "Potential Carcinogenic Hazards from Drugs - Evaluation of Risk (pp 60-78) Springer Verlag, Berlin, and EPA - Water Quality Criteria Document FR 45:79313 - 79379.
- (2). TMRC represents the Raw Agricultural Commodities listed in 1983 FRC 180.383 excepting peanut hulls and rice straw.
- (3). This factor is the geometric mean of  $Q_1^* = 7.0 \times 10^{-2}$  (time adjusted for males) and  $Q_1^* = 4.6 \times 10^{-2}$  (time adjusted for females).

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The model for acifluorfen dose/response relationship is supported by the Rohm and Haas two-year feeding study for Blazer. The data there exhibit a significant ( $p = .03$ ) dose related trend for acifluorfen using Peto's trend test on the first three doses (0, 7.5, 45 ppm).

We note that when all four doses (0, 7.5, 45, 270 ppm) are used that the significance level becomes borderline ( $p = .08$ ). However, the high dose (i.e., 270 ppm) group was given a dosage of 1.25 ppm during the initial 16 weeks and then changed over to 270 ppm for the balance of the study. This is difficult to interpret because the early effect of liver carcinogenesis might be lost.

The basic data used for this memo are given below.

Rhone-Poulenc

	Dose (ppm)			
	0	625	1250	2500
Male	9/58	21/60	16/57	41/58
Female	1/58	8/59	8/58	26/58

Rohm and Haas

	0	7.5	45	270 [1.25]
Male	19/69	18/69	28/70	27/70

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