10-24-80

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE:

SUBJECT: Prowl

FROM: Clayton Bushong, Chief, Ecological Effects Branch, HED (TS-769)

TO: James W. Akerman, Chief, Fungicide-Herbicide Branch, RD (TS-767)

THRU: Peter E. McGrath, Director, Hazard Evaluation Division

THRU: Douglas D. Campt, Director, Registration Division

The Ecological Effects Branch has reevaluated its position on Prowl and its use on sorghum. The toxicological characteristics of the Prowl active ingredient, pendimethalin, suggest that present uses (including tobacco) provide for potential chronic hazards (acute hazards appear unlikely) to freshwater aquatic organisms. A chronic freshwater fish study indicates that reproductive effects may occur at concentrations as low as 10 ppb. Also, pendimethalin is concentrated to 2200x in fathead minnows, suggesting a bioaccumulation problem. Although leaching may not be significant, the persistence (half life > 90 days) and soil adsorption characteristics indicate that pendimethalin may enter aquatic environments through runoff. Additional information would be needed to determine the levels of pendimethalin entering aquatic environments. Note, however, that data are also unavailable for estuarine and marine aquatic organisms. With this in mind, therefore, and coupled with the potentially significant increase in coastal use of Prowl (see attached table), EEB concludes that potentially significant chronic risks exist for nontarget estuarine/marine organisms from the use of Prowl on sorghum.

EEB wants to emphasize that the above conclusion is based upon available freshwater organism data. If a more accurate risk assessment of Prowl on sorghum is required, however, then pertinent estuarine/marine risk data should be submitted. Such data are:

(1) a chronic aquatic invertebrate toxicity study,

(2) a field monitoring study,

(3) a chronic estuarine invertebrate toxicity study, and

(4) a chronic estuarine vertebrate toxicity study.

Prowl: Acreage

USES	NATIONAL ACREAGE*	COASTAL ACREAGE**	COASTAL ACREAGE AS PERCENTAGE OF NATIONAL ACREAGE
Field Corn	79,017,000	483,049	0.61
Cotton	12,370,000	392,287	3.17
Soybeans	63,003,000	765,171	1.21
Subtotal	154,390,000	1,640,507	1.06
Tobacco	949,060	47,509	5.01
Potatoes	1,368,100	42,660	3.12
Sorghum	15,873,000	933,512***	5.88
Subtotal	18,190,160	1,023,681	5.63
Total	172,580,160	2,664,188	1.54

*Agricultural Statistics, 1979.

**1974 Census of Agriculture, U.S. Dept. of Commerce, 1977. Only eight coastal states were examined in this analysis: i.e., North Carolina, South Carolina, Georgia, Florida, Alabama, Louisiana, Mississippi, and Texas; therefore, these figures are conservative.

***Sorghum use represents 56.9% of other three uses already registered: i.e., 933,512/1,640,507=56.9%. Therefore, there is a 56.9% increase in coastal acreage from previously registered uses.