



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

P.150/ISB 2244

APR 5 1988

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: PP#6F3431. Harmony (DPX-M6316) on Wheat and Barley.
TAS Dietary Exposure Analysis.

FROM: Susan L. Stanton
Tolerance Assessment Program *Susan L. Stanton 04/05/88*
HED/RCB (TS-769C)

THRU: Karl Arne, Ph.D. *KArne*
Branch Senior Scientist
HED/RCB (TS-769C)

TO: Robert Taylor, PM 15
Registration Division (TS-767C)

Action Requested

Provide a dietary exposure analysis of the proposed use of Harmony (DPX-M6316) on wheat and barley.

RCB has reviewed the petition (PP#6F3431) and continues to recommend against the establishment of tolerances for residues of Harmony in or on wheat and barley grain, due to outstanding deficiencies regarding product chemistry, the nature of the residue, analytical methodology, and the magnitude of the residue (memo Deyrup to Rispin and Taylor, 04/01/88).

Discussion

1. The Reference Dose (ADI) used in the analysis is 0.013 ppm based on a NOEL of 1.25 mg/kg/day from a 2-year rat feeding study with a safety factor of 100. This value has been approved by the TOX Branch ADI Committee (02/25/88) and verified by the Agency reference dose committee (03/23/88).

2. To date, no tolerances have been established for residues of Harmony. The present analysis estimates dietary exposure to Harmony from the proposed use on wheat and barley only. The residue value used in the analysis for both crops is 0.05 ppm and assumes that data being requested by RCB will support this proposed tolerance level. A complete listing of residue information is provided in Table 1.

3. The TAS routine chronic analysis estimates the Theoretical Maximum Residue Contribution (TMRC) for the U.S. population and each of 22 subgroups. The TMRC for the U.S. population is calculated to be 0.000073 mg/kg body weight/day, which occupies approximately 0.6% of the ADI. The two most highly exposed subgroups are children, ages 1 to 6 (0.000158 mg/kg/day or 1.2% of the ADI) and children, ages 7 to 12 (0.000116 mg/kg/day or 0.9% of the ADI). A summary of the analysis is provided in Table 2.

4. The exposure estimate assumes residues would be present at the proposed tolerance level of 0.05 ppm and that 100% of the U.S. wheat and barley crop would be treated, a conservative approach that overestimates exposure. However, since estimates of exposure and risk using this approach are negligible, a more refined analysis is not necessary at this time.

cc: TAS File
Reading File
circ.
PMSD

TOX (Rathman)
Harmony SF
PP#6F3431

Table 1

CHEMICAL INFORMATION FOR CASWELL NUMBER 5735

DATE: 04/05/88

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CHEMICAL	STUDY TYPE	EFFECTS	REFERENCE DOSES	DATA GAPS/COMMENTS	STATUS
Harmony (DPX-M6316) Caswell #5735 CAS No. 79277-27-3 A.I. CODE: 128845 CFR No. 180.	2yr feed-rat NOEL= 1.2500 mg/kg 25.00 ppm IEL= 25.0000 mg/kg 500.00 ppm ONCO: Negative- 2 species.	Lower body wt gains in M, serum sodium in M & F were sporadically lower throughout the study. No evidence of oncogenicity in rats or mice.	ADI SF --> 100 OPP RFD= 0.013000 EPA RFD= 0.000000 WHO RFD 0.000000 Type:	No data gaps.	TOX complete 2/25/88. EPA verified 3/23/88. OPP to add comments concerning significance of serum Na levels.

FOOD CODE	FOOD NAME	PETITION NUMBER	NEW	TOLERANCE (PPM)	PENDING	PUBLISHED
24001AA	BARLEY	6F3431		0.050000		
24007AA	WHEAT-ROUGH	6F3431		0.050000		
24007GA	WHEAT-GERM	6F3431		0.050000		
24007HA	WHEAT-BRAN	6F3431		0.050000		
24007MA	WHEAT-FLOUR	6F3431		0.050000		

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TOLERANCE ASSESSMENT SYSTEM ROUTINE CHRONIC ANALYSIS

Table 2

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CHEMICAL INFORMATION	STUDY TYPE	EFFECTS	REFERENCE DOSES		DATA GAPS/COMMENTS	STATUS
			ADI	100		
Harmony (DPX-M6316) Caswell #5735 CAS No. 79277-27-3 A.I. CODE: 128845 CFR No. 180.	2yr feed-rat NOEL= 1.2500 mg/kg 25.00 ppm LET= 25.0000 mg/kg 500.00 ppm	Lower body wt gains in M, serum sodium in M & F were sporadically lower throughout the study. No evidence of oncogenicity in fats of mice.	EPA RfD= 0.013000 EPA RfD= 0.000000	WHO RfD 0.000000 Type:	No data gaps.	TOX complete 2/25/88. EPA verified 3/23/88. OPP to add comments concerning significance of serum Na levels.
ONCO: Negative- 2 species.						
POPULATION SUBGROUP	TOTAL TMRC (MG/KG BODY WEIGHT/DAY)	CURRENT TMRC*	NEW TMRC**	NEW TMRC AS PERCENT OF RFD	DIFFERENCE AS PERCENT OF RFD	EFFECT OF ANTICIPATED RESIDUES
U.S. POPULATION - 48 STATES	0.000000	0.000073	0.564662	0.564662		ARC 3RFD
U.S. POPULATION - SPRING SEASON	0.000000	0.000072	0.550823	0.550823		
U.S. POPULATION - SUMMER SEASON	0.000000	0.000072	0.550708	0.550708		
U.S. POPULATION - FALL SEASON	0.000000	0.000076	0.581185	0.581185		
U.S. POPULATION - WINTER SEASON	0.000000	0.000075	0.575946	0.575946		
NORTHEAST REGION	0.000000	0.000078	0.596777	0.596777		
NORTH CENTRAL REGION	0.000000	0.000076	0.585623	0.585623		
SOUTHERN REGION	0.000000	0.000069	0.531738	0.531738		
WESTERN REGION	0.000000	0.000071	0.547723	0.547723		
HISPANICS	0.000000	0.000070	0.538723	0.538723		
NON-HISPANIC WHITES	0.000000	0.000075	0.578085	0.578085		
NON-HISPANIC BLACKS	0.000000	0.000064	0.493015	0.493015		
NON-HISPANIC OTHERS	0.000000	0.000070	0.540285	0.540285		
NURSING INFANTS (< 1 YEAR OLD)	0.000000	0.000025	0.190546	0.190546		
NON-NURSING INFANTS (< 1 YEAR OLD)	0.000000	0.000059	0.450515	0.450515		
FEMALES (13+ YEARS, PREGNANT)	0.000000	0.000052	0.396954	0.396954		
FEMALES 13+ YEARS, NURSING	0.000000	0.000065	0.503446	0.503446		
CHILDREN (1-6 YEARS OLD)	0.000000	0.000158	1.217662	1.217662		
CHILDREN (7-12 YEARS OLD)	0.000000	0.000116	0.890208	0.890208		
MALES (13-19 YEARS OLD)	0.000000	0.000084	0.648162	0.648162		
FEMALES (13-19 YEARS OLD, NOT PREG. OR NURSING)	0.000000	0.000064	0.489385	0.489385		
MALES (20 YEARS AND OLDER)	0.000000	0.000063	0.488046	0.488046		
FEMALES (20 YEARS AND OLDER, NOT PREG. OR NURS)	0.000000	0.000048	0.368777	0.368777		

*Current TMRC does not include new or pending tolerances.
 **New TMRC includes new, pending, and published tolerances.

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