8-27-81

028201
SHAUGHNESSEY NO.

19
REVIEW NO.

EEB BRANCH REVIEW

DATE: IN 7/29/81 OUT 8/27/81

FILE OR REG. NO. 707-75

PETITION OR EXP. PERMIT NO.

DATE OF SUBMISSION 7/14/81

DATE RECEIVED BY HED 7/28/81

RD REQUESTED COMPLETION DATE 8/28/81

EEB ESTIMATED COMPLETION DATE

RD ACTION CODE/TYPE OF REVIEW 335/Amendment -- Food use

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

DATA ACCESSION NO(S).

PRODUCT MANAGER NO. R. Taylor (25)

PRODUCT NAME(S) Stampede 3E Herbicide

COMPANY NAME Rohm and HAAS Company

SUBMISSION PURPOSE Proposed Conditional Registration of Barley and Oat Uses

SHAUGHNESSEY NO.	CHEMICAL, & FORMULATION	% A.I.
028201	Propanil	33.8

Stampede 3E (Propanil)

100 Pesticide Label Information

100.1 Pesticide Use

Selective postemergent herbicide for control of various weed species in barley and oats.

100.2 Formulation Information

Stampede 3E emulsidiable concentrate

Propanil	33.8%
Inerts	66.2%
	100 %

Stampede 3E contains the equivalent of 3 lbs active ingredient per gallon.

100.3 Applications; Directions, Rates

TIMING OF APPLICATION

For maximum weed control, it is important that wheat fields be inspected frequently prior to the STAMPEDE application to ensure that emerging foxtail grass and susceptible broadleaf weeds are treated with STAMPEDE at the proper stage of growth.

FOXTAIL GRASS AND BROADLEAF WEED CONTROL

When foxtail grass and broadleaf weeds are present in the same field, time the application to the foxtail leaf stage. A single application of STAMPEDE 3E should be timed ot occur when the majority of the foxtail grass seedlings are in the 2-4 leaf stage and the wheat is in the 2 leaf to early tillering stage. Application of STAMPEDE at this time will provide effective control of foxtail grass as well as susceptible broadleaf weeds in the 1 to 4 leaf stage. Since the height of foxtail grass plants bears no relationship to leaf stage, it is important to judge the susceptibility of foxtail grass to STAMPEDE only by leaf stage. The effectiveness of STAMPEDE in controlling foxtail grass declines rapidly as the fifth leaf emerges and tillering begins. Applications of STAMPEDE made after the fifth leaf stage of wheat may be less effective on foxtail grass and broadleaf weeds because crop cover will interfere with spray coverage of the weeds.

TIME OF SPRAYING

Although successful applications of STAMPEDE have been made at any time of the day when wind conditions remained favorable, early morning or late evening application is usually preferable. At this time winds are generally at a lower velocity and humidity is higher.

DOSAGE RECOMMENDATIONS

STAMPEDE 3E should be applied in a single application at the rate of 2 quarts (1.5 pounds active ingredient) per acre when the majority of the foxtail seedlings are in the 2 to 4 leaf stage and when the wheat is in the 2 leaf to early tillering stage. At this growth stage of foxtail grass, most susceptible broadleaf weeds should be in the 1 to 4 leaf stage and will be effectively controlled. Time the application to the foxtail leaf stage. STAMPEDE has no residual herbicidal effect and, therefore, will not control foxtail grasses and broadleaf weeds which emerge from the soil after application.

100.4 Target Organisms

Green Foxtail (Wild Millet or Pigeongrass) (Setaria viridis)

Yellow Foxtail (Wild Millet or Pigeongrass) (Setaria lutesoens)

Wild Buckwheat (Polygonum convolvulus)

Redroot Pigweed (Amaranthus retroflexus)

Prostrate Pigweed (Amaranthus blitoides)

Lambsquarters (Chenopodium album)

Wild Mustard (Brassica kaber)

101 Physical and Chemical Properties
(See EEB review by Leitzke, 12/3/79).

102 Behavior in the Environment
(See EEB review by Leitzke, 12/3/79).

103 Toxicological Properties

103.1 Reference From Toxicology Branch

Acute Oral LD50

Rat	1384 mg/kg	Technical
Rat	1.87 mg/kg	STAM F .34 (36.5% ai)
Dog	1217 mg/kg	Technical
Rat	560 mg/kg	STAM EC
Rabbit	520 mg/kg	STAM ED

Subacute

Rat no effect level (NOEL) in diet <0.1%

Chronic

Rat	NOEL	400 ppm	STAM
Dog	NOEL	600 ppm	STAM

Reproduction

Rat	NOEL	<1000 ppm	STAM F-34

103.2 Fish and Wildlife Minimum Requirements

There is a virtual absence of Core data among the submitted fish and wildlife tests. Betz (EEB review of 10/10/78) found all submitted tests Supplemental because of non-standard test or statistical methods, use of formulated products, or use of non-standard species. Leitzke (12/3/79) attempted to correct for the use of formulated products by extrapolation, but such extrapolations often give inaccurate results.

All of the available acute oral LD50s have been expressed as mg/kg/day, rather than as a single mg/kg dose. No 8-day dietary LC50s on birds are available, except as extrapolated from acute oral LD50s. The only available Core studies on aquatic species are a fathead minnow embryo-larvae test, a fathead minnow residue uptake study, and a study of propanil metabolism in rainbow trout. None of these studies fulfills the minimum requirements for registration. Supplemental studies indicate that propanil is moderately toxic to fathead minnows and Daphnia species.

103.4 Additional Aquatic Tests

The Maximum Acceptable Toxicant Concentration (MATC) found in a 60-day Egg-to-Fingerling study on fathead minnows (Pimephales promelas) was 0.4 - 0.6 ppb. The Application Factor (96-hr LC50/MATC)= 22,000 (See Leitzke, 12/3/79).

In a fathead minnow residue uptake study, bioconcentration factors at 0.5, 5.0, 5.0, and 50 ppb (nominal) were 69.0, 111.3, 114.4, and 66.3, respectively.

103.5 Aquatic Field Test

(Note: The following is not a validation)

An enclosed 0.025 ha pond was treated with 7 kg/ha propanil (normal application rate for rice in Russia), and 72 "ides" were introduced. Samples were taken periodically for residue analyses, and over a 60-day period fish were biochemically and histologically examined.

Propanil concentration was 0.2 ppm on day 1 and declined to 0.05 ppm by day 5; only its metabolites were found on the 10th day. By day 10 the following pathological findings were noted: 1) complete loss of hemoglobin from red blood cells and numerous dead white blood cells, 2) disaggregation of liver cells which increased over the remainder of the test, and 3) degeneration and resorption of ovocytes which also continued till the end. After 60 days control fish had increased in weight 63%, while exposed fish increased by only 14% and had 20% mortality.

Popova, G.V. 1973. Changes in morphophysiological indices of fish, induced by propanil. Eksp. Vod. Toks. 4: 38-49. (transl. by Colten; In: EEB Propanil Registration Review file).

104 Hazard Assessment

104.1 Discussion (Residue Profile)

The following residues (in ppm) may be expected on vegetation immediately following application at 1.5 lb. AI/acre:

Short Grass	Long Grass	Leaves & Leafy Crops	Forage
360	165	187	87

104.2 Likelihood of Adverse Effects to Non-Target Organisms

Barley and oats are both major crops, and are both heavily utilized by many types of wildlife, particularly birds. Registration of Stampede 3E for use on barley and oats could result in enormous increases in the amount of land and the number of wildlife populations exposed to the pesticide.

104.4 Adequacy of Toxicity Data

The data currently in EEB files is inadequate to support registration of Stampede 3E for use on major crops such as barley and oats. None of the minimum requirements have been fulfilled. A tentative evaluation of the hazards to fish might be made, based on the 60-day Egg - to fingerling study mentioned in Section 103.4 above, but the registrant has contended that study does not represent the true toxicity of Stampede 3E.

104.5 Additional Data Required

The Following data are required to support the registration of Stampede 3E on barley and oats:

1. An 8-day dietary LC50 for a wild waterfowl (preferably the mallard duck)

2. An 8-day dietary LC50 for an upland gamebird (preferably the bobwhite quail or ring - necked pheasant).

3. The 96-hour LC50s for a warmwater fish (preferably the bluegill sunfish) and a coldwater fish (preferably the rainbow trout). As related by Leitzke (4/11/80), previous quality control bioassays did not satisfy the purposes for which they were proposed, i.e. identification of alleged contaminants in "old" technical propanil batches.

4. A 48-hr EC50 for an aquatic invertebrate

All of the above tests should be performed on technical propanil.

105 Classification

No classification will be suggested until data gaps have been filled and a hazard evaluation has been completed.

107 Conclusion

The proposed registration of propanil (Stampede 3E) on barley and oats would greatly increase the acreage and number of wildlife populations exposed to the pesticide. Barley and oats are major crops, grown in areas of the country other than rice, the currently registered product. In order to perform an adequate hazard assessment, EEB will require that several major data gaps (See Section 104.5) be filled. Until these data are provided. EEB will recommend against the registration of propanil (Stampede 3E) for use on barley and oats.

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