121001
SHAUGHNESSY NO.

11
REVIEW NO.

EEB BRANCH REVIEW

DATE: IN 5-22-85 OUT 6-4-85

FILE OR REG. NO. 85-CO-04

PETITION OR EXP. PERMIT NO.

DATE OF SUBMISSION

DATE RECEIVED BY HED 5-22-85

RD REQUESTED COMPLETION DATE 6-6-85

EEB ESTIMATED COMPLETION DATE 6-6-85

RD ACTION CODE/TYPE OF REVIEW 510/Section 18

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

DATA ACCESSION NO(S).

PRODUCT MANAGER NO. D. Stubbs (41)

PRODUCT NAME(S) Poast

COMPANY NAME State of Colorado

SUBMISSION PURPOSE Proposed Section 18 for use on onions

SHAUGHNESSY NO.	CHEMICAL & FORMULATION	% A.I.
121001	2-[1-ethoxyimino)butyl-5-[2-	18%
	(ethylthio)propy]-3-hydroxy-2-	
	cyclohexen-1-one	

EEB BRANCH REVIEW

Sethoxydin (Poast)

100 Submission Purpose and Label Information

The State of Colorado has requested an Emergency Exemption (Section 18 action) for the use of Poast (active ingredient sethoxydin) to control postemergent weeds in onions.

100.1 Formulation Information

Poast (EPA Registration No. 7969-58) contains 18 percent (1.5 lbs per gallon) sethoxydin.

100.3 Application Methods, Directions, Rates (from proposal)

Rate: 0.25 lbs ai/acre with a maximum of three applications. Maximum rate, regardless of the number of applications, will not exceed 0.75 lbs ai/acre.

Applications will be made using a minimum of 5 - 20 gallons diluent per acre.

Method of application: Ground or air

100.4 Target Organisms

Yellow Foxtail (Setaria lutecens)
Green Foxtail (Setaria viridas)
Barnyardgrass (Echinochloa crus-galli)
Sandbur (Cenchrus sp.)
Shattercane (Sorghum bicolor)
Fall Panicum (Panicum dichotomiflorum)
Wild Proso Millet (Panicum miliaceum)

100.5 Precautionary Labeling
(Taken from label submitted to RD: Date April 4, 1985)

Environmental Hazards

"Do not apply directly to lakes, ponds, or streams. Do not contaminate water by cleaning of equipment or disposal of wastes."

100.6 Proposed Section 18 Program

100.6.1 Nature and Scope of Emergency

(Taken from submitted letter of request)
"Currently, there are no postemergent herbicides registered for grassy weed control in onions. Because of this lack, the only alternative method of control is hand weeding. The rising cost of labor (when such labor is available) has precluded the use of this method for control. This combined with increasingly severe grassy weed problems necessitates the use of a postemergent herbicide."

"...Nitrofen manufactured by Rohm and Haas under the trade name TOK was formerly registered for postemergent control of grassy weeds in onions. However, the manufacturer has withdrawn registration of this product and nitrofen is no longer available."

100.6.2 Date, Duration

Duration of Application: No treatments will be performed after August 15, 1985. Applications will begin when grassy weeds are at least 3" in height.

100.6.3 Treatment Areas

Colorado counties: Adams, Bent, Boulder, Crowley, Delta, El Paso, Larimer, Logan, Mesa, Montrose, Morgan, Otero, Prowers, Pueblo, and Weld.

A maximum of 12,000 acres will be treated. Not all acreage will be treated and it is unlikely that all affected areas will be treated at maximum rates and/or number of applications.

101 Hazard Assessment

101.1 Likelihood of Adverse Effects to Nontarget Organisms

Terrestrial Organisms

Sethoxydin is considered practically nontoxic to mammals based on acute oral LD_{50}'s of over 2,000 mg/kg for rats and over 5,000 mg/kg for mice. Available data also indicate the chemical to be practically nontoxic to birds on an acute oral basis (LD_{50} > 2,000 mg/kg for mallard duck). The dietary data also establish sethoxydin's low toxicity for both upland birds (LC_{50} > 5,000 ppm for bobwhite quail) and waterfowl (LC_{50} > 5,000 ppm for mallards).

Following a single application of sethoxydin at a rate of 0.25 lb ai/acre, maximum expected residues on typical avian and mammalian dietary matter would range from 1.8 ppm on fruit to about 60 ppm on sparse foliage. Expected body burdens of the toxicant following a single application would not approach toxic levels.

Three treatments may be made. The proposal did not state time intervals between repeat applications. Nonetheless, if terrestrial organisms were exposed to residues three times those indicated above, toxic effects still would not be anticipated. Also, environmental fate data indicate that the chemical is not persistent (photodegradation half-life is less than 1 day for soil and water).

Aquatic Organisms

Based on available laboratory data, sethoxydin is practically nontoxic to freshwater fish species (96-hour LC_{50}'s greater than 100 ppm for both rainbow trout and bluegill trout). The chemical is slightly toxic to Daphnia magna (48 hour LC_{50} of 78.1 ppm).

A direct application of sethoxydin at the maximum rate (0.25 ai/acre) to a 6-inch acre body of water could be expected to result in residues no greater than 0.092 ppm. Assuming no breakdown of the compound between three applications at the maximum rate (total of 0.75 lbs ai/acre), residues would not exceed 0.551 ppm. Theoretical aquatic triggers would not be surpassed.

Sethoxydin is fairly stable to hydrolysis (half-life is 40 days), however it photodegrades rapidly in water (half-life is less than 1 day). Available data indicate no potentional for bioaccumulation.

101.2 Endangered Species

Given application rates, the low toxicity of the chemical, and evidence that the compound will not persist in the environment, no significant impact is expected to Endangered/Threatened animal species.

The North Park Phacelia is an endangered plant located in Jackson County, Colorado. The Section 18 proposal does not list Jackson County as an area intended to receive herbicide treatment.

The registrant states that the Colorado Division of Wildlife will be contacted to determine the potential risk to "rare and/or endangered species." EEB encourages such communication.

102 Conclusions

Based on available data, use of sethoxydin (Poast) under this Emergency Exemption program should not provide for significant risks to populations of non-target organisms, including Federally Endangered/ Threatened Species.

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5