EEB file

189251
RECORD NO.

121001
SHAUGHNESSEY NO.

REVIEW NO.

EEB REVIEW

DATE: IN 3-25-87 OUT 4-2-87

FILE OR REG. NO 87-NE-02

PETITION OR EXP. NO.

DATE OF SUBMISSION 2-6-87

DATE RECEIVED BY HED 3-23-87

RD REQUESTED COMPLETION DATE 4-6-87

EEB ESTIMATED COMPLETION DATE 4-6-87

RD ACTION CODE/TYPE OF REVIEW 510

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

DATA ACCESSION NO(S).

PRODUCT MANAGER NO. Stubbs (41)

PRODUCT NAME(S) Sethoxydim (Poast)

COMPANY NAME State of Nebraska

SUBMISSION PURPOSE Section 18 for use of Poast in dry edible beans

SHAUGHNESSEY NO.	CHEMICAL, & FORMULATION	% A.I.
121001	~~Sethoxydim~~	

100.0 Submission Purpose and Label Information

100.1 Submission Purpose and Pesticide Use

The Department of Agriculture for the State of Nebraska is requesting a section 18 emergency exemption to use Poast® during the 1987 growing season.

This herbicide is expected to control volunteer corn, wild proso millet and other grasses over 40,000 acres of dry edible beans in the following counties:

Banner	Garden	Rock
Box Butte	Garfield	Scotts Bluff
Chase	Hayes	Sheridan
Cheyenne	Keith	Sioux
Custer	Keya Paha	Brown
Duel	Kimball	Dawes
Dundy	Morrill	Dawson
Red Willow	Perkins	Hamilton
	Lincoln	Hitchcock

100.2 Formulation Information

Active Ingredients:
Sethoxydim* 18%
Inert Ingredients 82%

One gallon contains 1.5 lb. a.i.

100.3 Application Methods, Directions, Rates

Poast will be applied by aerial or ground equipment at a maximum rate of 0.3 lb. a.i./acre for each application or a total of 0.5 lb. a.i. per year (maximum 2 applications per year). A total of 20,000 lb. a.i. will be applied over 40,000 acres. The first application will be when the grassy weeds are three to six inches tall.

100.4 Target Organisms

Volunteer corn, *zea mays*
Wild proso millet, *Panicum miliaceum*
Yellow foxtail, *Setaria lutescens*
green foxtail, *Setaria viridis*
barnyard grass, *Echinochloa crus-golli*
witchgrass, *Panicum capillare*,
sandburr, *Cenchrus pauciflorus* and
Cenchrus longispinus

100.5 Precautionary Labeling

No Environmental Hazard Labeling was included with the submission.

Discussion

Directly following a single application rate of 0.3 lb. a.i./acre, the following maximum residue concentrations are anticipated:

Surface	Maximum residue (ppm)
short rangegrass	72
long grass	32
leafy crops	36
forage alfalfa and Insects	17
seed pods	3
fruit	1.8
Top 6" of water (after direct application)	220 ppb
Top 6" of soil (after direct application)	6.6
Aquatic EEC	9.15 ppb

101.2 Likelihood of Adverse Effects to Nontarget Organisms

Avian Species

The available avian toxicity data indicates sethoxydim is practically non toxic to waterfowl (Mallard LD50 > 2,000 mg/kg) on an acute oral basis. This chemical is also practically non-toxic to both upland game birds and waterfowl (Mallard and Bobwhite LC50 > 5,000 ppm) on a dietary basis.

Mammalian Species

The available mammalian toxicity data indicates sethoxydim is practically non-toxic to mammals on an acute oral basis (Rat LD50 > 2,000 mg/kg and Mice LD50 > 5,000 mg/kg).

Aquatic Species

Sethoxydim is practically non-toxic to freshwater fish (Bluegill LC50 = 265 ppm and Rainbow Trout LC50 = 170 ppm) and slightly toxic to aquatic invertebrates (Daphnia magna LC50 = 78 ppm).

Environmental Fate

Sethoxydim has a half-life of < 4 day in soil and water (< 1 day in direct sunlight). (See EEB Review, Charles Lewis, 2/12/87). The Estimated Environmental Concentration is expected to be 9.15 ppb. (See Attachment A for calculations).

Exposure

Avian Species

Based on the estimated exposure and the available avian toxicity data, sethoxydim is not expected to pose a hazard to avian wildlife. The maximum expected exposure of short range grass (72 ppm) is well below both the endangered species trigger (1/10th LC50 > 500 ppm) and the restricted use trigger (1/5th LC50 > 1000 ppm).

Aquatic

Based on the estimated exposure and the available aquatic toxicity data, sethoxydim is not expected to pose a hazard to aquatic organisms. The maximum exposure, even after direct application is 220 ppb, and is well below the endangered species trigger (1/20th LC_{50} = 3.9 ppm) and the restricted use trigger (1/20th LC_{50} = 7.8 ppm) for aquatic organisms. In this case EEB used the LC_{50} for the most sensitive aquatic organism, Daphnia magna.

101.3 Endangered Species

EEB does not expect that this systemic post emergence herbicide will pose a hazard to endangered avian or aquatic wildlife.

The Office of Endnagered Species, Nebraska Field Office, did identify a wildflower known as blowout penstemon (Penstemon haydenii) that will be in jeopardy if this herbicide is used in its range. With the assistance of Wally Jobman, FTS-541-6571, 3-26-87, the following boundry was decided upon to restrict the use of this herbicide:

"Poast (sethoxydim) can not be applied east of Route 385 and South of Route 2 in Box Butte County."

This would minimize the potential hazard to this endangered plant. See Attachment B for the map.

4

101.4 Adequacy of Toxicity Data

No data were submitted however, the available toxicity data are adequate to complete a risk assessment for the proposed emergency exemption to use Poast on dry edible beans.

However, prior to registration of this herbicide, an acute contact toxicity study on honeybees will be required.

101.5 Adequacy of Labeling

The following "Environmental Hazards labeling" is required.

"Do not apply directly to water or wetlands. Do not contaminate water by cleaning of equipment or disposal of wastes. Do not apply east of Route 385 and South of Route 2 in Box Butte County."

103.0 Conclusion

EEB has completed the risk assessment for this emergency exemption submitted by the Department of Agriculture for the State of Nebraska to control volunteer corn, wild proso millet, and other dry grasses in dry edible beans.

Based on the available toxicity data, and the estimated exposure, use of this herbicide is not expected to pose an acute hazard to non-endangered or endangered wildlife. There is concern for 1 endangered plant species, therefore, the labeling in 101.5 is required to mitigate this concern.

Candy Brassard, Environmental Protection Specialist
Ecological Effects Branch
Hazard Evaluation Division (TS-769-C)

Candy Brassard 3/30/87

Douglas J. Urban, Head - Section III
Ecological Effects Branch
Hazard Evaluation Division (TS-769-C)

Douglas J. Urban 4/1/87

for Michael W. Slimak, Chief
Ecological Effects Branch
Hazard Evaluation Division (TS-769-C)

Douglas J. Urban, Acting 4/2/87

Telephone Confirmation Poast

First contact- Wally Jobman, U.S. Fish and Wildlife Service
FTS- 541-6571

I called to determine if there were any endangered plants that would be affected by the use of sethoxydim, also known as Poast on dry edible beans in Nebraska. After listing the counties involved, he informed me that the only one that was a concern was Box Butte county. He informed me that there is an proposed endangered wildflower, known as blowout tenstemon, that is expected to be listed within the next month.

Second Contact- Don Kemper, Dept. of Agriculture, State of Nebraska
(402) 471-2394

I then called Mr. Kemper, and was informed that Box Butte is one of the largest counties where dry edible beans are grown. I then realized that restricting the use to exclude Box Butte county would be a problem.

I called Wally Jobman again and discussed limiting the method of of application to ground application, but we decided that to restrict its use totally in the south east portion of this county would be better. Therefore this herbicide can not be used in the south east portion of the Box Butte County - the highway boundarys agreed upon are as follows:

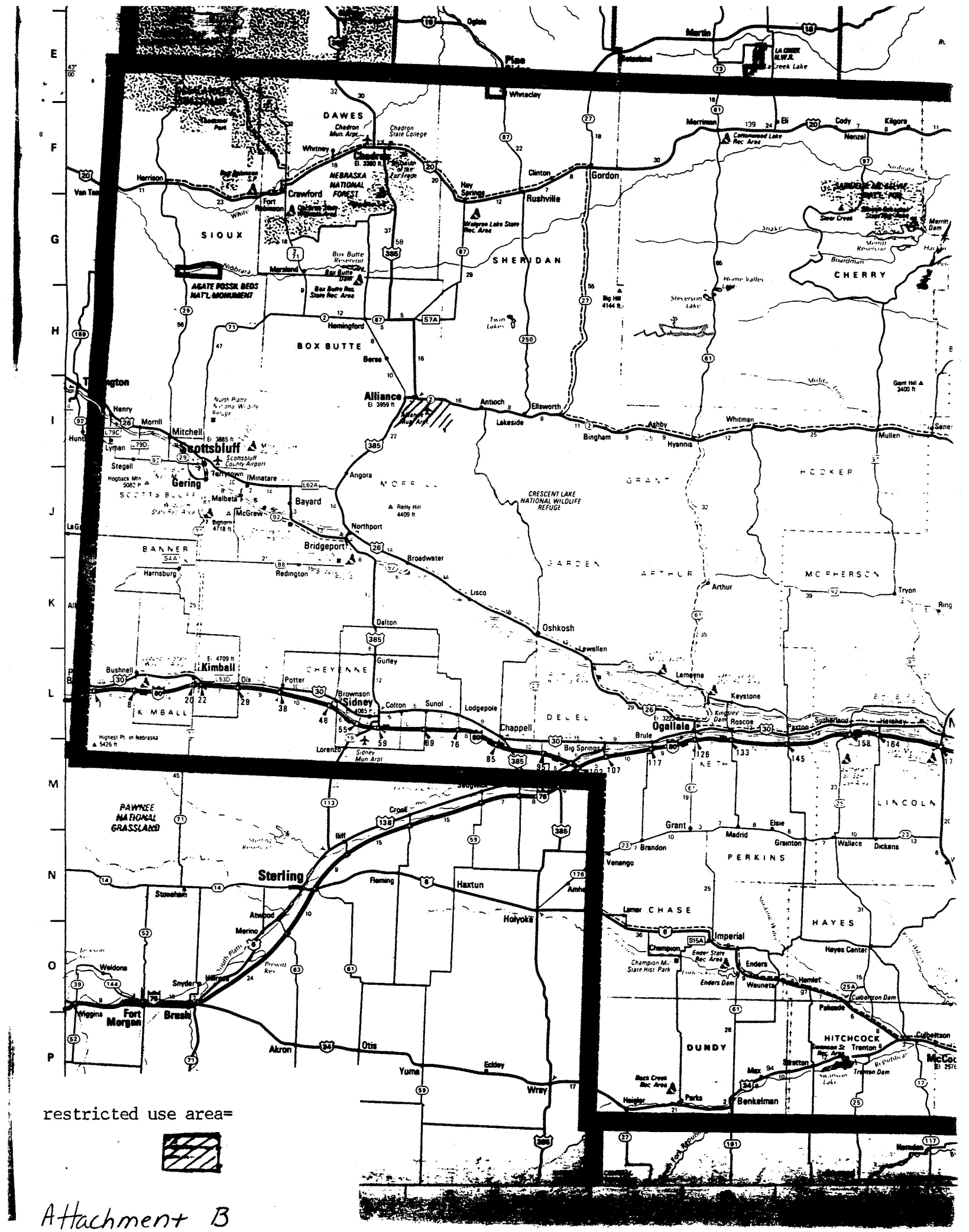
Sethoxydim (Poast) can not be used east of Rout 385 or South of Route 2 in Box Butte County.

I then discussed this with Don Kemper, and he too agreed that this restriction would be workable.

I informed Wally Jobman (OES) that I would send him a copy of the EEB review for his future reference.

Cindy Brassard
3/26/87

6



restricted use area=

Attachment B