EEB File

245158
RECORD NO.

121001
SHAUGHNESSEY NO.

30
REVIEW NO.

EEB REVIEW

DATE: IN 5-12-89 OUT MAY 23 1989

FILE OR REG. NO 89-IA-01

PETITION OR EXP. NO.

DATE OF SUBMISSION 5-5-89

DATE RECEIVED BY EFED 5-12-89

RD REQUESTED COMPLETION DATE 5-26-89

EEB ESTIMATED COMPLETION DATE 5-26-89

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. D. Stubbs (41)

PRODUCT NAME(S) POAST (Sethoxydim)

COMPANY NAME State of Iowa

SUBMISSION PURPOSE Proposed §18 for use on lima beans

SHAUGHNESSEY NO.	CHEMICAL, & FORMULATION	% A.I.
121001	sethoxydim	18%

EEB REVIEW

Chemical: Poast (sethoxydim)

100 Submission Purpose and Label Information

100.1 Submission Purpose and Pesticide Use

The State of Iowa is requesting an emergency exemption (§18) for the use of Poast herbicide to control "late season escapes of grassy weeds including shattercane, wild proso millet...". No new ecological effects data were submitted with the request.

100.2 Formulation Information

Active ingredient: Sethoxydim.....18%
Inert ingredients.....82%

1.5 lb ai/gal

100.3 Application Methods, Directions, Rates

Submitted directions indicate: one ground application/season at maximum rate of 0.28 lb ai/A (1.5 pints Poast/A).

100.4 Target Organisms

The reported target organisms are annual grasses including shattercane and wild proso millet.

101 Hazard Assessment

101.1 Discussion

The proposal estimates that a maximum of 150 acres out of an estimated 500 acres of lima beans in production in 1989 in Iowa would be treated. The herbicide "...would normally be applied in late July or early August".

101.2 Likelihood of Adverse Effects on Nontarget Organisms

As indicated in previous EEB reviews, sethoxydim is considered "practically non-toxic" to mammals, birds, and freshwater fish, and "slightly toxic" to aquatic invertebrates. At 0.28 lb ai/A, it is not expected to pose a hazard to nontarget fauna.

101.3 Endangered Species Considerations

Because of the low toxicity to animal test species, hazard to endangered/threatened animal species is not expected under the proposed use. However, substantial hazard is quite possible for any exposed endangered/threatened plant. Based on EEB's 5/11/89 endangered species list, the federally-listed plants in Iowa are the Mead's milkweed, the prairie bush-clover, and the northern wild

monkshood (all three have threatened status). Eastern and western prairie fringed orchids are federally-proposed threatened species in Iowa (See 3-page endangered species attachment).

The §18 application states that "lima bean production in Iowa is limited to the northeastern part of Iowa primarily in Bremer and Chickasaw counties". Reference to the "northeastern part of Iowa" is vague. Bremer county contains the western prairie fringed orchid. Other Iowa counties that could be considered "northeastern" and which all contain federally-listed plants include Allamakee, Black Hawk (possibly), Butler, Clayton, Delaware, Dubuque, Howard, Jackson, and Winneshiek counties. This §18 application should not be approved for any of these or other of the 25 counties shown on the attached pages, unless the USFWS Endangered Species Regional Office (Region 3--Twin Cities, MN) is able to confirm that these species would not be exposed under the proposed use.

103 Conclusions

EEB has reviewed the proposed emergency exemption for the use of Poast herbicide on lima beans in Iowa. EEB concludes that the proposed use will not likely result in any hazard to nontarget fauna. However, because federally-listed or -proposed threatened plant species are located in counties in which lima beans may be grown, this application should not be approved unless USFWS confirms that these species would not be exposed (see above).

James D. Felkel

James D. Felkel
Wildlife Biologist
Section #4
EEB/EFED

Harry Craven 5/23/89

Harry Craven, Head
Section #4
EEB/EFED

for James W. Akerman, Chief
EEB/EFED

ENDANGERED SPECIES

SPECIES	KNOWN IN COUNTY	LISTED STATUS	TAXON GROUP
** STATE: IA			
* COUNTY: ADAIR			
MILKWEED, MEAD'S	.T.	T	PLANT
ORCHID, WESTERN PRAIRIE FRINGED	.T.	PT	PLANT
* COUNTY: ALLAMAKEE			
MONKSHOOD, NORTHERN WILD	.T.	T	PLANT
* COUNTY: BLACK HAWK			
BUSH-CLOVER, PRAIRIE	.F.	T	PLANT
* COUNTY: BREMER			
ORCHID, WESTERN PRAIRIE FRINGED	.T.	PT	PLANT
* COUNTY: BUENA VISTA			
ORCHID, WESTERN PRAIRIE FRINGED	.T.	PT	PLANT
* COUNTY: BUTLER			
BUSH-CLOVER, PRAIRIE	.T.	T	PLANT
* COUNTY: CHEROKEE			
ORCHID, WESTERN PRAIRIE FRINGED	.T.	PT	PLANT
* COUNTY: CLARKE			
BUSH-CLOVER, PRAIRIE	.T.	T	PLANT
* COUNTY: CLAY			
ORCHID, WESTERN PRAIRIE FRINGED	.T.	PT	PLANT
* COUNTY: CLAYTON			
MONKSHOOD, NORTHERN WILD	.T.	T	PLANT
* COUNTY: DELAWARE			
MONKSHOOD, NORTHERN WILD	.T.	T	PLANT
* COUNTY: DICKINSON			
BUSH-CLOVER, PRAIRIE	.T.	T	PLANT
ORCHID, WESTERN PRAIRIE FRINGED	.T.	PT	PLANT

ENDANGERED SPECIES

SPECIES	KNOWN IN COUNTY	LISTED STATUS	TAXON GROUP
* COUNTY: DUBUQUE			
MONKSHOOD, NORTHERN WILD	.T.	T	PLANT
* COUNTY: EMMET			
BUSH-CLOVER, PRAIRIE	.T.	T	PLANT
ORCHID, WESTERN PRAIRIE FRINGED	.T.	PT	PLANT
* COUNTY: GUTHRIE			
ORCHID, WESTERN PRAIRIE FRINGED	.T.	PT	PLANT
* COUNTY: HOWARD			
BUSH-CLOVER, PRAIRIE	.T.	T	PLANT
ORCHID, WESTERN PRAIRIE FRINGED	.T.	PT	PLANT
* COUNTY: JACKSON			
MONKSHOOD, NORTHERN WILD	.T.	T	PLANT
* COUNTY: JOHNSON			
ORCHID, EASTERN PRAIRIE FRINGED	.T.	PT	PLANT
* COUNTY: KOSSUTH			
BUSH-CLOVER, PRAIRIE	.T.	T	PLANT
ORCHID, WESTERN PRAIRIE FRINGED	.T.	PT	PLANT
* COUNTY: LUCAS			
BUSH-CLOVER, PRAIRIE	.T.	T	PLANT
* COUNTY: OSCEOLA			
BUSH-CLOVER, PRAIRIE	.T.	T	PLANT
* COUNTY: POCOHONTAS			
ORCHID, WESTERN PRAIRIE FRINGED	.T.	PT	PLANT
* COUNTY: STORY			
BUSH-CLOVER, PRAIRIE	.T.	T	PLANT
* COUNTY: WARREN			
MILKWEED, MEAD'S	.T.	T	PLANT

ENDANGERED SPECIES

SPECIES	KNOWN IN COUNTY	LISTED STATUS	TAXON GROUP
* COUNTY: WINNESHIEK			
BUSH-CLOVER, PRAIRIE	.T.	T	PLANT

KEY:
T = Threatened; E = Endangered; P = Proposed; CH = Critical Habitat
.T. = Known in County; .F. = Possible in County

8

To: RSERB (EPA7356)
From: IA/DOA/LD (EPX2475) Delivered: Mon 8-May-89 12:46 EDT Sys 163 (538)
Subject: ATTN: Donald Stubbs/Request for Section 18 Exemption/Iowa
Mail Id: IPM-163-890508-115010833

May 5, 1989

Mr. Donald Stubbs, Section Head
Emergency Response Branch
Registration Division (TS 767C)
Environmental Protection Agency
401 M Street SW
Washington DC 20460

RE: Emergency use of Poast (EPA Reg. No. 7969-58)

Active ingredient: 2- 1-(ethoxyimino) butyl -5- 2-(ethylthio) propyl -3-hydroxy-2-cyclohexen-1-one) for postemergence grass control in lima beans

Dear Mr. Stubbs:

Section 18 of P.L. 92-516 as amended provides that the administrator may at his discretion exempt any state or federal agency from the provisions of this act if he determines emergency conditions exist which require such exemptions. Part 116, Subchapter E, Chapter 1 of Title 40, further provides rules for determining such exemptions. As Secretary of Agriculture, I am requesting a specific exemption for the use of Poast as a postemergence herbicide for controlling grass infestations in lima beans. A report outlining the information requested under Part 166.20 is attached.

I will appreciate your expeditious review of this application and notification of approval.

Sincerely,

Dale M. Cochran
Secretary of Agriculture

DMC/CAE/sr

Enclosure

cc Daryl Frey
Charles Eckermann
Leo Alderman
Henry Tabor
Deborah Datillo

PST/pc-2844

7

APPLICATION FOR EMERGENCY EXEMPTION FOR THE USE OF THE HERBICIDE POAST ON LIMA BEANS IN IOWA

This is an application for specific exemption under Section 18 of FIFRA for the use of sethoxydim for postemergence control of annual and perennial grasses in Iowa during the 1989 growing season. The following information is submitted in the format indicated in the proposed rules for Chapter 1, Title 40 CFR, Part 166, Subchapter E.

General information required in an application for a specific exemption.

1. Identity of contact persons.

   A. Technical questions regarding use of Poast on lima beans should be addressed to:

   Dr. Henry Taber
   Extension Horticulturist
   Iowa State University
   Ames, IA 50010
   Phone: 515-294-1870

   B. Questions regarding regulatory matters and the Section 18 application should be addressed to:

   Charles Eckermann, Chief
   Pesticide Bureau
   Iowa Department of Agriculture and Land Stewardship
   Wallace Building
   Des Moines, IA 50319
   Phone: 515-281-8590

2. Description of the pesticide.

   A. Poast is a selective postemergence herbicide registered by BASF Corporation (EPA Reg. No. 7969-58) of Parsippany, New Jersey. It contains 18 percent sethoxydim (2- 1-(ethoxyimino)butyl -5- 2-(3thylthio) propyl -3-hydroxy-2-cyclohexen-1-one) and 82 percent inert ingredients. See label in Appendix viii.

   Poast is used for postemergence control of annual and perennial grass weeds in soybeans, cotton, sugar beets, alfalfa, sunflower, peanuts, strawberries, raspberries, tomatoes, bell peppers, nonbearing food crops, ornamental, nursery and other nonfood crops.

   B. Proposed label for use of Poast in lima beans in Iowa for the 1989 growing season.

For use only by certified private applicators and/or licensed commercial applicators certified in the Category 1A - Agriculture Weed Control or Category 1D - Fruit and Vegetable Pest Control.

Supplemental labeling and use directions for the emergency use of Poast Herbicide (EPA Reg. No. 7969-58) for weed control in lima beans in Iowa. Consult the product label for additional requirements, restrictions and precautions.

This label is valid only during the 1989 growing season under an EPA emergency exemption issued pursuant to section 18 of the Federal Insecticide, Fungicide and Rodenticide Act as amended.

Use of this product in a manner inconsistent with its labeling is a violation of state and federal laws. Use of this product for control of weeds in lima beans without the supplemental labeling in the possession of the user is a violation of the law. Use of this product for the control of weeds in lima beans in a manner other than approved under the emergency exemption is considered a misuse and the user is subject to criminal and civil penalties and revocation of the applicator's certification credentials.

Before applying this product for control of weeds in lima beans under this emergency exemption contact Charles A. Eckermann, Chief, Pesticide Bureau Iowa Department of Agriculture and Land Stewardship, Henry Wallace Building, Des Moines, IA 50319 (515-281-8591) or his designee for reporting requirement necessary to comply wit the terms of the exemption. At the end of the growing season, reporting of the number of acres treated and the application rate is required.

Directions for use:

Control of annual grass weeds in lima beans.

-- Maximum rate of 0.28 pound of active ingredient per acre may be used (1.5-pint Poast per acre).

-- Make only one application per season.

-- Do not apply within 30 days of harvest.

-- Applications may be made with ground application equipment only.

-- Do not feed treated lima bean crop to livestock.

-- All applicable directions, restrictions and precautions on the EPA registered label are to be followed.

Contact the Iowa Department of Agriculture and Land Stewardship, Pesticide Bureau, Wallace Building, Des Moines, IA 50319 or (515-281-8591), for additional information.

3. Description of proposed use.

   A. Sites of expected treatment and acreage: Lima bean production is relatively new to Iowa. In 1988 217 acres were produced. Projections for 1989 production were set at 500 acres with expectations up to 1000 acres to be dedicated to lima beans in future years. Lima bean production in Iowa is limited to the northeast part of Iowa primarily in Bremer and Chickasaw counties. This area is preferred because of the more desirable level topography and highly fertile, well drained soils. Another favorable aspect is the longer growing season available in Iowa compared to the northern states.

   Late season escapes of grassy weeds including shattercane, wild proso millet present the greatest risk for adversely affecting lima bean production in Iowa. It is estimated that not over 150 acres of lima beans grown in Iowa for processing would be treated with Poast, if Iowa was granted this specific exemption.

   B. Method and rate of application. Details of program state will implement. See proposed label 2(B) for emergency exemption use directions and program implementation for Poast on lima beans in Iowa.

   C. Restrictions and requirements of the proposed use. See proposed label 2(B) for applicable restrictions including qualification of applicators.

4. Availability of alternate controls.

   A. Mechanical and chemical controls have not been successful in controlling shattercane and wild proso millet infestations in lima beans grown on heavier soils in Iowa.

   Cultural practices have been changing over recent years as growers change from row crop planting practices to grain drilling which results in higher populations with normally 7 inches or less row spacing. Research has shown better yields per acre with grain drilling and the availability of pod stripper has allowed commercial growers to adopt these practices. Drilling allows more uniform spacing of the plants by reducing the spacing between the rows while increasing the spacing between plants within the row.

With drilling, however, the use of cultivation for weed control has necessarily decreased. As the rows close earlier, there is less opportunity to cultivate. Additionally, cultivation cannot prevent severe competition within the row by wild proso millet, shattercane and giant foxtail.

B. Listing of pesticides currently registered.

A brief description of the herbicides which could be used in Iowa follows below. None of the presently registered herbicides controls late season escapes of the persistent problem grasses — wild proso millet, shattercane or giant foxtail. It is this lack of alternative which has created a crisis situation for the lima bean processing industry in certain growing areas.

Trifluralin is labeled for preplant incorporated application. Although it provides acceptable control of some annual grasses, it does not control wild proso millet or shattercane.

Preplant incorporated applications of pendimethalin will not control wild proso millet or shattercane.

Metolachlor is registered for preemergence or preplant incorporated applications to pod crops. It will not control wild proso millet or shattercane.

Alachlor applied preemergence at higher rates will reduce competition from shattercane but not provide satisfactory control of shattercane or wild proso millet.

Chloramben provides preemergence control of some annual grasses. It does not provide reliable weed control in all seasons; and it use is very limited in Iowa. It will not control wild proso millet or shattercane.

Glyphosate may provide effective control of most emerged grasses, if sufficient time is allowed for the translocation of the herbicide to take place prior to planting. However, it does not provide an alternative for late season grass escapes after the lima bean crop is nearing maturity.

Bentazon is labeled for postemergence application to lima beans. It controls specific annual broadleaf weeds in beans and does not control grasses.

Paraquat is registered for application before planting or crop emergence. Paraquat has no

residual activity. It will burn down most weeds present; but field preparation is just as effective and less expensive. It is not an alternative for control of wild proso millet or shattercane which germinate after the beans are planted.

5. Effectiveness of the proposed use.

The herbicide Poast is being requested for Section 18 registration on lima beans for postemergence use for control of annual and perennial grasses. Evidence of the efficacy of such a treatment under Iowa conditions is presented in Appendix v.

6. Discussion of residues for food uses.

The manufacturer of Poast, BASF, has submitted data for registration of the compound on peas and beans. (May 20, 1988)

7. Discussion of risk information.

No potential unreasonable risks to human health, endangered or threatened species, beneficial organisms and the environment are expected from using sethoxydim on lima beans.

8. Coordination with other affected state or federal agencies.

Dr. Russel Currier with the State of Iowa Health Department, Dr. Keith Long with the University of Iowa Institute of Agricultural Medicine, and Mr. Larry Wilson, Director of the Iowa Department of Natural Resources, have been notified of the proposed exemptions. No comments on the proposal were received.

9. Notification of registrant or basic manufacturer.

BASF Corporation has been notified of Iowa's intent to apply for specific exemption for Poast on lima beans.

Progress towards registration: The registration of Poast on lima beans has been a project of the manufacturer, BASF Corporation. The manufacturer has submitted a registration package to EPA for this use. A national label may be granted in 1989.

10. Description of the proposed enforcement/information program.

The Iowa Department of Agriculture and Land Stewardship will distribute the approved Section 18 label upon request to the grower. The growers will be required to be certified before a label is issued to them. The names of the growers receiving the approved label will be kept on file for follow-up investigations, if needed. Growers will be selected at random to monitor the use of this herbicide and collect

samples for residue analysis. The state chemical laboratory will analyze the samples submitted for residue analysis. Standard regulatory procedures as outlined in Iowa's Enforcement Grant Agreement with EPA will be executed, if any unacceptable residues or use violations are documents.

11. Repeat uses.

Not applicable.

12. Information included in the appendices.

A. Letter from William A. Veith of Seneca Foods Corporation to Dr. Henry Taber, Iowa State Cooperative Extension Service, supporting the exemption along with a table outlining losses of raw product yield and gross dollar returns due to shattercane and other grassy weeds.

B. Letter from Dr. Hank Taber with Iowa State University's Cooperative Extension Service Department of Horticulture supporting exemption.

C. Efficacy data related to Poast herbicide trials on lima beans performed by Dr. Larry Binning, Extension Horticulturist, University of Wisconsin of Madison, Wisconsin.

D. Technical data for sethoxydim WSSA 1983.

E. Poast label information for other crops, BASF.

13. Economic cost benefit and loss assessment.

A. The following information was provided by Mr. Bill Veith, agronomist for Seneca Foods Corporation, and is based on the production of lima beans grown in Iowa in 1988.

i. Cost of production per acre with Poast: $297.68
Cost of production per acre without Poast: _____
Increased production costs per acre: $ 24.18

Cost of production would increase $24.18 per acre with the use of the herbicide Poast based on cost of herbicide and custom application charges.

ii. Yield in tons per acre with Poast: 1.500
Yield in tons per acre without Poast: _____
Increased yield in tons per acre: 0.295

iii. Price received per ton

Average 1988 contract price:	$180 per ton
Average 1989 contract price:	
Average price per ton:	$410 - 2 = $205

iv. Acreage in production 1989: 500 acres

v. Total average increase in return:

0.295 Tons x $205 x 500 acres - 500 acres x $24.18 = $18,147.00

B. It should be noted that the total average increase in returns for lima bean producers in Iowa are based on the yield reductions experienced in 1988 which ranged from 5 percent to 50 percent yield losses. A total crop failure could very likely be a reality in 30 percent of the acres under certain climatic conditions such as dry weather at planting and early growing season followed by above normal rainfall in the mid to late growing season. If these conditions developed a total average increase in return with the use of Poast could be calculated in the following manner.

i. 150 acres infested with shattercane, giant foxtail and wild proso millet.

ii. Total value for crop loss would equal: 150 acres x 1.205 tons per acre x $205 per ton + 150 acres x $273.50 production cost per acre = $78,078.75.

iii. Total potential increase in return: $78,078.75

14. Information required for a specific exemption.

A. Pest or pest complex.

Poast is a selective herbicide recommended as a postemergence surface applied treatment for control of most annual and perennial grassy weeds. The major pests affecting lima bean productivity in Iowa are wild proso millet (panicum miliaceum) and shattercane (sorghum bicolor).

The grassy weeds compete with the crop for space, light, nutrients and water. In addition, these weeds adversely influence the incidence and severity of insect pests and plant diseases. Shattercane and wild proso millet infestations severely reduce yields of lima beans as well as interfering with mechanical harvesting operations.

B. Discussion of the events which brought about the emergency condition.

Lima bean production practices have evolved to narrow row spacing (7-inch rows) with the development of harvesting equipment designed to harvest higher population stands. The higher populations are desired, of course, for higher yields and profitability. Commercial lima bean production was first introduced in Iowa in 1988. Iowa was chosen because of the desired soil types and topography allowing better germination and uniformity of stand along with the longer growing season which all are factors favoring higher yields.

Lima beans are planted in late May in Iowa. Under normal or ideal growing conditions where a favorable amount of precipitation is received, the use of currently labeled herbicides may provide adequate control of shattercane and wild proso millet, when applied preemergence. However, if unfavorable conditions prevail such as dry weather at planting time and early growing season followed by above-average rainfall in the second half of the growing season, grassy weed escapes are very likely, as was experienced in 1988. As the plant canopy closes, earlier cultivation becomes impractical. Also, mechanical cultivation will not control grassy weeds in row, resulting in severe competition. If a grass escape occurs, a postemergence grass herbicide is needed to prevent significant yield losses or even total crop failure. The postemergence herbicide for grass escapes when needed would normally be applied in late July or early August.

Another problem that has to be considered is that lima beans are very rate sensitive and shattercane control is not satisfactory when currently labeled herbicides are applied at rates that will not cause crop phytotoxicity. Finally, the adoption of high population stands planted with a drill rather than row-cropped eliminates cultivation as an alternative for late season weed control.

PST/pc-2843

Disposition: