

230309  
RECORD NO.

121001  
SHAUGHNESSEY NO.

33  
REVIEW NO.

EEB  
copy

EEB REVIEW

JUN 23 1989

DATE: IN 8-30-88 OUT \_\_\_\_\_

FILE OR REG. NO. 7969-58

PETITION OR EXP. NO. \_\_\_\_\_

DATE OF SUBMISSION 8-8-88

DATE RECEIVED BY EFED 8-25-88

RD REQUESTED COMPLETION DATE 11-7-88

EEB ESTIMATED COMPLETION DATE 11-7-88

RD ACTION CODE/TYPE OF REVIEW 335

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

DATA ACCESSION NO(S). \_\_\_\_\_

PRODUCT MANAGER NO. R. Taylor (25)

PRODUCT NAME(S) Poast (Sethoxydim)

COMPANY NAME BASF Corp.

SUBMISSION PURPOSE Proposed registration of use on onions  
and garlic

SHAUGHNESSEY NO. CHEMICAL, & FORMULATION % A.I.

121001

Sethoxydim

230677  
RECORD NO.

121001  
SHAUGHNESSEY NO.

34  
REVIEW NO.

EEB REVIEW

DATE: IN 9-15-88 OUT \_\_\_\_\_

FILE OR REG. NO. 7969-58

PETITION OR EXP. NO. \_\_\_\_\_

DATE OF SUBMISSION 6-29-88

DATE RECEIVED BY EFED 9-9-88

RD REQUESTED COMPLETION DATE 10-21-88

EEB ESTIMATED COMPLETION DATE 10-21-88

RD ACTION CODE/TYPE OF REVIEW 335

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

DATA ACCESSION NO(S). \_\_\_\_\_

PRODUCT MANAGER NO. R. Taylor (25)

PRODUCT NAME(S) Poast (Sethoxydim)

COMPANY NAME BASF Corp.

SUBMISSION PURPOSE Proposed Registration of use on grapes  
and green beans

SHAUGHNESSEY NO.	CHEMICAL, & FORMULATION	% A.I.
<u>121001</u>	<u>Sethoxydim</u>	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

227708  
RECORD NO.

121001  
SHAUGHNESSEY NO.

35  
REVIEW NO.

EEB REVIEW

DATE: IN 7-26-88 OUT \_\_\_\_\_

FILE OR REG. NO. 7969-58

PETITION OR EXP. NO. \_\_\_\_\_

DATE OF SUBMISSION 4-29-88

DATE RECEIVED BY EFED 7-21-898

RD REQUESTED COMPLETION DATE 10-17-88

EEB ESTIMATED COMPLETION DATE 10-17-88

RD ACTION CODE/TYPE OF REVIEW 335

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

DATA ACCESSION NO(S). \_\_\_\_\_

PRODUCT MANAGER NO. R. Taylor (25)

PRODUCT NAME(S) Poast (Sethoxydim)

COMPANY NAME BASF Corp

SUBMISSION PURPOSE Proposed registration of uses on beans  
and peas

SHAUGHNESSEY NO. CHEMICAL, & FORMULATION % A.I.

121001 Sethoxydim \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

EEB REVIEW

Chemical: Poast (Sethoxydim)

100 Submission Purpose and Label Information

100.1 Submission Purpose and Pesticide Use

Registration of Sethoxydim for use on onions, garlic, grapes, dry and succulent beans, and dry and succulent peas.

100.2 Formulation Information

Active Ingredient:

Sethoxydim . . . . .18%  
Inert Ingredients . . . . .82%

Contains 1.5 lb ai per gallon

100.3 Application Methods, Directions, Rates

(See Appendix I, II, III, - label)

100.4 Target Organism

(See Appendix I, II, III, - label)

100.5 Precautionary Labeling

Environmental Hazards (excerpted from proposed labels)

Do not apply directly to water.

Do not contaminate water by cleaning of equipment or disposal of wastes.

Endangered Species Concerns

The use of any pesticide in a manner that may kill or otherwise harm an endangered species or adversely modify their habitat is a violation of Federal law.

The use of this product is controlled to prevent death or harm to Solano grass which occurs in Solano County, CALIFORNIA. Before using this product in this county you must obtain the EPA Endangered Species Bulletin (EPA/ES-85-13) available from either your County Agricultural Extension Agent, the Endangered Species Specialist in the U.S. Fish and Wildlife Service (Portland, Oregon) or the U.S. Environmental Protection Agency (San Francisco, California). THIS BULLETIN MUST

BE REVIEWED PRIOR TO PESTICIDE USE. THE USE OF THIS PRODUCT IS PROHIBITED IN THIS COUNTY UNLESS SPECIFIED IN THE BULLETIN.

101 Hazard Assessment

101.1 Discussion

This review will consider the 3 submissions for registration:

1. Onions and garlic
2. Grapes
3. Beans and peas

101.2 Likelihood of Adverse Effects on Nontarget Organisms

Data from previous EEB reviews indicate that sethoxydim is practically nontoxic to mammals, birds, and freshwater fish, and no more than slightly toxic to aquatic invertebrates. The high use rate will result in residues of less than 120 ppm on terrestrial dietary food items. Direct application to water at the maximum proposed rate would result in an aquatic EEC of less than 0.4 ppm (direct application to 6" acre-layer of water) substantially less than that expected to adversely affect aquatic fauna. Given an environmental half-life of less than four days in both soil and water, sethoxydim is not expected to cause any adverse effects in nontarget fauna.

101.3 Endangered Species Considerations

On the basis of low toxicity to mammals, birds, fish, and aquatic invertebrates, hazard to endangered species of animals is not expected from the proposed use. The only organisms at risk would be nontarget plants.

Exposure to endangered plants may occur. Table 1 lists the plants and crops which coincide after comparing EEB's listing of endangered plant counties with the 1982 Census of Agriculture's listing of counties for each crop. EEB will seek formal consultation with the U.S. Fish and Wildlife Service to determine whether or not there is jeopardy. Refer to the attached Table 1 for identification of plant species, specific crop and the states/counties which overlap. EEB has determined that there are twenty-two endangered/threatened plant species growing in counties of twenty states where commercial amounts of peas, beans, grapes, onion and garlic are grown.

101.4

Adequacy of Labeling

The precautionary labeling order "Environmental Hazards" is not correct. The following statements are required:

Do not apply directly to water or wetlands (swamps, bogs, marshes, and potholes). Do not contaminate water when disposing of equipment washwaters.

101.5

Adequacy of Toxicity Data

Based on the possible toxicity to endangered plants Tier I nontarget area phytotoxicity testing is required. The majority of these species are not grass species and may or may not be affected by sethoxydim. The label specifically states that the broadleaf weeds can not be controlled by this herbicide. Because the loss of a single plant may be of importance to an endangered population and EEB has no data for a hazard assessment, EEB is requiring the following tests:

Guide-  
lines  
Reference  
No.

Type of Study

- 
- 122-1 Seed germination/seedling emergence
  - 122-1 Vegetative vigor
  - 122-2 Aquatic plant growth

Upon receiving these studies EEB will assess the hazard. If it appears a hazard exists options, such as formal consultation with the US Fish and Wildlife Service and/or labeling will be considered.

103

Conclusions

EEB has reviewed the proposed registrations for the use of Poast herbicide on onions, garlic, grapes, bean and peas. EEB concludes that the proposed use will not result in hazard to nontarget fauna.

Endangered plant species are found in counties where these crops are grown. The majority of these species are not grass species and may or may not be affected by sethoxydim. The label specifically states that the broadleaf weeds can not be controlled by this

herbicide. However, because the loss of a single plant may be of importance to an endangered population, EEB is requiring tests (see 101.5 above) in order to assist in determining the hazard to endangered plant species.

Dennis J. McLane  
Wildlife Biologist  
Ecological Effects Branch

*Dennis McLane*

6-22-89

Raymond W. Matheny  
Head Section 1  
Ecological Effects Branch

*Ray W. Matheny* 6/23/89

James W. Akerman, Chief  
Ecological Effects Branch  
Environmental Fate and Effects Division (H7507C)

*James W. Akerman* 6/23/89

Table 1

Endangered Plants Distribution by Crop

The following code describes the use:

- 1) DB - Dry Beans
- 2) DP - Dry Peas
- 3) AWP - Austria Winter Peas
- 4) GLE - Green Lima Beans
- 5) DLB - Dry Lima Beans
- 6) SB - Snap Beans
- 7) DCP - Dry Cowpeas
- 8) GCP - Green Cowpeas
- 9) GP - Green Peas

Beans and Peas

Bunched Arrowhead NC - Henderson - SB<sup>1</sup>  
SC - Greenville - SB

Bradshaw's Lomatium OR - Benton - SB  
Lane - SB  
Linn - AWP, SB  
Marion - DP, AWP, SB  
Polk - AWP, SB

Canby's Dropwort - GA - Burke - GLB, GCP  
Dooly - GLB, SB, GCP  
Lee - SB, GCP  
Sumter - GLB, SB, GCP, GP  
MD - Queen Anne's - GLB, SB  
NC - Scotland - GLB, GCP, GP  
SC - Allendale - SB  
Bamberg - GLB  
Barnwell - GLB  
Berkeley - DP  
Clarendon - GLB, SB, GCP  
Colleton - GLB, SB  
Lee - GLB  
Orangeburg - GLB, SB, GCP

<sup>1</sup> This registration is for dry and succulent peas and dry and succulent beans. Because the U. S. Department of Commerce, Census of Agriculture was used to determine the counties, all beans and peas information was specific to each type of bean or pea, for example, green lima beans or dry cowpeas. For beans and peas an additional column has been added to indicate which crop was found at a particular location.



Canby's Dropwort - SC - Richland - SB, GCP  
   Williamsburg - GLB, SB, GCP  
 Harperella           AL - DeKalb - GLB, SB, GCP, GP  
   MD - Allegany - SB  
   NC - Granville - GLB, SB  
   SC - Aiken GLB, SB, GCP  
  
 Mead's Milkweed     IL - Ford DB, GLB, SB  
  
 Decurrent False Aster - None  
  
 Tennessee Purple Cone Flower - TN - Davidson, SB, GCP,  
   Rutherford SB  
  
 Mohr's Barbara's Button - AL - Cherokee GCP  
   Etowah GLB, SB, GP  
   GA - Barton SB, GCP, GP  
   Floyd SB, GP  
  
 Missouri Bladder - Pod (None)  
  
 Prairie Bush-Clover - IA - Bulter - DB  
   IL - Lee - GP  
   - McHenry - GP  
   MN - Brown - GP  
   - Goodhue - DB, SB, GP  
   - Renville - DB, DP, GP  
   WI - Dane - GLB, SB, GP  
  
 Running Buffalo Clover - WV - Fayette - SB  
  
 Pondeberry - AR - Wheeler - GCP  
   NC - Bladen - GLB, SB, GCP, GP  
   SC - Berkeley - SB  
  
 Minnesota Trout Lily - MN - Rice - DB, GP  
   - Goodhue - DB, SB, GP  
  
 Swamp Pink - DE - Kent GLB, SB, GP  
   - New Castle GLB, SB, GP  
   - Sussex GLB, SB, GP  
 MD - Anne Arundel GLB, SB, GP  
 NC - Henderson - SB  
   Jackson - SB, GCP  
   Transylvania - SB  
 NJ - Atlantic - GLB, SB  
   Burlington - GLB, SB  
   Camden - SB  
   Cape May - GLB, SB  
   Cumberland - GLB, SB  
   Gloucester - GLB, SB  
   Middlesex - GLB, SB

Swamp Pink - NJ - Monmouth - GLB, SB  
                                  Morris - GLB, SB  
                                  Salem - GLB, SB  
SC - Greenville - SB, GCP  
VA - Henrico - GLB

Solano Grass - CA - Colusa - DB, DLB,  
                                  - Fresno - DB, DP, GLB, DLB, SB, GCP, GP  
                                  - Glenn - DB, SB  
                                  - Madera - DB, SB  
                                  - Merced - DB, GLB, DLB, DCP, GP  
                                  - San Joaquin - DB, GLB, DLB, SB, GP  
                                  - Solano - DB, SB  
                                  - Stanislaus - DB, DP, GLB, DLB, SB, DCP,  
  GP  
                                  - Tehama - DB

Texas Wild-Rice - None

Green Pitcher Plant - AL - Cherokee - GCP  
                                  - DeKalb - GLB, GCP  
                                  - Etowah - GLB, GCP  
                                  - Jackson - GCP  
GA - Towns - SB

Mountain Sweet Pitcher Plant - NC - Henderson - SB  
                                  - Transylvania - SB  
SC - Greenville - SB, GCP

Palmate - Bracted Bird's-beak - CA - Alameda - SB  
  Colusa - DB, SLB  
  Fresno - DB, DP, GLB,  
  DLB, SB, GCP,  
  GP  
  Los Angeles - SB  
  Madera - DB, SB  
  Orange - SB  
  San Luis Obispo - DB, DP,  
  DLB,  
  SB, GP  
  San Diego - DB, DLB, SB,  
  GP  
  Santa Barbara - DB, DP,  
  GLB, DLB,  
  SB  
  Ventura - GLB, DLB, SB,  
  GP  
  Yolo - SB

Blowout Penstemon - NE - Box Butte - DB  
                                  - Garden - DB  
                                  - Sheridan - DB

Eastern Prairie Fringed Orchid - IL - Lake - SB, GP<  
 McHenry - GP  
 ME - Aroostook - DB, SB, GCP  
 MI - Bay - DB, GLB, GCP

Eastern Prairie Fringed Orchid - Huron - DB, GLB  
 Livingston - DB, GLB, GCP  
 Monroe - GLB, GCP  
 Saginaw - DB, GLB, GCP  
 St. Clair - DB, GLB, GCP  
 St. Joseph - DB, GLB, GCP  
 Tuscola - DB, GLB, GCP  
 Washtenaw, DB, GLB, GCP  
 Wayne - GLB, GCP

OH - Sandusky - SB  
 Wayne - GLB, GCP

WI - Dane - GLB, SB, GCP  
 Jefferson - GLB, SB, GCP  
 Kenosha - SB, GCP  
 Ozaukee - SB, GCP  
 Rock - GLB, SB, GCP  
 Walworth - GLB, GCP  
 Waukesha - SB, GCP  
 Winnebago - SB, GCP

Western Prairie Fringed Orchid - MN - Clay - DB  
 Mower - DB, SB, GP  
 Norman - DB  
 Polk - DB, GP

Lentils - (None)

Garlic -

Bradshaw's Lomatium - OR - Lane  
Linn  
Polk

Solano Grass - CA - Colusa  
Fresno  
San Joaquin  
Solano

Palmate - Bracted Bird's Beak - CA - Alameda  
Colusa  
Fresno  
Los Angeles  
San Luis Obispo  
Santa Barbara  
Yolo

Dry Onions

Bradshaw's Lomatium - OR - Lane  
Linn  
Marion

Prairie Bush - Clover - IL - Cook  
McHenry  
Goodhue  
WI - Dane

Minnesota Trout Lily - MN - Goodhue

Solano Grass - CA - Fresno

Palmate - Bracted - Bird's Beak - CA - Fresno  
Los Angeles  
Yolo

Eastern Prairie Fringed Orchid - IL - Lake  
McHenry  
MI - Bay  
Livington  
Monroe  
Saginaw  
St. Joseph  
Tuscola  
Washtenaw  
Wayne  
WI - Dane  
Jefferson  
Kenosha  
Ozaukee  
Rock  
Waukesha  
Winnebago

Western Prairie Fringed Orchid - MN - Clay  
NE - Lancaster

Green Onions

Bradshaw's Lomatium - OR - Marion

Canby's Dropwort - MD - Queen Anne's  
SC - Richland

Harperella - SC - Aiken

Swamp Pink - NJ - Atlantic  
Burlington  
Camden  
Cumberland  
Gloucester

Solana Grass - CA - Fresno  
Merced  
San Joaquin

Palmate-Bracted Bird's - Beak - CA - Fresno  
Los Angeles  
San Diego  
Santa Barbara  
Ventura

Eastern Prairie Fringed Orchid - MI - Bay  
Monroe

Grapes

Bunched Arrowhead - NC - Henderson  
SC - Greenville

Bradshaw's Lomatium - OR - Benton  
Lane  
Linn  
Marion  
Polk

Canby's Dropwort - GA - Sumter  
SC - Barnwell  
Orangeburg  
Richland

Harperella - NC - Chatham  
Granville  
SC - Aiken  
WV - Morgan

Mead's Milkweed - MO - Pettis  
Polk

Decurrent False Aster - MO - St. Charles

Tennessee Purple Cone Flower - TN - Davidson  
Rutherford  
Wilson

Mohr's Barbara's Button - AL - Etowah  
GA - Murray

Prairie Bush Clover - WI - Dane

Pondberry - NC - Bladen

Swamp Pink - DE - Kent  
New Castle  
Sussex  
MD - Anne Arundel  
Cecil  
NC - Henderson  
Jackson  
NJ - Atlantic  
Burlington  
Camden  
Cumberland  
Gloucester  
Middlesex  
Monmouth  
Morris

SC - Greenville  
VA - Augusta  
Nelson

Solano Grass - CA - Colusa  
Fresno  
Glenn  
Madera  
Merced  
San Joaquin  
Solano  
Stanislaus  
Tehama

Green Pitcher Plant - AL - DeKalb  
Etowah  
Jackson  
GA - Towns

Mountain Sweet Pitcher Plant - NC - Henderson  
SC - Greenville

Palmate-Bracted Bird's - Beak - CA - Alameda  
Caluso  
Fresno  
Los Angeles  
Madera  
Orange  
San Diego  
San Luis Obispo  
Santa Barbara  
Ventura  
Yolo

Eastern Prairie Fringed Orchid - MI - Bay  
Huron  
Livingston  
Monroe  
Saginaw  
St. Clair  
St. Joseph  
Tuscola  
Washtenaw  
Wayne  
OH - Sandusky  
Wayne  
VA - Augusta  
WI - Dane  
Jefferson  
Kenosha  
Rock  
Walworth



Eastern Prairie Fringed Orchid - WI - Wauhesha  
Winnebago  
Western Prairie Fringed Orchid - KS - Douglas  
Franklin  
Jackson  
Jefferson  
Leavenworth  
Osage  
Shawnee

RECORD OF TELEPHONE CALL

DATE 6-20-89

NAME OF PERSON

Rick Nelson, Field Station Supervisor

INCOMING CALL    OUTGOING CALL    X

NAME & ADDRESS

TELEPHONE NO.

Rock Island Field Office USFWS  
1830 2<sup>nd</sup> Ave.

FTS/386-5800

Rock Island, Illinois 61201

BRIEF SUMMARY OF CONVERSATION

Mr. Nelson was called in connection with EEB's review of sethoxydim for use on beans, peas, lentils, garlic, onions, and grapes. This review has identified several endangered plants which are found in counties where these crops are grown. Mr. Nelson indicated the Prairie Bush-Clover was found along an old railroad right-of-way and may be near agricultural fields. Due to the potential for affects on endangered plants fromal consultation was recommended.

RECORDED BY

DENNIS MCLANE

RECORD OF TELEPHONE CALL

DATE 6-19-89

NAME OF PERSON

David Martin

INCOMING CALL      OUTGOING CALL      X

NAME & ADDRESS

TELEPHONE NO.

Jacksonville Field Office USFWS

FTS / 946-2580

3100 University Boulevard, South

Suite 120, Jacksonville, Florida 32216

BRIEF SUMMARY OF CONVERSATION

Mr. Martin was called in connection with EEB's review of sethoxydim for use on beans, peas, lentils, garlic, onions, and grapes. This review has identified several endangered plants which are found in counties where these crops are grown. Mr. Martin indicated two plants, Canby's Dropwort and Harper-alla, and this would be through runoff. He agreed to send written confirmation of our conversation.

RECORDED BY

DENNIS MCLANE

RECORD OF TELEPHONE CALL

DATE 6-21-89

NAME OF PERSON

John Fridell

INCOMING CALL      OUTGOING CALL      X

NAME & ADDRESS

TELEPHONE NO.

Asheville Field Office ,USFWS

FTS / 672-0321

100 Otis Ave. Room 224

Asheville, North Carolina 28801

BRIEF SUMMARY OF CONVERSATION

Mr. Fridell was called in connection with EEB's review of sethoxydim for use on beans, peas, lentils, garlic, onions, and grapes. This review has identified several endangered plants which are found in counties where these crops are grown. Mr. Fridell indicated two additional plants not included in Table 1 . They were Small Whorled Pogonia and Dwarf Flower Heart Leaf. Due to the potential for affects on endangered plants consultation was recommended.

RECORDED BY

DENNIS MCLANE

RECORD OF TELEPHONE CALL

DATE 6-20-89

NAME OF PERSON

Sandy Tucker

INCOMING CALL    OUTGOING CALL    X

NAME & ADDRESS

TELEPHONE NO.

Alabama    Field Office ,USFWS

205-690-2181

BRIEF SUMMARY OF CONVERSATION

Ms. Tucker was called in connection with EEB's review of sethoxydim for use on beans, peas, lentils, garlic, onions, and grapes. This review has identified several endangered plants which are found in counties where these crops are grown. Ms. Tucker indicated two additional plants not included in Table 1 . They were Alabama Leather flower and Alabalma Cane-brake Pitcher Plant. Due to the potential for affects on endangered plants formal consultation was recommended.

RECORDED BY

DENNIS MCLANE