

FILE COPY

D178190
DPBARCODE (RECORD)

111601
SHAUGHNESSEY NO

REVIEW NO.

EEB REVIEW

DATE IN 06/12/92 OUT 08/17/92

CASE # : 283557 REREG CASE: N/A
SUBMISSION # : S416733 LIST: N/A
ID # : 92OR0021 (0=A, 2=B, 3=C, 4=D)

DATE OF SUBMISSION 04/22/92

DATE RECEIVED BY EFED 05/15/92

SRRD/RD REQUESTED COMPLETION DATE 06/13/92

EEB ESTIMATED COMPLETION DATE _____

SRRD/RD ACTION CODE/TYPE OF REVIEW 510 SEC18-OC F/F USE

MRID #(S) _____

DP TYPE 001 SUBMISSION RELATED DATA PACKAGE

PRODUCT MANAGER, NO. LIBBY PEMBERTON (PM 41)

PRODUCT NAME(S) GOAL 1.6E HERBICIDE (OXYFLUORFEN)

TYPE PRODUCT F R I N H D HERBICIDE

COMPANY NAME _____

SUBMISSION PURPOSE (include use (s)) REVIEW OF USE RESTRICTIONS

IN LIGHT OF NEW ENDANGERED SPECIES (NELSON'S

CHECKER MALLOW).

COMMON CHEMICAL NAME OXYFLUORFEN

①

DP BARCODE: D178190

CASE: 283557
SUBMISSION: S416733

DATA PACKAGE RECORD
BEAN SHEET

DATE: 05/14/92
Page 1 of 1

* * * CASE/SUBMISSION INFORMATION * * *

CASE TYPE: EMERGENCY EXEMP ACTION: 510 SEC18-OC F/F USE
CHEMICALS: 111601 Chloro-1-(3-ethoxy-4-nitrophenoxy)-4-(trifluoromet %

ID#: 92OR0021

COMPANY:

PRODUCT MANAGER: 41 REBECCA COOL

703-305-7717 ROOM: CM2 720

PM TEAM REVIEWER: LIBBY PEMBERTON

703-305-5309 ROOM: CM2 716A

RECEIVED DATE: 04/22/92 DUE OUT DATE: 06/11/92

* * * DATA PACKAGE INFORMATION * * *

DP BARCODE: 178190 EXPEDITE: N DATE SENT: 05/14/92 DATE RET.: / /
CHEMICAL: 111601 Chloro-1-(3-ethoxy-4-nitrophenoxy)-4-(trifluoromethyl)benze

DP TYPE: 001 Submission Related Data Package

ADMIN DUE DATE: 06/13/92

CSF: N

LABEL: Y

ASSIGNED TO	DATE IN	DATE OUT
DIV : EFED	05/15/92	/ /
BRAN: EEB	05/18/92	/ /
SECT:	/ /	/ /
REVR :	/ /	/ /
CONTR:	/ /	/ /

* * * DATA REVIEW INSTRUCTIONS * * *

Refer to last review, attached. See our restrictions imposed in past mailgram based on memo write up also attached. There is now new ES, Nelson's Checker Mallow. Is current statement in mailgram sufficient?

* * * ADDITIONAL DATA PACKAGES FOR THIS SUBMISSION * * *

DP BC	BRANCH/SECTION	DATE OUT	DUE BACK	INS	CSF	LABEL
178188	BAB	05/14/92	06/13/92	Y	N	Y
178189	EAB	05/14/92	06/13/92	Y	N	Y

Harry
can you check this out

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

August 12, 1992

MEMORANDUM

SUBJECT: USE RESTRICTIONS FOR THE USE OF GOAL 1.6E
HERBICIDE (OXYFLUORFEN) FOR WEED CONTROL IN
GRASSES GROWN FOR SEED IN OREGON

FROM: Doug J. Urban, Acting Chief
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

TO: Libby Pemberton (PM 41)
Registration Division (H7505C)

EEB has received and reviewed your request to establish whether the current statement in the submitted mailgram is sufficient to protect a newly listed endangered species, Nelson's Checker Mallow (Sidalcea nelsoniana). As a result of informal consultation with the United States Department of the Interior, Fish and Wildlife Service, Portland Field Station, 2600 S.E. 98th Avenue, Suite 100, Portland, Oregon, 97266, EEB received correspondence from Russell D. Peterson (attached) which suggest the following changes and/or additions in labeling for Goal 1.6E Herbicide:

1. under the "GENERAL INFORMATION" section add the following:

"it is recommended that GOAL 1.6E herbicide not be applied directly to or within 10 meters (30 ft.) of native prairie habitats, especially those which persist in fence rows, roadsides, and drainage ditches."

2. It is recommended that dosage rates for kentucky bluegrass, tall fescue, orchard grass, bentgrass, and perennial ryegrass be maintained at the lower end of the range of 10 to 30 ounces per acre in a further effort to lessen potential impacts to endangered species.

3. In order to reduce the amount of drift it is also suggested that the label specify a head pressure not to exceed 60 psi under the "METHOD OF APPLICATION" section.

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CONCURRENCES							
SYMBOL	H7507C	H7507C	H7507C	H7507C			
SURNAME	WINNIK	Turner	Cramer	Cramer			
DATE	8-12-92	8/17/92	8/19/92	8/17/92			

Although the informal consultation was initiated for the assessment of risk to endangered plants, the Fish and Wildlife Service also reassessed risk to other endangered wildlife. With respect to the Aleutian Canada Goose (Branta canadensis leucopareia) the "Service" does not concur with the EEB "no effect" determination. However, EEB continues to support the opinion as stated in the October 24, 1990, review of a Section 18 request to control weeds in grasses grown for seed as follows:

The "Service" also suggests a 30 meter buffer zone between the application site and water or wetlands in order to protect aquatic endangered species and aquatic candidate species. Since the proposed use of GOAL 1.6E herbicide is not expected to produce maximum residues that exceed the fish and aquatic invertebrate endangered species triggers, the proposed use of oxyfluorfen is not expected to pose hazard to endangered aquatic wildlife and will not require the 30 meter buffer as suggested.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

August 12, 1992

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: USE RESTRICTIONS FOR THE USE OF GOAL 1.6E
HERBICIDE (OXYFLUORFEN) FOR WEED CONTROL IN
GRASSES GROWN FOR SEED IN OREGON

FROM: Doug J. Urban, Acting Chief *H. T. Crow 8/17/92*
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

TO: Libby Pemberton (PM 41)
Registration Division (H7505C)

EEB has received and reviewed your request to establish whether the current statement in the submitted mailgram is sufficient to protect a newly listed endangered species, Nelson's Checker Mallow (Sidalcea nelsoniana). As a result of informal consultation with the United States Department of the Interior, Fish and Wildlife Service, Portland Field Station, 2600 S.E. 98th Avenue, Suite 100, Portland, Oregon, 97266, EEB received correspondence from Russell D. Peterson (attached) which suggest the following changes and/or additions in labeling for Goal 1.6E Herbicide:

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2. It is recommended that dosage rates for kentucky bluegrass, tall fescue, orchard grass, bentgrass, and perennial ryegrass be maintained at the lower end of the range of 10 to 30 ounces per acre in a further effort to lessen potential impacts to endangered species.

3. In order to reduce the amount of drift it is also suggested that the label specify a head pressure not to exceed 60 psi under the "METHOD OF APPLICATION" section.

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EEB concurs with the above suggestions and feels these additions to the previously approved labeling will sufficiently protect the endangered plants.

Although the informal consultation was initiated for the assessment of risk to endangered plants, the Fish and Wildlife Service also reassessed risk to other endangered wildlife. With respect to the Aleutian Canada Goose (Branta canadensis leucopareia) the "Service" does not concur with the EEB "no effect" determination. However, EEB continues to support the opinion as stated in the October 24, 1990, review of a Section 18 request to control weeds in grasses grown for seed as follows:

"With maximum residues of 2 to 90 ppm of oxyfluorfen expected on plants the trigger for risk to endangered birds ($1/10$ of the northern bobwhite LC_{50} (390 ppm) = 39 ppm) has been exceeded. Although there are several species of endangered birds in Oregon (American Peregrine Falcon, Bald Eagle, Brown Pelican, Northern Spotted Owl, and the Aleutian Canada Goose) the only one that has the potential to be impacted by the proposed use of Oxyfluorfen is the Aleutian Canada Goose. This goose has been found in association with grain and grass fields. However, due its large size and its closer similarity to the mallard duck as opposed to the northern bobwhite, the Aleutian Canada Goose LC_{50} is expected to be nearer that of the mallard duck ($LC_{50} = >4000$ ppm). Since the expected residues do not exceed $1/10$ the mallard duck LC_{50} (400 ppm) the proposed use of Oxyfluorfen is not expected to pose significant hazard to the Aleutian Canada Goose."

The "Service" also suggests a 30 meter buffer zone between the application site and water or wetlands in order to protect aquatic endangered species and aquatic candidate species. Since the proposed use of GOAL 1.6E herbicide is not expected to produce maximum residues that exceed the fish and aquatic invertebrate endangered species triggers, the proposed use of oxyfluorfen is not expected to pose hazard to endangered aquatic wildlife and will not require the 30 meter buffer as suggested.

If you have any questions regarding this review please contact Harry Winnik, Biologist, at 305-7089.

EFED indicated, in their 1989 review of this use, that minimal hazard is expected for aquatic and terrestrial species from this proposed use. However, one endangered plant, Bradshaw's lomatium, may be at risk from runoff. To prevent hazard, the Applicant was required to develop conservation measures necessary to avoid effects to Bradshaw's lomatium. Those measures were submitted to the USFWS Portland Field Office for approval. A copy of the approved measures were submitted to this Agency with last year's request. USFWS indicated that Bradshaw's lomatium should be adequately protected without additional precautions. However, USFWS recommended that a statement with respect to native prairie habitats be included. EFED indicated that the statement was satisfactory and it was included in last year's authorizing mailgram. That statement will be included in this year's mailgram if this request is approved.

RECOMMENDATION:

I recommend that this specific exemption be granted subject to the conditions and restrictions listed in the authorizing mailgram (attached). This recommendation is based on the following:

1. There are no registered alternative pesticides which will provide adequate control of these weeds in grasses grown for seed.
2. A significant economic loss may result if an effective pesticide is not made available. This loss may be as great as \$28.4 million.

3. A maximum of two ground applications at a maximum rate of 30 ounces product (.375 pound active ingredient) may be made per acre.
4. A maximum of 187,500 acres of grass grown for seed may be treated.
5. Applications will not be made within 150 days of harvest.
6. Do not graze treated stands.
7. Workers must wear long-sleeved shirts, long pants, and chemical resistant gloves during mixing, loading, and application.
8. Due to the close proximity of native prairie remnants to agricultural areas and the potential for these areas to be adversely affected by herbicides through drift or possible runoff/soil movement, it is recommended that Goal 1.6E herbicide not be applied directly to native prairie habitats. }
9. Applications made in accordance with the above provisions are not expected to result in residues of oxyfluorfen and its metabolites containing the diphenyl ether linkage in excess of 0.05 ppm in or on grass screenings. This Agency has determined that this level is adequate to protect the public health. The Food and Drug Administration, DHHS, has been advised of this action. ~~Analytical methodology is available in PAM II.~~
10. The EPA shall be immediately informed of any adverse effects resulting from the use of this pesticide in connection with this exemption.
11. A report summarizing the results of this program must be submitted by July 15, 1992.
12. This specific exemption expires January 15, 1992.
13. Any future correspondence in connection with this exemption should refer to file symbol: 91-OR-20.

Lilly

April 20, 1992

Ms. Rebecca Cool, Section Head
Emergency Response Group (H7505C)
Environmental Protection Agency
401 M Street S.W.
WASHINGTON DC 20460

**SPECIFIC EXEMPTION TO USE GOAL 1.6E HERBICIDE (OXYFLUORFEN) FOR
WEED CONTROL IN GRASSES GROWN FOR SEED IN OREGON**

The Oregon Department of Agriculture requests approval of this application for a specific exemption under Section 18, FIFRA, as amended in Title 40 CFR Part 166, to use Goal 1.6E Herbicide (oxyfluorfen) to control various weeds in grasses grown for seed.

The following is a brief summary of the items of information required in 40 CFR 166.20(a):

1. The pesticide intended to be used is Goal 1.6E Herbicide (active ingredient: oxyfluorfen, 1.6 lb ai/gal.) manufactured by Rohm & Haas Company of Philadelphia, Pennsylvania, EPA Reg. No. 707-174.
2. Increasingly stringent restrictions on the use of open field burning as a sanitation practice in grass seed production in Oregon have seriously limited the number of grass seed fields burned in recent years. Herbicides previously registered for grass seed fields were developed for use in conjunction with thermal sanitation and do not adequately control seedling grasses in unburned situations. The most serious problem is failure to control volunteer crop seedlings in certified seed production fields; this leads to rejection of fields for certification. Such stands must then be taken out of production and reseeded at considerable cost to the grower. The spread and level of infestation of several herbicide tolerant weeds such as Bromus carinatus and Poa trivialis are also serious problems resulting from limitations on field burning. Further restrictions on the use of thermal sanitation in grass seed production were enacted by the Oregon state legislature. These restrictions will

Barbara Roberts
Governor



decrease the acreage allowed to be burned each year thereby increasing the unburned acreage. In fact, open field burned acreage in 1991 was reduced to slightly over 100,000 acres. This leaves approximately 300,000 acres which were not burned that unavoidably has large amounts of organic residues and extremely high numbers of viable grass seeds on the soil surface. Since performance of available herbicides is already impaired by the presence of residue and excessive numbers of weed seedlings, reduction in field burning intensifies the problems of controlling seedling weedy grasses and volunteer crops.

Registrations for use of atrazine and simazine on grasses grown for seed have been withdrawn by CIBA-GEIGY, and use of those herbicides will stop when stocks have been depleted. Manufacture of protham and chlorprotham has ceased. PPG Industries did not renew registration of either material for grasses grown for seed and supplies have been exhausted. Diuron, metribuzin, and terbacil are therefore the only broad-spectrum, soil-residual herbicides still registered and available for use on grasses grown for seed. Each is registered only on certain species of established grasses because of the possibility of crop injury on other grasses. Performance of Enquik against ~~seedling grasses, particularly~~ volunteer perennial ryegrass and tall fescue, has been unsatisfactory because of its lack of translocation within the plant and its lack of residuality in the soil. All other registered herbicides, i.e. ethofumesate, fenoxaprop, MSMA, and various phenoxy compounds, are highly selective between species, and do not control volunteer seedlings of perennial grass seed crops.

Research during the past several years has identified various herbicides which might replace atrazine, simazine, chlorprotham, and protham in grass seed production. Indeed, some alternative herbicides control weeds in unburned fields more effectively than atrazine or simazine. Registration for these herbicides is at least 3 to 5 years away. Emergency exemption for oxyfluorfen is being requested at this time because this herbicide would provide the necessary level of weed control with a tolerable amount of crop injury, and it has the support of the manufacturer. In 1989, additional field work and forage dissipation studies were conducted. Residue samples have been analyzed at Oregon State University and a final report has been written and submitted to the national IR-4 office. It is anticipated that a full label (through the IR-4 process) will be available sometime in the near future, but not soon enough for the autumn of 1992.

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3. Weeds and volunteer crops not adequately controlled by registered herbicides which can be controlled or suppressed by oxyfluorfen:

- a. Annual (A) and perennial (P) grasses not controlled in the seedling stage in the absence of open field burning by any herbicide registered for use in established perennial ryegrass and not adequately controlled even with open field burning.

<u>Lolium multiflorum</u>	(A)	Italian ryegrass
<u>Lolium perenne</u>	(P)	Perennial ryegrass
<u>Festuca arundinacea</u>	(P)	Tall fescue

- b. Volunteer crop seedlings partially controlled by herbicides registered for use in each respective crop and partially controlled as weeds in all other crops but controlled to a satisfactory degree only with open field burning.

<u>Festuca arundinacea</u>	(P)	Tall fescue
<u>Festuca rubra</u> and related species	(P)	Fine and hard fescues
<u>Dactylis glomerata</u>	(P)	Orchardgrass
<u>Poa pratensis</u>	(P)	Kentucky bluegrass
<u>Agrostis tenuis</u>	(P)	Bentgrass

- c. Annual and perennial weedy grasses not adequately controlled in the seedling stage in the absence of open field burning by any herbicide registered for use in established perennial ryegrass, tall fescue, and bentgrass in the fall.

<u>Lolium multiflorum</u>	(A)	Italian ryegrass
<u>Bromus carinatus</u>	(P)	California brome
<u>Poa trivialis</u>	(P)	Roughstalk bluegrass

- d. Annual and perennial weedy grasses not adequately controlled in the seedling stage in the absence of open field burning by any herbicide registered for use in established orchardgrass.

<u>Lolium multiflorum</u>	(A)	Italian ryegrass
<u>Bromus carinatus</u>	(P)	California brome
<u>Poa trivialis</u>	(P)	Roughstalk bluegrass
<u>Poa annua</u>	(A)	Annual bluegrass
<u>Vulpia myuros</u>	(A)	Rattail fescue

- e. Annual weedy grasses not adequately controlled in the absence of open field burning by any herbicides registered for use in fine fescue.

<u>Poa annua</u>	(A) Annual bluegrass
<u>Vulpia myuros</u>	(A) Rattail fescue

4. Time period during which oxyfluorfen is needed:

September 1, 1992 to December 1, 1992.

5. a. Pesticides presently registered:

Atrazine - Registration covering use on perennial ryegrass and orchardgrass was withdrawn by the manufacturer on March 2, 1987.

Simazine - Registration covering use on perennial ryegrass, bentgrass, fine fescues, orchardgrass, and tall fescue was withdrawn by the manufacturer on March 2, 1987.

Propham - Manufacture has ceased and registration covering use on perennial ryegrass, bentgrass, fine fescues, orchardgrass, and tall fescue is being withdrawn by the manufacturer. Supplies have been exhausted.

Chlorpropham - Manufacture has ceased and registration covering use on perennial ryegrass, bentgrass, fine fescues, orchardgrass, and tall fescue is being withdrawn by the manufacturer. Supplies have been exhausted.

Diuron - Registration for use on bentgrass, Kentucky bluegrass, orchardgrass, tall fescue, and perennial ryegrass. Due to limited crop tolerance, perennial ryegrass registration is for a low rate which does not adequately control many of the weeds found in ryegrass fields. Not effective against Bromus spp. and performs poorly against volunteer crop seedlings and many weedy grasses in high residue, unburned conditions.

Terbacil - Registered for use on Kentucky bluegrass and fine fescues only. Crop injury commonly occurs at rates required for control of most seedling grasses.

Metribuzin - Registered for use West of the Cascade Mountains and in Crook, Deschutes, and Wasco counties on perennial ryegrass, tall fescue, Kentucky bluegrass, and orchardgrass. Control in research trials has been inconsistent on many seedling grasses, especially in high organic residue, unburned conditions.

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Ethofumesate - Registered for use on Italian ryegrass, perennial ryegrass, bentgrass, and tall fescue only. No control of volunteer crop seedlings under any conditions. Control of Bromus carinatus and Poa trivialis only under optimal conditions or at higher than label rates in research trials. Poa annua and Vulpia myuros are controlled when in conjunction with open field burning.

Fenoxaprop - Registered for use on perennial ryegrass, fine fescues, tall fescue, and certain varieties of Italian ryegrass only. This herbicide controls only certain specific weeds such as Avena fatua and Poa trivialis, and does not control volunteer crop seedlings under any conditions.

Sethoxydim - Registered for use on fine fescues only. Does not control Vulpia myuros, Poa annua, or volunteer fine fescues.

Fluazifop - Registered for use on fine fescues only. No control of Vulpia myuros, Poa annua, or volunteer fine fescues.

MSMA - Registered for use on Italian ryegrass, perennial ryegrass, Kentucky bluegrass, and fine fescues only. Controls only certain specific weeds and does not control volunteer crop seedlings under any conditions. There have been indications that this use may not be supported by the manufacturer during re-registration.

Bensulide - Registered for use in bentgrasses only.

2,4-D - Registered only for control of broadleaf weeds in grass seed crops.

Dicamba - Registered for control of broadleaf weeds in grass seed crops. Higher rates are registered for control of seedling grasses in Kentucky bluegrass only, where it sometimes causes crop injury.

Monocarbamide dihydrogensulfate (Enquik) - Recently registered (by exemption from tolerance requirements, EPA Reg. No. 612-4) for postemergent application to reduce volunteer seedlings. The degree of control of grass seedlings often has been poor. Factors adversely affecting performance include lack of any translocation within plants, necessitating complete coverage of all foliage, and absence of any residuality within the soil. Experience in the field during the past two years indicates that some species, including volunteer perennial ryegrass, are susceptible

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only at the 1-leaf growth stage when Enquik is applied during cloudy, wet weather. Lack of complete synchronism in the germination and emergence of weedy grasses and volunteer crop seedlings prevents a single application of this herbicide from providing efficacious control of such pests. Performance in years when early fall rains germinate grasses by October 1 and when Enquik is applied during periods of sunny weather has been more satisfactory; seedlings at the 2-leaf growth stage have been controlled. Label suggestions to avoid treatments when rain is expected severely limits its usefulness in Oregon.

MCPA - Registered for control of broadleaf weeds only in grasses grown for seed.

Bromoxynil - Registered only for control of broadleaf weeds in grasses grown for seed.

Clopyralid + 2,4-D or MCPA - Registered only for control of broadleaf weeds in grasses grown for seed.

b. Alternative Methods:

Monocarbamide dihydrogensulfate (Enquik) does not promise, and is unable to provide, the degree of control of volunteer perennial ryegrass and tall fescue seedlings needed to meet seed certification standards. Performance of diuron, metribuzin, and terbacil against volunteer crop seedlings and certain herbicide tolerant weeds is unsatisfactory in the absence of field burning. Poor control is probably caused by failure of these herbicides to penetrate the post-harvest crop residue on the soil surface in adequate quantities soon enough after seedling germination. Registrations of atrazine, simazine, protham, and chlorprotham have been dropped by the manufacturers. No other herbicides presently registered provide broad-spectrum control of seedling grasses.

Open field burning by itself provides fairly good control of seedling weeds and volunteer crops, but burning was done on only 25 percent of the acreage of all grasses grown for seed in 1991 because of restrictions imposed by laws of Oregon and regulations of the Oregon Department of Environmental Quality. Continued declines in open field burning are mandated by Oregon law, as passed by the 1991 Oregon legislature, until a maximum of only 65,000 acres will be allowed to

be burned in 1997. This will leave 360,000 acres unburned and in dire need of more effective weed control programs under nonburning management techniques. Goal herbicide is essential as part of this management strategy.

An alternative thermal sanitation practice, propane flaming, which is more costly and less effective than open field burning, was used on 15 percent of the grass seed acreage. Propane flaming provides a useful reduction in the amount of residue on the soil surface, but fails to destroy the viability of most of the weed and volunteer crop seeds. The Oregon state legislature has also placed restrictions on propane flaming under the same law that reduced open field burning. Each year an average of 19 percent of the established perennial grasses reach the end of their useful stand life and are destroyed and replanted to other crops or to new grass stands. The remaining 41 percent of the acreage receiving only mechanical residue removal is the portion most at risk of severe weed infestation and contamination by volunteer crop seedlings. These fields most urgently need treatment with oxyfluorfen. Fields already infested with high densities of grassy weeds (possibly because they were not field-burned sometime in the recent past) are at high risk of continued infestation, even if they can be field-burned in a particular year, because of the absence of suitable herbicide treatments.

Mechanical cultivation and hand weeding are impractical for control of seedling grasses which may be present at densities from one hundred to several thousand per square foot. Mechanical cultivation between rows used to be done during the early stages of stand establishment, but cultivation was never functional in later years of a stand life when the established plants grow larger and the area available for cultivation diminishes.

6. Proposed rates of oxyfluorfen:

- a. Pounds of active ingredient per acre and total in Oregon:

Tall fescue, orchard-		
grass, bentgrass,		
Kentucky bluegrass,		
and perennial ryegrass	0.375 lb a.i./Acre	68,025 lb
Fine fescues	0.125 lb a.i./Acre	763 lb

Total all grass seed crops 68,788 lb

b. Formulated product per acre and total in Oregon:

Tall fescue, orchard-		
grass, bentgrass,		
Kentucky bluegrass,		
and perennial ryegrass	30 ounces/Acre	42,516 gal
Fine fescues	10 ounces/Acre	477 gal

Total all grass seed crops 42,993 gal

c. Preharvest interval

No grazing will be allowed. Prohibition will be based on lack of final interpretation of current residue data on grass forage to indicate whether meat, milk, and egg tolerances of 0.05 ppm for oxyfluorfen would be met and also on the likelihood that early grazing would reduce grass seed yield. 150 days minimum to seed harvest.

d. Proposed label (Exhibit 1 - Copy of the 1991-92 "Supplemental labeling for State Emergency Exemption" with date revisions.)

7. Anticipated acreage:

a. Total crop acreage and anticipated oxyfluorfen usage in Oregon:

	1989-90 Total Acres	1990-91 Total Acres	1992-93 Est. Acreage to be treated with Oxyfluorfen*
Tall fescue	91,510	98,680	69,000
Orchardgrass	19,950	18,700	13,000
Bentgrass	14,940	18,420	12,000
Kentucky bluegrass	25,620	20,150	6,400
Perennial ryegrass	108,340	111,410	81,000
Fine fescues	26,580	27,220	6,100
Total - All perennial grasses	286,940	294,580	187,500

*Normal stand life of 5.2 years for these six grass crops should result in reseedling of 55,978 acres or 19 percent of the 294,580 acres harvested in 1991. The

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1992 seedlings would be too young to treat with oxyfluorfen removing potentially treated acres, leaving about 238,610 acres that might be treated. The estimate of 187,500 acres to be treated is based on treating most of the unburned fields and up to 75 percent of the field-burned acreage. None of the 109,200 acres of Italian (annual) ryegrass will be treated due to the lack of herbicide tolerance in this annually planted crop. Grazing will be prohibited in any fields treated with oxyfluorfen; however, the 51,110 acres of tall fescue, orchardgrass, and perennial ryegrass not treated with oxyfluorfen would be available for grazing by sheep, along with the entire Italian ryegrass acreage, for a total of 160,310 acres which could be grazed. At a common stocking rate of 3 head per acre, this would approximately equal the current number of sheep grazing in the Willamette Valley from November through March. Selection of the 25 percent of established tall fescue, perennial ryegrass, and orchardgrass not to be treated with oxyfluorfen would be made by the growers based on their individual desires to graze sheep in preference to more fully controlling weeds.

b. Perennial grass seed acreage of all counties in Oregon:

County	Total crop acreage in 1991-92 growing season in acres	Anticipated usage in 1992-93 growing season in acres
Benton	24,230	16,500
Clackamas	6,300	3,050
Jefferson	14,000	5,650
Lane	20,710	13,980
Linn	105,050	74,650
Marion	68,000	38,020
Polk	23,500	15,900
Union	9,120	5,000
Washington	1,920	1,850
Yamhill	15,000	10,450
All other countries	6,750	2,450
Total	286,940	187,500

8. Criteria which determines an emergency:

An emergency exists for all certified perennial ryegrass because of the absence of any adequately effective herbicide treatment registered for control of volunteer crop seedlings. Volunteer seedlings cannot exceed 25 percent of all perennial ryegrass plants in a field if seed

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certification standards are to be met. Even when allowed, field burning by itself provides only partial control of volunteer perennial ryegrass, and stands would generally fail to meet seed certification standards without herbicide treatments. Herbicides which are registered for use in perennial ryegrass are able to control only certain species of seedling weeds and frequently fail to control many weed species when used without prior field burning. Diuron is registered on perennial ryegrass at a maximum rate of 1.6 lb a.i./Acre which is insufficient, by itself, for control of volunteer ryegrass. Diuron is reasonably effective if combined with Goal Herbicide.

An emergency also exists for all unburned stands of certified tall fescue, orchardgrass, bentgrass, Kentucky bluegrass, and fine fescues because of the difficulty in controlling volunteer crops and many common grassy weeds with available herbicides in the absence of field burning. While at least one reasonably effective, broad-spectrum herbicide remains registered on each of those crops, the level of volunteer crop and weedy grass control is unsatisfactory without the use of field burning.

An emergency also exists in certain stands of these same crops even when they have been "open field burned" because of the presence of specific weeds which cannot be controlled by any registered herbicides. Weeds whose mere presence constitutes an emergency because of the lack of any effective herbicide treatment whether or not open field burning is performed include Bromus carinatus in all crops and Poa trivialis in bentgrass, Kentucky bluegrass, and orchardgrass. Additionally, heavy infestations of Poa trivialis in tall fescue and perennial ryegrass constitute an emergency despite the availability of fenoxaprop to suppress this species; serious yield losses will have occurred before this herbicide can be applied in the spring if seedlings are not controlled. High levels of Vulpia myuros, Poa annua, and Lolium multiflorum caused by failure to adequately control weeds in previous years (because of an inability to open field burn) also constitutes an emergency even if a stand is burned in the current season. Extremely dense weed populations impair the performance of the soil-residual herbicides diuron, metribuzin, and terbacil, and result in significant crop yield losses because of weed competition.

9. Economic benefits and losses:

- a. Meeting seed certifications standards is vital to the marketing of Oregon grass seed. The industry had gross sales of \$181.3 million in 1991 for all annual and perennial species. Long-term average price advantage

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for certified versus uncertified grass seed is from \$0.01 to \$0.025 per pound or from 2 to 6 percent of the total price. This price differential was developed under conditions in which most of the seed grown was able to meet certification standards, and the premium undoubtedly would increase to \$0.10 per pound or more if certified seed were to become scarce and uncertified seed relatively abundant. Restricted availability of open field burning and withdrawal of registrations for atrazine, simazine, propham, and chlorpropham jeopardize the entire industry. Even if seed certification standards were relaxed to allow large amounts of volunteer crop, the increasing prevalence of weeds in the absence of new herbicide registrations would reduce crop yields and increase seed cleaning costs. Uncontrolled Poa trivialis reduced perennial ryegrass yield by more than 50 percent in research by Mueller-Warrant and Brewster. While this particular weed can now be suppressed by fenoxaprop in certain crops, losses of similar magnitude can be expected for other aggressive weeds such as Vulpia myuros, Lolium multiflorum, and Bromus carinatus. Stocks of atrazine and simazine produced prior to the label changes which dropped their uses on grasses grown for seed are nearing exhaustion. Supplies of propham and chlorpropham have been exhausted.

Failure to grant emergency registration for oxyfluorfen for the 1992-93 growing season will cause increased yield losses due to weeds and due to phytotoxicity of the likely alternative treatment (more diuron), and there will have to be increased replanting of fields that are too weedy to be certified or too badly injured by excessive chemical treatments. These effects will be most serious on unburned fields. Dr. George Mueller-Warrant, USDA-ARS Research Agronomist, has provided the following information: Assuming an average value of production of \$600 per acre, losses on 66,000 unburned and 165,000 burned acres of established perennial grasses can be estimated. Losses on the unburned fields could average 30 percent from weed competition and phytotoxicity due to alternative treatments, plus premature re-establishment costs of \$100 per acre, for a total of \$280/Acre or \$18,500,000 on all unburned acreage. Losses on burned acreage would be lower, but could reach \$60/Acre, or \$9,900,000 on all field-burned acreage. This would give a combined total of \$28.4 million in potential losses if oxyfluorfen is not available.

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b. Production costs in dollars per acre:

Crop	1987	1988	1989	1990	1991
Tall fescue	328	335	471	504	549
Orchardgrass	429	438	446	477	520
Bentgrass	296	302	308	330	360
Kentucky bluegrass	573	585	596	638	695
Perennial ryegrass	359	366	451	483	526
Fine fescues	481	491	500	535	583
Avg.-all species	392	400	462	494	538

c. Seed yields in pounds per acre:

Crop	1987	1988	1989	1990	1991
Tall fescue	1018	1239	960	1210	1280
Orchardgrass	882	902	840	850	850
Bentgrass	353	351	420	420	400
Kentucky bluegrass	751	789	690	790	970
Perennial ryegrass	938	1105	1110	1190	1160
Fine fescues	700	717	698	715	710
Avg.-all species	872	1011	926	1085	1077

d. Economic value of grass seed crops to Oregon in millions of dollars:

Crop	1987	1988	1989	1990	1991
Tall fescue	29.8	54.7	43.0	55.2	53.9
Orchardgrass	14.0	14.4	9.2	8.0	6.9
Bentgrass	7.9	10.3	15.1	16.7	17.6
Kentucky bluegrass	19.9	22.2	13.5	13.3	13.6
Crop	1987	1988	1989	1990	1991
Perennial ryegrass	37.2	52.2	56.8	61.4	54.6
Fine fescues	12.2	16.1	12.5	9.5	9.0
Total-all species	120.9	169.8	150.1	164.1	155.6

e. Price received in dollars per hundred pounds of seed:

Crop	1987	1988	1989	1990	1991
Tall fescue	52.4	63.6	52.9	49.9	42.6
Orchardgrass	62.0	62.1	48.9	47.1	43.6
Bentgrass	197.4	260.5	271.3	264.5	243.3
Kentucky bluegrass	103.0	101.1	62.9	65.7	69.5
Perennial ryegrass	45.5	52.0	48.6	47.7	42.4
Fine fescues	65.4	82.6	63.9	48.1	45.6
Avg.-all species	56.3	61.5	57.0	54.4	49.0

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f. Estimated percent control with registered herbicides-1987-91:

Weed Problem	1987	1988	1989	1990	1991
Volunteer perennial ryegrass	90	80	60	70	85
Volunteer bentgrass	90	90	90	90	90
Volunteer orchard-grass	99	90	90	90	98
Volunteer Kentucky bluegrass	95	95	95	95	95
Volunteer fine fescue	95	90	80	85	90
Vulpia myuros	98	95	95	95	95
Poa annua	98	95	95	90	95
Poa trivialis	60	90	90	90	80
Bromus carinatus	80	75	70	70	70
Lolium multiflorum	85	85	85	85	85

g. Estimated percent control in 1992-93 cropping year with registered herbicides and with oxyfluorfen averaged across all grass crops:

Percent weed control without open field burning (75% of retained acreage was not burned in 1991)

Weed Problem	Registered Herbicides Only	Oxyfluorfen Added
Volunteer perennial ryegrass	50	90
Volunteer tall fescue	60	98

Weed Problem	Registered Herbicides Only	Oxyfluorfen Added
Volunteer bentgrass	90	100
Volunteer orchardgrass	75	99
Volunteer Kentucky bluegrass	75	95
Volunteer fine fescues	60	99
Vulpia myuros	75	100
Poa annua	75	95
Poa trivialis	75	90
Bromus carinatus	25	85
Lolium multiflorum	50	90

Percent weed control following
an open field burn (25% of
retained acreage was field
burned in 1991)

Weed Problem	Registered Herbicides Only	Oxyfluorfen Added
Volunteer perennial ryegrass	70	95
Volunteer tall fescue	90	99
Volunteer bentgrass	90	100
Volunteer orchardgrass	95	100
Volunteer Kentucky bluegrass	95	99
Volunteer fine fescues	90	100
Vulpia myuros	90	100
<u>Poa annua</u>	90	99
<u>Poa trivialis</u>	85	98
<u>Bromus carinatus</u>	70	90
<u>Lolium multiflorum</u>	85	95

*75 percent control of volunteer weeds is required to
meet seed certification standards.

10. Information about oxyfluorfen:

Oxyfluorfen is registered for use on artichokes, broccoli, cabbage, cauliflower, non-bearing citrus, coffee, conifers, cotton, field corn, guava, jojoba, mint, nuts, onions, ornamentals, grapes, and tree fruits. Information on fate in the environment, toxicology, metabolism, and residues in other crops is a matter of public record. Based on the mode of action, metabolism, and translocation within plants, it is reasonable to assume that oxyfluorfen content will have greatly decreased by the time that treated grasses resume vigorous growth. Private data from samples taken at harvest in 1988 in demonstration strips known to have been treated with oxyfluorfen showed no detectable levels of oxyfluorfen at the 0.05 ppm mdl. Additional residue testing has been completed under an IR-4 Program with analysis of all residue samples now completed at Oregon State University, Department of Agricultural Chemistry. No detectable levels of oxyfluorfen (0.05 ppm mdl) were found in the straw, screenings, or seed collected at normal harvest time. The final report for these studies has been written and sent to IR-4 for inclusion in a submission by IR-4 in support of a Section 3 registration package for this oxyfluorfen use. The Section 3 registration package is scheduled for submission to EPA by June 1992.

Ms. Rebecca Cool
April 20, 1992
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11. Rohm and Haas Company is aware of this request.
12. The Oregon Department of Agriculture has adequate authority for enforcing provisions of emergency exemptions. If this Section 18 is approved, we propose a program using a dealer/grower enrollment and reporting form which will require a commitment and signature of the grower to follow all Section 18 directions. Rohm and Haas Company will be responsible for supplemental labeling and enrollment and reporting forms.
13. Knowledgeable Experts:

Dr. George Mueller-Warrant
Research Agronomist, USDA-ARS
National Forage Seed Production
Research Center
3450 SW Campus Way
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(503) 757-4502
FTS: 420-4502

Dr. Larry Burrill
Extension Agronomist,
Weed Control
Crop and Soil Sciences,
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Corvallis, Oregon 97331
(503) 737-2771

Dr. Ron Burr
Ag Research, Inc.
13446 Waldo Hills Drive SE
Sublimity, Oregon 97385
(503) 769-3416

Dr. Ian Tinsley (residue
information)
Department of Agricultural
Chemistry
Oregon State University
Corvallis, Oregon 97331
(503) 737-1789

Sincerely,

C. K. Kiley

for B. D. Wright, Administrator
Plant Division
Phone-(503) 378-3776
Fax-(503) 378-5529

PL/SECTION.18/Goal.grass
Enclosures (via mail)

cc: George Mueller-Warrant
Larry Burrill
Ron Burr
Jay Holmdal

Ian Tinsley
Dave Nelson
Jon Heller
Margaret Reiff
Files

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Goal[®]

1.6E HERBICIDE

Supplemental labeling for State Emergency Exemption

Expires January 15, 1992

For Distribution and Use Only in the State of OREGON

Use of this product on grasses grown for seed is conditioned upon the completion, signing and mailing of the Enrollment and Reporting Form.

GOAL 1.6E HERBICIDE FOR WEED CONTROL IN GRASSES GROWN FOR SEED

EPA Reg. No. 707-174

EPA Est. No. 707-PA-1

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

NOTICE: Before using this product, read the entire Precautionary Statements, Conditions of Sale and Warranty, Directions for Use, Use Restrictions, and Storage and Disposal Instructions. If the Conditions of Sale and Warranty are not acceptable, return the product unopened within thirty days of purchase to the place of purchase.

This Supplemental Label and the labeling supplied with the container must be in the possession of the user at the time of application.

GENERAL INFORMATION

GOAL 1.6E herbicide is recommended for late preemergence through early postemergence control of annual broadleaf weeds, annual grasses and the seedling stage of perennial grasses, including volunteer crops, in established perennial grasses grown for seed. A minimum of 12 months of good growing conditions is required from time of planting new stands of perennial grasses until the perennial grasses are sufficiently well established to be treated with GOAL herbicide.

NOTE: Due to the close proximity of native prairie remnants to agricultural areas and the potential for these areas to be adversely affected by herbicides through drift or possible runoff/soil movement, it is recommended that GOAL 1.6E herbicide not be applied directly to native prairie habitats.

DOSAGE

GOAL 1.6E is recommended at the following rates (by crop): Kentucky bluegrass, tall fescue, orchardgrass, bentgrass, perennial ryegrass.

Apply an initial application of GOAL 1.6E at a rate of 10 to 30 ounces (0.125 to 0.375 lb ai) per acre. Do not apply more than 30 ounces of GOAL 1.6E herbicide per acre as a result of two applications in a single growing season. The initial application should be applied before the weed (or grass) seedlings to be controlled exceed the 2-leaf growth stage (no later than December 15). The final application must be completed prior to January 15, 1992.

For increased control of volunteer ryegrass seedlings in perennial ryegrass, do not apply more than 1.2 lbs active of diuron per acre in tank mixtures with GOAL per season.

Fine fescues (Chewings, creeping red, and hard types)

Apply a single application of GOAL 1.6E at 10 ounces (0.12 lb ai) per acre per season. The application should be applied before the weed seedlings to be controlled exceed the 2-leaf growth stage (no later than December 15, 1991).

SURFACTANT: LATRON AG-98 (or comparable 80% active nonionic surfactant cleared for application to growing crops) may be added at a rate of 0.12 to 0.5% spray volume for improved control of emerged seedlings.

CROP TOLERANCE

The application of GOAL 1.6E herbicide to established perennial grasses will result in a chlorosis (yellowing) of the vegetation within 2 weeks after treatment. Some crop response symptoms may be present for up to 3 months following application. The use of GOAL 1.6E herbicide may also result in a substantial reduction in vegetative growth by perennial grasses during the winter. Leaf chlorosis and reduction of vegetative growth is a typical and normal response, and seed yield of healthy, vigorous perennial grasses has not been affected by fall application of GOAL 1.6E herbicide. It is accepted by the grower that conditions under which seed yield may be reduced are not fully understood. **DO NOT GRAZE FIELDS THAT HAVE BEEN TREATED WITH GOAL HERBICIDE AS ILLEGAL RESIDUES MAY BE PRESENT IN THE VEGETATIVE FORAGE.** Grazing may also magnify crop injury and reduce the seed yield.

Crop tolerance to GOAL 1.6E herbicide can be improved by limiting the amount of leaf tissue present on the established perennial grasses at time of application by such methods as propane flaming, intensive mechanical clipping (crew cutting), prior livestock grazing, or open field burning.

WEEDS SUPPRESSED AND/OR CONTROLLED

GOAL 1.6E herbicide will provide control or suppression of the following weeds and volunteer crops when applied between the onset of germination and the 2-leaf seedling growth stage:

Common Name

BENTGRASS
BLUEGRASS, ANNUAL
BLUEGRASS, KENTUCKY
BLUEGRASS, ROUGHSTALK
*BROME, CALIFORNIA (mountain)
FESCUE, FINE (creeping red
and Chewings)
FESCUE, HARD
FESCUE, RATTAIL
FESCUE, TALL
ORCHARDGRASS
RYEGRASS, ITALIAN
*RYEGRASS, PERENNIAL

Scientific name

Agrostis species
Poa annua
Poa pratensis
Poa trivialis
Bromus carinatus
Festuca rubra

Festuca longifolia
Vulpia myuros
Festuca arundinacea
Dactylis glomerata
Lolium multiflorum
Lolium perenne

*These species are suppressed but not fully controlled by GOAL 1.6E herbicide.

GOAL 1.6E herbicide will also control or suppress many annual broadleaf weeds.

Early treatment is important for control of seedling grasses. Applications of GOAL at the onset of grass seed germination during the initial fall rains (late preemergence) or at the 1 leaf growth stage (early postemergence) may provide somewhat better control of volunteer crop seedlings than applications at the 2-leaf stage. Ample soil moisture soon after application is required for optimum performance against seedling grasses.

Applications to seedling grasses between the 2 and 6 leaf stage may result in partial control, varying with species. Single applications made to seedlings between the 2 and 6 leaf growth stages will cause injury and stunting, but regrowth will generally occur. If seedlings have not died within 3 to 4 weeks after treatment with GOAL herbicide and healthy green regrowth is visible, a second application may be needed.

GOAL 1.6E herbicide will not control established perennial grasses or seedlings of most annual and perennial grasses beyond the 6 leaf stage.

Tank mixtures of GOAL 1.6E with other registered herbicides may result in enhanced crop injury. If a tank mixture is to be applied, applications should be made only to healthy, vigorous stands of perennial grasses. The decision to apply a tank mixture containing GOAL herbicide is at the sole discretion of the grower and at the grower's risk.

METHOD OF APPLICATION

Apply as a broadcast application in a minimum spray volume of 20 gallons of water per acre. Use conventional ground spray equipment with flat fan spray nozzles at a minimum spray pressure of 30 psi. Spray equipment should be calibrated carefully before each use.

MIXING DIRECTIONS

Fill the spray tank at least one-third full of clean water. With the pump and agitator running, add the recommended amount of herbicide to the spray tank. The order of addition to the spray tank should be wettable powders first, flowables second and liquids last. Complete filling of the spray tank with water. The use of LATRON AG-98 (or comparable 80% active nonionic surfactant cleared for application to growing crops) may be

added at a rate of 0.12 to 0.5% spray volume for improved control of emerged seedlings. Maintain agitation until spraying is complete.

SPECIFIC USE RESTRICTIONS:

The following use restrictions must be observed when GOAL 1.6E herbicide is used as recommended on this label:

- Follow the General Use Restrictions listed on the EPA registered label.
- Read and observe all label directions before using. All applicable directions, restrictions and precautions on the EPA-registered product label must be followed.
- Do not allow animals to graze on any areas treated with GOAL 1.6E herbicide.
- Do not apply GOAL herbicide within 150 days of harvest.
- GOAL 1.6E herbicide should be applied only by ground application equipment.
- Do not apply when weather conditions favor drift. Avoid drift to all non-target areas. GOAL 1.6E herbicide is phytotoxic to plant foliage.
- Do not treat ditch banks or waterways with GOAL 1.6E herbicide.
- Workers must wear long-sleeved shirts, long pants and chemical resistant gloves during mixing, loading and application.

CHEMIGATION: Do not apply this product through any type of irrigation system.

ENVIRONMENTAL HAZARDS: Do not apply directly to water or wetlands. Do not apply to saturated soil; do not apply to standing water. Do not contaminate water by cleaning of equipment or disposal of wastes. This product is highly toxic to aquatic invertebrates, aquatic plants, wildlife and fish. Use with care when applying in areas frequented by wildlife or adjacent to any body of water or wetland area. Do not apply when weather conditions favor drift or erosion from target areas. If soil is approaching saturation, avoid application when heavy rainfall is predicted to occur within 24 hours following planned application.

CONDITIONS OF SALE AND WARRANTY

Rohm and Haas warrants that the product conforms to its chemical description and is reasonably fit for the purpose stated on the label only when used in accordance with label directions under normal conditions of use. **ROHM AND HAAS MAKES NO OTHER EXPRESS OR IMPLIED WARRANTIES EITHER OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE.** Handling, storage and use of the product by Buyer or User are beyond the control of Rohm and Haas and Seller. Risks such as crop injury, ineffectiveness or other unintended consequences resulting from, but not limited to, weather or soil conditions, presence of other materials, disease, pests, drift to other crops or property or failure to follow label directions will be assumed by the Buyer or User. **IN NO CASE WILL ROHM AND HAAS OR SELLER BE HELD LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE HANDLING, STORAGE OR USE OF THIS PRODUCT.**

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