

AYV

9 June 1989

NOTE

SUBJECT: Section 18 Special Exemptions for use of terbufos on rape and mustard in North Dakota and Montana, 1989.

FROM: Dave Warburton, EEB/EFED DW 6/9/89

TO: Terbufos File, EEB/EFED

The attached materials document some of the meetings and decisions made within OPP regarding two proposed Section 18 actions for terbufos in 1989. If similar exemption requests require EEB review in the future, reviewers should note the following.

Because of the Special Review status of terbufos, EEB was required to "concur/non-concur" with the proposed exemptions when the Special Review and Reregistration Division deferred to EEB. Due to the ecological hazards determined to occur with the proposed uses (see EEB reviews - Record Nos. 238228 and 239671), EEB "non-concurred" with approval of the actions (see memorandum from D. Urban, EEB to H. Jamerson, RSERB, 3/2/89, and "NOTE TO DOUG CAMPT", attached). A decision to authorize the specific exemptions apparently was made at an OPP meeting 3/26/89 (see attached memorandum) based on the premise that "Terbufos is currently registered on corn, sorghum and sugar beets. All three of the crops are extensively grown in North Dakota and Montana. Treatment of these crops with terbufos at up seven times the rate proposed for use on the minor crops rape and mustard represent a negligible incremental increase in ecological risks to avian species." It was not explained how the use rate represented ecological hazard. Further, the attached "ACTION MEMORANDUM" (3/27/89) to Douglas Campt, Director, OPP, contains ecological risk conclusions (page 5) which were in no way based on EEB reviews cited above. OPP authorized the exemptions 4/6/89 (see attached correspondence).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

MAR 2 1989

MEMORANDUM

OFFICE OF PESTICIDES AND TOXIC SUBSTANCES

Subject: Section 18 - Specific Exemption for Use of Terbufos as a Planting Drill Box Treatment of Rape and Mustard Seed for the Control of Flea Beetles in North Dakota

From: Douglas J. Urban, Acting Branch Chief
EEB/EFED (H7507C)

To: Hoyt Jamerson
ERMUS/RSERB/RD (H7505C)

We are non-concurring with the proposed approval of the Section 18 action because the proposed action could cause serious impacts to breeding population of non-endangered waterfowl. This risk to waterfowl recruitment arises out of terbufos' very high acute toxicity to fish (0.77 to 20 ppb) and aquatic invertebrates (0.31 to 8 ppb) when compared to EEB's exposure estimates of 6.1 to 73 ppb (see EEB review by David Warburton dated 2/6/89). Nesting ducks and their broods depend heavily on aquatic invertebrates from pothole wetlands for food. These birds begin to nest in April and sometimes continue rearing into August. Since aquatic habitat is much reduced in dry years (as seen in 1988), the remaining limited prairie pothole habitat could pose a greater risk to waterfowl due to increased concentration of birds attempting to breed. The proposed county restrictions for endangered species will not address our concern for non-endangered waterfowl.

Further, this action may result in direct effects on fish (mortality), and indirect effects on fish stocks due to reductions in aquatic invertebrates that comprise their food supply. EEB has reports of fish kills from the use of currently registered granular formulations. These fish kills and our request for aquatic field testing are documented in EEB's Science Chapter of the Terbufos Registration Standard.

Our concerns for impacts to waterfowl recruitment in the prairie pothole region of the U.S. (North Dakota, South Dakota, Minnesota, and parts of Montana) are not new. I have attached EEB reviews of Section 3 actions for use of carbaryl and tralomeethrin on barley and sunflowers, respectively. In these reviews, we have clearly described our concerns for impacts on breeding waterfowl and these reviews date back to May, 1987.

Risk to birds from the use of this unregistered 5G formulation was addressed by Dave Warburton in his 2/6/89 review. Based on data extrapolated from the registered and tested 15G formulation, he concluded that "it is unlikely that a lethal dose (i.e., 15 to 30) granules would be consumed under typical foraging circumstances". However, since EEB has not had the opportunity to review a Section 3 proposal for this formulation, it is premature to completely eliminate any concern for risk to birds. Under a Section 3 review, additional avian testing of the 5G formulation would likely be required prior to completing a risk assessment on birds.

Attachments

cc: Anne Barton

NOTE TO DOUG CAMPT

Re: Section 18s, 89-ND-02/89-MT-04, Terbufos (Counter 5G)/Rape
& Mustard Seed Treatment to Control Flea Beetle in North
Dakota & Montana.

For your information:

a) Special Review Concurrence. Concurrence is contingent
on EEB/EFED approval.

b) Ecological Effects. EEB/EFED non-concurs for section 18
use of terbufos (Counter 5G) on rape & mustard seed because
of the potential for serious impacts to non-endangered waterfowl
that arises from the very high acute toxicity to fish and aquatic
invertebrates when compared to the exposure estimates. The
non-concurrence rationale is attached.

c) My recommendation, as defined in the Memorandum, is that
this use be granted this year to allow the states one year to
find an alternative, and with the added recommendation that no
further use under section 18 be allowed.



Anne

MAR 7 1989

MEMORANDUM OF MEETING

SUBJECT: Terbufos on Rape and Mustard Seed in North Dakota and Montana

A meeting was held in Doug Campt's office on Monday, March 26, 1989, to discuss the use of terbufos on rape and mustard seed under section 18. Participants included Doug Campt, Anne Lindsay, Anne Barton, Jim Akerman, Ferial Bishop and Donald Stubbs.

PROBLEM: Potential adverse effects to duck populations due to acute toxicity of terbufos to aquatic invertebrates.

TOPICS DISCUSSED:

1. Acute toxicity to wildlife:

The proposed use is for a granular 5G terbufos product applied via ground incorporation. Since rape and mustard seeds are typically planted no deeper than 1/2 inch, all terbufos applied under the use is considered available for runoff. Resulting residues of terbufos (based on run-off modeling) in potholes can reach near 15 ppb exceeding the LD50 for aquatic invertebrates and bluegill sunfish. The expected residue levels of terbufos in water will cause adverse effects to some species of fish and significant impact on aquatic invertebrates. Adverse effects to aquatic invertebrates may impact on waterfowl rearing broods. This is especially critical because the area where use of terbufos is proposed in North Dakota and Montana is part of the "prairie pothole region" which is the major waterfowl reproduction area for the Central and Mississippi Flyways. There is already a record low waterfowl population level in this area, and waterfowl chicks depend on aquatic vertebrates for growth and survival during April to June.

2. Currently registered uses of terbufos:

Currently registered uses of terbufos include field corn, sorghum, and sugar beets. All three crops are extensively grown in the "prairie pothole" region of the midwest. The currently registered formulation is a 15G versus a 5G proposed under the section 18 with application rates up to 7X the rate (a.i.) proposed under the section 18.

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Akerman
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3. Current regulatory actions:

Special Review-

American Cyanamid Company was notified by letter (Grassley/Allen) dated December 12, 1988, that granular terbufos may pose a risk to the continued existence of endangered or threatened species. However, the Agency has held off initiation of the Special Review pending OPP development of a "paradigm" for determining an "unacceptable risk" level for ecological concerns.

Data requirements-

The Agency has requested, through a September 1988 Registration Standard for Terbufos, that the registrant submit a level II terrestrial field study, monitoring studies and an aquatic organism study.

4. Incremental risk increase:

Terbufos is currently registered on corn, sorghum and sugar beets. All three of the crops are extensively grown in North Dakota and Montana. Treatment of these crops with terbufos at up seven times the rate proposed for use on the minor crops rape and mustard represent a negligible incremental increase in ecological risks to avian species.

DECISION:

The decision was to go ahead with authorization of the use of terbufos on rape and mustard under specific exemptions to North Dakota and Montana. The decision was based on the negligible increase in ecological risks when compared to risks from the currently registered uses of terbufos and the magnitude of the emergency situation.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, DC 20460

OFFICE OF
PESTICIDES AND
TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Section 18 - Specific Exemptions for Use of Terbufos as a Planting Drill Box Treatment of Rape and Mustard Seed for The Control of Flea Beetles in North Dakota and Montana -- ACTION MEMORANDUM --

FROM: Anne E. Lindsay, Director
Registration Division

TO: Douglas D. Campt, Director
Office of Pesticide Programs

APPLICANTS' REQUESTS

Applicants: North Dakota Department of Agriculture
Montana Department of Agriculture

Chemical: Terbufos, an organophosphate insecticide/nematocide

Product: Counter 5-G, an unregistered 5% a.i. granular product, manufactured by American Cyanamide Co. The registered product is Counter, Reg. No. 241-238, which is a 15% a.i. granular product registered for use on corn, sugar beets and sorghum

Site: Rape and mustard seed

Pest: Flea beetles, striped flea beetle (Phyllotreta striolata), cabbage flea beetle (P. cruciferae) and hop flea beetle (Psylliodes punctulata)

Rate: Counter 5-G will be applied at a rate of 0.25 to 0.50 lbs. a.i. per acre (5 to 10 lbs. product) with sufficient mustard or rape seed for planting 1 acre. Counter 5-G will be mixed with the seed in a drill box with a mixing stick.

Acreage: 100,000 acres in the Eastern half of North Dakota
30,000 acres in Montana

Poundage: 25,000 to 50,000 lbs. a.i. (500,000 to 1,000,000 lbs. of product) and as much as 7,500 to 15,000 lbs. a.i. (150,000 to 300,000 lbs. product) in Montana

Use Season: April 15, 1989, to June 31, 1989

-2-

Emergency: Flea beetles are early season infestors of rape and mustard fields. They begin feeding on rape and mustard seedlings as soon as the plants begin emerging from the soil. North Dakota indicates that because of the lack of any viable alternatives, illegal uses of non-registered pesticides are occurring. These illegal pesticides uses are perpetrated by farmers to save crops that would otherwise be lost to infestations of flea beetles. The potential of pesticide residues from non-registered use on crops is very real.

Registered Alternatives: Foliar insecticide treatments cannot provide the level of protection at-planting that systemic treatment can provide. Currently registered foliar treatments are too expensive, and lack residual control against flea beetle reinfestation. Rapeseed producers have previously relied on Furadan (not registered) for systemic control of flea beetles but crops treated with this product can be processed only in Canada.

Economics: The Applicants estimate that without the use of Counter 5-G at planting time, yield losses could range from 20% to 70%. The value of the crop in North Dakota is estimated at 8 million dollars. A 20% loss would amount to approximately 1.6 million, and a 70% loss would average approximately 5.6 million. In Montana, a 20% loss to the \$4.18 million crop could amount to \$836,000 and a 70% loss could amount to almost \$3 million.

EPA EVALUATION:

Background. This is the second year that North Dakota has requested emergency exemptions for the use of terbufos on rape and mustard seed; use was granted last year. This is the first request for use in Montana and the use is identical to that in North Dakota. Tolerances are established (180.352) for residues of terbufos in or on sugar beets, corn (field, pop & sweet) and sorghum at from 0.05 to 0.5 ppm.

Region VIII reviewed the specific exemption requests from North Dakota and Montana and agree that there is substantial economic justification for granting this use.

Reviews. Biological and Economic Analysis Division (BEAD) review last year concluded that the registered insecticides that are used for foliar treatment (carbofuran, methyl and ethyl parathion, endosulfan, sevin, and malathion) are ineffective for this particular use, they have short residual periods which require repeated applications to achieve the necessary level of control. A single seed application of Counter 5-G, which is a systemic pesticide, provides the necessary protection to get the crops through and beyond the critical stage when the seedlings emerge from the soil. This eliminates the need for repeated and more expensive foliar treatments by currently registered pesticides. Furthermore, registered products do not provide adequate protection during the critical period of stand establishment.

Based on the information provided, BEAD concluded last year that rape and mustard growers in North Dakota have an emergency situation in that an effective means of controlling the flea beetle is not available and rape and mustard growers will suffer heavy economic loss if they are unable to control the beetle infestation.

DEB/HED evaluated the proposed use of terbufos and concluded that the residues of concern are the parent compound and its cholinesterase inhibiting metabolites (terbufos sulfoxide and sulfone; terbufoxon; and terbufoxon sulfoxide and sulfone). Combined residues of terbufos and its cholinesterase inhibiting metabolites are not expected to exceed 0.05 ppm (negligible residues) in rape and mustard seed as a result of this use. Residues are not expected to exceed 0.05 ppm in forage and fodder of rape and mustard plants. Secondary residues in animal commodities are not expected to occur as a result of this use, provided the grazing and feeding of livestock is restricted prior to 35 days after planting. A reference standard is available in the repository, and an analytical method is available upon request from HED for enforcement purposes.

Toxicological review of terbufos indicates that there is no evidence of oncogenicity in rats or mice. Mutagenicity studies conducted both in-vitro and in-vivo did not show evidence of a mutagenic effect. A developmental toxicity NOEL was established at 0.1 mg/kg in the rat. A new rabbit teratology study is required.

HED indicated that the toxicology data were adequate to support this action. Using a ChE NOEL of 0.0013 mg/kg/day from a 28-day dog feeding study (in conjunction with a 1-year dog oral feeding study) and a safety factor of 10, the PADI was calculated to be 0.00013 mg/kg/day for terbufos. The percent PADI utilized based on published tolerances is 35.89%. This action increases the percent of the PADI utilized by 0.04% to 35.93%.

EEB/EFFD review last year indicated that the use of this product on rape and mustard would cause adverse effects to some species of fish and significant impact on aquatic invertebrates in nearby aquatic ecosystems. The Piping Plover feeds on invertebrates associated with aquatic habitats in certain counties in North Dakota, and may be affected by severe reductions in its food supply. The review stipulated that, in order to avoid a "may effect" situation, terbufos not be applied to areas within a minimum distance of 20 yards of ponds, potholes, streams and marshes in certain counties.

EEB/EFFD review this year indicates that the primary route of exposure of granular terbufos to nontarget terrestrial species is through direct ingestion of the granules. Since granules will be covered with soil along with the rape and mustard seeds at plant, minimal exposure of granules is expected. Although, soil-probing birds may ingest granules either as grit or attached to earthworms, it is unlikely that a lethal dose (15 to 30 granules) would be consumed under typical foraging circumstances.

However, waterfowl rearing broods are likely to be impacted in areas of terbufos use due to adverse effects on aquatic invertebrates. Since rape and mustard seeds are typically planted no deeper than 1/2 inch, all terbufos applied with this use is considered available for runoff. This proposed use is critical, in that: the use area includes major waterfowl production areas (the prairie pothole region); the waterfowl population level is at a record low; and because of the significant dependence of waterfowl chicks on aquatic invertebrates for growth and survival during April-June.

Endangered species known to occur in North Dakota include the Least Tern and the Piping Plover. Both of these shorebirds feed on aquatic invertebrates associated with ponds and wetland areas; as such, they may be affected by food supply reductions. The Least Tern is not likely to be affected by this requested use since the species is known to occur only in counties west of the use area. The Piping Plover, however, is known to occur in Benson, Kidder, Logan, McIntosh, Pierce, and Rolette counties in the eastern part of the state. These counties have pesticide use restrictions designed to protect the Piping Plover which provides for a 1/2-mile buffer in any "A" site (area where pesticides use restrictions for protection of endangered species apply).

EEB review of the request from Montana indicates similar concern to those in the North Dakota review in regard to the potential for adverse effects to waterfowl rearing broods likely to be impacted in areas of terbufos use. Two species of species of shorebirds, the piping plover and the least tern, feed on aquatic invertebrates and small fish associated with ponds, wetlands, and shallow water shoreline areas to a lesser extent, peregrine falcons, bald eagles, and migrating whooping cranes may be affected by locally reduced or contaminated aquatic food supplies. Hazard to the piping plover, least tern, and the whooping crane may be partially mitigated since these species occur predominantly in the eastern and northeastern parts of Montana and the proposed the proposed use is in the north-central section (Cascade, Choteau, Glacier, Hill, Liberty, Pondera, Teton, and Toole counties) of the state.

Special Review Branch was requested to review this use and responded by indicating they would concur dependent on concurrence by EEB/EFFD.

Although the proposed use could cause adverse effects to aquatic habitats, the reduced concentration, usage rate, label restrictions, and early expiration date should minimize those risks. The incremental ecological risks associated with this use should be no greater than those associated with the already registered uses on corn, sorghum, and sugar beets.

Progress toward registration: A petition 4F2926 for a tolerance for residues of terbufos (Counter 5 G) in or on rape and mustard seed at 0.05 ppm was submitted in 1983. Application of Counter 5-G blended with the seed was proposed to be soil incorporated (including the stipulation that granules exposed at the end of treated rows, turns and loading areas be covered by deep discing immediately after treating fields). The company was notified in November of 1983, of: toxicological deficiencies; the need for a grazing restriction; a qualifying phrase "grown for oilseed purposes only, to prevent use on mustard greens"; and regarding an [redacted] clearance.

Subsequently, chronic data for terbufos was submitted. The only current toxicological data gap listed by the recent registration standard is a rabbit teratology study. Concerning the inert ingredient, American Cyanamid indicated that [redacted] but is not and will not be used in the Counter 5-G for use under section 18. The American Cyanamid Company submitted a CSF and indicated that they are prepared to produce the product [redacted] (as stipulated in the CSF) for section 18 use. [redacted]

INERT INGREDIENT INFORMATION AND COMMERCIAL/FINANCIAL INFORMATION IS NOT INCLUDED

Registration Standard/Special Review: A Registration Standard for Terbufos was completed in June of 1983. At that time, the Agency imposed additional data requirements to support the continued registration of the chemical. The standard required restricted use based on the high acute oral and dermal toxicity to humans.

In September of 1988, a revised Registration Standard for Terbufos was completed with the following regulatory positions developed: 1) The Agency is not placing terbufos into Special Review at this time; 2) a level II terrestrial field study, monitoring studies and an aquatic organism study were required; 3) certain uses including use on corn, sorghum and sugar beets may jeopardize endangered species; 4) a 7-day reentry interval was imposed for terbufos use on corn for aerial application and broadcast (without soil incorporation) application; 5) additional worker safety and protective clothing statements are required; 6) restricted use against aerial or broadcast application on seed corn (without soil incorporation) prior to detasseling; 7) deferred decision on potential for contaminating ground water; and 8) certain data will receive immediate review.

Subsequently, American Cyanamid Company was notified by a letter (Grassley/Allen) dated December 12, 1988, that granular terbufos may pose a risk to the continued existence of endangered or threatened species. The Agency indicated it would consider the company's response in determining whether to initiate a Special Review of the terbufos pesticide product(s) particularly for endangered species concerns associated with uses on corn, sorghum and sugar beets. The manufacturer responded and now the Special Review Branch/SRRD is in the process of developing a Position Document (PD-1) based on ecological concerns associated with granular formulation of terbufos. This document should be completed by mid-summer.

Uses are registered for Counter, a 15% granular formulation EPA Reg. No. 241-238, for insecticide/nematicide control on corn, sugar beets and grain sorghum. These uses employ banded (over the row) or in-furrow application methods of up to 17.4 lbs. of the 15% product (2.6 lbs. a.i.) per acre at planting and an additional post-emergence banded application of up to 17.4 lbs. of product on corn. On sugar beet up to 29 lbs. of Counter (4.35 lbs. a.i.) and on grain sorghum, 26.1 lbs. (3.9 lbs. a.i.) are allowed. Use of Counter 5G, a 5% a.i. product, used at 5 to 10 lbs. of product (0.25 to 0.5 lbs. active) per acre on rape and mustard represents use at less than 1/7th of registered uses.

RECOMMENDATION:

I recommend that the North Dakota and the Montana Departments of Agriculture be granted specific exemptions for the use of terbufos on rape and mustard seeds. This recommendation is based on the following:

1. Flea beetles pose a major problem in rape and mustard seed fields. There are no registered systemic insecticides registered for the control of flea beetle on rape and mustard seed for seed processed in the U.S. Foliar alternative means of control have proven both expensive and ineffective.
2. Significant economic loss (both states indicate yield losses of between 20% and 70% amounting to as much as \$5 million in North Dakota and near \$3 million in Montana) may result if an effective seed treatment is not made available.
3. Combined residues of terbufos and its cholinesterase inhibiting metabolites are not expected to exceed 0.05 ppm in rape and mustard seed as a result of this use. This use can be toxicologically supported.
4. Although the proposed use could cause adverse effects to aquatic habitats, the reduced concentration, usage rate, label restrictions, and early expiration date should minimize those risks. The incremental ecological risk associated with this use compared to those associated with the already registered uses on corn, sorghum, and sugar beets is negligible.

Additionally, I recommend that both the North Dakota and the Montana Departments of Agriculture be notified of the potential aquatic effects and subsequent impact to breeding populations of non-endangered waterfowl that could result from terbufos runoff and advise them to keep in contact with the manufacturer concerning studies required by the Registration Standard for Terbufos and any progress towards registration.

Approve: *Dylan A. Cant* Discussed/
 Disapprove: _____ Act. Inf. Adm.
 Date: APR 6 1989 4/5/89

EFFD and SRPD should continue to pursue development generic procedure relative to ecological risk assessment as outlined in J. Adlard's memorandum of 1-3-89. This should pertain to the assessment of ecological risk for this chemical for all registered uses. This decision relates to the incremental risk/benefit for this Sect. 18 request. See also memo dated 10/10/88 with RD-1 EFFD on this request. R.L. 13

EPA9850
Jay Sinnott

/ZIP
John J. Drynan MD.
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FDA/CFSAN
200 C Street S.W.
Washington DC 20204,

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MT Department of Agriculture
Agriculture/Livestock Bldg.
Capitol Station
Helena MT 59620-0205+

ATTN: E. M. Snortland, Director
Environmental Management Division

After careful consideration, I am authorizing this use with great reservation. Terbufos is highly toxic to aquatic organisms and birds and the proposed use offers potential for serious impacts to non-endangered waterfowl due to the high toxicity to fish and aquatic invertebrates. The Environmental Protection Agency hereby grants a specific exemption under the provisions of section 18 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended, to the Montana Department of Agriculture for use of terbufos (Counter 5G) to control flea beetles in rape and mustard seed. This specific exemption is subject to the following conditions and restrictions:

1. The Montana Department of Agriculture is responsible for ensuring that all provisions of this specific exemption are met. It is also responsible for providing information in accordance with 40 CFR 166.32. This information must be submitted to EPA Headquarters through the EPA regional office.

2. The product Counter 5-G, an unregistered product, manufactured by American Cyanamid Company, may be applied. All applicable precautions, directions and restrictions of this authorizing telegram and on the product label for Counter, EPA Reg. No. 241-238, must be followed. Actual use must be in accordance with the provisions given below.

3. Seed sufficient to plant 30,000 acres (20,000 of rape seed and 10,000 of mustard seed) may be treated in the triangle area of Montana only (Cascade, Choteau, Glacier, Hill, Liberty, Pondera, Teton and Toole counties).

4. Counter 5-G will be applied at a rate of 0.25 to 0.50 lbs. active ingredient (5 to 10 lbs. of product) mixed with enough seed to sow 1 acre below the surface soil at planting time.

5. All applications will be made by or under the direct supervision of certified applicators.

6. The grazing and feeding of livestock on treated fields is prohibited during the first 35 days after planting.

7. The label containing terbufos as the active ingredient must contain the following ecological statements:

"This pesticide is toxic to fish, birds and other wildlife. Treated granules exposed on soil surface may be hazardous to birds and other wildlife. Runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwaters."

"Cover granules that may be exposed on the ends of treated rows and turns and loading areas by deep discing immediately after treating fields."

8. Applications made in accordance with the above provisions are not expected to result in residues of terbufos, and its cholinesterase inhibiting metabolites (terbufos sulfoxide and sulfone; terbufoxon; and terbufoxon sulfoxide and sulfone) in excess of 0.05 ppm (negligible) in or on rape/rape fodder and mustard seed/mustard fodder as a result of this specific exemption. This Agency has determined that these levels are adequate to protect the public health. The Food and Drug Administration, DHHS, and the USDA have been notified of this action. Analytical methodology is available upon request from Residue Chemistry Branch, HED (TS-769C), EPA, 401 M. Street, SW, Washington, DC 20460.

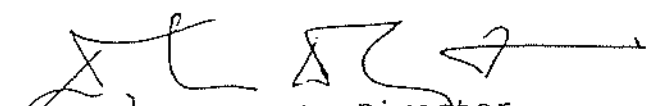
9. The Montana Department of Agriculture must arrange with the manufacturer to obtain a list of the distributors of Counter 5G prior to the expected use season. Based on this list the Department of Agriculture will develop a written enforcement strategy for monitoring the terms of this exemption. This strategy must be approved by EPA Region VIII prior to the expected use season.

10. The EPA headquarters and the Region VIII Operations Office shall be immediately informed of any adverse effects resulting from the use of this pesticide in connection with this exemption.

11. A final report summarizing the results of this program must be submitted by April 30, 1990.

12. This specific exemption is effective April 15, 1989, and expires on June 31, 1989. Any future correspondence in connection with the exemption should refer to file symbol: 89-MT-04.

Because of the high acute aquatic toxicity of terbufos, this use has potential for direct, acute effects on fish and indirect effects on fish stocks due to reduction in aquatic invertebrates that comprise their food supply. Non-endangered waterfowl and their broods depend heavily on aquatic invertebrates from wetlands for their food which could be affected by runoff and soil transport. The manufacturer has been notified of these concerns and has been requested to supply an aquatic organism field study and aquatic residue data to address our ecological concerns. You should keep in contact with the manufacturer concerning studies required by the Registration Standard for Terbufos and any progress towards registration.


Douglas D. Campt, Director
Office of Pesticide Programs

Date: 6

EPA9850

Ed Stearns

/ZIP

Robert M. Wentz MD

Department of Health

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ND Department of Agriculture

State Capitol

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ATTN: Sarah Vogel, Commissioner

After careful consideration, I am authorizing this use with great reservation. Terbufos is highly toxic to aquatic organisms and birds and the proposed use offers potential for serious impacts to non-endangered waterfowl due to the high toxicity to fish and aquatic invertebrates. The Environmental Protection Agency hereby grants a specific exemption under the provisions of section 18 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended, to the North Dakota Department of Agriculture for use of terbufos (Counter 5G) to control flea beetles in rape and mustard seed. This specific exemption is subject to the following conditions and restrictions:

1. The North Dakota Department of Agriculture is responsible for ensuring that all provisions of this specific exemption are met. It is also responsible for providing information in accordance with 40 CFR 166.32. This information must be submitted to EPA Headquarters through the EPA regional office.

2. The product Counter 5-G, an unregistered product, manufactured by American Cyanamid Company, may be applied. All applicable precautions, directions and restrictions of this authorizing telegram and on the product label for Counter, EPA Reg. No. 241-238, must be followed. Actual use must be in accordance with the provisions given below.

3. Seed sufficient to plant 100,000 acres (80,000 of rape seed and 20,000 of mustard seed) may be treated in the eastern half of North Dakota only.

4. Counter 5-G will be applied at a rate of 0.25 to 0.50 lbs. active ingredient (5 to 10 lbs. of product) mixed with enough seed to sow 1 acre below the surface soil at planting time.

5. All applications will be made by or under the direct supervision of certified applicators.

6. The grazing and feeding of livestock on treated fields is prohibited during the first 35 days after planting.

7. The label containing terbufos as the active ingredient must contain the following ecological statements:

"This pesticide is toxic to fish, birds and other wildlife. Treated granules exposed on soil surface may be hazardous to birds and other wildlife. Runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwaters. The Piping Plover is known to occur in Benson, Kidder, Logan, McIntosh, Pierce and Rolette counties."

"Cover granules that may be exposed on the ends of treated rows and turns and loading areas by deep discing immediately after treating fields."

8. Applications made in accordance with the above provisions are not expected to result in residues of terbufos, and its cholinesterase inhibiting metabolites (terbufos sulfoxide and sulfone; terbufoxon; and terbufoxon sulfoxide and sulfone) in excess of 0.05 ppm (negligible) in or on rape/rape fodder and mustard seed/mustard fodder as a result of this specific exemption. This Agency has determined that these levels are adequate to protect the public health. The Food and Drug Administration, DHHS, and the USDA have been notified of this action. Analytical methodology is available upon request from Residue Chemistry Branch, HED (TS-769C), EPA, 401 M. Street, SW, Washington, DC 20460.

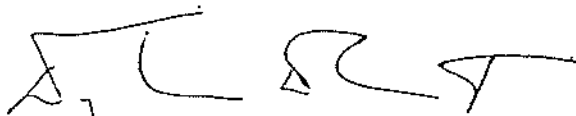
9. The North Dakota Department of Agriculture must arrange with the manufacturer to obtain a list of the distributors of Counter 5G prior to the expected use season. Based on this list the Department of Agriculture will develop a written enforcement strategy for monitoring the terms of this exemption. This strategy must be approved by EPA Region VIII prior to the expected use season.

10. The EPA headquarters and the Region VIII Operations Office shall be immediately informed of any adverse effects resulting from the use of this pesticide in connection with this exemption.

11. A final report summarizing the results of this program must be submitted by April 30, 1990.

12. This specific exemption is effective April 15, 1989, and expires on June 31, 1989. Any future correspondence in connection with the exemption should refer to file symbol: 89-ND-02.

Because of the high acute aquatic toxicity of terbufos, this use has potential for direct, acute effects on fish and indirect effects on fish stocks due to reduction in aquatic invertebrates that comprise their food supply. Non-endangered waterfowl and their broods depend heavily on aquatic invertebrates from wetlands for their food which could be affected by runoff and soil transport. The manufacturer has been notified of these concerns and has been requested to supply an aquatic organism field study and aquatic residue data to address our ecological concerns. You should keep in contact with the manufacturer concerning studies required by the Registration Standard for Terbufos and any progress towards registration.



Douglas D. Campt, Director
Office of Pesticide Programs

Date: _____ 6 _____