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SHAUGHNESSEY NO.

32
REVIEW NO.

EEB REVIEW

DATE: IN 03/04/87 OUT 06/02/87

FILE OR REG. NO. 34704-EUP-0

PETITION OR EXP. NO. _____

DATE OF SUBMISSION 12/30/86

DATE RECEIVED BY HED 03/03/87

RD REQUESTED COMPLETION DATE 05/25/87

EEB ESTIMATED COMPLETION DATE 05/18/87

RD ACTION CODE/TYPE OF REVIEW 751

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

DATA ACCESSION NO(S). _____

PRODUCT MANAGER NO. W. Miller (16)

PRODUCT NAME(S) UAP 101 or Clean Crop Holdem 10-10G

COMPANY NAME Platte Chemical Company

SUBMISSION PURPOSE Proposed EUP for new end-product containing ethoprop
and phorate for use on potatoes

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

EEB REVIEW

UAP 101 or CLEAN CROP HOLDEM 10-10G

100.0 Submission Purpose and Label Information

100.1 Submission Purpose and Pesticide Use

The registrant is requesting an EUP for UAP 101 or Clean Crop Holdem 10-10G, which is a granular combination of ethoprop and phorate, for use on potatoes. Both of the active ingredients are registered separately for use on potatoes, but the registrant believes that by combining them in the same granule they could be applied in one application thus saving the user money, and a broader spectrum of insects can be controlled.

The EUP will allow the registrant to observe the efficacy of this combination under different climatic and soil conditions. Twelve states will be covered by this EUP. These states and the total acreage per state are: Idaho (1750 A), California (100 A), Colorado (50 A), Nebraska (50 A), Michigan (300 A), Minnesota (100 A), New York (300 A), North Carolina (100 A), North Dakota (200 A), Wisconsin (450 A), Washington (375 A) and Oregon (75 A). The total acreage is 3850 A, and the total amount of formulated product that will be applied is 115,500 lb. As each active ingredient comprises 10% of the granules, 11,550 lb. of each active ingredient will be used.

100.2 Formulation Information

Active Ingredients:

Ethoprop (O-Ethyl S,S-Dipropyl Phosphorodithioate).....	10.0%
Phorate (O,O-Diethyl S-((Ethylthio) Methyl) Phosphorodithioate.....	10.0%

Inert Ingredients.....80.0%

CSF is attached to review.

100.3 Application Methods, Directions, Rates

This product should be applied with a granular pesticide applicator properly calibrated to assure accurate placement and proper dosage.

For control of aphids, leafhoppers, leafminers, psyllids, flea beetle larvae and reduction of flea beetle adults use 20 lbs per acre on sandy or light soils (22 oz per 1000 linear foot of row on 36 inch row spacing),

25 lbs on medium soils (27.5 oz per 1000 linear foot of row on 36 inch row spacing) and 30 lbs per acre on heavy silt or clay loam soils (33 oz per 1000 linear foot of row on 36 inch spacing). For control of wireworms and nematodes such as lesion, stubby root and other root feeding nematodes and suppression of Northern root knot nematodes use 30 lbs per acre.

Distribute granules in a 10 inch band using the row bander in front of closing disks at planting time or distribute granules in a band on each side of the row at cracking and incorporate using cultivators. Wait 90 days after treatment before harvesting potatoes.

Do not use as a seed furrow treatment or allow granules to contact the seed pieces.

100.4 Target Organisms

Wireworms	Aphids
Nematodes	Leafhoppers
Leafminers	Psyllids
Flea beetle larvae	Flea beetle adults

100.5 Precautionary Labeling

This pesticide is toxic to fish and wildlife. Birds and other wildlife feeding in treated areas may be killed. Do not apply directly to water or wetlands. Runoff and drift from treated areas may be hazardous to aquatic organisms in adjacent sites. Do not contaminate water by cleaning of equipment or disposal of wastes. Cover or incorporate spills. Shrimp and crab may be killed at application rate recommended on this label. Do not apply where these are important resources. Apply this product only as directed on label.

This product is toxic to bees exposed to direct application. Applications should be timed to coincide with periods of minimum bee activity, usually between late evening and early morning.

101.0 Hazard Assessment

101.1 Discussion

UAP 101 is a granular insecticide composed of two active ingredients, ethoprop and phorate. Both of these chemicals are registered as separate pesticides to control a different spectrum of insects on potatoes. The registrant is requesting an EUP to observe the efficacy of a combined granular pesticide on potatoes. The EUP will

cover 3850 acres in 12 states. However, TSS recommends that Maine should be included in the program since New England is not covered in the proposal. TSS is proposing that 600 acres in Maine should be tested. Therefore, the total acreage would be 4450 acres in 13 states, and the total amount of formulated product would be 133,500 lbs. The amount of each active ingredient would be 13,350 lbs.

The proposed application rate of the granular pesticide is 20 lbs/A on sandy and light soils, 25 lbs/A on medium soils and 30 lbs/A on heavy silt or clay loam soils. This converts to 3 lbs/A of phorate and 3 lbs/A of ethoprop. Ethoprop is currently registered as Mocap 10G for use on potatoes at 3 lbs/A, and phorate is currently registered as Thimet 20G for use on potatoes at 2.3 lbs/A on light or sandy soils and 3.5 lbs/A on heavy or clay soils.

101.2 Likelihood of Adverse Effects to Nontarget Organisms

Since there are no toxicity data on the formulated granule, the toxicity of each active ingredient will be discussed separately. Phorate is very highly toxic to birds on an acute basis and on a dietary basis. The acute LD₅₀ values range from 0.62 mg/kg for mallards to 7.5 mg/kg for starlings, and the LC₅₀ values range from 248 ppm for mallards to 381 ppm for upland gamebirds. Ethoprop is moderately to very highly toxic to birds. The acute LD₅₀ values range from 4.2 mg/kg for sparrows to 13.3 mg/kg for pigeons, and the dietary LC₅₀ values range from 33 ppm for bobwhite quail to 550 ppm for mallards.

There are more field testing data and bird kill data for phorate. Several simulated field studies conducted with Thimet 20G at 2.6 lbs a.i./A on corn indicated that 20% to 40% of the quail in the fields were killed by ingesting the granules. A full-scale field study was recently conducted and a preliminary examination of the report indicates that birds ingesting Thimet 20G applied to corn are killed. EEB has several reports of bird kills associated with the use of phorate on crops. The number of birds killed in each incident range from 66 to over 2000, and the species involved include waterfowl, raptors and songbirds.

The scant field testing data for ethoprop indicated that Mocap 10G applied at 6 lb a.i./A on corn killed 33% of the quail in the field. A full-scale field study was recently submitted and is currently under review. There is only one bird kill report, one dead robin on a lawn in Florida.

The data for phorate and ethoprop demonstrate that birds that enter a field following its treatment with

either chemical can mistakenly ingest enough pesticide granules, instead of seed or grit which birds normally pick out of agricultural fields, and die. Although there are no data on the UAP 101 formulation, we can predict that birds will die when they accidentally ingest UAP 101 granules in potato fields, based on the results of the individual chemicals.

There is also a more complete set of aquatic toxicity data for phorate than for ethoprop. Phorate is very highly toxic to freshwater and estuarine fish and invertebrates. The ranges of the acute LC₅₀ values are: freshwater fish (2 to 280 ppb), freshwater invertebrates (0.68 to 50 ppb), estuarine fish (1.3 to 5 ppb) and estuarine invertebrates (0.27 to 900 ppb). Ethoprop is moderately to highly toxic to freshwater fish (1.02 to 1.85 ppm) and highly toxic to estuarine species (7 to 232 ppb) except for oysters (11 ppm).

As discussed in EEB's chapter of the phorate registration standard, phorate has been implicated in fish kills caused by its surface runoff into ponds and streams. The Storet Retrieval System listed phorate residues of 0.01 to 40 ppb in streams in California. Phorate is currently being studied in a full-scale pond study. Aquatic field testing of ethoprop is reserved until the acute and chronic toxicity data gaps have been filled. Although the data set on ethoprop is incomplete, and we have no data on UAP 101, we can assume that toxic effects to aquatic organisms can occur from the phorate component of the granule, which we know is very highly toxic. Although the field testing of phorate has not been completed, our assumption of unacceptable hazards to aquatic organisms is valid until the data prove otherwise.

Although EEB is concerned about the toxicity of this pesticide to birds and aquatic organisms, we do not believe that its use on potatoes will result in an increased exposure to these organisms, primarily because it will be applied to less than 1% of the total acreage grown with potatoes throughout the country (Agricultural Statistics, 1984). Therefore, we do not believe that use of UAP 101 under the conditions of this EUP will present unacceptable risks to nontarget organisms.

101.3 Endangered Species Considerations

In its cluster analysis of pesticides for endangered species labeling, ethoprop and phorate have been listed as likely to jeopardized endangered species from its use on crops. Therefore, UAP 101 cannot be used in the following counties:

California -- Butte, Colusa, Glenn, Imperial, Kern, Merced, Modoc, Inyo, Los Angeles, Orange, Riverside, Sacramento, San Bernardino, San Diego, Santa Barbara, Solano, Stanislaus, Sutter, Tehema, Yolo and Ventura.

Nebraska -- Boyd, Brown, Buffalo, Butler, Cass, Cedar, Colfax, Dawson, Dodge, Douglas, Hall, Hamilton, Holt, Howard, Kearney, Keya Paha, Knox, Merrick, Nance, Phelps, Platte, Polk, Rock, Sarpy and Saunders.

North Carolina -- Edgecombe, Nash and Pitt.

North Dakota -- Banson, Bottineau, Burke, Burleigh, Divide, Dunn, Eddy, Emmons, Foster, Kidder, Logan, McHenry, McIntosh, McKenzie, McLean, Mercer, Morton, Mountrail, Nelson, Oliver, Pierce, Ramsey, Ranville, Rolette, Sheridan, Sioux, Stutsman, Towner, Ward, Wells and Williams.

Oregon -- Lake.

101.4 Adequacy of Toxicity Data

The registration standards for phorate and ethoprop listed the data gaps that need to be fulfilled. However, the data for the individual active ingredients are not sufficient to assess hazards from the use of this combination granule. It is possible that additive toxicological effects may be occurring by combining two toxic chemicals in one granule. Therefore, the six basic studies -- two acute toxicity tests with freshwater fish, one acute toxicity test with a freshwater invertebrate, one avian acute oral toxicity test and two avian dietary tests -- must be conducted with UAP 101 before we can consider this pesticide for a full registration. Based on the results on these acute tests, additional testing, including field testing, may be required.

103.0 Conclusions

The Ecological Effects Branch has reviewed this proposed EUP for the use of a granular pesticide, UAP 101 or Clean Crop Holdem 10-10G, which is 10% phorate and 10% ethoprop, to control a broad spectrum of insects on potatoes. EEB concludes that the EUP will not cause a significant increase in exposure to nontarget organisms as the acreage in each of the states is limited. As each of the active ingredients is known to be toxic the registrant is required to notify the Agency if any fish or wildlife mortalities occur during the use of this product under this EUP. If the registrant wants a full registration for this pesticide, then the data requirements listed in section 101.4 must be fulfilled.

Ann Stavola 5/31/87

Ann Stavola
Aquatic Biologist
Ecological Effects Branch

Douglas Urban 6/1/87

Douglas Urban
Head Section III
Ecological Effects Branch

Michael Slimak 6/1/87

Michael Slimak
Chief
Ecological Effects Branch

MEMORANDUM TO THE FILES ON EXPERIMENTAL USE PERMITS *

The following is a summary of information that describes a proposed EPA Experimental Use Permit (EUP) and includes comments by the reviewing Technical Support Section and the Product Manager or his Assistant. This summary and the appropriate reviews from HED will accompany actions on EUPs to the Branch Chief and/or RD Director. If this is an extension, renewal, or amendment the form for the original EUP is to be attached. If an original form has never been prepared, attach a second form with items 1, 6, and 7 completed.

- 1. EPA EUP Number: 34704-EUP-0 ; ORIGINAL, EXTENSION, RENEWAL, AMENDMENT
- 2. Name of Registrant Platte Chemical Company
- 3. Chemical Name ethoprop + phorate
- 4. Pests wireworms, nematodes, green peach aphid, potato aphid, flea beetles, leafhopper, leafminers, psyllid, Colorado potato beetle
- 5. Proposed period of treatment March 1 through June 30, 1987
- 6. Program Requested

See addendum,
attached,

States	lbs. ai.	Acres

- 7. EPA Pesticide Petition G 12 states, Proposing Tolerances None - already exist
- 8. EPA Pesticide Petition H, Proposing Tolerances None - already exist

- 9. Objective of Program: Development of Data: Product Performance; Residue Chemistry
 Environmental Fate; Other (Specify _____)

Technical Support Section comments (Adequacy of program, data deficiencies, etc.):
The program is adequate as far as it goes. However, the omission of Maine from the list of states in which testing is proposed is a significant defect in our opinion, for at least 2 reasons: without Maine the New England states are not represented and the absence of data for Maine would likely delay marketing in that area, also Aroostook County, Maine, is the top-ranking county in the U.S. by a large margin. Addition of 600 acres in Maine is strongly recommended as being representative of its relative importance (2nd only to Idaho). See addendum for revised program totals needed.
 Is the number of acres and/or the amount of ai. requested excessive for the program? No

Recommend to grant EUP: Yes , No
 providing 600 acres in Maine are added to the program.
1800 lbs. ai.

TSS Reviewer Vern L. McFarland
 Date February 17, 1987

Product Manager Team comments:

Recommend to grant EUP: Yes , No
 Maintain in PM EUP File: _____
 PM Reviewer _____
 Date _____

* If space on this form is inadequate for the requested information for an item to be completely presented, add addendum for that numbered item. 8

Item Number 6: Program Requested (addendum)

<u>States</u>	<u>Amount a. i.</u>	<u>Quantity (pounds)</u>	<u>Acreage</u>
California	300	3,000	100
Colorado	150	1,500	50
Idaho	5,250	52,500	1,750
Michigan	900	9,000	300
Minnesota	300	3,000	100
Nebraska	150	1,500	50
New York	900	9,000	300
North Carolina	300	3,000	100
North Dakota	600	6,000	200
Oregon	225	2,250	75
Washington	1,125	11,250	375
Wisconsin	<u>1,350</u>	<u>13,500</u>	<u>450</u>
Totals 12 states	11,550 lbs.	115,500 lbs.	3,850 acres

Item Number 9: Program Recommended (addendum)

<u>States</u>	<u>Amount a. i.</u>	<u>Quantity (pounds)</u>	<u>Acreage</u>
California	300	3,000	100
Colorado	150	1,500	50
Idaho	5,250	52,500	1,750
Maine	1,800	18,000	600
Michigan	900	9,000	300
Minnesota	300	3,000	100
Nebraska	150	1,500	50
New York	900	9,000	300
North Carolina	300	3,000	100
North Dakota	600	6,000	200
Oregon	225	2,250	75
Washington	1,125	11,250	375
Wisconsin	<u>1,350</u>	<u>13,500</u>	<u>450</u>
Totals 13 states	13,350 lbs.	133,500 lbs.	4,450 acres

Ecological Effects Branch Reviews - Phorate

Page 10 is not included. The page identifies the confidential statement of formula for the product.

102 JUL 1987

12/30/86 - #187759
3/31/87 - #196331

Platte Chemical Company
P.O. Box 667
Greeley, CO 80632

Gentlemen:

Subject: Clean Crop Holdem 10-10G
EPA Experimental Use Permit File Symbol 34704-EUP-O
Your Application Dated December 4, 1986 and
Amendments of December 30, 1986 and March 31, 1987

The application for a permit to ship and use the subject product for experimental purposes, submitted under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is not acceptable for the following reasons:

1. Please refer to our letter of March 9, 1987 recommending that your program be revised to include 600 acres in Maine in your proposed efficacy testing. This is because of the relative importance of Maine (second only to Idaho) in U.S. potato production. We have enclosed a copy of the complete efficacy review, which describes a realignment of acreages among the other States should you desire to maintain the same totals of acreage.
2. In its cluster analysis of pesticides for endangered species labeling, ethoprop and phorate have been listed as likely to jeopardize endangered species from its use on crops. Therefore, your program for the subject permit must be revised to specify that the subject product is not to be used in the following counties:
 - a. California--Butte, Colusa, Glenn, Imperial, Kern, Merced, Modoc, Inyo, Los Angeles, Orange, Riverside, Sacramento, San Bernardino, San Diego, Santa Barbara, Solano, Stanislaus, Sutter, Tehama, Yolo, and Ventura.
 - b. Nebraska--Boyd, Brown, Buffalo, Butler, Cass, Cedar, Colfax, Dawson, Dodge, Douglas, Hall, Hamilton, Holt, Howard, Kearney, Keya Paha, Knox, Merrick, Nance, Phelps, Platte, Polk, Rock, Sarpy, and Saunders.

92697:I:Miller:M-4:KENCO:06/26/87:07/08/87:teg:lisa:ek:cdb

CONCURRENCES

SYMBOL	ORIGINATOR							
SURNAME								
DATE								

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- c. North Carolina--Edgecombe, Nash, and Pitt.
- d. North Dakota--Banson, Bottineau, Burke, Burleigh, Divide, Dunn, Eddy, Emmons, Foster, Kidder, Logan, McHenry, McIntosh, McKenzie, McLean, Mercer, Morton, Mountrail, Nelson, Oliver, Pierce, Ramsey, Ranville, Rolette, Sheridan, Sioux, Stutsman, Towner, Ward, Wells, and Williams.
- e. Oregon--Lake.

The Ecological Effects Branch has concluded that the use of the subject product under the conditions of your proposed experimental program will not cause a significant increase in exposure to nontarget organisms.

The Registration Standards for phorate and ethoprop listed the environmental safety data gaps that need to be fulfilled. However, the data for the individual active ingredients are not sufficient to assess hazards from the use of this combination granule. It is possible that additive toxicological effects may be occurring by combining two toxic chemicals in one granule. Therefore, the six basic studies--two acute toxicity tests with freshwater fish, one acute toxicity test with a freshwater invertebrate, one avian acute oral toxicity test and two avian dietary tests--must be conducted with UAP 101 before we can consider this pesticide for a full registration. Based on the results on these acute tests, additional testing, including field testing, may be required.

Refer to our letter of March 9, 1987, regarding the human safety precautionary statements to be added to the subject product labeling, the residue chemistry data needed to support registration, and the toxicology data needed to support registration.

It is understood that your proposed amended program submitted with your letter of May 14, 1987 is not to be considered at this time.

Sincerely yours,

Herbert S. Harrison, Chief
Insecticide-Rodenticide Branch
Registration Division (TS-767C)

Enclosure