5-16-84

Date: May 16, 1984

Subject: EPA Registration Number: 352-352
DuPont Krovar I Weed Killer

005265

From: Delores J. Graham
TIIB/TSS E 5/16/84

To: Robert Taylor
Product Manager (25)

Applicant: E.I. duPont de Nemours and Company
Attn.: J.J. Trexel, Legal Department
Wilmington, DE 19898

Active Ingredients:
Bromacil [5-bromo-3-sec-butyl-6-methyluracil] 40%
Diuron [3-(3,4-dichlorophenyl)-1,1-dimethylurea] 40%
Inert Ingredients 20%

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Background: Submitted Acute Oral, Acute Dermal, Eye Irritation and Skin Irritation Studies for Acute Toxicology Data Matrix. Studies conducted by Haskell Laboratory for Toxicology and Industrial Medicine. Studies under accession number 252189. Method of support not indicated.

Recommendations:
(1) TIIB/TSS finds the Skin Irritation Stu[dy] ...

[illegible] ... pacted

Reviewer on file;

(a) Acute Oral and Acute Dermal studies (at least four animals per sex per dose must be used.

(b) Eye irritation study (at least six animals per dose must be used). Individual scoring for Iritis, corneal opacity, iris irritation, redness, chemosis, and discharge for each animal must be submitted.

Label:

(1) No labeling comments until acceptable data for presently mentioned studies are submitted.

Review:

(1) Acute Oral Toxicity Study: Haskell Laboratory; Report No. 142-72; April 2, 1973.

Procedure - Six groups consists of ten male CHR-CD rats each received one of the following doses orally: 4,000; 4,500; 5,500; 6,000; 6,500; or 7,000 mg/kg. Observations made for 14 days.

Results: at 5,500 mg/kg, 7/10 M died; at 6,000 mg/kg 5/10 M died; at 6,500 mg/kg, 5/10 M died; at 7,000 mg/kg, 10/10 M died. Toxic signs reported included lethargy, prostration, moribundity, ruffled fur, ataxia, chromodacryorrhea, lacrimation, pallor or cyanosis, wet stained perineal area, necrotic area at tip of tail,

however, redness, swelling and discharge were noted through day 2 005265

Study Classification: Core Supplementary Data. At least six animals per dose must be used. Individual scoring of corneal opacity, iris irritation, redness, swelling and discharge for each animal must be submitted.

(4) Skin Irritation Study: Haskell Laboratory; Report No. 355-77; May 13, 1977.

Procedure: Six male rabbits received 0.5 gm of the test material at intact and abraded skin sites under occlusive wrap for 24 hour exposure. Observations made at 24 and 72 hours after treatment.

Results: At 24 hours, 6/6 slight erythema (scores of 1 and 2) and no edema. At 72 hours, 5/6 slight erythema (scores of 1 and 2) and 1/6 slight edema (score of 1). Primary Irritation Score reported to be 0.66.

Study Classification: Core Guideline Data.

Toxicity Category: IV - CAUTION

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ACCEPTED

DEC 1 - 1980

Under the Federal Insecticide, Fungicide and Rodenticide Act, as amended for the pesticide registered under EPA Reg. No. 352-352

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DU PONT

REG U.S. PAT. & TM. OFF.

KROVAR® II

WEED KILLER

WETTABLE POWDER

ACTIVE INGREDIENTS	80%
Bromacil [5-bromo-3-sec-butyl-6-methyluracil]	40%
Diuron [3-(3,4-dichlorophenyl)-1,1-dimethylurea]	40%
INERT INGREDIENTS	20%

EPA Reg. No. 352-352

Keep out of reach of children.

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS

CAUTION! MAY IRRITATE EYES, NOSE, THROAT, AND SKIN.
Avoid breathing dust or spray mist. Avoid contact with skin, eyes, and clothing.

ENVIRONMENTAL HAZARDS

Keep out of lakes, streams, or ponds. Do not contaminate water by cleaning of equipment or disposal of wastes.

IMPORTANT—Injury to or loss of desirable trees or other plants may result from failure to observe the following:

Do not apply (except as recommended for crop use), or drain or flush equipment on or near desirable trees or other plants, or on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots. Do not use on lawns, walks, driveways, tennis courts or similar areas. Do not use in home fruit plantings nor in citrus orchards interplanted to other trees or desirable plants. Prevent drift of dry powder or spray to desirable plants. Do not contaminate any body of water. Keep from contact with fertilizers, insecticides, fungicides and seeds.

Thoroughly clean all traces of "Krovar" I from application equipment immediately after use. Flush tank, pump, hoses, and boom with several changes of water after removing nozzle tips and screens (clean these parts separately).

4

NET 5 LBS.

E. I. du Pont de Nemours & Co. (Inc.)
Biochemicals Department, Wilmington, Delaware

GENERAL INFORMATION

005265

Du Pont "Krovar" I Weed Killer is a wettable powder to be mixed in water and applied as a spray for selective control of weeds in citrus and for non-crop weed control.

"Krovar" I controls annual weeds such as barnyardgrass (watergrass), chickweed, crabgrass, filaree, fleabane, Florida pusley, foxtail, groundsel, horseweed, johnsongrass seedlings, junglerice, lambsquarters, natalgrass (red top), nightshade (annual), pigweed, pineappleweed, puncturevine, purslane, ragweed, sandbur (sandspur), shepherdspurse, sowthistle (annual), spanishneedles, wild lettuce, and wild mustard. At higher use rates, treatment controls certain perennial weeds. Effects on perennial weeds are slow to appear, usually progressing over a period of several months.

Moisture is necessary to activate the herbicide; best results are obtained if treatment is made to moist soil, and moisture is supplied by rainfall or sprinkler irrigation within two weeks after application. The degree and duration of control will vary with the amount applied, soil texture, rainfall, and other conditions.

NOTICE OF WARRANTY

Du Pont warrants that this product conforms to the chemical description on the label thereof and is reasonably fit for the purposes stated on such label only when used in accordance with the directions under normal use conditions. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Du Pont. In no case shall Du Pont be liable for consequential, special or indirect damages resulting from the use or handling of this product. All such risks shall be assumed by the buyer. DU PONT MAKES NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

NOTICE TO BUYER: Purchase of this material does not confer any rights under patents of countries outside of the United States.

5

DIRECTIONS FOR USE

005265

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

Du Pont "Krovar" I should be used only in accordance with recommendations on this label, or in separate published Du Pont recommendations available through local dealers.

Du Pont will not be responsible for losses or damages resulting from use of this product in any manner not specifically recommended by Du Pont. User assumes all risk associated with such non-recommended use.

CITRUS (Oranges, Lemons, Grapefruit)

Apply any time of year provided overhead moisture (rainfall or sprinkler irrigation) is available to activate the herbicide, preferably just before or just after weeds have germinated.

Use only where trees have been established in the orchard for at least three years. Apply with a properly calibrated fixed-boom power sprayer as a band or broadcast treatment beneath and/or between trees. Use sufficient water (min. 40 gals. per acre) to obtain uniform coverage; avoid contact of foliage and fruit with spray or mist. Avoid overlapping, and shut off spray boom while starting, turning, slowing or stopping, or injury to trees may result. Continuous agitation in the spray tank is required to keep the material in suspension. Best results are obtained if application is made shortly before or shortly after weed growth begins; if dense growth is present, remove tops and spray ground. Do not use on citrus in Kern County, California.

Dosages are expressed as broadcast rates; for band treatment, use proportionately less.

Annual Weeds

California, Arizona—Best results occur when applied in late fall or early winter, but before winter annuals become well established. In groves where a nontillage program is being initiated, application should be made after the first fall or early winter rains have settled the soil.

Initial Treatment: In groves where a nontillage program is being initiated, or where a history of moderate to heavy weed pressure exists, make a single application of 4 to 5 lbs. per acre on coarser soils (sands, loamy sands, sandy loams) and 5 to 6 lbs. per acre on finer soils (silt loams, clay loams or soils with organic matter of 2½% or more); use the higher range of rates where groundsel or puncturevine are known to be a problem. The higher rates will also suppress low density stands of bermudagrass and yellow nutsedge.

Annual Retreatment: In groves that have been under a nontillage program and weed pressure is less severe, or where the initial rate of "Krovar" I has provided adequate seasonal control (requiring no more than one follow-up spot weed oiling of annual weeds), make a single application of 3 to 4 lbs. on coarser soils and 4 to 5 lbs. on finer soils. Use the higher range of rates where groundsel or puncturevine is a problem.

Texas, Louisiana—Make a single application of 2 to 4 lbs. per acre on coarser soils (sands, loamy sands, sandy loams) and 4 to 6 lbs. per acre on finer soils (silt loams, clay loams, or soils with organic matter of 2½% or more); use the higher rates for maximum suppression of perennials. Alternatively, make two applications per year at rates of 2 lbs. per acre on coarser soils and 3 lbs. per acre on finer soils; make the second application when needed to maintain weed control.

Florida—Make one or two applications of 4 to 8 lbs. per acre where trees have been established three or more years. Make the second application when needed to maintain weed control. Do not apply more than 12 lbs. per acre per year. Where trees have been established only one or two years, apply 2 to 4 lbs. per acre. A second application may be made when needed to maintain weed control, but do not exceed 8 lbs. per acre per year. Use higher rates to control balsam apple vine seedlings, bermudagrass, drymary, guineagrass, and milkweed (strangler) vine seedlings, and provide partial suppression of established balsam apple vine and milkweed (strangler) vine.

Note: Temporary yellowing of citrus leaves may occur following treatment. Because injury to citrus trees may result: do not use on soils with less than 1% organic matter (½% in Florida), poorly drained soils, gravelly soils, nor thinly covered or exposed subsoils; do not treat trees planted in irrigation furrows; do not treat diseased trees such as those with foot rot.

Do not replant treated areas to any crop within two years after last application as injury to subsequent crops may result, except that citrus trees may be planted one year after the last application.

NON-CROP WEED CONTROL

For short-term control of annual weeds on non-cropland areas such as roadsides, storage areas, and plant sites, apply 4 to 6 lbs. per acre in 40 to 100 gals. of water. For extended control of annuals and partial control of perennials such as bermudagrass and nutsedge, apply 7 to 18 lbs. per acre. For control of hard-to-kill perennials such as bermudagrass, bouncingbet, dogbane, johnsongrass, nutsedge, and saltgrass, apply 19 to 40 lbs. per acre.

Use the higher levels of dosage rates on adsorptive soils (high in organic matter or carbon). Best results occur when application is made just before weed emergence or in early stages of weed growth.

Retreatment: Apply 4 to 6 lbs. per acre when annual weeds and grasses reappear on sites where weed growth has been controlled.

Small Areas: ¼ cupful of "Krovar" I per 200 sq. ft. is approximately 15 lbs. per acre.

6

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal. Do not re-use container. Bury empty container, or product that cannot be used, in a safe place away from water supplies, or dispose of by alternative procedures recommended by federal, state, or local authorities. Open dumping is prohibited.