

EMERGENCY EXEMPTION REQUEST (SECTION 18)
POTATO

A. THE PEST PROBLEM

1. Has or is a pest outbreak about to occur?

Soil nematode populations are an immediate threat to California's potato growing region due to the recent suspension of the chemical Telone (1,3,D). (Telone was found at an unacceptable level in California air monitoring tests.) Potato growers in all other regions of the United States still have this chemical available for soil fumigation. California potato growers, after considering possible alternatives, must use another strategy to achieve the consistent nematode control needed to make the growing of potatoes economically feasible. This Section 18 is requesting permission to use methyl bromide for a period of one year.

2. Why was this pest not previously a critical problem?

Telone has given acceptable control to an ongoing pest problem. With its suspension, the presence of the pest causes a critical situation. To demonstrate the effectiveness of Telone, a test conducted by the University of California Cooperative Extension Service showed Telone treated field resulted in a 50 percent reduction in potato blemish and a 75 percent reduction in nematodes.

3. Name of the pest (common and scientific). *John Howard*

Various nematode genera: Meloidogyne (root knot), Hemidorus (needle), and Paratrichodorus (stubby root).

4. Type of crop damage.

Nematodes infest the tubers and roots of the plant causing greatly reduced yields as the infection renders the tubers unsalable and fewer are produced.

5. Areas affected (counties or geographical locations).

Potatoes are grown in a number of counties throughout the state (primarily Kern, Riverside, Santa Barbara, San Joaquin, Siskiyou, Modoc, and Lassen).

6. Population monitoring methods.

Extraction of nematodes from soil or previous crop history.

7. Infestation level which requires treatment as an economic necessity.

There is really no threshold level of infestation requiring treatment. Any infestation can cause economic damage and treatment is necessary.

B. CROP OR SITE

1. The name of the crop or site.

This Section 18 is requested for Kern County, California's largest growing area, but is intended to cover all growing areas in the state.

2. Total acres planted to the crop.

In the past three years in California the acreage planted to potatoes has ranged between 47,200 and 50,000.

3. Amount of critically affected acreage.

This varies from year to year and from county to county. In the Bakersfield area, approximately one third of the acreage requires treatment each year. In the northern counties, approximately 40 percent of the acreage is fumigated. Statewide, 130,000 acres need treatment.

4. Stage of crop growth when treatments will be made.

Applied at least 10 - 14 days prior to planting the crop. No post-planting treatment can be done.

5. How this crop is marketed (i.e., fresh market, canning, processing).

Potatoes are grown and marketed primarily as a fresh market crop. In the Kern county area, approximately 15 percent of the crop is processed for chips. In the Tulare county area, approximately 2 percent is processed.

6. Will livestock be fed or graze the crop, its byproducts, or treated fields?

Livestock are never allowed to graze the crop, its by-products or treated fields.

C. ALTERNATIVES

1. List each alternative and its limitations.

Both Vapam and Mocap have been used as alternatives, with Vapam being the more commonly used. The limitations of both compounds include the fact that control is inconsistent. The shortage of water makes the use of Vapam (it requires water for application) very limited at this time.

2. Estimate the percent control of alternatives for the last four years.

Due to the availability and effectiveness of Telone, neither Vapam or Mocap have been used sufficiently to provide any reliable figures. With Telone, the control level is estimated to be 75 percent.

3. Costs of alternative method over the last four years and an estimate for the upcoming year.

It is estimated that the cost of Vapam is \$150.00 per acre versus \$200.00 per acre for Telone. Mocap has been used so little that there are no reliable cost estimates for this compound.

4. Crop yields over the last four years when using alternatives and an estimate for the upcoming year.

Alternative chemicals have not been used sufficiently to provide meaningful data.

5. Field data to support any claims of pest resistance to alternatives.

No data are available concerning pest resistance to the alternatives.

D. ECONOMIC EFFECTS INFORMATION

1. Total value of the crop this year and each of the last four years.

<u>Year</u>	<u>Total Crop Value</u>
1989	N/A
1988	\$143,673,000.00
1987	158,908,000.00
1986	144,136,000.00

2. For each of the last four years.

<u>Year</u>	<u>Total Acreage</u>	<u>Net Yield Per Acre</u>	<u>Total Net Production</u>
1989	N/A	N/A	N/A
1988	47,200	355cwt	16,765,000cwt
1987	50,600	376cwt	19,039,000cwt
1986	48,400	381cwt	18,451,000cwt

3. Market price of crops and whether price is fixed or variable.

The market price of potatoes is variable and has ranged between \$7.00 and \$12.00 per hundredweight over the past several years depending on available supply and season of the year.

4. Cost of production this year and the last four years to verify emergency situations vs. historical pest problem.

Production costs range from \$1,200.00 to \$1,400.00 per acre. These figures include rent for land, but do not include costs of harvesting or packing. Without the use of a nematocide, cost of production is estimated to increase 20 - 50 percent. Although yield may not be greatly affected when a nematocide is not used, crop quality is greatly reduced making marketing of infested tubers impossible.

5. Estimate percentage crop loss for the last four years and this year without the proposed material.

University of California crop specialists claim it is very difficult to estimate crop loss due to the nematode problem alone as there are a number of disease problems as well. Telone use reduces potato blemish by approximately 50 percent. The loss of its use will have a dis-

astrous effect on yield of marketable potatoes unless growers can use methyl bromide.

6. Estimate percent crop loss with the proposed material.

Methyl bromide is certainly as effective as Telone against the nematodes. In addition, methyl bromide will help suppress the serious disease organisms which infect potatoes. There should be little crop loss due to nematodes and possibly reduced loss to diseases should methyl bromide be used.

7. Cost of the proposed material and any additional costs such as required monitoring programs.

The use of methyl bromide will cost \$150.00 to \$300.00 per acre. Although methyl bromide has no known chronic toxicity, it requires a much stronger worker safety program and shall only be applied by licensed pest control operators.

E. PROPOSED PROGRAM

Product: TRICAL Methyl Bromide 90%

EPA Reg. No: 11220-17

Manufacturer: TRICAL Inc.

Dosages: 300 lbs. per acre

Dilution Rate: N/A

Method of Application: Deep shank soil injection, tarpless. Prior to application of the fumigant, the soil should be loosened to depth of treatment. Clods should be well broken up, and previous crop residue worked well into the soil. Soil temperature at time of application should be between 45 F. and 80 F. at a depth of 6 inches. Do not fumigate when soil temperature is below 45 F. Chisel points should be 18 - 66 inches apart with an application depth of 12 - 18 inches. A wing may be welded 2 - 4 inches above the injection point to immediately close the chisel mark to trap the fumigant in the soil. The fumigation rig should also pull a bar or have press wheels to seal the chisel marks at the soil surface. A second unit consisting of a V-float with roller, or disc with cultipacker must follow immediately to complete the sealing process.

Frequency/Timing of Application: One application per year/
10 - 14 days before planting

Field Reentry Interval: 48 hours

Preharvest Interval: N/A

Date First Application Needed: Immediate, for one year

F. POTENTIAL ENVIRONMENTAL HAZARDS TO BEES, FISH, BIRDS, ENDANGERED SPECIES AND OTHER NON-TARGET ORGANISMS (ALSO LIST ANY MITIGATION MEASURES).

No environmental hazards, data on file with EPA and CDEA.

G. CURRENT REGISTRATION STATUS

(x) No application for registration of the use is under review by EPA. The Methyl Bromide Industry Panel is currently seeking the establishment of tolerances for organic methyl bromide resulting from the use of methyl bromide as a preplant soil fumigant.

H. SUPPORTING DATA

I. KNOWLEDGEABLE EXPERT TO BE CONTACTED BY EPA

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Name: Dr. Tom Duafala
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Applicant: Mr. Charles Kirschenmann

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APPROVAL

Approved For a Permit If Issued: _____
Agricultural Commissioner

County