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WASHINGTON, D.C. 20460

C. Fnelow  
(PIB/FOD)

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OFFICE OF  
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM:

SUBJECT: ID #90-MI-07. Chlorothalonil [BRAVO®]: Section 18 exemption for use on asparagus in the State of Michigan. [DEB:#6718;MRID: n/a]

FROM: William L. Anthony, Chemist  
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Dietary Exposure Branch  
Health Effects Division [H7509C]

*William L. Anthony*

THRU: Francis B. Suhre, Section Head  
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TO: S. Stanton/B. Cool, PM #41  
Emergency Response Branch  
Registration Division [H7505C]  
and  
Toxicology Branch  
Health Effects Division [H7509C]

The State of Michigan, Department of Agriculture, has requested an emergency exemption under Section 18 of FIFRA, as amended, for use of the fungicide, chlorothalonil [BRAVO®-720], EPA Reg. #50534-188, to control: Puccinia asparagi or "rust"; Stemphyllium vesicarium or "purple spot"; and Cercospora asparagi or cercospora leaf blight on asparagus.

BRAVO®-720 contains 54% chlorothalonil [6 lb ai/gal or 720 gm/L] This product is produced by the Fermenta ASC Corp. (Mentor, OH).

It is expected that up to 23,000 bearing acres of asparagus will be treated, with up to a maximum rate of [4 pt (1.5 lb to 3.0 lb ai) BRAVO®-720/A]. Repeated applications, presumably not to exceed five, would allow for a total of 345,000 lb of the active ingredient. The requested exemption is for use by June 15, 1990 and can be terminated November 1, 1990.

There is no tolerance for the use of chlorothalonil in/on asparagus.

### Tolerances

Tolerances are established for the combined residues of the parent, chlorothalonil [2,4,5,6-Tetrachloro-iso-phthalonitrile] and its metabolite [4-OH-2,5,6-trichloro-iso-phthalonitrile] in/on several raw agricultural commodities ranging from 0.05 ppm for bananas, cocoa beans, nectarines, and onions to 15 ppm for celery and papayas, [40 CFR 180.275].

There are no permanent or temporary tolerances for residues of chlorothalonil in/on asparagus. "Fermenta ASC is currently working through a IR-4 project [PR# 0319] to establish an appropriate tolerance and registration". Memo: Application request from D. Wade to B. Cool, 5/25/90.

### Proposed Use

This exemption calls for repeated applications at 2 to 4 week intervals 2 to 4 pt [1.5 lbs to 3.0 lbs ai] BRAVO®-720 to be applied to asparagus ferns after harvest of spears. Applications are to be repeated at 2 to 4 week intervals until the ferns are no longer productive. The fungicide should be diluted with sufficient water to obtain adequate coverage of ferns. Note: The maximum number of chlorothalonil applications were not stated in the supplemental directions label.

Restriction: Do not apply within 100 days of harvest of spears during the subsequent growing season.

### Metabolism

The metabolism of chlorothalonil in plants is adequately understood. Chlorothalonil and its 4-OH metabolite are the residues of concern, [Memo: M. Kovacs, PP# 3E2939,1/13/84].

### Residue Data/Analysis

Limited data summaries were submitted with this request which had been collected from seven field studies completed in OK, MI, WA, and CA. The residues of chlorothalonil on asparagus spears harvested in the spring following application of BRAVO®-720 were at rates ranging from 1.13 lb ai/A to 3.0 lb ai/A with the number of applications ranging from 3 to 6. The PHIs ranged from 97 to 248 days. The chlorothalonil residues in all samples were <0.01 ppm. The sensitivity limit was 0.01 ppm.

Based on the limited residue data, we would not expect the combined residues of chlorothalonil and its metabolite to exceed 0.05 ppm as a result of this Section 18 exemption. A residue level of 0.05 ppm would be consistent with the lowest current tolerance levels.

Note: The time between cutting<sup>g</sup> down of the ferns and the first appearance of asparagus spears can be as much as 7 to 8 months in cold climates such as Michigan. Asparagus are usually washed by the larger growers, whereas a small number of local growers may not wash their product before being marketed. [Memo: B. Benson PhD, UCLA, College of Agriculture at Davis, CA to L. Kudney, DEB/HED), 7/2/84].

It is assumed that the residue data submitted with this exemption were from unwashed asparagus samples. The analytical method(s) used were not specified.

Analysis: Method I in Pesticide Analytical Manual, Vol. II may be used for enforcement.

#### Meat, Milk, Poultry, and Eggs

Asparagus is not a feed item, therefore no secondary residues should result in these commodities.

#### Conclusion

- (1) No tolerance has been established for residues of chlorothalonil and its 4-OH-metabolite.
- (2) For purposes of this Section 18, the metabolism of chlorothalonil in plants is adequately understood. The residues of concern are chlorothalonil and its 4-OH metabolite.
- (3) The combined residues of the parent and its metabolite are not likely to exceed 0.05 ppm in asparagus as a result of this Section 18 request.
- (4) Since asparagus is not a feed item, no problem with secondary residues in meat, milk, poultry, and eggs is anticipated.
- (5) Method I in Pesticide Analytical Manual, Vol. II is adequate for enforcement. Analytical Reference Standards for chlorothalonil and its 4-OH-metabolite are available from the Pesticide & Industrial Chemicals Repository at Industrial Park, NC.

Recommendation

TOX considerations permitting, DEB has no objection to this Section 18 request. Agreement should be made with FDA regarding the legal status of the treated commodity in commerce.

CC: Reviewer;Chlorothalonil[BRAVO®];FOD/PIB(C.Furlow);DRES  
(J.Kariya);DEB(R.Schmitt);Sec.18 File; Circulation.  
RDI:SH,6/22/90;FBS;EZ,6/25/90.  
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