3-9-95 R.o.F.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

MAR 9 1995

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

SECTION 18 EXEMPTION FOR USE OF **CHLOROTHALONIL** IN/ON **MUSHROOMS.**

To: Andrea Beard/David Deegan, PM Team #41 (7505C)
From: María Isabel Rodríguez, CBTS (7509C). María I. Rodríguez March 9, 1995

ID#: 95PA0004
DP Barcode: D212572
CBTS #: 15206
Chemical:
EPA Approved Common Name: Chlorothalonil
Chemical Name: 2,4,5,6-Tetrachloroisophthalonitrile
Formulation Trade Name: Bravo 500
Registration #: 50534-8
Class: Fungicide (Broad spectrum protectant)
State or Agency Applying for Exemption: Pennsylvania
Type of Exemption: Specific emergency
Reason: To control the fungal pathogen *Verticillium fungicola* in commercial button mushrooms. This pathogen causes spots, dry bubbles and deformities when it infects the mushroom. Therefore, yield and quality losses are imminent.

RECOMMENDATIONS: TOX considerations permitting, CBTS has no objection to the issuance of this Section 18 exemption for use of chlorothalonil in/on mushrooms. An agreement should be made with FDA regarding the legal status of the treated mushrooms in interstate commerce.

CONCLUSIONS:

1. For the purposes of this Section 18 request only, the metabolism of chlorothalonil in/on plants is considered understood. The residues of concern are the parent (chlorothalonil) and its metabolite 4-hydroxy-2,5,6-trichloro-isophthalonitrile (known as SDS-3701). Also, the Agency has expressed concern over hexachlorobenzene (HCB), an impurity formed in the manufacturing process of the technical product.

2. There are no feed items associated with mushrooms, therefore, the metabolism of chlorothalonil in/on animals is not of concern in this Section 18 request since secondary residues in meat, poultry, milk, and eggs are not expected to occur as a result of the proposed use.

3. An adequate method using gas chromatography with electron capture (GC/EC) detection is available for the enforcement of tolerances for the combined residues of chlorothalonil and its metabolite 4-hydroxy-2,5,6-trichloroisophthalonitrile. It is published as Method I in the *Pesticides Analytical Manual* (*PAM*), Vol. II. Additionally, CBTS has recommended (W.T. Chin, Memorandum dated 2-22-1991) that the method entitled *General Analytical Procedure for the Determination of Residues of Chlorothalonil, SDS-3701, SDS-46851, HCB, and PCBN on Selected Crops* be published in *PAM*. To date, such method has not been published.

4. Analytical reference standards for chlorothalonil are available from Ultra Scientific, N. Kingstown, RI (401-294-9400). The 4-hydroxy metabolite is available from the Pesticides and Industrial Chemicals Repository, RTP, NC.

5. According to Table II (June 1994), the raw agricultural commodity (rac) for mushrooms is the cap with stem. There are no processed commodities.

6. The residue data used in the evaluation of this Section 18 request were generated by IR-4 (NJ) in collaboration with ISK Biosciences (OH).

Comparison of Proposed Label and Residue Data Parameters Used the in CBTS's Decision:

	Proposed Use	Residue Data
Chemical	Chlorothalonil	Chlorothalonil
Formulation	Bravo 500 (Contains 4.17 lb ai/gallon)	Bravo 500
Crop	Mushrooms	Mushrooms
Method of Application	Drench applied with irrigation equipment.	Drench applied with irrigation equipment.
# of Applications	2	2
Timing	-1st application at casing -2nd application at pinning, at least 5 days before harvest	-1st application at casing -2nd application at pinning, at least 5 days before harvest
Rate/application	-1st application 11.33 lb ai in 12.5 gal H_2O/A (0.26 lb ai in 12.5 gal H_2O/1000 ft^2) -2nd application 5.67 lb ai in 12.5 gal H_2O/A (0.13 lb ai in 12.5 gal H_2O/1000 ft^2)	-1st application 11.33 lb ai in 12.5 gal H_2O/A -2nd application 5.67 lb ai in 12.5 gal H_2O/A
Rate/year or season	17 lbs ai/A/season (0.39 lb ai/1000 ft^2; 12 oz product/1000 ft^2)	17 lbs ai/A/season
Maximum Residue	N/A	0.7 ppm[2]
Restrictions	-Do not apply to mature mushrooms or within 5 days of harvest.	-Do not apply to mature mushrooms or within 5 days of harvest.

1 Preliminary results of a study submitted in the present request. The study is entitled: *Magnitude of the Residues and Anticipated Residues on Mushrooms Following Two Applications of Bravo 500*, (Report PR #6204, 2-9-95, IR-4 Project, NJ). Two studies were conducted in PA and one in CA.

2 At a pre-harvest interval (PHI) of 5 days, total residues ranged from 0.109 to 0.487 ppm for unwashed mushrooms. For matching samples of the 5-day PHI that were subjected to a "household rinse," residues ranged from 0.012 to 0.083 ppm. Studies were also performed at a 7-day PHI with total residues ranging from 0.032 to 0.684 ppm and at a 13-day PHI with total residues ranging from 0.033 to 0.119 ppm. However, mushrooms harvested at 7- and 13-day PHIs are not of marketable size.

Additional Information:

1. Tolerances are established for the combined residues of chlorothalonil and its metabolite 4-hydroxy-2,5,6-trichloroisophthalonitrile in/on several racs according to 40 CFR §180.275.

2. Chlorothalonil is a List A chemical for which a *Reregistration Eligibility Document* (*RED*) is scheduled to be completed by May 1995. Chlorothalonil is classified under Group B2 (probable human carcinogen) under HED's *List of Chemicals Evaluated for Carcinogenic Potential* (April 1994).

This is the second request for this Section 18 within a five month period. According to information provided by the PM (telecon) and the petitioner, the previous request (not routed through the CHemistry Branches) was denied due to unacceptable carcinogenic risk and inadequate progress towards registration. The present submission presents an amended use pattern showing a longer PHI and a reduced application rate.

In PP6E3410 (M. Flood, 3-12-1993), CBTS recommended for a tolerance of 7.0 ppm for residues of chlorothalonil and its metabolite SDS-3701 in/on mushrooms. As indicated in the present submission, IR-4 anticipates submission of a revised Section B for the mushrooms tolerance by June 1, 1995.

Previous Section 18 requests for use of chlorothalonil on mushrooms had been filed under 91-TN-0001 [J. Abbotts, DEB (now known as CBRS/CBTS) #7934, 5-13-1991] and 84-PA-05 (M.L. Loftus, 5-29-1984).

3. A total of 7760 doubles are expected to be filled with mushrooms for a total area usage of 8000 square feet of production surface. A total of 55% of the crop are to be treated with Bravo 500. Sites to be treated are in Armstrong, Berks, Chester, Delaware, Lancaster and Westmoreland Counties in Pennsylvania.

RDI: RBPerfetti/RALoranger/EZager (3-9-95)
MIRodríguez: Draft (3-8-1995), Edited (3-9-1995)

cc: Reading File, Section 18 File, Subject File, Circulation, MIRodríguez, RGriffin (RCAB).