PMSD/ISB

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JAN 22 1990

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: 90-IL-03. Crisis Exemption. Dimethoate on Canola. No MRID #. DEB # 6183.

FROM: Leung Cheng, PhD, Chemist
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THRU: Francis Suhre, Section Head
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TO: R. Forrest, PMT # 41
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The state of Illinois has issued a crisis exemption for the use of Cygon 400 to control aphids in some 500 acres of canola crop in southern Illinois. The active ingredient is O,O-dimethyl S-(N-methylcarbamoylmethyl)phosphorodithioate or dimethoate.

Tolerances are established for total residues of dimethoate and its oxygen analog [O,O-dimethyl S-(N-methylcarbamoyl)phosphorothioate or dimethoxon on various raw agricultural commodities including mustard greens at 2 ppm, soybeans at 0.05 ppm, 0.002 ppm in milk, 0.02 ppm in eggs and meat, meat byproducts and fat [40 CFR 180.204]. No food additive tolerances are established.

The proposed use would allow a rate of 0.25 lb ai/A. Application may be repeated. A preharvest interval of 21 days is imposed.

For this Section 18 exemption DEB considers the parent compound and its oxygen analog to be the residue of concern.

No residue data were submitted with 90-IL-03. Available residue data show mustard greens following 2 applications of 0.25-0.5 lb ai/A contained <0.5 ppm parent and its oxygen analog when sampled 14-21 days after treatment. Following 3 applications of 0.5-1 lb ai/A and PHI's of 20-24 days, residues on soybean hay were <0.5 ppm (Dimethoate Registration Standard, Residue Chemistry chapter, 9/30/82). Treatment at 5x the registered rate (0.5 lb

ai/A) resulted in nondetectable residues (<0.05 ppm) in soybeans (Dimethoate FRSTR, 10/1/87).

DEB estimates that residues are not likely to exceed 0.5 ppm on canola and <0.05 ppm in the seed and oil as a result of the proposed use.

Canola may be used as feed items for cattle (ca 15%) and poultry (7%) resulting in dietary burden of 0.075 ppm and 0.035 ppm, respectively. Feeding studies results show that at 10 ppm or 18 ppm feeding level, neither dimethoate nor dimethoxon residues were detected (<0.05 ppm) in liver, kidney, muscle and fat of calves, or in milk (<0.01 ppm). Residues were also nondetectable (<0.02 ppm each compound) in liver, kidney, muscle, eggs and fat of laying hens when fed 1 ppm dimethoate for 21 days.

Thus, meat and milk tolerances will not be exceeded as a result of this crisis exemption use.

A method in PAM II is available for determining residues of dimethoate in or on canola.

Conclusions and Recommendation

1. The residues of concern are the parent compound and its oxygen analog in plants and animals.

2. A method is available for determining dimethoate residues in canola and in meat and milk.

3. Residues are not likely to exceed 0.5 ppm in canola and not detectable (<0.05 ppm) in canola seed and oil as a result of the proposed use.

4. DEB concludes that the established meat, milk, poultry and eggs tolerances are adequate to cover the residues resulting from the proposed use.

5. Reference standards are available from the Pesticides and Industrial Chemicals Repository at RTP, NC.

TOX considerations permitting, DEB has no objections to this crisis exemption request. An agreement should be made with FDA regarding the legal status of the treated canola in commerce.

cc:Circ, RF, Section 18 F, Cheng, PMSD/ISB
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