

2,4-D/TOX

ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D. C. 20460

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Releasable

Date: July 15, 1971

Reply to  
Attn of:

Subject: 2,4,-D(2,4-dichlorophenoxyacetic acid). Additional data to support additional tolerance request of 300 ppm on rangeland grasses or ~~XXX~~ pasture grasses.

TO: Drew Baker, Petitions Control Branch

Pesticide Petition No. 8F0670

Dow Chemical Company  
Midland, Michigan 48640

The petitioner is requesting that PP# 8F0670 be amended to include a tolerance proposal for 300 ppm of 2,4-D in or on rangeland grasses or pasture grasses.

Toxicity data for the original petition (8F0670) was evaluated by G.E. Whitmore, March 22, 1968. Petitioner requested negligible residue tolerances on flax and rice at 0.5 ppm, berries, corn, sorghum, soybeans, sugarcane, potatoes, alfalfa, clover, trefoil and soybean hay at 0.2 ppm. The no-effect level was considered to be 1250 ppm for the rat (2-yr study), and 500 ppm for rat reproduction. These levels have since been confirmed by an FDA study. From this study the no-effect level for a 2 yr beagle dog study was 500 ppm. The conclusions of Dr. Whitmore were that "the published data and FDA developed data of laboratory animal 2,4,-D toxicity data are sufficient to support the safety of the requested residue tolerances".

Questions as to the toxicity of various metabolites of 2,4-D were raised by PRB, DFCT (D.V. Reed, 12/26/68). PRB, DPT (memo of G.E. Whitmore, 1/15/69) stated that "the sum of total available information allows a judgement that possible metabolites would not be expected to be significantly more toxic than parent compounds-----." If DFCT could conclude the presence of any metabolites would be negligible --- we could conclude there is no reason to identify or quantitate metabolites-----."

DFCT (memo of D.V. Reed, 1/30/69) responded that they could conclude that the level of metabolites of 2,4-D would be negligible only where favorable recommendations were given. These were 0.2 ppm in or on blueberries, cranberries, grapes, strawberries, raspberries, soybeans and soybean hay, and sugarcane. (memo of D.V. Reed, 12/24/68).

It was also stated (memo of D.V. Reed, 12/26/68) that residues of 2,4-D of 0.01 ppm or above may occur when the diet of dairy cattle contain 2,4-D residues in excess of 20-30 ppm.

\*Hansen, W.H., Quaife, M.L., Habermann, R.T., and Fitzhugh, O.G. (1971)  
Toxicol. Appl. Pharmacol. (in press)

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Section C submitted as part of the additional data contains: (1) summary of the data submitted with the original petition. The acute oral LD<sub>50</sub> for various species of animals ranges from 300-1000 mg/kg, except for the dog which is the most sensitive (LD<sub>50</sub> = 100 mg/kg). (2) Reprints of several published articles describing the toxicity of 2,4-D in cattle, sheep and chickens.

1E1136  
The question of teratogenicity and dioxin content has been discussed in PP# 1E1336 (see memo of C.H. Williams, 6/2/71). 2,4-D has no significant teratogenic potential and several commercial samples of 2,4-D presently marketed were negative for tetrachlorodibenzo-p-dioxin.

Using the no-effect level of 500 ppm from the 2 yr chronic feeding to dogs and the 100-fold safety factor, a level of 5 ppm (.125 mg/kg) of 2,4-D in the total dietary could be supported. For a 60 kg man a total of 7.5 mg/day 2,4-D could be tolerated in the total dietary. From the tolerances already established for 2,4-D under 420.142, about 0.3 ppm \*\* would be added to the total dietary. The amount contributed from the presently requested tolerances on the berries and grains to the dietary would still afford a wide margin of safety.

The range grass and the forage crops, however, present a problem. Chemistry Branch finds (see memo of J.G. Cummings, 3/29/68) that there are some data to show that 2,4-D does appear in milk when fed to dairy cows, and that tolerances in animal feed items would be subject to category 2 of 420.6 (reasonable expectancy of residues).

We, therefore, cannot make further evaluations of the safety of 2,4-D until Chemistry Branch determines the magnitude of the residues which could be present in meat and milk.

\*\* Lehman, Summaries of Pesticide Toxicity, Page 4.

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cc: OGFitzhugh  
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Division Reading File  
Branch Reading File  
PP No. 8F0670

10/11/71