



LD

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

APR 11 1995

100-6511

**MEMORANDUM**

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

**SUBJECT:** Cyromazine, Larvadex™ 1% Premix Larvacide, (EPA Reg. No. 101-671).  
Review of 6(a)(2) data and correspondence (dated: 10/6/94) from Ciba-Geigy Corporation.  
MRID No. 434025-01; CBTS No. 14634; DP Barcode: D208867.

542199

**FROM:** William D. Wassell, Chemist *W.D. Wassell 4/11/95*  
Tolerance Petition Section I  
Chemistry Branch I - Tolerance Support  
Health Effects Division (7509C)

**THROUGH:** Edward Zager, Acting Chief *Edward Zager*  
Chemistry Branch I - Tolerance Support  
Health Effects Division (7509C)

**TO:** George LaRocca / Linda Deluise, PM-13  
Insecticide / Rodenticide Branch  
Registration Division (7505C)

**Background/Summary:**

Larvadex® Premix (EPA Reg. No. 100-631) is registered for blending into poultry feed to control certain fly species which develop in poultry manure. The active ingredient in the product is cyromazine or *N*-cyclopropyl-1,3,5-triazine-2,4,6-triamine. Tolerances are established for residues of the active ingredient and its metabolite melamine (1,3,5-triazine-2,4,6-triamine) under 40 CFR §180.414 in or on various raw agricultural commodities. A feed additive tolerance is established for residues of cyromazine under 40 CFR §186.1400 at 5.0 ppm in or on poultry feed.

In 1993, the State of Maine was contacted by a grower wanting to know if a restriction on the product label which prohibited the application of poultry manure from animals fed Larvadex to fields in which "small grains" were to be planted included corn. Lebel R. Hicks, MS DABT, of the Maine Department of Agriculture, Food and Rural Resources, Board of Pesticides Control, contacted EPA for clarification of the restriction. In our memo of 04/14/94 (W.D. Wassell, DP Barcodes: D200463 and D201432) we stated that although it is not a violation of the label restriction to apply cyromazine-treated poultry manure to



Recycled/Recyclable  
Printed with Soy/Canola Ink on paper that  
contains at least 50% recycled fiber

fields in which corn will be grown, the data base for cyromazine was not sufficient to determine if there would be residues of cyromazine or its metabolite melamine in corn.

In Maine, corn silage from fields amended with cyromazine-treated poultry manure is frequently fed to dairy cattle. The State of Maine and Ciba-Geigy determined that it would be appropriate to analyze bulk milk samples from cows fed corn silage grown in fields amended with cyromazine-treated poultry manure and bulk milk samples from cows fed corn silage grown in fields not amended with cyromazine-treated poultry manure and the corn silage from these fields to determine if residues of either cyromazine or its metabolite melamine were present. The registrant has previously submitted some of the preliminary results of this monitoring study as 6(a)(2) data because residues of melamine have been detected in the raw milk samples (see our memo of 8/10/94, W.D Wassell, DP Barcode D205836). The current submission consists of cover letters (C.B. Bussey, Ciba-Geigy Corporation, 10/6/94 and L. Hicks, Maine Board of Pesticides Control, 9/7/94) and residue data for cyromazine and melamine on corn silage generated by the University of Maine.

#### Detailed Considerations:

The Department of Agricultural, Food and Rural Resources (DAFRR) of Maine has initiated a monitoring study for residues of cyromazine and its metabolite melamine in milk collected from various dairy farms. The purpose of the study was to determine if there is a transfer of residues of cyromazine and its metabolite melamine to the milk from dairy farms where cows are fed silage grown on fields amended with cyromazine-treated poultry manure. DAFRR identified two dairy farms in which the corn silage fed to the cows was grown in fields which had not been amended with cyromazine treated manure. We will refer to the milk and corn silage samples from these farms as "untreated" samples. Three farms in which the cows were fed corn silage grown in fields amended with cyromazine-treated poultry manure were also identified by DAFRR. We will refer to the corn silage and milk samples from these farms as "treated" samples. DAFRR collected samples of raw milk and corn silage from the five farms. Please note: the corn silage samples were collected after the analysis of the milk samples had been completed. The samples were halved and sent to Ciba-Geigy Corporation in Greensboro, NC and to the University of Maine in Orono, ME for analysis. The samples were analyzed for residues of cyromazine and its metabolite melamine by the Ciba-Geigy analytical method AG-403. A copy of the analytical procedure was not included in the submission. As of the time of our initial review of the data, the University of Maine had not completed the analysis of the corn silage samples. This submission reports the results of the analysis of the corn silage samples for residues of cyromazine and melamine by the University of Maine.

Table 1 contains the sample analysis results from Ciba-Geigy (previously reported) and Table 2 contains the results of the sample analyses of the University of Maine (previously reported milk data). The corn data in Table 2 are new.

Table 1. Residue Levels of Cyromazine and its Metabolite Melamine in Milk and Corn Silage from the State of Maine (Ciba-Geigy).

Maine Farm ID	Sample Type	Residue Levels (ppm) <sup>1</sup>	
		Cyromazine	Melamine
94001 (untreated)	Milk	<0.010	<0.010
	Corn Silage	<0.05	<0.05
94002 (untreated)	Milk	<0.010	0.013 <sup>2</sup>
	Corn Silage	<0.05	<0.05
94003 (treated)	Milk	<0.010	<0.010
	Corn Silage	<0.05	<0.05
94004 (treated)	Milk	<0.010	0.053
	Corn Silage	<0.05	<0.05
94005 (treated)	Milk	<0.010	0.020
	Corn Silage	<0.05	<0.05

<sup>1</sup> Residue levels are the average of two values and melamine residues are reported as cyromazine equivalent residues.

<sup>2</sup> Residue results for this sample obtained by GC/MSD analysis.

Table 2. Residue Levels of Cyromazine and its Metabolite Melamine in Milk from the State of Maine (University of Maine).

Maine Farm ID	Sample Type	Residue Levels (ppm) <sup>1</sup>	
		Cyromazine	Melamine
94001 (untreated)	Milk	<0.005	<0.005
	Corn Silage	<0.1	<0.1
94002 (untreated)	Milk	<0.005	0.005
	Corn Silage	<0.1	<0.1
94003 (treated)	Milk	<0.010	0.008
	Corn Silage	<0.1	<0.1

94004 (treated)	Milk	<0.010	0.056
	Corn Silage	<0.1	<0.1
94005 (treated)	Milk	<0.010	0.017
	Corn Silage	<0.1	<0.1

<sup>1</sup> Residue levels are the average of two values and melamine residues are reported as cyromazine equivalent residues. Melamine residue levels are corrected for an average fortification recovery of 80%.

The University of Maine reports fortification of untreated milk and corn silage samples was performed in conjunction with the residue analysis. Recoveries of melamine from milk and corn silage ranged from 61 to 94% and from 85 to 100%, respectively. Recoveries of cyromazine from milk and corn silage ranged from 59 to 78% with an outlier at 23% recovery and from 123 to 140%, respectively. Ciba-Geigy does not report the results of any fortification recovery experiments.

#### CBTS Comments / Conclusions:

CBTS concludes the results of the analysis of corn silage samples for residues of cyromazine and melamine by the University of Maine do not change our previous conclusions concerning this study. In our memo of 8/10/94 (W.D. Wassell, DB barcode: D205836), we concluded the following:

CBTS can conclude that the results of the sample analysis by the University of Maine seem to confirm Ciba-Geigy's results, but we are unable to determine the source of the melamine residues in the milk samples from the submitted data. Further, the results of this study do not alter our previous conclusions and data requirements (see our memo of 4/14/94, W.D. Wassell, DP Barcodes: D200463 and D201432, for the additional data requirements) concerning the use of Larvadex Premix and Larvadex 2SL (EPA Reg. Nos. 100-631 and 100-662, respectively). We note that as melamine and/or melamine resins are a common constituent of many materials such as adhesives, paper, textiles, plastic items and dinnerware, the melamine contamination of the milk samples may have come from sources other than animal feeds grown in fields amended with cyromazine-treated poultry manure.

cc: WDWassell, RF, Circ., Cyromazine SF.  
 RDI: RSQuick: 04/06/95; RALoranger: 04/07/95; EZager: 04/11/95.  
 7509C:CBTS:WDWassell:wdw:CM#2:Rm 804U:305-6135:04/05/95  
 Disk: WDW-4 File: FY94WDW.125

4