0155 PMSD/ISB

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

JUN 6 1985

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: PP#2F2707 (Accession No. 257065; RCB No. 784): Cyromazine (Larvadex®) in Poultry. Amendment of 3/7/85.

FROM: Alfred Smith, Chemist
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

THRU: Charles L. Trichilo, Ph.D., Chief
Residue Chemistry Branch
Hazard Evaluation Division (Ts-769)

TO: Adam Heyward, PM Team #17
Registration Division (TS-767)

and

Toxicology Branch
Hazard Evaluation Division (TS-769)

CIBA-GEIGY's amendment of 3/7/85 contains a study (ABR-83077) on the effects of food processing on residues of cyromazine and its metabolite melamine in eggs and meat of poultry. The studies are evaluated below.

In order to determine the effect of cooking on residues of cyromazine, N-cyclopropyl-1,3,5-triazine-2,4,6-triamine, and its metabolite melamine, 1,3,5-triazine-2,4,6-triamine, egg samples were fortified by injection through the shell with 20 micrograms and 100 micrograms of cyromazine and melamine.

Additional eggs samples were fortified with cyromazine alone at a level of 100 micrograms. The fortified egg samples and unfortified (control) egg samples were cooked (scrambled or boiled) and analyzed for residues using the validated procedure method AG-417, "Determination of Cyromazine and Melamine Residues in Animal Tissues and Eggs by High Performance Liquid Chromatography."

The scrambled eggs showed losses at all fortified levels: cyromazine (7-17% loss); melamine (6-13% loss). No melamine residues were noted in eggs fortified with cyromazine alone.

The boiled eggs showed an average loss of cyromazine (6.5%) and a slight increase of melamine (1.5%) at the 20 microgram fortification level. At the 100 microgram fortification level, cyromazine had an increase of 5% and melamine showed a decrease of 1%.

Cooking of eggs containing residues of cyromazine and its metabolite melamine is not likely to significantly affect the residue levels.

Poultry tissues (skinless breast samples) were fortified with cyromazine and melamine at levels of 20 micrograms or 100 micrograms (same as with eggs), cooked, and analyzed using the above method. Tissue samples were baked at 350°F for one hour in an oven. Another group of tissue samples were covered with water and boiled for 45 minutes with the pan cover off. The pan was covered and boiled for 15 minutes. In a third study, chicken breasts were fortified with cyromazine and melamine at levels of 20 microgram and 100 microgram and boiled in water. The boiled water (broth) was analyzed for residues of cyromazine and melamine with method AG-417 as in the above studies.

Reductions due to baking were 8-28% for cyromazine and 12-15% for melamine. Reductions due to boiling were 6-11% for cyromazine and 2-15% for melamine. The actual residue levels in boiled meat were significantly reduced (29-41% for cyromazine, 36% for melamine), but residues that transferred to the broth accounted for most of this (19-30% for cyromazine, 20-35% for melamine). No melamine residues were noted in the broth resulting from the boiling or baking of meat fortified with cyromazine.

Conclusion

1. The cooking of poultry meat and eggs containing cyromazine and its metabolite melamine generally results in little reduction of the residue levels in the cooked meat and eggs. Additionally, the parent compound, cyromazine, is not converted to the metabolite melamine as a result of cooking.

cc:R.F., Circu, Reviewer, TOX, EAB, EEB, PP#2F2707, FDA
Robert Thompson, PMSD/ISB
RDI:KHArne:6/3/85:RDSchmitt:6/3/85
TS-769:CM#2:RM810:X7377:ASmith:wh:6/4/85