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SYMPOSIUM ON ORIGIN AND FATE OF ETHYLENETHIOUREA FUNGICIDES

Introduction

The ethylenebisdithiocarbamate (EBDC) fungicides are the most important and widely used group of the organic fungicides. In a recent survey of the State Agricultural Experiment Stations, these were the major fungicides recommended for controlling diseases on crucifers, cucurbits, tomatoes, potatoes, and ornamental crops. Thus, these compounds have been widely used for controlling a variety of plant pathogenic fungi.

The EBDC fungicides have been shown by several investigators to be degraded to several compounds, one of these being ethylenethiourea (ETU). It was found by Czezlédi-Jankó (1967) that ETU was a contaminant in the formulated products and that when these products were stored under relatively high temperature–high humidity regimes, more ETU was formed.

The formation of ETU from the EBDC fungicides has been known for years but until recently there was no reason for concern. However, recent evidence (Graham and Hansen, 1972) suggests that the presence of ETU on food and food products poses a potential hazard because of its effects on the thyroids of mammals. It should be pointed out that Seifter and Ehrich (1948), as early as 1948, reported adverse effects of ETU upon weanling rats, but the dosage was many times the amount that one would expect to encounter.

It is the purpose of this symposium to review the current status of the ETU problem in hope that new information will become available to answer some of the important questions and aid in directing research for answering some of the questions. Particular attention will be paid to the formation and fate of ETU in the environment and to the various analytical methods available for determination of ETU. It should be noted that the information which Dr. Newsome presents has been published before this symposium (Newsome, 1972).

Literature Cited

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