Under surveillance activities, FDA reported that the Cincinnati, Kansas City, and Minneapolis Districts uncovered potential or actual microbiological problems in certain industries, and listed the following: coagulase positive staphylococci in butter, cheese, and eclairs; E. coli in pecans and breaded onion rings; and salmonella in dried whey, dried yeast, egg products, and macaroni and noodle products.

It also reported that many of the other Districts found that bacteriological problems were improving in the breaded shrimp, tree nut, and other nut industries, and requiring less effort.

Under compliance activities, the major microbiological contamination problems reported were staphylococcus in cheese and salmonella in imported fish meal.

## FDA PLANS TOXICITY STUDY OF POLYCHLORINATED BIPHENYLS

Controversy has arisen over the possibility that physiological effects previously attributed to DDT might actually be due to polychlorinated biphenyls, which have been confirmed in milk and human fat tissues, according to the Food and Drug Administration's quarterly report of activities.

The second quarterly report on fiscal year 1970 pesticides activities (See FOOD CHEMICAL NEWS, April 6, Pages 12 and 13) said that toxicity studies have been planned to help the agency evaluate the hazards from PCB's, which are structurally related to the persistent chlorinated pesticides.

FDA said a preliminary study to determine tolerated dosage levels in rats has been completed, noting that liver enlargement was prevalent among the survivors.

Physiological behavorial studies in rats administered Araclor 1260 and DDT were undertaken, and FDA reported that DDT attenuated the animals normal responses to stressful situations and also attenuated one of the more basic physiological processes of habituation.

Araclor 1260 had no effect on the exploration of a novel (mildly stressing) environment nor on habituation, but facilitated learning of an active avoidance situation, FDA said.

The agency also reported progress on the separation of PCB's from DDT and its analogs, and said residues ranging from 5 to 12 p.p.m. were detected from milk fat.

In vitro studies investigating the mechanisms of liver enlargement, as a result of DDT administration to rats, FDA said, have shown an increased protein content of the microsomal and ribosomal fractions, but a decreased ratio of DNA and RNA to protein compared to controls, indicating that the "DDT is altering the messenger nuclear material in the liver cell."



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In studies with six amino acids, it was found that DDT administration increased the rate at which amino acids were incorporated into microsomal protein, the agency reported, adding that rats pretreated with DDT and then administered an inhibitor of protein synthesis had decreased in vitro microsomal amino acid incorporation. FDA said this is further evidence that DDT action is involved with protein metabolism in the cell.

Teratogenic studies of 2,4-D, 2,4-D sodium salt, 2,4,5-T, and silvex have been undertaken, the report noted (See story, Page 28).

A 2-year rat feeding study of ethylenethiourea (ETU), a metabolic product of the ethylene-bisdithiocarbamate herbicides, has been undertaken because of the suspicion that it may be responsible for thyroid damage attributed to this group of herbicides.

FDA also reported preliminary experiments indicate that DDT has adverse effects on growth and levels of vitamin A in blood and tissues, noting that the experiments on rats and rabbits also indicate that DDT ingestion produces fatty livers and causes significant change in the fatty acid pattern of these tissues.

Other preliminary data indicate that the degree of the adverse effects of DDT is directly related to the nutritional status of the experimental animal, with animals in a malnourished status (due to poor quality or quantity of protein) adversely affected to a greater degree than the well-nourished animals.

The quarterly report also listed the findings of a study of the effects of processing on pesticide residues in dairy products, which concluded that the residues in the products remained essentially unchanged, even in products stored for three and six months, except for dieldrin, lindane, and chlordane that showed a 10-25% decrease in spray-dried products, and DDE and dicofol that showed some decrease in sterilized condensed whole milk products.

More than a dozen new methods for detecting pesticides were also listed in the report.

Field emphasis on pesticide work resulted in the number of surveillance inspections for the first half of the year reaching 300% of the number planned for the entire year. Compliance activities were also high, with man-year usage already at 100% of total planned.

Seattle and New York Districts reported an emerging problem with pesticide-contaminated imported frog legs. New York reported five of five entries of frogs legs examined have been detained, and the Seattle District reported seven detentions.

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