

MEDDH-MR

13 October 1958

Mr H. B. McCoy, Chairman
 Interdepartmental Committee on the
 Radiation Preservation of Food Program
 Office of the Administrator
 Business and Defense Services Administration
 U S Department of Commerce
 Washington 25, D.C.

Dear Mr McCoy:

As requested in your letter of 25 September 1958, the following information, designed to bring you up to date on The Surgeon General's program regarding the wholesomeness of foods preserved by radiation, is submitted:

1. SHORT-TERM FEEDING STUDIES WITH IRRADIATED FOODS MAINTAINED AT FROZEN CONDITIONS:

As a result of these animal studies (previously reported to the Committee), 110 irradiated foods were cleared for further investigation (see inclosure 1). Forty-three of these foods were then selected on the basis of potential value to either the military or civilian economy and were fed to human volunteers for a period of four (4) weeks (see inclosure 2). These studies (previously reported to the Committee) showed no evidence of toxic effects on the human volunteers and indicated that there was no significant difference in the metabolizable energy or digestibility between the irradiated and the identical but non-irradiated food.

2. LONG-TERM FEEDING STUDIES OF IRRADIATED FOODS STORED AT ROOM TEMPERATURE FOR A MINIMUM PERIOD OF THREE (3) MONTHS:

a. Animal Feeding Studies Projected Over a Two-year Period:

Studies have been initiated at various medical research centers for the feeding of 21 of the most promising irradiated foods (3 million and 6 million rep; meats, cereal products, fruits and vegetables) at a level of 35 per cent dry weight to at least two test animals (rat, dog or monkey) for a period of two years. From an over-all point of view, these studies

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Mr H. B. McCoy

13 October 1958

have progressed to a point of more than 50 per cent completion (see inclosure 3). These studies to date have indicated that there is no significant deleterious effect of long-term feeding of these foods upon the growth, reproduction, lactation, or longevity of these animals.

b. Preliminary Human Volunteer Feeding Studies of Four-week Duration with Selected Irradiated Foods Stored at Room Temperature Conditions for a Minimum Period of Three (3) Months:

Twenty-one foods irradiated at 3 megarads were included in this study (see inclosure 3) for foods studied). There were no untoward results from the feeding of these foods.

c. Troop Acceptance Studies on the Twenty-one Selected Foods:

Well-controlled acceptance studies on volunteer troops at Fort Lee, Virginia, have shown that irradiated pork and bacon are highly satisfactory as food items from the point of view of appearance, odor, and taste. Follow-up physical examinations of these volunteers three months later showed no untoward effects of these feedings.

Plans are in the process of development which call for the completion of the acceptance tests on all twenty-one foods by the middle of February 1959.

d. Human Volunteer Feeding Studies of Four-month Duration Employing a 100 Per Cent Irradiated Food Diet:

Present plans call for the feeding to human volunteers of irradiated food, which has been stored for three months or longer at room temperature, at the 100 per cent level for a period of four (4) months. These studies will be implemented on or about 1 March 1959 at the U S Army Medical Research and Nutrition Laboratory, Fitzsimons Army Hospital, Denver, Colorado.

3. CARCINOGENICITY STUDIES;

Extensive carcinogenic studies to date have brought forth no evidence to suggest that irradiated foods are carcinogenic or that they contain carcinogens. These studies are continuing.

4. VITAMIN AND ENZYME STUDIES:

Experimental data to date indicate that the destruction of vitamins by ionizing radiation is probably no greater than that observed in thermal processing of food.

Enzyme studies have shown that there are no unusual or significant problems in this area.

MEDDH-MR
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13 October 1958

The Army Medical Service portion of the irradiated food program is progressing satisfactorily and according to plan. At the present time there are no problems or difficulties foreseen which will interfere with or defer the completion of our program.

Sincerely,

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- 1 List of 110 foods
- 2 List of 43 foods
- 3 Summary

WILLIAM W. COX
Lt Colonel, Medical Corps
Chief, Medical Research Branch
Medical Research and
Development Command

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