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Irradiated Meat Plant Proposed for Tanzania*

Tanzania has many cattle—more, in fact, than it has people—and Tanzanians like to eat beef. If they had better, more economical methods of preserving it, they would probably eat much more. They might even sell some to other countries which have similar preservation problems and fewer cattle.

This is the reasoning of Thomas A. Wood, a young American who has founded TAW Development Corporation with the hope of making Tanzania the first developing country to produce and market irradiated beef. In Wood's project, which has the support of the Tanzanian Government, a meat irradiation plant will be built on the eastern shore of Lake Victoria after irradiated meat has been approved by the United States Food and Drug Administration (FDA) or a comparable organization. An FDA decision is expected shortly.

The FDA already has approved irradiated canned bacon, wheat and wheat products and potatoes, and the U.S. Surgeon General reported to Congress in 1965 that foods irradiated up to 5.6 megarads are "wholesome". Wood believes the FDA stamp of approval will give consumers confidence in the safety and desirability of his product.

Proposed plant

Requiring at least two years to construct, the plant will cost some \$4 million. The money comes from American and possibly Tanzanian investors.

* This article is based on an interview with Thomas A. Wood, founder of the TAW Development Corporation, New York City.

Under the present plan, the plant will encompass all phases of the meat preparation process, from slaughtering the animals to packaging the meat for distribution. Immediately after the slaughtering, the meat will be cut into small cubes and placed in polyethylene bags. A conveyor belt will carry the packaged meat into an irradiation chamber containing in excess of 1.2 million-curies of cobalt. Unless the container is perforated and the meat becomes exposed to atmosphere and thereby the possibility of contamination, it will remain "fresh" and wholesome for weeks, perhaps months. Since the irradiated meat needs no special handling, such as refrigeration, practically all distributing outlets will be satisfactory.

Though the plant will have the capacity to handle 30 million pounds of beef a year, production the first year probably will not exceed 12 million pounds. If the plant is successful, TAW may build another for irradiating fish, of which Lake Victoria yields an abundant supply.

Anticipated general benefits

Since no other country has tried to mass market irradiated meat, no one knows for sure what changes it may bring in Tanzania. If the results meet its proponents' expectations, however, Tanzania will benefit in several ways.

First of all, the use of irradiated meat might greatly increase the *per capita* meat intake, at least in certain regions, thus increasing the protein in the diet and promoting better health. The average Tanzanian eats approximately 30 pounds of meat a year, but factors such as the lack of easy access to fresh meat in some regions impose limitations. At present, each town has a small abattoire where butchers have their cattle slaughtered each day. If a butcher cannot

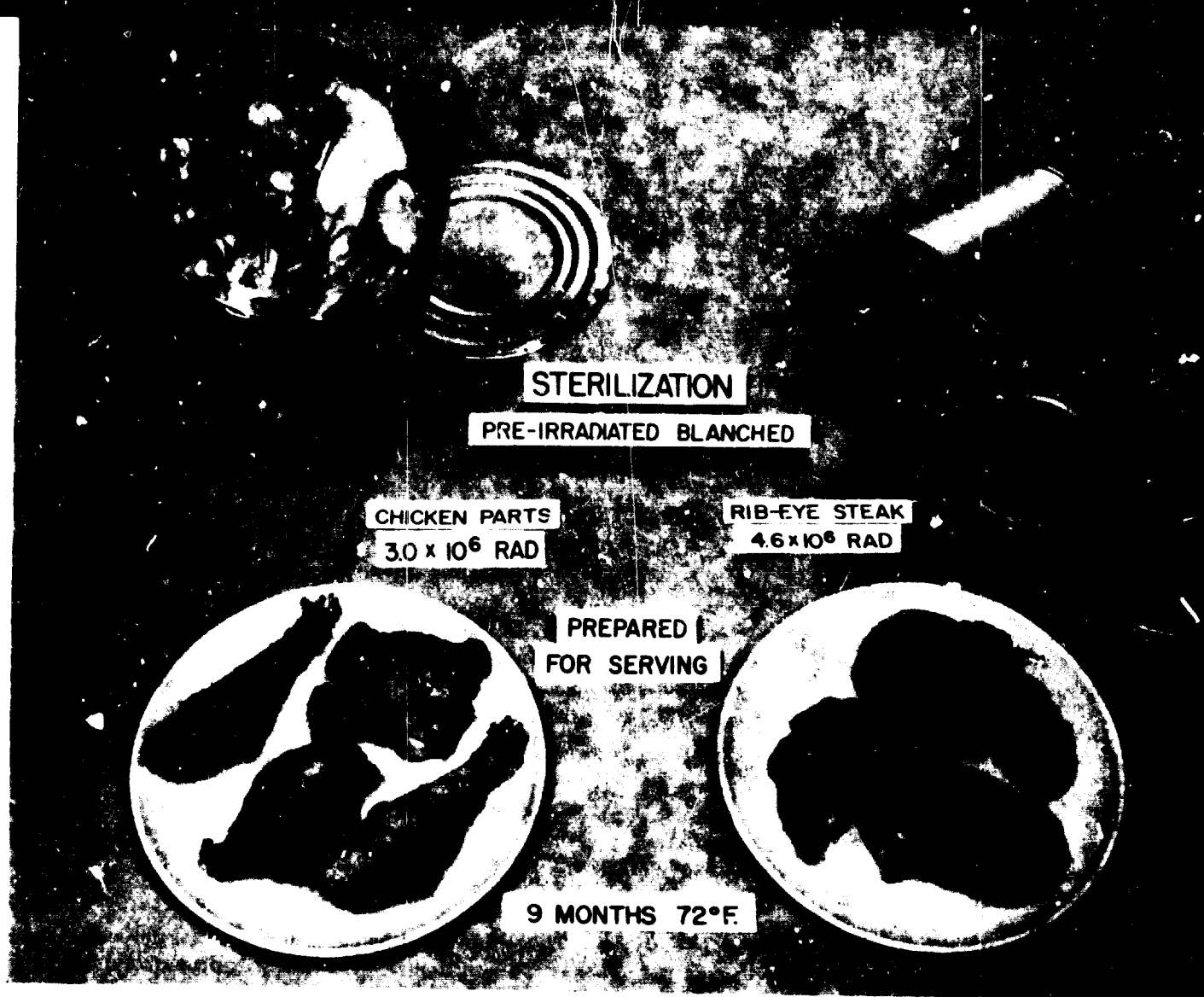
Radiation Preservation of Fresh Meat and Poultry

Ionizing radiation can destroy spoilage microorganisms regardless of the state of the meat or poultry, that is, whether raw or cooked, frozen or unfrozen. Generally speaking, radiation does not alter the state of the meat, and largely for this reason, the radiation preservation of fresh meats and poultry has been a matter of great interest from the date of the earliest observations.

The proposed uses of irradiation in preserving fresh meats and poultry vary according to objectives. Two broad objectives have been advanced:

- (1) To extend in a limited way the life of meats and poultry when handled with refrigeration (pasteurization).
- (2) To obtain indefinite product life without refrigeration or other preservative agent (sterilization). . . .

—Walter M. Urbain, *Swift & Company, Chicago. Reprinted from Radiation Preservation of Foods, National Academy of Sciences—National Research Council Publication 1273.*



Irradiated chicken and beef before and after prepared for serving.

sell his meat or refrigerate it before it spoils, he loses money and the consumer loses meat.

In rural areas where herdsmen butcher animals from their own herds, eating meat may be reserved for special occasions when an entire animal can be consumed before the meat falls prey to spoilage.

With irradiated meat, spoilage ceases to be a problem. Even people in remote areas could get several months' supply of meat from either a butcher in one of the towns or, perhaps, from peddlers who would act as itinerant distributors.

Although irradiation makes minimal changes in the taste and appearance of the meat, this will present no marketing problems, Wood and his associates feel. The irradiated meat will be in cubes suited for cooking with other food (e.g. stew). In stew, the cooking process and seasoning would mask any difference in appearance and taste.

The quality of the meat may, in fact, be better than that of much of the unprocessed meat Tanzanians eat today. For one thing, irradiated meat will not be subject to spoilage or contamination. For another, the irradiation process can destroy health menaces—such as viruses, rinderpest and hoof-and-mouth disease—which could be present in the meat.

Anticipated economic benefits

Irradiated meat can be an economic asset to citizens in both rural and urban areas and to the country as a whole.

With market for their cattle, herdsmen may not only increase their income but also be encouraged to thin out their herds and improve the strain of their cattle.

The plant will provide employment for a number of unskilled and semi-skilled workers as soon as it opens, for the Corporation plans to staff the plant with Tanzanians.

The irradiation process may also make it possible for the country to improve its balance of payments by exporting meat to its neighbours.

Irradiated food in other countries

Tanzania is not the only country taking an active interest in the irradiation of food. Hawaii and several Central American countries are experimenting with the preservation of tropical fruits by radiation;¹ Canada is very interested in wheat; some irradiated beef is now being sold in the Union of Soviet Socialist Republics; and the United States Atomic Energy Commission is helping a private company finance a plant which will process one million pounds of meat a year.

Though the irradiation of meat in Tanzania is still at least two years away, Wood is already looking for other developing countries which might find irradiated food a boon.

¹ See *Industrial Research and Development News*, Vol. 11, No. 1, p. 29.



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