

## Sampling and bacteriological survey of »Ready-To-Eat« Meats in Canada

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The Meat Inspection Division is one of three Divisions within the Health of Animals Branch. The other two Divisions are the Contagious Diseases Division and the Animal Pathology Division. The Animal Pathology Division provides a supporting laboratory diagnostic service for the other two Divisions.

It should be recognized that most food-borne illnesses are due to contamination and mishandling of the food during its harvesting, preparation and distribution, and to incriminate the food as the total offender without taking into consideration the poor hygienic practices associated with its handling, often places unwarranted and exclusive blame on the food. In no area of his responsibility will the food hygienist be faced with more difficult decisions than that connected with the identification and correction of food-borne illness problems. The necessity for complete objectivity and scientific reliability is so fundamental to the satisfactory resolution of these problems that familiarity with the total problem and objective evaluation are essential before a decision may be made.

Our Branch maintains that Ready-to-Eat Meats should not contain pathogenic or potentially pathogenic micro-organisms. To this end we have, over the years, carried out continual sampling and bacteriological surveys of the Ready-to-Eat Meats that are manufactured in all registered establishments operating under the Federal Meat Inspection system. The sampling of the Ready-to-Eat Meat is carried out by the Meat Inspection Division and the bacteriological examinations are made by the Animal Pathology Division. All types of Ready-to-Eat Meats manufactured by registered establishments are sampled within the course of a year. The samples are taken at the manufacturing plant at random and in the same package that it is presented to the consumer. That is, it could be either an 8 oz. package of sliced cooked ham that is wrapped in a pliofilm pouch or it could be a whole ham or loaf of meat that is wrapped and packaged and is ready for delivery to the retail outlets.

A definite schedule of submission is set up at headquarters by the Meat Inspection Division and co-ordinated with the Animal Pathology Division so that all laboratories carrying out the examinations receive a definite number of samples on a daily basis. The samples are submitted either in a frozen state or under refrigeration. Each sample is identified by a sticker bearing the following information:

1. Name of plant
2. Location
3. Establishment number
4. Description of sample
5. Sample number
6. To be examined for
7. Form submitted
8. Date sample taken
9. Date received
10. Laboratory number
11. Inspector's name

All samples are accompanied by a form HA 89 which is eventually returned to the Inspector in Charge of the plant of origin upon completion of the laboratory examination. This form HA 89 also bears the aforementioned information along with a space for the bacteriologist's remarks or findings.

The purpose of these tests is to examine Ready-to-Eat Meat or Meat Products for the presence of micro-organisms which are pathogenic or possibly pathogenic for humans.

Consequently it is necessary to check the products for:

1. Known food poisoning organisms (such as: Salmonellae or Coagulase positive Staphylococci — some strains of which are enterotoxin producers).
2. Organisms whose role in food poisoning is uncertain (such as: Proteus spp., fecal Streptococci, and alpha and beta haemolytic Streptococci).
3. Organisms which may or may not be capable of causing food poisoning but which do definitely indicate fecal or sewage contamination (such as: E. coli Coliforms and fecal Streptococci).

In this regard it might be mentioned that there is some concern at present over the ability of certain type «A» strains of Clostridium perfringens and of certain fungi to cause food poisoning. It may become necessary for us in the future to examine for these micro-organisms also.

Meats which we have tested to date have not been checked on a routine basis for the presence of Cl. botulinum toxin. The reason for this is that the types of products submitted for examination have not been incriminated, except on very rare occasions, in cases of botulism in Canada.

We do not attempt to establish a bacterial count but rather to establish the fact that the Meat Product is free from, or contaminated with, pathogenic

or potentially pathogenic micro-organisms. The type of pathogenic or potentially pathogenic micro-organism found is identified.

The results of the examination are submitted to the Director of the Meat Inspection Division who in turn notifies the District Veterinarian and the Inspector in Charge concerned. Last year we examined many hundreds of samples of Ready-to-Eat and Meat Products. Approximately 30 % of these samples were found to be unsatisfactory, that is, contaminated with pathogenic or potentially pathogenic micro-organisms.

When the results are unsatisfactory, the Inspector in Charge, in conjunction with Management, must carry out an investigation in order to determine the source of the contamination and submit a report of their findings together with the corrective action taken to rectify the situation. Following this, a check sample of the Ready-to-Eat Meat Product must be submitted again to be examined for pathogenic or potentially pathogenic micro-organisms. Approximately 20 % of the check samples submitted were to be unsatisfactory. This represents 6 % of the original submissions.

Microbiologists concerned with food have generally agreed that foods should not contain viable pathogens. It is widely recognized that this desirable state has not been completely attained nor is it ever likely to be realized.

The demonstrated effectiveness of antemortem and postmortem inspection in removing septicemic animals from the channels of trade generally confines the search for pathogens in meat to those introduced by contamination during the separation of the edible from the inedible parts of the carcass or during further handling.

It must be concluded that man's contamination of food and his subsequent mishandling of it account for almost all of the food-borne illnesses. All Ready-to-Meat Products in Canada, with a few exceptions, are labelled with the statement »keep refrigerated». These products must be maintained under refrigeration both in the store and in the home.