

codex alimentarius commission



FOOD AND AGRICULTURE
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Agenda Item 5 (c)

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JOINT FAO/WHO FOOD STANDARDS PROGRAMME CODEX COMMITTEE ON MEAT AND POULTRY HYGIENE

Ninth Session

Wellington, New Zealand, 17-21 February 2003

DISCUSSION PAPER

PROPOSED DRAFT HYGIENE PROVISIONS FOR PROCESSED MEAT

(prepared by the Codex Secretariat)

BACKGROUND

The 8th Session (February 2002) of the Codex Committee on Meat and Poultry Hygiene (CCMPH) discussed the Proposed Draft General Principles of Meat Hygiene and the Proposed Draft Code of Hygienic Practice for Fresh Meat. The Committee decided to progress the proposed draft standards to Step 5 and Step 3 respectively.

The Committee agreed that a drafting group would prepare a revised version of the Proposed Draft Code of Hygienic Practice for Fresh Meat for circulation, additional comment and further consideration at the 9th Session of CCMPH in 2003 (CX/MPH 03/04).

The 8th Session of the CCMPH also discussed the inclusion of provisions related to processed meats in the Proposed Draft Code of Hygienic Practice for Fresh Meat. In the report of the 8th Session¹, the CCMPH noted its previous agreement that the Proposed Draft Code of Hygienic Practice for Fresh Meat should take into account meat hygiene throughout the entire food chain, including hygiene provisions relating to processed meat products. The Committee requested that a discussion paper be prepared on the later topic, for potential inclusion in the Code. The decision to broaden the scope of the Code in this way was approved by the 50th Session (June 2002) of the Codex Executive Committee².

The content of this discussion paper is entirely subsidiary to "horizontal provisions" already presented in The Recommended International Code of Practice: General Principles of Food Hygiene³, the Proposed Draft General Principles of Meat Hygiene⁴, and the Proposed Draft Code of Hygienic Practice for Fresh Meat⁵. Such provisions are not repeated. This approach is similar to that taken in recent development of food

¹ Alinorm 03/16, paragraphs 84-85

² Alinorm 03/3A, paragraph 85

³ CAC/RCP 1-1969, Rev. 3-1997

⁴ CX/MPH 02/03

⁵ CX/MPH 03/04

hygiene regulations in a number of countries, with product-specific regulations being subsidiary to "horizontal" food safety regulations that provide generic guidance.

Although this discussion paper has been developed in parallel to the Proposed Draft Code of Hygienic Practice for Fresh Meat so as not to impede the step-wise elaboration and finalisation of the latter document, the CCMPH has undertaken to explore all opportunities for incorporation of the proposed draft hygiene provisions for processed meat during further elaboration of the Proposed Draft Code of Hygienic Practice for Fresh Meat⁶. Therefore, the hygiene provisions for processed meat have been formatted so as to facilitate future inclusion in a single code of practice for meat hygiene from production to consumption. In this eventuality, editorial linkages and consequential changes in the Proposed Draft Code of Hygienic Practice for Fresh Meat are made as appropriate.

When requesting new work on hygiene provisions for processed meat, the CCMPH did not discuss the scope of the new work. The consultant preparing this paper, Dr. Steve Hathaway, has conducted informal discussions with a number of Member countries on their hygiene provisions for different categories of processed meat, and has identified varying approaches and levels of regulatory involvement. The actual scope of the proposed draft hygiene provisions for processed meat will be an important topic for debate at the 9th Session of the CCMPH.

With the addition of hygiene provisions for processed meat, the overall intent of the CCMPH in relation to the Proposed Draft Code of Hygienic Practice for Fresh Meat is to take into account meat hygiene throughout the entire food chain. This should logically include hygiene provisions for mechanically separated meat, minced meat and meat preparations, which are included in this discussion paper for consideration by the CCMPH.

Acceptance of the meat hygiene provisions presented in this discussion paper would result in revocation of the Recommended International Code of Hygienic Practice for Processed Meat and Poultry Products (CAC/RCP 13-1976, Rev. 1[1985]).

RECOMMENDATION

It is recommended that the CCMPH:

- Reach agreement on definitions relating to "processed meat" and the scope of proposed draft hygiene provisions;
- Consider this discussion paper on Proposed Draft Hygiene Provisions for Processed Meat with the view to incorporation of these draft provisions at the earliest opportunity into the Proposed Draft Code of Hygienic Practice for Fresh Meat;
- Consider inclusion of hygiene provisions for minced meat, mechanically-separated meat and meat preparations.

⁶ Alinorm 03/16, paragraph 86

DISCUSSION PAPER

PROPOSED DRAFT HYGIENE PROVISIONS FOR PROCESSED MEAT

Editorial note

The proposed draft hygiene provisions for processed meat have been formatted so as to facilitate future inclusion in a single code of practice for meat hygiene⁷ from production to consumption. **In this eventuality, the structure, format and paragraph numbering of the Proposed Draft Code of Hygienic Practice for Fresh Meat is used to present proposed additional hygiene provisions for processed meat⁸.** Editorial linkages are made as appropriate, together with reference to consequential changes that may be necessary in the Proposed Draft Code of Hygienic Practice for Fresh Meat.

Where appropriate, existing text in a particular paragraph of the Proposed Draft Code of Hygienic Practice for Fresh Meat is presented in italics, so as to show the placement of the proposed new text relating to processed meat.

PROPOSED DRAFT CODE OF HYGIENIC PRACTICE FOR FRESH MEAT

The title of an integrated code of practice could be changed to " Proposed Draft Code of Practice for Meat Hygiene"

1. INTRODUCTION

Additional text to be added to paragraph 2

...food-borne risks to consumers. This should be reflected in application of specific measures based on science and risk assessment, with a greater emphasis on prevention and control of contamination during all aspects of production of meat and its further processing.

New paragraph 4 bis

Meat can be subjected to many forms of processing, and this provides a wide variety of end-uses. Achieving appropriate hygiene for processed meat presents particular challenges, especially where the products concerned are prepared for use by the consumer in a ready-to-eat form.

2. SCOPE AND USE OF THIS CODE

Paragraph 5

This proposed draft code of practice for meat hygiene further develops 'The Recommended International Code of Practice: General Principles of Food Hygiene'⁹ as it applies to meat, and presents hygiene provisions from the time of live animal production up to the point of retail sale. However, all hygiene measures that are applied should take into account any further hygiene measures and food handling practices that are likely to be applied by the consumer. *Where appropriate....*

⁷ This future code could be titled "Code of Practice for Meat Hygiene"

⁸ This approach also has the practical advantage of not requiring translation and presentation of a complete and independent code

⁹ CAC/RCP 1-1969, Rev. 3-1997

Delete current paragraph 7

New paragraph 7

This discussion paper includes hygiene provisions for minced / ground meat, mechanically-separated meat, and "meat preparations". Some of these products may not be subjected to a heat or other biocidal process before consumption.

3. DEFINITIONS

The Committee should note that the proposed hygiene provisions for processed meat **also have the effect of extending the scope of the draft provisions for fresh meat to the point of retail sale**, and all definitions should be understood in this context.

New definitions

Meat:	All parts of an animal that are intended for, or have been judged as safe and suitable for human consumption (Note that with the changes proposed in this discussion paper, the term "fresh meat" will be removed from the proposed draft code of hygienic practice, and the term "raw meat" will be used where necessary)
Meat product	A product containing meat, such that the cut surface shows that the product no longer has the characteristics of raw meat
Meat preparation:	Meat which has had foodstuffs, seasonings or additives added to it or which has undergone a treatment insufficient to modify the internal muscle fibre structure and thus to eliminate the characteristics of raw meat
Minced meat	Boned meat which has been reduced into fragments or passed through a spiral screw mincer
Processed meat:	All parts of an animal that have been judged as safe and suitable for human consumption, and have been treated in some physical or chemical way for the purposes of preservation that is in addition to chilling/freezing, or modified atmosphere or vacuum packaging
Mechanically separated meat	Meat product obtained by removing meat from flesh-bearing bones after boning or from poultry carcasses, using mechanical means that result in the loss or modification of the muscle fibre structure
Ready-to-Eat (RTE)	Meat product presented in a consumer-ready packaged state that is intended to be consumed without any further biocidal steps [intended to be consumed in the same state as it is sold]

4. GENERAL PRINCIPLES OF MEAT HYGIENE

Editorial note

No changes to the general principles of meat hygiene are suggested, as these are already sufficiently generic to cover all aspects of meat hygiene. However, the Committee should note that the proposed hygiene provisions for processed meat also have the effect of extending the scope of the current draft provisions for fresh meat through to meat and meat products at the point of retail sale e.g. in this context, principle 7 states that all establishment operators should apply HACCP principles, and this would have application in all establishments handling meat up to the point of retail sale.

5. PRIMARY PRODUCTION

Paragraph 11 -editorial note

Change "fresh meat" to "meat" in this paragraph and all subsequent paragraphs throughout the draft code and appendices.

Paragraph 12

...*animal population*. This may be particularly important in situations where the presence of zoonotic agents is not detectable by organoleptic of laboratory tests and routine precautionary measures need to be taken e.g. exclusion of "specified risk materials" where the possibility of bovine spongiform encephalopathy exists.

8. ESTABLISHMENTS: DESIGN, FACILITIES AND EQUIPMENT

New paragraph 67 bis

Rooms (or areas within the same room that are sufficiently separate) should be separately available for the different activities associated with processing of meat.

New paragraph 67 bis 2

Wood may be used in rooms for curing, smoking, maturing, pickling, storage and dispatch of processed meat products when essential for technological reasons, as long as meat hygiene requirements are not compromised.

New paragraph 74 bis

Equipment used for heat treatment in the processing of meat should be fitted with all control devices necessary to ensure that an appropriate heat treatment is applied

New paragraph 78 bis

Where steam is generated in the cooking of meat, it must be properly vented out of the area and not allowed to permeate into adjoining rooms.

Paragraph 79

...*Slaughter* and dressing of animals and animal parts, and further handling and processing of meat *presents many opportunities*...

Editorial note

The draft text currently states that all areas in which exposed meat may be present have taps that are not operable by hand.

9. PROCESS CONTROL

New paragraph 83 bis

Ready-to-eat (RTE) meat products intended to be consumed without any further biocidal steps may require specific microbiological testing regimes that incorporate microbiological performance parameters, microbiological process parameters and/or microbiological criteria.

Section 9.1: New principle x bis

HACCP plans for processed meat should include microbiological testing for verification purposes that is appropriate to the type of product and the likely risks to consumers.

Section 9.1: New principle xi bis

Handling of cooked RTE meat or meat products from the point of cooking to the point of sale to the consumer should ensure that there is no contact with non-RTE meat or meat products, and any other exposure to potential sources of microbiological contamination is minimised to the greatest extent practicable.

New paragraph 89 bis

In the case of RTE meat products, microbiological verification of SSOPs for food contact and non-food contact surfaces is likely to be of higher intensity than for other types of meat, and may be incorporated in a HACCP plan.

New paragraph 92 bis

Generic HACCP plans for different types of processed meat should be provided to establishment operators so as to guide development and implementation of process-and product-specific HACCP plans. Generic HACCP plans differentiated according to processing category include those for:

- Thermally processed / commercially sterile e.g. canned meat
- Raw ground or comminuted e.g. pork sausage
- Non-heat treated / shelf stable e.g. dry salami
- Heat treated / shelf stable e.g. beef jerky
- Fully cooked / non-shelf stable e.g. ham
- Heat treated / not fully cooked, non-shelf stable e.g. partially-cooked patties
- Meat with secondary inhibitors / non-shelf stable e.g. cured corned beef

New paragraph 92 bis 2

When developing HACCP plans for heat-treated processed meat, the establishment operator should fully document all thermal process parameters, post-heat treatment handling, and additional preservation treatments appropriate to the intended process outcome e.g. pasteurisation, thermal death of vegetative pathogens. Process parameters for cooling of heat-treated products may incorporate rapid cooling (for most products) slow cooling e.g. for cooked cured products, or interrupted cooling. Previously heated processed products should not be packaged above a minimum temperature e.g. 4 C, unless it can be demonstrated that packaging does not interfere with the cooling schedule.

New paragraph 92 bis 3

HACCP plans for processed meat that is cooked should include taking and recording of the internal temperatures that are reached, and documentation of all information necessary to identify the batch involved.

New paragraph 96 bis

Microbiological performance parameters, microbiological process parameters and microbiological criteria for RTE meat or meat products presented in a consumer-ready packaging state should be risk-based according to the category of product e.g. not heat treated and shelf stable, heat treated and shelf stable, fully cooked and not shelf stable. Microbiological verification tests should be undertaken by the establishment and/or the competent authority at a frequency appropriate to the circumstances. HACCP plans applied by the establishment should document corrective, preventative and recall procedures to be taken in the event of positive tests for pathogens or toxins.

Paragraph 102

...and meat involved. The role of official (and other) inspectors during distribution and retail sale of meat or meat products should be of an extent that is proportional to likely generation of risks to consumers during these activities.

New paragraph 108 bis

An equivalence determination may equally be sought by industry operating within the national jurisdiction of a competent authority, especially in respect of alternative technologies for production of processed meat.

9.7 HYGIENE REQUIREMENTS FOR PROCESS CONTROL AFTER POST-MORTEM EXAMINATION

Paragraph 139

...and cutting, further preparing, processing, packaging, freezing, storing, and distribution to the point of retail sale.

Paragraph 143

...cutting, mincing, mechanical separation, and further preparing or processing of meat should be reserved for those purposes alone, with rooms being maintained at a required temperature and humidity during operations¹⁰.
Meat...

New paragraph 143 bis

The handling, packaging and storage of raw meat should not take place in rooms or areas that are used for processing of meat [especially if the processed meat is cooked]. Processing of meat should take place in rooms or areas that are only used for processing of the kind undertaken and are clearly identified as such.

New paragraph 143 bis 2 (new second box)

When meat is minced:

- It should be obtained only from parts of animals as approved by the competent authority e.g. striated muscle and adherent fatty tissues¹¹
- It should not be obtained from scrap cuttings or scrap trimmings [or mechanically-separated meat]
- Organoleptic deficiencies should be removed before mincing
- The competent authority may specify compositional criteria.

New paragraph 143 bis 3 (new third box)

When meat is mechanically separated, the competent authority may:

- restrict the type of animal parts that can be used e.g. non-use of skulls
- set compositional standards for maximum calcium content
- require specific labelling of the final product
- require that mechanically separated meat be subject to cooking according to specified time / temperature schedules

New paragraph 143 bis 4 (new fourth box)

When meat is minced, mechanically separated or used in meat preparations:

- The competent authority should specify maximum time/temperature schedules for process control at each step of production e.g. maximum times and temperatures from chilling or freezing of raw material to the time of preparation, maximum temperatures during production, maximum times before chilling or freezing
- Unless used directly as an ingredient for processed meat, product should be immediately wrapped and/or packaged, followed by immediate refrigeration
- The competent authority may specify microbiological performance parameters, microbiological process parameters or microbiological criteria for raw materials and final product
- Establishments should have in-line magnets or other means of detecting contamination with metal fragments as appropriate
- Meat that is minced, mechanically separated or used in meat preparations should not be refrozen after thawing.

New paragraph 143 bis 5 (new fifth box)

¹⁰ The competent authority may allow an exemption from refrigeration of specific processing rooms where the conditions of process control do not compromise meat hygiene

¹¹ Pig meat and horse meat should have undergone an examination for trichinella as specified by the competent authority

When meat is processed:

- Processing should take place in rooms (or areas within rooms that are sufficiently separate) that are only used for that purpose
- The process flow of meat awaiting processing and during processing should ensure uniform turnover of accumulated product
- Supply and addition of non-meat ingredients should be subject to good hygienic practice and HACCP as appropriate, and may involve decontamination treatments e.g. for herbs and spices
- Meat products that include non-meat protein products [as defined or standardised by Codex] should be appropriately labelled¹², and the nutritional adequacy of the final product should be considered when non-meat protein products are used for partial substitution purposes
- Process control for non-commercially sterile products should prevent pathogen growth and toxin production during all processing activities e.g. during fermentation, partial heat treatment, drying, maturing and curing. Process parameters include: correct pH after fermentation, correct time/temperature schedules after heating or smoking, correct moisture / protein ratio after drying, correct formulation and application of nitrite as a cure ingredient
- If heat and/or other processing treatments is not sufficient to ensure the stability of the product, rapid cooling to the storage temperature specified by the competent authority should be immediately applied so that the critical temperature zone for spore germination and subsequent growth is passed through as rapidly as possible
- Product formulations e.g. distribution of antibacterial ingredients throughout cooked sausage emulsions, addition of cultures, adjustment of pH, should achieve required levels of pathogen control
- Microbiological contamination of raw material used in fermented meat products should be as low as possible, and mechanically separated meat should only be used as a raw material if appropriate time / temperature schedules as specified by the competent authority are achieved
- Processing of shelf-stable meat products in hermetically sealed rigid containers should be according to Codex guidelines¹³
- Cooked meat products should achieve time / internal temperatures that are validated as achieving specified microbiological performance parameters
- Pasteurisation values should be validated for all heat treated chilled products in hermetically sealed containers so as to ensure that product safety is maintained to the end of shelf life, taking into account all preservation factors that may be present
- Process treatments for meat products containing striated pork or horse muscle, either alone or in combination, should be sufficient to destroy trichinella
- Contamination with *L. monocytogenes* at slicing or peeling of heat treated / non-shelf stable and non-heat treated / shelf stable products should be prevented by effective use of SSOPs
- Contamination of unpackaged non-shelf stable processed meat during cold storage e.g. corned beef should be prevented
- Dried meat products should be protected from environmental contamination and from reabsorption of moisture
- Processes for products containing minced, comminuted or mechanically separated meat should have in-line magnets or other means of detecting contamination with metal fragments.

¹² Codex General Standard for the Labelling of Prepackaged Food (CODEX STAN 1-1985)

¹³ Recommended International Code of Hygienic Practice for Low-Acid Canned Foods CAC/RCP 23-1979 (Rev. 1, 1989)

New paragraph 144 bis

Where applicable, the establishment operator should document a validated procedure whereby the shelf life of each processed meat product is determined.

New paragraph 144 bis 2

RTE products that do not meet microbiological performance parameters, microbiological process parameters or microbiological criteria, may be re-processed, subject to the use of such product as documented in the establishment HACCP plan. Follow-up sampling should verify that re-processed meat complies with regulatory microbiological requirements.

Because of the potential for harbouring and growth of pathogens, RTE products that are exposed to any contamination subsequent to cooking and/or other preservation treatment should be reworked or condemned without compromise. Any reworking of RTE products dropped on the floor of an establishment should be carried out on a work surface not used for other activities, which should be sanitised after each use.

New paragraph 144 bis 3

The conditions of storage of processed meat whose preservation is only ensured for a limited period after a treatment e.g. salting, drying, smoking or pickling, should be clearly presented on the packaging.

Paragraph 147 bis

Where a recall and/or seizure of meat is necessary, the amount of product involved may be more than that from a single production or sampled lot. In the case of microbiological hazards in processed meat products, the decision will depend on a number of factors including the pathogen involved, the type of processing and packaging, and the extent of microbiological testing undertaken as part of the establishment's HACCP plan.

10. ESTABLISHMENTS: MAINTENANCE AND SANITATION**11. PERSONAL HYGIENE**Editorial note

The Committee should note that the proposed hygiene provisions for processed meat also have the effect of extending the scope of the draft provisions for fresh meat to the point of retail sale in terms of personal hygiene e.g. the current text requires that all establishments should maintain relevant personal health records of personnel.

New paragraph 155 bis

Persons moving from rooms or areas containing raw meat to rooms or areas used for processing of meat [especially cooking] should thoroughly wash, change and/or sanitise their protective clothing as appropriate, and otherwise limit the possibility of cross-contamination to the lowest level practicable.

13. PRODUCT INFORMATION AND CONSUMER AWARENESSParagraph 161 bis

Processed meat products should be specifically labelled so as to provide safe handling instructions for consumers. Processed food containing meat that have not received an adequate biocidal treatment for pathogens (e.g. containing raw meat, partially cooked meat, or meat products with secondary inhibitors) should be labelled with handling, cooking and preparation statements that have been validated as sufficiently biocidal.

CX/MPH 03/06

APPENDICES AND ADDITIONAL PROVISIONS TO THE PROPOSED DRAFT CODE OF HYGIENIC PRACTICE FOR FRESH MEAT

Change title to "Appendices and additional provisions to the proposed draft code of practice for meat hygiene".

Paragraph 9

...is defined as "an expression of the required level of control of hazards in the food at a specified step that is considered necessary to achieve the appropriate level of protection".

Paragraph 10

For practical reasons, microbiological performance parameters for meat are unlikely to be verified *on an on-going basis as part of a HACCP plan*

Paragraph 13

In the case of specific hazards (e.g. *Salmonella* spp. on carcasses, *Listeria* spp. in processed meat), the detection rate may reflect hazards arising pre-slaughter or cross-contamination after slaughter. In the former case, there is limited availability of HACCP parameters for on-line control of the level of contamination with specific hazards.