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ALINORM 72/15

JOINT FAO/WHO FOOD STANDARDS PROGRAMME  
CODEX ALIMENTARIUS COMMISSION

Ninth Session, Rome

6-17 November 1972

REPORT OF THE  
CODEX COMMITTEE ON MEAT HYGIENE

First Session

10-13 April 1972

New Zealand High Commission, London

INTRODUCTION

1. The Codex Committee on Meat Hygiene held its first session at the New Zealand High Commission in London, from 10 to 15 April 1972 by courtesy of the Government of New Zealand under the Chairmanship of Dr. A.T. Johns, Director General, Department of Agriculture, Wellington, New Zealand.
2. The participants were welcomed by His Excellency, Sir Denis Blundell, High Commissioner for New Zealand, in the name of his Government. The High Commissioner particularly emphasized in his address the need to harmonize on an international level meat legislation and practices in view of the extreme importance of the international trade in meat from the public health, the nutritional and the economic points of view.
3. Representatives from the following thirty-six countries were present: Argentina, Australia, Austria, Belgium, Brazil, Canada, Czechoslovakia, Denmark, Finland, France, Federal Republic of Germany, Ghana, Hungary, Iceland, Iran, Ireland, Italy, Japan, Kenya, Luxembourg, Netherlands, New Zealand, Norway, Peru, Philippines, Poland, Spain, Sweden, Switzerland, Tanzania, Thailand, Tunisia, United Kingdom, United States of America, Uruguay and Venezuela. Observers were present from the European Economic Community (EEC). Officers of FAO and WHO were also present. A list of participants is contained in Appendix I to this Report.

ELECTION OF RAPPORTEURS

4. On the proposal of the Chairman, the Committee appointed Dr. W.R.P. Hildebrand (United Kingdom), Prof. Dr. C. Flachet (France) and Dr. J.R. Prieto (Spain) as Rapporteurs of the Session.

ADOPTION OF PROVISIONAL AGENDA

5. The Committee adopted the Provisional Agenda with some minor modifications.

## TERMS OF REFERENCE OF THE COMMITTEE

6. The Committee was informed of the decision by the Commission to establish a Codex Committee on Meat Hygiene with the following terms of reference: "To elaborate world wide standards and/or codes of practice as may seem appropriate for meat hygiene excluding poultry meat".

## CONSIDERATION OF PROPOSED DRAFT CODE OF HYGIENIC PRACTICE FOR FRESH MEAT AT STEP 4

7. The Committee had before it Appendix II to ALINORM 71/15 which contained the Proposed Draft Code of Hygienic Practice for Fresh Meat as elaborated during the fifth session of the Codex Committee on Meat in Bonn, Federal Republic of Germany, in November, 1970. The delegate of Luxembourg drew the attention of the Committee to paragraph 6 of ALINORM 71/15 and to the position of his country regarding the EEC directive on fresh meat which was binding on members of the EEC. The Committee proceeded to detailed examination of the Proposed Draft Code in the light of Government comments which had been compiled in document CX/MH 72/2 Addendum 1.

### Section I: Scope

8. The Committee made no change either in the Title of the Code or in the Scope section. Section II: Definitions

9. The Committee made a number of amendments to Section II - Definitions:

- Definitions 2, 3, 4 and 5 were amended editorially.
- Definition 7 "Dressed" or "Dressing" was amended in substance. A third paragraph was added to deal specifically with sheep and lambs.
- Definition 8 "Edible offal" - it was agreed to delete specific mention of the various parts of slaughtered animals listed as edible offal, since not all the parts listed were universally regarded as edible offal, and some parts regarded as edible offal by some countries were not listed. It was decided, therefore, to draft the text in general terms, so that it would be a matter for the authorities in each country to determine what constituted edible offal within their own jurisdiction.
- Definition 14 "Meat" was discussed extensively but remained unchanged. The definition was one which was devised solely for the purpose of the code; it was necessarily phrased in very general terms and, for the purposes of the code, included edible offal.
- Definition 15 "Potable water" - it was decided to delete the reference to the date in the WHO 1963 requirements since these requirements had since been updated and could undergo further amendment in the future.
- Definition 16 "Protective clothing" was amended. In doing this the Committee adopted a text proposed by Australia as amended during the discussions.
- Definition 17 "Disinfecting of surfaces" was amended to read: "Disinfection" means the application of hygienically satisfactory chemical or physical agents and processes to cleaned surfaces with the intention to inactivate micro-organisms".

10. The Committee agreed that in the interests of harmonization of terminology, it would be necessary to ensure that terms commonly used in this Code and in the Code

of Hygienic Practice for Processed Meat Products as well as in the projected Code of Practice for Ante and Post Mortem inspection should be defined in the same way.

### Section III: Requirements concerning Slaughter Animals

11. The Committee made a limited number of amendments to this section which were largely editorial.

### Section IV: Establishment Facilities and Operating Requirements

#### 12. A. Establishment Registration, Construction and Lay-out

- A.1 The words "responsible for meat hygiene and inspection" were deleted, as they were redundant because of the fact that they were already included in the definition of "controlling authority".
- A.2 The Committee agreed to adopt a re-arranged draft submitted by Australia, as amended slightly during the discussions., The Australian text, which set out the general requirements first, followed then by the particular requirements, also included some changes in the original text, the reasons for which were given in the Australian comments.
- A.3(a) Several minor amendments were made.
- A.3(b) This sub-section was amended in accordance with a proposal put forward by the delegation of New Zealand.
- A.3(d) The provision which permitted, with the consent of the controlling authority, the use of adequate and efficient fixed equipment instead of a separate room for emptying and rinsing the digestive organs had proved to be a controversial matter when this subject was last discussed within the framework of the Codex Committee on Meat at the meeting held in Bonn in November 1970 The Committee re-examined this matter, in the light of a paper entitled "Emptying and Rinsing of Digestive Organs", which had been prepared for the current session by the delegation of the USA and also in the light of a film on the subject, made by the US Department of Agriculture and shown to the delegates during the course of the session. While a few delegations supported the delegation of the USA in the contention that the system demonstrated was satisfactory from a hygiene point of view and ought to be provided for in the Code, the great majority of delegations which spoke on this subject stated that they were not entirely convinced that the system involved no risk of contamination. The Committee decided therefore not to take a definite position, one way or the other, on the subject at this stage. It was agreed therefore that the entirety of this subsection should be placed in square brackets [ ] and that the delegation of the USA should make available for the next session of the Committee scientific evidence demonstrating that the system involved no risk of contamination.
- A.3(j) This provision recommending that a special room, capable of being locked, be provided for the slaughter of sick and suspect animals had proved to be controversial when this subject was last discussed at the meeting of the Codex Committee on Meat in Bonn in November 1970 and was also controversial at the current session. Many delegations - in the main delegations from European countries - considered that in order to guard against the risk of contamination, slaughtering premises should in all cases be equipped with a special room - separate from the main slaughter room — in which sick and suspect animals could be slaughtered. Other delegations, however, considered that sick and

suspect animals could be slaughtered separately in the main slaughter room at the end of a normal day's kill, or at any other suitable time, provided that such slaughter was followed immediately by cleaning and sterilization of the slaughter floor and its associated facilities. The point was also made that in small slaughter houses and in slaughtering premises where the number of animals slaughtered was less than the slaughter house would be capable of handling, it would be economically unfeasible - especially, though by no means exclusively, in developing countries - to require that a separate slaughter room be installed for sick and suspect animals. The Committee agreed to adopt the text proposed in its written comments by the delegation of Australia, amended in such a way that the provisions therein relating to slaughter of sick and suspect animals in other than a separate room were placed in square brackets. No delegation disagreed with the view that it was desirable to provide a separate room for the slaughter of sick and suspect animals. For this reason, this section of the Australian text was not placed in square brackets. However, some delegations considered that sick and suspect animals could just as effectively from the hygienic point of view be slaughtered in the main slaughter room, subject to taking the precautions mentioned earlier. Since other delegations were not convinced of this, it was agreed to put this part of the text in square brackets and to request governments to comment specifically on this point. As this was a particularly important point in the Code, to be considered further in the light of government comments, the Committee expressed the hope that if the Code were put before the Commission at its next session at Step 5, the Commission would take no decision on this matter until it had been re-examined by the Committee at its next session. The Committee agreed to include three additional provisions (q), (o) and (p) suggested in their written comments by the delegation of the Federal Republic of Germany.

13. A.4 Establishments in which meat is boned—out and cut-up

- A.4(b) As regards this sub-section the delegation of Australia stated that the existing text, in which it was recommended that packaging of boned out and cut up meat should take place in a separate room from that used for the actual operation of de-boning and cutting, was not in accordance with modern techniques. The Australian delegation pointed out that it was hygienically more satisfactory to pack in the room where the meat was de-boned, as this allowed continuous inspection and prevented possible contamination of the meat through movement from one room to another. The Committee adopted a text, for inclusion in this sub-section, which recommended that the packing of boned out and cut up meat should take place in the same room where it was boned and cut up, but that where this was not possible the packing could take place in a separate room.
- A.6(f) (i) The Committee amended the text of this provision with the intention of making it clear that only potable water should be available in those parts of abattoirs and establishments dealing directly with meat. It was understood, however, that this would not preclude the availability of non potable water for emergencies, such as fire.
- A.6(g) Concerning this sub-section, which provided that an adequate supply of hot water at not less than 82 C should be available at all times during the working hours, the delegation of New Zealand questioned whether there was really a need for water to be supplied at 82 C. There appeared to be no evidence to

- support this figure, and trials in New Zealand had shown that a lower temperature of 72 C had approximately the same effect and avoided, to a considerable degree, unwanted scale in pipes and tanks. Attention was drawn to the fact that the General Principles of Food Hygiene made no mention of a temperature of 82 C nor did the Draft Code of Practice for Processed Meat Products. The Committee did not consider it appropriate to alter the figure of 82 C at this stage, but agreed that the statement of the delegation of New Zealand be brought to the attention of governments and that the views of governments on this matter be obtained for the next session of the Committee.
- A.6(h) The Committee agreed to delete the present text and to insert the proposal for revision as made by Australia in their written comments.
  - A.6(i) In connection with the subject of lighting, the delegation of the Federal Republic of Germany thought that the figure of 220 lux (20 ft candles) should be changed to 300 lux and that the figure of 325 lux (30 ft candles) should be changed to 400 lux and that the specification to light of 540 lux could be deleted. The delegations of Ireland and the USA stated that lighting of the order of at least 540 lux (50 ft candles) should be provided in the inspection area.. Governments were specifically requested to give their views on this matter.
  - A.6(l) The Committee deleted the sub-section as this provision dealing with measures for pest control would be dealt with under a separate section.
  - A.6(p) The Committee agreed to amend the text of this provision to specify that facilities for washing hands should be furnished with waste pipes leading to drains. It was further agreed to delete the qualification "of a disinfectant type" with reference to liquid soap.
  - A.6(q) (i) The provision indicating the placing of implement sterilizers was expanded to cover also those rooms where meat is prepared or packed and it was specified for which implements these sterilizers were intended; this incorporated the text of IV.A.6(q)(iii).
  - A.6(q) (ii) A clause was taken from IV.A.6(q) (iv) and inserted indicating the frequency with which the sterilizers should be emptied and cleaned.
  - A.6(r) and A.7 The Committee agreed to the written proposal by the Australian delegation to combine these two provisions.
  - A.8 The existing provision was deleted and replaced by a provision specifying the making available of office accommodation and laboratory facilities to the meat inspection service.
14. **B. Equipment and Utensils**
- 3.1 The provision was re-worded to indicate that all equipment, implements and utensils used in abattoirs or establishments should present a smooth impervious surface and be resistant to corrosion. The reference to scale was deleted as on new equipment there would be no scale.
  - B.2 This provision dealing with the use of wood in abattoirs and establishments was deleted as the Committee was of the opinion that no wood should be used where it could come into contact with meat.
  - B.5 It was agreed to illustrate what was meant by the word "containers" in this provision.

15. C. Hygienic Operating Requirements

- C.1(a) This sub-section was deleted and replaced by a provision stating that amenities provided for the use of employees and the meat inspection service should be kept clean at all times.
- C.1(b) *The* provision was revised and a sentence was added indicating the frequency with which cleaning and disinfection should take place. The Committee agreed that work should not commence before the equipment was found to be hygienically satisfactory.
- G.1(f) The Committee agreed to delete the reference to detergents etc. capable of imparting residues when they come into contact with meat, as it was of the opinion that no such agents should come into contact with meat.
- C.2 This provision dealing with pest control was revised in the light of the written Australian comments, and sub—section IV.C.5 was added, where by reference to rodenticides was deleted as this was already covered by pesticides.
- C.3 This provision was expanded to make it clear that animals other than animals for slaughter were, in addition to not being permitted entry, prohibited from being kept in abattoir buildings.
- C.4 Several delegations favoured the recommendation that "national legislations should provide for a medical examination of meat handlers, meat inspectors and other persons who have access and come into contact with meat in abattoirs and establishments" and that "medical examinations should be carried out before these persons are employed and at regular intervals thereafter". These delegations considered that such measures constituted an additional safeguard against a risk of meat contamination. One delegation, however, drew attention to a WHO symposium held in Warsaw in 1970 where this was one of the subjects discussed. It was stated that the majority of the participants at this symposium had expressed the view that routine medical examinations were not of sufficient value in the prevention of food borne diseases to warrant the expense and time involved. The results of the medical examinations would be valid when the examination took place, but a person could contract a disease or acquire an infection shortly after the examination. There was also a difference of opinion as to whether the provision 4(b), which recommended the exclusion from work in abattoirs or establishments of persons who were suffering from or carriers of any communicable disease, was correctly formulated. Some delegations were of the opinion that not all the diseases and conditions referred to in IV.C.4(b) were transmissible by food. The Committee decided therefore to place the provisions of 4(a) and 4(b) in square "brackets and to invite governments to comment particularly on these matters. The Committee agreed to leave the provisions in 4(c), 4(d) and 4(e) unchanged.
- C.5 The Committee agreed that this sub-section should be linked up with the other provisions under pest control.
- C.6 The Committee agreed that sub-section (i) of this section should, because of its special importance, become sub-section (a) and made a number of amendments to certain sub-sections. In amending sub-section (c), the Committee considered that the term protective clothing including head covering and footwear. Sub-section (e) was amended in accordance with the text

proposed by the Australian delegation. In sub-section (f) the Committee did not think it necessary to require that notices be displayed.

16. D. Operating Practices and Requirements

- D.1 The main amendments in this section concerned sub-sections q(iii), (v), (w) and (2). Sub-section q(iii) was amended to read "intestines should not be severed from the stomach during evisceration of any carcass and no other opening should be made during evisceration ..." Sub-sections (v) and (v) were placed in square brackets, as a consequence of the earlier decision to place in square brackets the provision dealing with the question of a separate room for emptying and rinsing the digestive organs (IV.A.3(d) and (e)). Sub-section (z) was amended to require that immediately after slaughter the dressed carcass, viscera and blood should be subjected to post mortem examination by an inspector, and that prior to final examination all parts required for inspection should remain identifiable with the carcass and must not be removed.

17. Identification of Inspected Meat

- D.2 The only amendment made to this section was to qualify the word "container" by the word "sealed" in IV.D.2(a) because of the difficulty in branding some of the smaller organs.

18. Pre-Rigor Boning of Meat

- D.3 Before considering this section of the Code the Committee heard a resumé given by the delegation of Australia of their paper (CX/MH 72/5) "Pre-Rigor Boning of Meat". It was stated that the main advantages of pre-rigor boning were that pre-rigor meat had superior emulsifying properties and water holding capacity to post-rigor meat. This was a significant development in meat science and it was important that pre-rigor boning be recognised as a principle. It was pointed out that while pre-rigor boning of meat was not yet practised widely on a large commercial scale, it was a process that was expected to develop. The Committee took note of this and agreed that the Code should be drafted in such a way as not to exclude such a process. It was agreed that at a later stage the question of elaborating specific provisions on this process might be considered by the Committee. As regards sub-section IV.D.3(b), the delegation of the Federal Republic of Germany and other delegations from EEC countries had reservations about the provision which, as amended, read "it (meat) should be placed under refrigeration [except where other acceptable commercial practices are carried out], under the supervision of an inspector", in the absence of knowing what these other acceptable commercial practices were. Sub-sections (b)(i), (ii) and (iii), (c), (d) and (e) were amended in accordance with the text presented by New Zealand and amended at the Session.

19. A New Concept of Processing Beef and Lamb

Since IV.D.3 contained provisions on the chilling and freezing of meat, it was thought appropriate at this stage to invite the delegation of New Zealand to introduce their summary paper (CX/MH 72/9) entitled "A New Concept of Processing Beef and Lamb - The Effect of Cooling on Meat". In introducing this paper, the delegation of New Zealand drew attention to a supporting paper on this subject also entitled "A New Concept of Processing Beef and Lamb" and indicated that copies could be obtained, on application, from the New Zealand Codex Contact Point in London: Dr. A. Ginsberg, The New Zealand High

Commission, New Zealand House, Haymarket, London, SW1Y 4TO. Copies were available in English, but French and Spanish versions would be available in due course and copies would be sent to the delegates. The document consisted of a review of the major areas of meat science over the past ten years or so. The document dealt with, amongst other things, some of the most significant developments in meat science in recent times -in particular the recognition that meat tenderness can be adversely affected by chilling or freezing in the pre-rigor phase.

20. Packaging and Packing Material

- D.4 There was only one small amendment made in sub—section (a) of this section.

21. Transportation

- D.5 The Committee agreed to add a provision, proposed by the delegation of the Federal Republic of Germany, to sub-section (b) relating to the transport of stomachs, heads and trotters. As regards sub-section (e) (i), the delegation of the Federal Republic of Germany thought that it would be desirable to indicate certain temperature limits, for example the temperature figures laid down in Appendices 2 and 3 of the UNECE Agreement on International Transport of Highly Perishable Foods and on the Special "Ians of Transport to be used for this purpose - for meat (with the exception of fresh edible offals) +7°C; for fresh edible offals +3° C, for frozen meat -10° C, for frozen edible offals -12° C; for deep frozen meat and deep frozen edible offals -18° C. The Committee took no position on this sub-section at this stage. A number of amendments were also made to sub-section (e) (iv), (v) and (vi). Sub-section (e) (vii) was amended in accordance with a text put forward by the Australian delegation.

22. Condemned Meat

- D.6 The Committee agreed to add to this section, dealing with condemned meat, a proposal of the delegation of Argentina, slightly amended at the Session and reading as follows: "For the purpose of clear identification, cuts may be made to show the carcass or parts of the condemned meat."

23. E. Programme for Veterinarian Supervision and Hygiene Control

- D.E. The most significant amendment made to this section concerned the last sentence of sub-section 2, which was amended in accordance with a proposal put forward by the delegation of New Zealand.

24. Laboratory Control Procedures

- D.F. The Committee agreed to introduce a new section entitled as above.

25. Status of the Code

The Committee agreed to advance the Code to Step 5 of the Procedure. Attention was drawn to the need to simplify the numbering system in the document.

26. Mobile Slaughter Houses

The delegation of Norway, supported by the delegations of Sweden and Finland, drew the attention of the Committee to the fact that in those countries reindeer were slaughtered for human consumption and export. The reindeer were

slaughtered in mobile slaughter houses. Such mobile slaughter houses would not comply with all of the provisions of the present Code. It was stated that there might be similar circumstances in some African countries in connection with game cropping. The Committee noted that Norway would comment in detail in writing on this matter for the next Session of the Committee. The Committee noted that, as stated previously, the main object in elaborating these Codes was to facilitate international trade. While this was so, and it would follow, therefore, that the Codes were mainly directed at abattoirs and establishments producing meat for export, they were also directed, as recommended practices to be reached and followed in the course of time -recognizing that at present it would be difficult for some countries to apply them to all domestic abattoirs - in respect of the production of meat for domestic consumption.

#### Consideration of proposed draft code of ante-mortem and post-mortem inspection of slaughter ANIMALS AT STEP 2

27. The Committee had before it document CX/MH 72/4, the Report of an Ad-Hoc Drafting Group on a Code of Ante-Mortem and Post-Mortem Inspection of Slaughter Animals held in Geneva in November 1971 and which contained in Appendix II the Proposed Draft Code. During the

8th Session of the Codex Alimentarius Commission it was agreed that the term "meat hygiene" should be interpreted in its broadest sense and would certainly encompass ante- and post-mortem inspection of slaughter animals. It was considered that there was an urgent need for a code or even a standard to cover ante- and post-mortem inspection (see document ALINORM 71/31, paras. 167 and 168).

The Committee proceeded to a detailed examination of the Proposed Draft Code (Appendix II to CX/MH 72/4) at Step 2 of the Procedure, taking into account Government comments which had been compiled in document CX/MH 72/8.

#### 26. Section I; Scope

A number of delegates were of the opinion that the requirements as stated in the proposed Draft Code were of such a nature that - at least for some time to come - it would be difficult if at all possible to comply with them on a broad national level. These delegates were therefore of the opinion that the Scope of the Code should be limited to abattoirs or establishments working for export. An important argument brought forward for this limitation was the fact that generally abattoirs engaged in export tended to be much larger than those slaughter houses providing meat for the (local) home market.

The Committee agreed, however, that the general tendency seemed to be towards the setting-up of larger domestic slaughtering units, and that consequently the Code should not be limited only to export slaughter houses. The Scope Section remained unchanged.

#### 29. Section II: Definitions

The definitions which the present Code had in common with the Proposed Draft Code of Hygienic Practice for Fresh Meat were amended in the light of decisions taken earlier during the Session.

Def. 13 "Residues" was amended editorially.

Def. 14 "Slaughter animals". The enumeration of different species of animals was deleted as it was thought that the term "mammals" sufficed.

#### 30. Section III; General Requirements

- 15(b) To avoid questions which might arise as to who should issue a certificate to accompany every animal intended for slaughter for human consumption the word "document" was substituted for "certificate". Likewise "place of origin" replaced "farm" as in some countries the trade in slaughter animals often went through middlemen. The delegate of Spain proposed that the document should not only indicate the origin of the animals but also their status of health.

31. Section IV: Specific Ante-Mortem Requirements

- 16. The Section was deleted as it was thought that the provisions were covered by the Code Hygienic Practice for Fresh Meat.

32. Section V: Ante-Mortem Inspection

- 17(b), (f) and (g) were deleted as it was assumed that the remaining provisions of the paragraph sufficiently covered the purpose of ante-mortem inspection.

- 18. Prerequisites for ante-mortem inspection

The delegate of Poland, supported by a number of other delegates, reiterated his statement that in his view inspectors could only be veterinarians. The Committee discussed the provision relating to the time of the ante-mortem inspection and agreed that all animals should be inspected on the day of delivery to the slaughterhouse. It was further agreed that if subsequently the animal was not slaughtered within 15 hours, the ante-mortem examination should be repeated.

33. Section VII: Pest Mortem Inspection

27. Prerequisites for post-mortem inspection

- 27(i) The Committee agreed that evisceration of slaughter animals should be performed without delay. The delegation of Argentina proposed that a time limit of 30 minutes should be set. It was thought, however, that this might be under certain circumstances too restrictive. Milk was included in the list of possible contaminants.
- 27(ii) Some difference of opinion existed among the delegates with regard to when and if carcasses should be washed. It was agreed that washing should not take place until post-mortem inspection had been completed, but that pigs, and sheep and lambs might be washed before this provided the body cavity had not been opened.
- 27(iv) The provision was amended to indicate that in each instance after handling diseased material establishment employees and inspectors should wash and disinfect their hands.
- 28(a) The committee agreed that the post-mortem inspection procedure should include carcasses, viscera, blood and organs.
- 28(b)(ii) To cover parasitic diseases, e.g., trichinosis, the list of laboratory examinations was expanded to include parasitological examinations.
- 29. The Committee amended this section in such a way as to make it clear that incisions should be made by the inspector only where necessary and in such a way as to minimize the risk of contamination.
- The paragraph was deleted to avoid the Code acquiring the character of a handbook.

- The Committee amended this paragraph in such a way as to allow for the possibility of using other acceptable procedures to prevent the escape of gastrointestinal contents.
- 39. It was not considered necessary to specify how heads should be dealt with as this was covered in IV.D.I (g) and (k) of the Fresh Meat Code.
- 40. and 41. The delegate of France pointed out that WHO had approached the "Association Mondiale des Anatomistes Vétérinaire" to ask for the latest edition of Nomina Anatomica Veterinaria (1972). The Committee agreed not to make any amendments to the present text but to await the above-mentioned document so that the correct anatomical terminology could be introduced, where necessary, into the Code. The delegation of Switzerland had stated in their written comments that for countries where the bovine herds are free from tuberculosis, the incision of lymph glands or nodes on the head which showed no externally visible anomaly was of only minor importance. In brief, the Swiss delegation considered that the value of routine incision of the lymph nodes was outweighed by the risk of contamination. This was particularly true of mesenteric lymph nodes of pigs. Other delegations, however, stated that in their countries incision was a rule rather than the exception. The Committee decided not to go into *this* subject in detail at this stage, but to consider it further in depth at the next Session in the light of government comments to be obtained.
- 41(i) As in some countries testicles were used for human consumption, the Committee agreed to include these organs in the list of viscera to be examined.
- 41. (new) Further inspection of suspect carcasses
- The Committee agreed to move to a separate paragraph in the section on the inspection of cattle, which would serve also as a guide for the inspection of other species, subparagraph 52(c)(iv) dealing with action to be taken when at the time of post-mortem examination doubts arose concerning the health of the slaughtered animal.
- 43. The Committee decided also to include intestines and serous membranes in the list of organs to which particular attention should be paid during the post-mortem inspection of calves.
- 44. It was agreed to insert in the paragraph dealing with the inspection of horses a clause specifying the importance of checking on symptoms of melanosis.
- 52(b) The Committee agreed that in the case of castrated pigs the site of castration should be palpated, and added a provision accordingly.

#### 34. Status of the Code

The Committee agreed to advance the Code to Step 3.

#### MARKING INKS FOR INSPECTION STAMPS

35. The Committee agreed that colours used for marking inks should be toxicologically safe and technologically suitable for the purpose required and the range of such colours should be reduced as far as practicable. Information had already been collected by the Animal Production and Health Division of FAO on the colours used in various countries for meat inspection stamps and this information was before the meeting in document CX/M/70/4. Attention was drawn to the fact that a number of colours had been given an ADI (acceptable daily intake) or temporary ADI by the Joint FAO/WHO Expert

Committee on Food Additives. These colours are attached as Appendix IV to this report. It was agreed that countries should consider whether it would be feasible for them to confine themselves to the use of the colours listed in Appendix IV and, if so, to indicate which of the colours listed they would regard as technologically suitable. The delegation of the United Kingdom offered to collate comments received from governments on this matter. It was agreed, therefore, that comments should be sent to the U.K. Codex Contact Point: Food Standards Division, Ministry of Agriculture, Fisheries and Food, Great Westminster House, Horseferry Road, London S.W.1, not later than 30 November 1972.

### OTHER BUSINESS

36. The delegation of the Argentine, supported by the delegations of Brazil, Kenya and Uruguay, stressed the need for a greater degree of uniformity in the requirements insisted upon by the veterinarians of importing countries when inspecting for approval abattoirs and establishments engaged on the production of meat for export. The Committee concurred in the importance of this matter and expressed the hope that the current and future work of the Committee would go a long way towards meeting this end.

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APPENDIX II

PROPOSED DRAFT CODE OF HYGIENIC PRACTICE FOR FRESH MEAT  
(At Step 5 of the Codex Procedure for the Elaboration of Codes of Practice)

SECTION I - SCOPE

This Code of Hygienic Practice applies to fresh meat intended for human consumption, whether by direct sale or through further processing. It contains the minimum requirements of hygiene of meat production from slaughter of animals up to and including the transport of meat and is intended to assure a healthful and wholesome meat supply.

SECTION II - DEFINITIONS

For the purpose of this Code:

1. "Abattoir" means premises approved and registered by the controlling authority used for the slaughter of animals for human consumption.
2. "Brand" means any mark or stamp approved by the controlling authority and also includes any tag or label bearing any mark or stamp.
3. "Carcase" means the body of any slaughtered animal after bleeding and dressing,
4. "Cleaning" of surfaces means the removal of objectionable matter.
5. "Contamination" means the direct or indirect transmission of objectionable matters to the meat.
6. "Controlling authority" in relation to an abattoir or establishment means the official authority charged by the government with the control of hygiene and meat inspection.
7. "Disinfection" means the application of hygienically satisfactory chemical or physical agents and processes to cleaned surfaces with the intention to inactivate microorganisms\*
8. "Dressed" or "Dressing"
  - (a) in relation to slaughtered animals except for pigs, sheep and lambs, means the removal of head, hide or skin, viscera (other than kidneys), genital organs, urinary bladder and feet up to the carpal and tarsal joints, and, udders of lactating animals, animals that have calved or are in advanced pregnancy; and
  - (b) in relation to slaughtered pigs, means the removal of hair and bristles or skin, claws, eyelids, viscera (other than kidneys), genital organs, urinary bladder, the udders in the case of lactating animals that have farrowed or are in

advanced pregnancy, and the external acoustic duct unless in respect of that tissue an alternative effective form of cleaning is carried out; and

(c) in relation to sheep and lambs means the removal of the head (except in the case of young lambs), the pelt or skin, viscera (including or not including the kidneys), genital organs, urinary bladder and feet up to the carpal and tarsal joints, udders of lactating animals, animals that have lambed or are in advanced pregnancy.

9. "Edible offal" in relation to slaughtered animals means such offals as may be passed as fit for human food.
10. "Establishment" means any premises approved and registered by the controlling authority in which fresh meat is produced, prepared, handled, packed or stored.
11. "Fit for human consumption" in relation to meat means an article which has been passed and appropriately branded by an inspector and in which no subsequent changes have been found due to disease, decomposition or contamination.
12. "Fresh meat" means meat which has not yet been treated in any way to ensure its preservation, except that if it has been subjected to refrigeration, it should continue to be considered as "fresh" for the purpose of this Code.
13. "Inspector" means a properly trained officer appointed by the controlling authority of a country for the purpose of meat inspection and supervision of meat hygiene. The supervision of meat hygiene including the inspection of meat should be the responsibility of a veterinarian.
14. "Manager" in relation to an abattoir or establishment includes any person for the time being responsible for the management of the abattoir or establishment.
15. "Meat" means the edible part of any mammal slaughtered in an abattoir.
16. "Potable water" means water that is pure and wholesome at the point of usage in accordance with WHO requirements contained in the "International Standards for Drinking Water"•
17. "Protective Clothing" means special garments intended to prevent the contamination of meat and used as outer wear by persons in an abattoir or establishment and includes head coverings and footwear.

### SECTION III - REQUIREMENTS CONCERNING SLAUGHTER ANIMALS

18. Where a person has reason to believe that, as a result of any accident or by reason of any defect or disease, or by the administration of any drug or chemical, any animal might not be suitable for human consumption, he should not send it to any abattoir or establishment where animals are slaughtered unless the animal is certified by a veterinarian to the effect that he has attended the animal and it is in his opinion suitable to be slaughtered for human consumption. However the inspecting veterinarian in charge of the abattoir or establishment should be the sole judge of whether an animal is fit for slaughter, irrespective of any certificate which may have been given.
19. Every means of transport used to convey animals to any abattoir or establishment should be maintained in a clean and sanitary condition by cleaning as soon as practicable after the animals have been unloaded therefrom.
20. Every means of transport should be so constructed and maintained that animals can be loaded and unloaded easily and that animals of different species are physically

separated during the transport and that soiling by excreta deposited on the vehicle floor is minimized because of floor grating or similar devices. In the case of a vehicle or railway truck having more than one deck, an impervious floor below the grating of the upper deck or any similar device should be provided to protect animals conveyed on the lower deck.

#### SECTION IV - ESTABLISHMENT FACILITIES AND OPERATING REQUIREMENTS

##### A. Establishment Registration, Construction and Lay-out

21 Abattoirs and establishments should be approved and registered by the controlling authority.

(a) (a) Abattoirs and establishments should be located in areas not subject to regular and frequent flooding and free from objectionable odours, smoke, dust or other contaminants.

(b) The size of the abattoir or establishment should be sufficient to allow for the required working space.

(c) The construction should be sound and ensure adequate ventilation, good natural or artificial lighting and easy cleaning.

(d) The layout and equipment of the abattoir or establishment should be such as to allow for efficient sanitary control.

(e) Effective facilities should be provided for the disposal of plant effluent and should at all times be maintained in good order and repair. Catch-basins, traps, save-alls and sumps should at all times be kept separate and apart from any department in which meat is prepared, handled, packed and stored.

(f) The abattoir or establishment should be of such construction as to protect against the entrance and harbouring of insects, birds, rodents or other vermin.

(g) The buildings and facilities of the abattoir or establishment should be kept in good repair at all times.

(h) The abattoir or establishment should be equipped so as to permit proper performance of meat inspection and control.

(i) In every abattoir or establishment there should be a physical separation between departments in which edible and inedible material is handled.

(j) In all rooms in an abattoir or establishment other than rooms provided for the accommodation of workers and inspectors:

(i) Floors, should be of water-proof, non-toxic, non-absorbent materials, easy to clean and disinfect. They should be non-slip and without crevices and, except in the case of rooms where meat is frozen or stored, should slope sufficiently for liquids to be drained off to trapped outlets protected by a grill.

(ii) Walls should be of water-proof, non-toxic, non-absorbent materials, which are easy to clean and disinfect, smooth, and at a height appropriate to the operation conducted; they should be light coloured and washable. The angles between the walls and the angles at the wall to floor junctions should be coved.

(iii) Ceilings should be so designed and constructed as to prevent the accumulation of dirt and condensation and should be easy to clean.

23. Abattoirs should include the following:

(a) Covered accommodation large enough to house the animals or, where climatic conditions permit, suitable uncovered holding facilities. Accommodation should be so arranged as to permit proper inspection of the animals before slaughter; the lairages and yards should be suitably constructed and maintained, paved or grated, well drained and furnished with an adequate number of water troughs having a piped water supply. Sufficient waterline connections with adequate water pressure should be available to enable the lairages, yards, races and unloading ramps and livestock transport vehicles to be cleaned. Where the whole yards are not covered and paved or where the climate is suitable to hold animals in paddocks, there should be a sufficient number of covered pens to facilitate ante-mortem inspection in bad weather and there should also be covered restraining devices such as chutes, squeeze gates, boxes or any other effective device for restraining animals requiring close examination. Any lairages and yards should be of such a lay-out that cross traffic of animals of different species is avoided. Where the climate is suitable, washing facilities for animals prior to a slaughter should be available; if possible, animals, with the exception of pigs should not be slaughtered while the hide or skin is still dripping.

(b) Separate facilities should be provided for the isolation of sick animals or animals suspected of being sick. These facilities should be covered if climatic conditions require this and should be lockable. The open drains of these pens should not connect with the drains of the remaining lairages and yards.

(c) Slaughter and dressing rooms which enable the work to be performed in a satisfactory manner. A special area should be reserved for pigs where appropriate. If other classes of animals are slaughtered or dressed at the same time as pigs, facilities for scalding and dehairing of pigs should be situated in an area separated from other areas.

(d) [Separate room for emptying and rinsing the digestive organs. However, with the consent of the controlling authority, adequate and efficient fixed equipment may be used instead of separate rooms for these operations, provided that all products destined for human consumption are protected from contamination].

(e) [Separate rooms for tripe and gut dressing. However, with the consent of the controlling authority, adequate and efficient fixed equipment may be used instead of separate rooms for these operations provided that all products destined for human consumption are protected for contamination].

(f) Separate facilities should be provided for the preparation and/or storing of edible fats.

(g) Separate rooms for storing hides, horns and hooves and inedible animal fats, unless the above-mentioned parts are removed daily from the abattoir.

(h) If salting, curing, grading, calibrating and packaging of casings is carried out in the abattoir or establishment, a separate area for this purpose should be provided.

(i) Refrigerated room suitable for the cooling and storage of meat.

(j) A special room for the slaughter of sick and suspect animals. [Alternatively, *the* separate killing of sick and suspect animals on the main slaughter floor at the end of a normal day's kill, or at any other time immediately

prior to a regular cleaning and disinfection of the slaughter floor and its associated facilities]. Such a special room should be located within easy reach of the pens reserved for isolated stock. Meat passed as being fit for human consumption in this room should be conveyed to the edible section of the establishment in such a manner as to prevent its contamination, [Where separate slaughtering is carried out on the main slaughter floor the complete slaughter floor should be washed down and disinfected at the completion of the suspect kill].

(k) Separate facilities in the form of a separate room or portion of a room capable of being controlled and capable of being locked, as required, for storing suspect meat and designed so as to prevent the risk of contaminating other meat and the risk of substitution.

(l) Room capable of being locked and suitable for the holding of condemned meat, unless other adequate arrangements for disposal exist.

(m) Adequate and well equipped areas reserved for the use of the meat inspection services,

(n) Facilities for the control of the entrances and exits of the slaughter establishment

(o) Location and adequate facilities for the cleaning and disinfection of vehicles. (p) Specially arranged location for the deposit of manure.

24. Establishments in which meat is boned-out and cut-up should include the following:

(a) Refrigerated room for the holding of meat,

(b) Rooms for boning and cutting physically separated from other rooms. The packing of boned out and cut-up meat should take place in the same room where it is boned and cut-up, but, where this is not possible the packing may take place in a separate room. These rooms should be temperature controlled,

(c) Adequate and well equipped areas reserved for the use of the meat inspection services.

25. Refrigeration facilities. The construction and lay-out of any chilling room or freezer should satisfy the requirements of this Code.

26. Sanitary facilities and controls -

(a) Those operations which carry a risk of contamination of meat suitable for human consumption should be sufficiently separated from other operations to avoid the risk of such contaminations.

(b) Rooms, equipment and utensils provided for slaughtering and dressing should be used for this purpose only and not for boning-out, cutting-up, holding or other handling of meat.

(c) Abattoirs and establishments should be laid-out and equipped so as to ensure that meat at no time comes into contact with floors, walls or other fixed structures, except those which are specifically designed for contact with meat.

(d) Slaughtering rooms should preferably be fitted with equipment enabling animals to be bled, flayed and eviscerated in a hanging position; if, however,

metal cradles are used for flaying, they should be high enough to ensure that the meat cannot touch the floor.

(e) Abattoirs and establishments should be equipped with an overhead rail for transporting meat so installed as to prevent contamination of the meat,

(f) An ample supply of potable water under adequate pressure should be provided with adequate facilities for its storage and distribution and with adequate protection against contamination and pollution:

(i) All water available for use in those parts of abattoirs and establishments in which meat is prepared, handled, packed or stored should be potable.

(ii) Non-potable water may be used for such purposes as producing steam, cooling refrigeration and fire control. Such water should be carried in completely separate lines, identified preferably by colour, and with no cross connection or backsiphonage with the lines carrying potable water.

(g) An adequate supply of hot potable water at no less than 82°C should be available at all times during the working hours.

(h) Abattoirs and establishments should have an efficient plumbing and waste disposal system. All plumbing and waste disposal lines (including sewer systems) must be large enough to carry peak loads. All lines must be water-tight and have adequate traps and vents. Disposal of waste should be effected in such a manner as not to permit contamination of potable water supplies. The plumbing and the manner of waste disposal should be approved by the controlling authority having jurisdiction.

(i) Adequate lighting of 220 lux (20 foot candles) should be provided throughout the abattoir establishment. Where establishment employees and meat inspector are engaged in work which requires better lighting, 325 lux (30 foot candles) or even 540 lux (50 foot candles) should be provided at working level and should not alter, colours. In carcase chilling rooms 110 lux (10 foot candles) lighting at lower shank level should be sufficient. Light bulbs and fixtures suspended over meat in any step of preparation should be of the safety type or otherwise protected to prevent contamination of meat in the case of breakage,

(j) Adequate ventilation should be provided to prevent excessive heat, steam and condensation and ensure that the air of premises is not contaminated with odours, dust, vapour or smoke. Ventilation openings should be screened. Windows should be fitted with whole panes and those which open should be screened. The screens should be made so as to be easily movable for cleaning. Internal window sills, if present, should be sloped to prevent use as shelves.

(k) All doors should be sufficiently wide and those opening from edible departments, unless provided with an effective and operating air screen, should be solid, as far as practicable, self-closing or snug-fitting double action doors.

(l) All stairs located in any room used in any edible department should be so constructed that:

(i) They can be easily cleaned and no contamination can be caused by material passing through the risers or treads;

(ii) They should have side curbs that are at least 10 cm in height measured at the leading edge of the treads.

- (m) Lift cages should be so constructed as to afford adequate protection of the meat against contamination. In particular the base and sides should be finished to a smooth impervious surface. Lift shafts should be smoothly finished or tiled. If painted a light colour should be used. The floor of lift shafts should be drained so as to permit effective cleaning.
- (n) Platforms, ladders, chutes and similar facilities in any room used for the preparation of meat should be constructed so as to be capable of being effectively cleaned and should consist of material which is resistant to fracture, abrasion, or corrosion and which can be effectively cleaned,
- (o) All rooms used for slaughtering, dressing, boning, preparation, packing or other handling of meat should be equipped with adequate facilities for washing hands, furnished with waste pipes leading to drains conveniently located for the use of personnel during operations. Taps of hand-washing facilities should be of a type not requiring operation by hand. In addition, where necessary, an adequate supply of odourless soap (liquid soap in suitable dispensers), or other cleansing agents. Where paper towels are used a sufficient number of dispensers with paper towels and receptacles for used towels should be provided adjacent to each washing facility.
- (p) (i) In every room in an abattoir and establishment in which carcasses are dressed, conveniently located implement sterilizers in sufficient number should be provided and if it is necessary also where meat is prepared or packed. These implement sterilizers are for use exclusively in the disinfection of knives, steels, cleavers, saws and other implements used in the dressing of carcasses and preparation or packaging of meat.
- (ii) Every sterilizer should be constructed of corrosion-resistant materials, and should be of such nature and size to be sufficient to enable all knives, steels, cleavers, saws and other implements used in the dressing, preparing or packaging of carcasses and meat to be efficiently disinfected. The sterilizer should be capable of being emptied and cleaned at the end of each working day and at such other times as considered necessary by the inspector.
- (iii) Any sterilizer in an abattoir and establishment where animals are slaughtered and dressed or in any part of the establishment used for the preparation of carcasses or meat should be fitted with a suitable means of supplying water in sufficient quantity at a temperature of not less than 82 C at all times while carcasses are being dressed or meat is being prepared in that part of the abattoir and establishment.
- (iv) Facilities should be provided in each abattoir and establishment for *the* cleaning and disinfection of trucks, trolleys, trays, gambrels, skids hooks, pouches and other similar equipment and working implements at the conclusion of each working day.
- 27 Every abattoir should include the following amenities:
- (a) In the case of persons employed: adequate changing room accommodation, lunchroom, toilets with flushing water closets, showers and handwashing facilities. Taps of handwashing facilities should be of a type not requiring operation by hand; and suitable hygienic means of drying the hands should be provided. where paper towels are used a sufficient number of

dispensers with paper towels and receptacles for used towels should be provided adjacent to each washing facility. All such accommodation and toilets, and shower and handwashing facilities should have adequate lighting, ventilation and heating. No changing room, lunchroom, toilet or room containing any shower or washing facilities should open directly to any work areas. Handwashing facilities should be provided adjacent to every toilet\* waste from these facilities should not join the plant effluent system prior to the final save-all; and

(b) In the case of meat inspection personnel: adequate changing room accommodation, drying room, lunchroom, toilets with flushing water closets, showers and handwashing facilities. Taps of handwashing facilities should be of a type not requiring operation by hand; and suitable hygienic means of drying the hands should be provided. Where paper towels are used a sufficient number of dispensers with paper towels and receptacles for used towels should be provided adjacent to each washing facility. The amenities reserved for the meat inspection service, and toilets, and shower and handwashing facilities should have adequate lighting, ventilation and heating.

28. Office accommodation should be provided for the exclusive use of the meat inspection service. Laboratory facilities should be readily available for the purpose of meat inspection and meat hygiene.

#### B. Equipment and Utensils

29. All equipment, implements and utensils used in abattoirs or establishments which come in contact with meat should present a smooth impervious surface and be resistant to corrosion and should be made of a material which is non-toxic, does not transmit odour or taste, smooth, free from pits, crevices, non-absorbent and capable of withstanding repeated exposure to normal cleaning and disinfection. Stationary equipment should be installed in such a manner as will permit easy access and thorough cleaning and disinfection. Such equipment should be so constructed that it may be easily cleaned.

30. Equipment and utensils used for inedible or contaminated materials should be so identified and should not be used for edible products.

31. Equipment and utensils for slaughtering and dressing should be used for this purpose only and not for cutting-up or boning-out or further preparation of the meat,

32. No containers, particularly wooden crates, wooden boxes or cartons, should be assembled and no containers, equipment, or utensils should be stored or deposited unless they are required in any part of an abattoir or establishment in which animals are slaughtered or dressed or where meat is cut-up or boned-out, prepared, handled, packed or stored unless the container, equipment, or utensils are required for use in that part.

#### C. Hygienic Operating Requirements

33. (a) Amenities provided for the use of employees and the meat inspection service including the meat inspection office space should be kept clean at all times.

(b) All equipment, implements, tables, utensils including knives, cleavers, knife pouches, saws and containers should be forthwith thoroughly cleaned and disinfected whenever they come in contact with diseased material, infected

material or become contaminated. They shall also be cleaned and disinfected at the commencement and conclusion of each working day.

(c) The manager should take all necessary steps to ensure that washing down, cleaning and disinfection are carried out in compliance with this Code.

(d) Cleansing and disinfection of rooms or equipment, implements and utensils should be so effected that they do not contaminate by splashing any carcase or meat.

(e) Where any skip or trolley or any container used in an edible department enters or is used in an inedible area it should be cleaned and disinfected immediately before re-entering any edible department.

(f) Detergents, sanitizing agents and disinfectants should conform to public health requirements and should not be allowed to come into contact with meat. Any residue of these cleaning and sanitizing agents used for the washing of floors, walls or edible product equipment should be removed by thorough rinsing with potable water before the equipment is again used for handling meat.

(g) No cleaning preparation or material, or any paint should be used in any abattoir or establishment where any carcase or meat is or may be prepared, handled, packaged or stored if it is likely to contaminate such carcase or meat.

(h) No deleterious substance of any nature by which any carcase or meat may be contaminated should be handled or stored in any part of any abattoir or establishment in which carcasses are slaughtered or dressed, or in which meat is prepared, handled, packaged or stored. However, materials employed in the construction or maintenance of an abattoir or establishment may be used at any time when an inspector is satisfied that there would be no danger of contamination of carcasses or meat.

#### 34. Pest Control

(a) An effective and continuous programme for the control of insects, birds, rodents or other vermin within the abattoir or establishment should be maintained.

(b) Abattoirs or establishments and surrounding areas should be regularly examined for evidence of infestation with insects, rodents or birds.

(c) Should pests gain entrance to abattoirs or establishments permitted eradication methods should be instituted to get rid of them. The eradication of pests should always be carried out under skilled supervision and with the full knowledge of the inspector.

(i) Only pesticides approved by the competent authority having jurisdiction should be used in an abattoir or establishment and the greatest care should be exercised to prevent any contamination of the meat. Pesticides should only be employed if other precautionary methods cannot be used effectively.

(ii) Before the application is commenced all meat should be removed from the room and all equipment and utensils covered. After spraying the equipment and utensils should be thoroughly washed prior to being used again.

- (d) All pesticides or other toxic substances should be stored in separate rooms or cabinets under lock and key and dispensed and handled only by authorised and properly trained personnel to avoid any possibility of contaminating any meat directly or indirectly, as the case may be.
35. No animals other than animals for slaughter should be allowed to enter or to live in any part of an abattoir and establishment where meat is prepared, handled, packed or
36. (a) [It is recommended, that national legislations should provide for a medical examination of meat handlers, meat inspectors and other persons who have access to and come into contact with meat in abattoirs and establishments. Medical examinations should be carried out before these persons are employed and at regular intervals thereafter]
- (b) [NO person who is suffering from, or who is a carrier of any communicable disease, notably diarrhoea, or is suffering from skin disease or any condition causing a discharge of pus or serum from any part of the head, neck, arms or hands, should engage in any abattoir or establishment in the preparation, handling or transportation of meat or should work in any department where meat is prepared, handled or transported. Any such person should immediately report to the manager].
- (c) The manager should take care to ensure that no person, while known to be affected with a disease capable of being transmitted through food, or known to be a carrier of such disease micro-organisms, or while afflicted with infected wounds, sores, or any illness, is permitted to work in any area of an abattoir or establishment in a capacity in which there is a likelihood of such a person contaminating meat with pathogenic organisms.
- (d) The manager of any abattoir or establishment should, if required to do so by an inspector, produce for perusal by the inspector any medical certificate produced to the manager by an employee of the abattoir or establishment.
- (e) No person who is suffering from any cut or injury should engage in any abattoir or establishment in the preparation, handling, packaging or transportation of any meat unless and until the cut or injury has been so treated or dressed that the discharge of blood on to the meat has been prevented.
37. Hygiene of personnel and meat handling practice
- (a) Every employee should be taught the principles of hygiene and the relevant parts of this Code so as to be able to take the necessary precautions to prevent contamination of meat.
- (b) Every person engaged in an abattoir or establishment should, before commencing work, and on every occasion after visiting a toilet and before resuming work and whenever necessary, wash his hands, thoroughly with soap, or other cleansing agent, and warm potable water. Notices requiring hand-washing should be displayed.
- (c) Every person engaged in an abattoir or establishment should maintain a high degree of personal cleanliness while on duty, and should at all times while so engaged wear suitable protective clothing including a head covering and a footwear all of which articles should be washable unless capable of being disposed of and which should be maintained in a clean condition consistent with the nature of the work in which the person is engaged.

- (d) Every person who visits an abattoir or establishment should wear clean protective clothing.
- (e) No clothing or personal effects other than protective clothing should be deposited in any part of an abattoir or establishment used for slaughter of animals, dressing of carcasses, preparation, handling, packaging or transportation of meat.
- (f) Protective clothing, knife pouches, belts and working implements may be left in a place provided for the purpose in such a manner that they will not contaminate any carcass or meat.
- (g) Eating, use of tobacco or chewing gum, and spitting should be prohibited, in any part of an abattoir or establishment used for slaughtering or dressing of carcasses or for the preparation, handling, packaging, storing or preservation of meat.
- (h) Gloves if used in the handling of meat should be maintained in a sound, clean and sanitary condition. The wearing of gloves does not exempt the operator from having thoroughly washed hands. Gloves should be made of an impermeable material except where their usage would be inappropriate or incompatible with the work involved.
- (i) No person working in any abattoir or establishment should wear any exposed bandage unless the bandage is completely protected by a waterproof covering and is of such a nature that it cannot become accidentally detached.

D. Operating Practices and Production Requirements

38. Principles to be observed during slaughtering, dressing and preparation of meat

- (a) Every animal intended for slaughter for human consumption should undergo an ante- and post-mortem inspection,
- (b) No animal should be slaughtered or dressed in any abattoir or establishment except when an inspector is present.
- (c) Any animal in an unreasonably dirty condition should be cleaned before entering the killing floor to the satisfaction of the inspector before slaughter.
- (d) All animals brought into rooms for slaughtering should be slaughtered without delay.
- (e) The bleeding should be as complete as possible. If blood is intended to be used in food preparation, it should be collected hygienically and should in no case be stirred by hand.
- (f) Stunning, sticking and bleeding of any animals in an abattoir should not be allowed to proceed at a rate faster than that at which the carcasses can be promptly accepted for dressing.
- (g) The sticking, bleeding and flaying of any animal in an abattoir should be so performed that no part of the carcass, including the head, comes in contact with the floor and in such a manner as will prevent contamination of the carcass and head.
- (h) Where pithing is permitted, the pithing instrument should be disinfected before re-use.

(i) The dressing of carcasses should be carried out with care so as to ensure the production of a clean carcase, head and edible offals. To achieve the above aims, the employees carrying out this procedure should be fully conscious of the necessity to observe the basic rules of personal hygiene. Handwashing facilities should be provided within easy reach for regular use by all operators removing the hide, skin or pelt and carrying out evisceration.

(j) Carcasses should be separated from each other to avoid contact and contamination once the removal of the hide, skin or pelt has commenced. This separation of carcasses should be maintained until they have been examined and passed by the inspector. Carcasses should not come in contact with any surface or equipment unless that surface or equipment is frequently disinfected.

(k) The heads of animals which have been removed from a carcase should, until they have been examined and passed by the inspector, be held in such a manner that contamination is prevented.

(l) Before the removal from any head of any meat or brain intended for human consumption, the head should, except in the case of pigs, be skinned then thoroughly washed and rendered clean with running potable water to the satisfaction of the inspector.

(m) Where the tongue is dropped it should be done in such a way that the tonsils are not cut.

(n) The following points should be noted in skinning operations:

(i) All species, except pigs, should be skinned and this should be done before the carcase is eviscerated in such a manner as to avoid contamination of the carcasses. Pumping of air between the skin and the carcase to facilitate skinning should be forbidden. Pigs should be scoured of all bristles, scurf and dirt and may be skinned or partly skinned.

(ii) No water should be allowed to flow on to a carcase during or after removal of the hide or skin and before it has been eviscerated in such a manner that the water may enter the abdominal or thoracic cavity.

(iii) Lactating or obviously diseased udders should be removed from all classes of animals. Removal of such udders should take place at the earliest appropriate time during dressing. No secretion should be allowed to contaminate the carcase and therefore udders should be removed in such a manner that teat and udder substance remains intact and without any milk duct or sinus being opened.

(o) Evisceration should be effected without delay.

(p) During evisceration and dressing of the carcase the following should be noted:

(i) Contamination of the carcase and edible viscera (including caulfat) by any material discharged from the oesophagus, paunch, intestines or rectum, or from the gall bladder, urinary bladder, uterus or udder should be effectively prevented by all means possible.

(ii) Any offals intended for human consumption should be removed from the carcase in a manner that will prevent contamination of the organ removed.

- (iii) Intestines should not be severed from the stomach during evisceration of any carcass and no other opening should be made during evisceration into any intestine, except as necessarily required by a dressing procedure. In such a case, the open ends of the intestines should be tied before incision. In the case of sheep and lambs, the removal of stomach and intestines should be carried out without separation.
- (iv) Gall bladder, urinary bladder and uterus should not be opened during the dressing of the carcass.
- (v) Visible perimastic cords and pizzles should be removed from the carcass.
- (q) No carcass, meat or edible offal should be washed in any abattoir other than with running potable water.
- (r) No paper, cloth, wad, sponge or brush should be used in the washing of any carcass. However, this will not apply with respect to the use of brushes in the dressing of singed pig carcasses.
- (s) No person should, whether by mechanical or any other means, inflate with air any carcass, meat or edible offal unless ritual procedures require the inflation of lungs.
- (t) No hides, skin or pelts should be washed or defleshed or left in any part of the abattoir or establishment used for the slaughtering or dressing of animals or the preparation or holding of any meat intended for human consumption.
- (u) [All stomachs and intestines and all inedible material derived from the slaughtering or dressing of animals should be removed as soon as possible but in accordance with the inspection procedure from the dressing floor in such a manner as to avoid contaminating the floor and walls or any carcass, meat or edible offal].
- (v) [All stomachs, intestines and all inedible material should subsequently be treated in parts of the abattoir or establishment destined for this purpose in accordance with recognized practices which should pay attention to cleanliness and hygiene].
- (w) Where the thoracic region has been soiled during the initial stages of evisceration by paunch or intestinal contents so that the brisket cutter's saw or knife would become contaminated when the sternum is split, the implement so contaminated should be washed clean before further use.
- (x) Faecal matter contaminating carcasses during dressing should be carefully trimmed off.
- (y) Where the inspector considers that the manner in which animals are being slaughtered or dressed or under which the carcasses or meat are being handled, prepared or packaged, will adversely affect
  - (j) the cleanliness of the carcass or meat; or
  - (ii) the hygiene of production; or
  - (iii) the efficiency of meat inspection,
 he may require the manager to take action to correct the deficiency or to reduce the rate of production or to suspend operations for the time being in any specified section of the abattoir or establishment. Immediately after slaughter, the dressed

carcase, head, viscera and blood should be subjected to a post-mortem examination by the inspector. Prior to the final examination all parts required for inspection of the slaughtered animals should remain identifiable with the carcase and must not be removed

39. Identification of inspected meat

(a) Meat which has been passed by the inspector as fit for human consumption should be identified by means of a brand applied either to the meat or to the container containing the meat.

(b) Brands and stamps bearing the marks of inspection should be kept clean while in use. They should be held in the custody of the inspector and used only under his supervision.

(c) Only firebrands or suitable branding ink should be applied to the meat.

40. Operating practices following post-mortem inspection including storage

(a) Meat passed as fit for human consumption should be handled, stored or transported in a manner that will protect the meat from contamination and deterioration.

(b) Meat passed as fit for human consumption should be removed without undue delay from the dressing area. It should be placed under refrigeration [except where other acceptable commercial practices are carried out/under supervision of the inspector.

(c) The following provisions should apply where carcasses, parts of carcasses or edible offals are placed in chilling rooms, freezing, or frozen storage as the case may be:

(i) Entry should be restricted to personnel necessary to carry out operations efficiently.

(ii) Doors should not be left open for extended periods and should be closed immediately after use.

(iii) No chilling room, freezing room or freezer store should be loaded beyond its designed capacity.

(iv) Where refrigerating equipment is not manned, automatic temperature recorders should be installed.

(v) If no automatic device is installed temperatures should be read at regular intervals and the readings recorded in a log book.

(vi) A record should be maintained of all meat placed in or taken out of the chilling room, freezing room or freezer store.

(d) There should be a reliable method of monitoring of carcasses, or edible offals which are placed in a chilling room for chilling and the following provisions should be observed in addition to those in sub-paragraph (c) of this paragraph.

(i) Meat should be hung or placed in suitable corrosion resistant trays, in a manner permitting adequate circulation of air around the meat.

(ii) Meat should be held in a manner which precludes drip from one piece falling on to any other piece.

- (iii) Temperature, degree of relative humidity and air flow should be maintained at a level suitable for the preservation of meat, taking into account the adverse effects of cold shortening on tenderness.
- (iv) Condensation should be prevented by the efficient operation of refrigerating facilities combined with proper insulation of walls and ceilings, the application of heat near the ceilings, or by any other suitable method. If overhead refrigerating coils are installed, insulated drip pans should be placed beneath them. Floor type refrigerating units should be placed within curbed and separately drained areas unless located adjacent to floor drains.
- (e) Where carcasses, or parts of carcasses, or edible offals are placed in a freezing room for freezing the following provisions should be observed in addition to the provisions in sub-paragraph (c) of this paragraph:
  - (i) Meat which is not in cartons should be hung or placed on suitable corrosion resistant trays in a manner permitting adequate circulation of air around the meat. Cartons should be stacked to permit adequate circulation of air around each carton,
  - (ii) Meat which is not in cartons should be held in a manner which precludes drip from one piece of meat falling on to any other piece.
  - (iii) Where meat is held on trays care should be taken to avoid contact between the base of any tray and meat stored beneath.
  - (iv) Refrigerating coils should be defrosted frequently to prevent excessive accumulation of ice and loss of refrigerating efficiency. Provision should be made for removal, without affecting the product, of water resulting from defrosting.
- (f) Where carcasses, or parts of carcasses, or edible offals to be stored are placed in any freezer store, the following provisions should be observed in addition to those in sub-paragraph (c) of this paragraph.
  - (i) No meat should be placed in a freezer store until the mean temperature of the meat has been reduced to an acceptable level.
  - (ii) Meat should not be stacked directly on the floor but should be placed on pallets or on dunnage. Stacks of meat in carcass form or in cartons should be placed so that there is adequate air circulation around the stacks.
  - (iii) The freezer store should be operated at a temperature which will give adequate protection to the type of product. Temperature fluctuations in the freezer store should be kept to a minimum. Where unpackaged meat is stored, the temperature difference between the evaporator and the meat should be kept to a minimum.
  - (iv) Refrigerating coils should be defrosted as required to prevent excessive accumulation of ice and loss of refrigerating efficiency. Provision should be made for removal, without affecting the product, of water resulting from defrosting.

If packaging material is used the following requirements should be taken into consideration:

- (a) Packaging materials should be clean and should be stored and used in a clean and sanitary manner to prevent contamination of the final product.
- (b) The use of equipment for wrapping or covering warm or cold meat transported within an establishment or from one establishment to another should be optional, but the material used for this purpose should be clean and should be of a type that does not leave threads on the meat.
- (c) Beef and veal, chilled and frozen, other than piece or boneless meat packed in cartons or cases should be wrapped in material which will not contaminate the meat.
- (d) Meat in the form of carcasses or sides of chilled and frozen pig meat, mutton and lamb, should be wrapped in material which will not contaminate the meat.
- (e) Meat cuts and boneless meats should be packed in cartons or cases with a suitable inner liner.  
Where cuts are individually wrapped before packing, an internal liner is not necessary.

42. Transportation

- (a) Meat should not be carried in any means of transport which is used for conveying live animals.
- (b) Meat or edible offals should not be carried in the same means of transport as other goods in a way which may adversely affect the meat or edible offals. Stomachs should only be transported when scalded, and heads and trotters only when skinned or scalded or dehaired.
- (c) Meat should not be put in any means of transport which has not been cleaned and disinfected (if necessary) before being loaded.
- (d) Carcasses, sides and quarters, other than those which are adequately wrapped and frozen, should be hung during transport or placed in a suitable manner on racks or similar equipment.
- (e) Means of transport should comply with the following conditions:
  - (i) Design and equipment should be such that a required temperature can be maintained throughout the whole period of transport.
  - (ii) All parts which may come in contact with meat should be made of corrosion resistant material, present a smooth surface with smooth joints and be easy to clean and disinfect.
  - (iii) Floors should be effectively sealed so as to prevent the entry of contaminants or any leakage during transport.
  - (iv) Where vehicles and railway trucks do not possess an overhead rail, duck-boards and racks made from suitable corrosion-resistant non-absorbent material should be available and kept clean and in a satisfactory state of repair; where any mechanical loading device is used it should be so designed that any part of it is easily accessible for cleaning and disinfection that it reduces to a minimum, contact between personnel and

meat to be loaded and that any contact between meat and floor is avoided.

- (v) Vehicles should be so constructed as to prevent contamination and the entry of pests.
- (vi) Vehicles be equipped with hangers or racks made of corrosion-resistant non absorbent material, for the transportation of meat other than frozen and wrapped, in such a manner that the transported meat does not come in contact with the floor.
- (vii) Suitable closed containers should be available for the transportation of unwrapped edible offal. If the period of transport is less than two hours the closed containers of edible offal may be transported in an insulated vehicle, otherwise they should be transported under refrigeration.
- (a) Every effort should be made to prevent thawing of frozen meat at any time during storage and transport but where accidental thawing takes place the meat should be examined and evaluated by the inspector before any further step is taken.

43. Condemned meat

- (b) where any carcase, meat, organ, viscera or fat is condemned by the inspector, or where in any abattoir or establishment any carcase, meat, organ, viscera or fat is in any way unsuitable for human consumption, it should forthwith be placed in a chute designed for this purpose, or in a truck, trolley, skip, or other clearly identified container, room or area provided for this purpose and held there securely to the satisfaction of the inspector until the said carcase, meat, organ, viscera or fat is conveyed to the place at which it is dealt with. For the purposes of clear identification, cuts may be made to show the carcase or parts of the condemned meat.
- (c) No person should remove or cause to be removed from any abattoir or establishment, any carcase, meat, organ, viscera or fat that has been condemned or retained by the inspector, except under his direction and supervision.
- (d) The inspector may give such directions as he considers necessary to ensure the retention within the premises of any carcase, meat, organ, viscera or fat that has been condemned or retained.
- (e) Where in any abattoir or establishment any carcase, meat, organ, viscera or fat is found to be unsuitable for human consumption, it should be the duty of the manager to cause the carcase, meat, organ, viscera or fat to be removed to a by-products plant in accordance with the rules of the controlling authority.

E. Programme for Veterinary Supervision and Hygiene Control

44. All aspects covered by this Code should be supervised by an official veterinarian. In particular, care should be taken that for every abattoir or establishment at least one official veterinarian is appointed for the supervision of meat hygiene and meat inspection.

45. It is desirable that each abattoir or establishment in its own interest designates a single individuals whose duties are preferably divorced from production, to be held responsible for the cleanliness of the abattoir or establishment. His staff should be a

permanent part of the organization or employed by the organization and should be well trained in the use of special cleaning tools, methods of dismantling equipment for cleaning and in the significance of contamination and the hazards involved. A permanent cleaning and disinfection schedule should be drawn up to ensure that all parts of the abattoir or establishment are cleaned appropriately and that critical areas, equipment and material are designed for cleaning and/or disinfection daily or more frequently if required.

F. Laboratory Control Procedures

46. In addition to the routine control carried out by the meat inspection services, it is desirable that each establishment in its own interest should have access to laboratory control. Analytical procedures used should follow recognized or standard methods in order that the results may be readily interpreted.

PROPOSED DRAFT CODE

OF ANTE-MORTEM AND POST-MORTEM INSPECTION OF SLAUGHTER ANIMALS

(At Step 3 of the Codex Procedure for the Elaboration of Codes of Practice)

This Code should be read in conjunction with the Proposed Draft Code of Hygienic Practice for Fresh Meat (ALINORM 72/15, Appendix II)

SECTION I - SCOPE

This Code applies to the ante-mortem and post-mortem inspection of slaughter animals intended for human consumption and slaughtered in an abattoir or establishment.

SECTION II - DEFINITIONS

For the purpose of this Code:

1. "Abattoir" means premises approved and registered by the controlling authority used for the slaughter of animals for human consumption.
2. "Brand" means any mark or stamp approved by the controlling authority and also includes any tag or label bearing any mark or stamp.
3. "Carcase" means the body of any slaughtered animal after bleeding and dressing.
4. "Cleaning" of surfaces means the removal of objectionable matter.
5. "Contamination" means the direct or indirect transmission of objectionable matters to the meat.
6. "Controlling authority" in relation to an abattoir or establishment means the official authority charged by the government with the control of hygiene and meat inspection.
7. "Disinfection" means the application of hygienically satisfactory chemical or physical agents and processes to cleaned surfaces with the intention to inactivate micro-organisms.
8. "Dressed" or "Dressing"
  - (a) in relation to slaughtered animals except for pigs, sheep and lambs, means the removal of head, hide or skin, viscera (other than kidneys), genital organs, urinary bladder and feet up to the carpal and tarsal joints,

and udders of lactating animals, animals that have calved or are in advanced pregnancy; and

- (b) in relation to slaughtered pigs, means the removal of hair and bristles or skin, claws, eyelids, viscera (other than kidneys), genital organs, urinary bladder, the udders in the case of lactating animals that have farrowed or are in advanced pregnancy, and the external acoustic duct unless in respect of that tissue an alternative effective form of cleaning is carried out; and
  - (c) in relation to sheep and lambs means the removal of the head (except in the case of young lambs), the pelt or skin, viscera (including or not including the kidneys), genital organs, urinary bladder and feet up to the carpal and tarsal joints, udders of lactating animals, animals that have lambed or are in advanced pregnancy.
9. "Establishment" means any premises approved and registered by the controlling authority in which fresh meat is produced, prepared, handled, packed or stored.
10. "Pit for human consumption" in relation to meat means an article which has been passed and appropriately branded by an inspector and in which no subsequent changes have been *found* due to disease, decomposition or contamination.
11. "Inspector" means a properly trained officer appointed by the controlling authority of a country for the purpose of meat inspection and supervision of meat hygiene. The supervision of meat hygiene including the inspection of meat should be the responsibility of a veterinarian.
12. "Potable water" means water that is pure and wholesome at the point of usage in accordance with WHO requirements contained in the "International Standards for Drinking Water".
13. "Residues" means any foreign substance, including metabolites, therapeutic or prophylactic agents, remaining in slaughter animals prior to slaughter or in any of the tissues after slaughter either as a result of treatment or accidental exposure. Examples of such substances are antibiotics, anthelmintics, growth promoters, hormones, hormone-like substances and pesticides, tranquillizers and radioactive residues.
14. "Slaughter animals" means any mammal brought into an abattoir or establishment for slaughter.

### SECTION III - GENERAL REQUIREMENTS

15. Every animal intended for slaughter for human consumption should
- (a) be appropriately identified or accompanied by an appropriate document which would ensure that the place of origin from which the animal has come can be traced;
  - (b) undergo an ante- and post-mortem inspection;
  - (c) be adequately rested prior to slaughter in clean, well ventilated lairages and yards having drinking troughs supplied with potable water.

### SECTION IV - ANTE-MORTEM INSPECTION

### Purpose of ante-mortem inspection

16. The purpose of ante-mortem inspection is:
- (a) to select for human consumption only those animals which are adequately rested and which are free of symptoms indicating the animal will yield meat which is unfit for human consumption;
  - (b) to select for isolation and detailed clinical examination, diseased, suspected diseased or suspected abnormal animals;
  - (c) to prevent contamination of premises, equipment and personnel by animals suffering from a disease which is communicable;
  - (d) to obtain information which may be necessary for the post-mortem inspection, diagnosis and judgement of carcase and offals.

### Prerequisites for ante-mortem inspection

17. No animal should proceed for slaughter until the inspector has carried out an antemortem inspection and has passed the animal for slaughter. All animals should be inspected on the day of delivery to the abattoir or establishment. If the animal is kept for more than 15 hours at the abattoir or establishment, the ante-mortem examination should be repeated on the day of slaughter. The Method of identification of inspected animals should be approved by the controlling authority and should be identical throughout the whole country. It is the duty of the management of the abattoir or establishment to present the animals in such a way that an adequate ante-mortem inspection can be carried out.

### Ante-mortem inspection procedure

18. Animals should be inspected in a standing position and in motion and when they are not excited.

The following should be noted:

- (a) abnormalities and symptoms of disease;
- (b) species, sex and behaviour of animals; in sick or suspected diseased animals, notice should be taken of age, colour and specific markings;
- (c) cleanliness of slaughter animals.

Particular attention should be paid to the following details:

- (i) manner of standing and walking;
- (ii) condition of nutrition;
- (iii) reaction to environment;
- (iv) condition of hide, skin, hair and wool;
- (v) digestive system (salivation rumination, consistency and colour of faeces);
- (vi) appearance of vulva and mammary gland;
- (vii) respiratory system (nostrils, including mucous membranes nasal discharge, blood tinged froth, quality of respiration);
- (viii) injuries, swelling or oedema.;

- (ix) body temperature (in suspected or obviously diseased animals);
- (x) blood smear (in cases in which a disease is suspected which could be diagnosed by examining the blood) (as a routine procedure in slaughter of camels);
- (xi) as certain diseases or disease symptoms have sites of predilection in different species, it is essential that attention should be paid to these sites; for example mallein test for solipeds.

#### SECTION V

##### Disposition of animal after ante-mortem inspection

- 19. The post-mortem inspector should be notified of the result of the ante-mortem inspection. The method of carrying out this notification is left to the controlling authority but whatever procedure has been adopted it should be the same throughout the country.
- 20. An animal is released for slaughter without any restriction when the ante-mortem inspection has revealed no evidence of any abnormal condition or disease.
- 21. If during the ante-mortem inspection any disease or condition has been noted which should not obviously prevent the animal from being slaughtered for human consumption, the animal should be identified, released for slaughter and further post-mortem veterinary inspection.
- 22. Where disease symptoms are doubtful the animal should be withdrawn from slaughter and placed in an isolation pen set aside for this purpose for observation or treatment, or slaughtered under special conditions to preclude contamination of the premises, equipment and personnel.
- 23. Where symptoms indicate a systemic affection, a communicable disease or toxicity from chemical or biological agents which do or may render the meat unsound, the animal so affected should be withheld from slaughter and condemned forthwith as unfit for human consumption or where appropriate set aside and remain under the control of the veterinary authority until a further decision regarding disposition is taken.
- 24. Animals exhibiting normal behaviour but known to have been treated or given drugs or chemicals should be either condemned or withheld from slaughter until the drug or chemical is metabolized to harmless end products by the body or excreted.

#### SECTION: VI - POST-MORTEM INSPECTION

##### A. General

##### Purpose of post-mortem inspection

- 25. The purpose of post-mortem inspection is to ensure the detection of abnormalities and lesions and pass for human food only meat which is fit for human consumption.

##### Prerequisites for post-mortem inspection

- 26. Before a post mortem inspection of slaughter animals is to commence it is the duty of the inspector to ensure that the condition of the premises, equipment and

facilities are conducive to the efficient and hygienic performance of this examination. It is the

duty of the management of the abattoir or establishment to present the carcasses and viscera in such a way that an adequate inspection can be carried out. It is essential for the prevention of contamination of carcasses and viscera that the basic requirements of hygiene such as laid down by the Code of Hygienic Practice for Fresh Meat are strictly enforced and that the labour force slaughtering and dressing carcasses is fully aware of their own vital part in maintaining a satisfactory level of meat hygiene.

In particular the following points should be noted:

- (i) evisceration of slaughter animals should be performed without delay and in a sanitary manner so as to avoid contamination with, e.g. faeces, ingesta, bile, urine, milk, hair and wool;
- (ii) washing of carcasses should not take place until post-mortem inspection has been completed, except in the case of pigs which may be washed prior to opening of any body cavity and sheep and lambs which may be washed after removal of the skin but prior to opening any body cavity;
- (iii) tools and equipment which come into contact with dressed surfaces should be disinfected between carcasses prior to the carcasses being inspected and passed;
- (iv) establishment employees and inspectors should wash their hands frequently and in each instance disinfect them after handling diseased material;
- (v) all condemned carcasses, condemned parts of a carcase, condemned viscera, and fetuses should be held securely to the satisfaction of the inspector until they are rendered, denatured or otherwise destroyed, so excluding them from human food purposes.

#### Inspection procedure

27. (a) An inspector carrying out a post-mortem inspection of carcasses, viscera, blood and organs should view, palpate and only where necessary make incisions. This inspection should be carried out in a systematic manner.
  - (b) Where in the opinion of the inspector there is required
    - (i) a more detailed post-mortem examination;
    - (ii) a bacteriological, parasitological, chemical or histopathological examination; or
    - (iii) any other examination necessary to render a judgement of a carcase or viscerahe should take all the necessary specimens from such carcase or viscera. The final responsibility as to the decision on fitness for human consumption rests with the veterinary inspector.
28. Where a lymph node, organ or any carcase tissue is being incised by the inspector, the cut surface should be cleanly sliced in order to present a picture which is not distorted either from an anatomical or a pathological point of view.

Where an incision is required to be made the inspector should prevent as far as possible any risk of contamination.

29. Viscera should be examined:
- (i) as they are removed from the carcass; and/or
  - (ii) after their removal from the carcass (clearly identifiable with the carcass until it has been passed).

The viscera should be inspected by viewing, palpation and, if necessary, incision. If GO required for diagnosis or final judgement, any part, portion or piece of the viscera including organs may be taken for laboratory examination.

30. (a) Any carcass and viscera which in the opinion of an inspector require a more detailed microscopical examination or specific laboratory tests should be suitably marked and safely retained under the supervision of the inspector.
- (b) The marking which denotes that a carcass and viscera had been "retained" for further inspection should be laid down by the controlling authority and should be uniform throughout the country.
31. Except with the permission of the inspector, no person should, prior to the inspection of any carcass being completed, (i) remove any serous membrane or any other part from the carcass; or (ii) remove, modify, or obliterate any evidence of disease in the carcass or organ by washing, scraping, trimming, stripping or otherwise treating the carcass or organ,
32. (a) No person should remove from the inspection area of an abattoir any part of any carcass, organ, viscera until the inspector has completed his examination and declared the carcass, organ or viscera as fit for human consumption and it has been branded.
- (b) The head, organs, viscera and any other part of a carcass required for postmortem inspection should be identifiable with the carcass from which they were removed until inspection has been completed. Blood of slaughtered animals intended for human consumption should be so retained as to permit identification with the carcass or carcasses from which the blood was derived until inspection has been completed.

#### Disposition or branding

33. (a) Carcasses, heads, organs and viscera which in the opinion of the inspector are fit for human consumption without further restrictions should be appropriately branded as "passed".
- (b) Any carcass which requires treatment by heat or by freezing to render it fit for human consumption should be suitably branded and kept under supervision of an inspector or under seal or lock until the necessary treatment has been concluded and the carcass can be passed as fit for human consumption.
- (c) Carcasses, organs and viscera which are in the opinion of the inspector unfit for human consumption should be so branded.
- (d) The size, shape and wording of any brand as well as the colour and composition of marking ink used for the branding of carcasses and organs

should be laid down by the controlling authority and should be uniform throughout the country.

B. Cattle including calves and other bovine species

Methods of slaughter

34. The inspector should carry out routine checks on the manner and methods of handling animals, stunning, shackling and bleeding.

Handling of carcasses

35. Where bovines are dressed in a hanging position, the dressing procedure should include the tying of the oesophagus and rectum or any other acceptable procedures producing the same results to prevent the escape of gastro-intestinal contents.
36. Slaughtered bovines should be a sufficient distance apart before inspection to prevent contamination of skinned parts of adjacent carcasses either by the hide or feet.

Inspection of heads

37. (a) Any head which has been skinned, washed and hung up or placed on special metal head loops is ready for inspection after the base of the tongue has been detached so as to give access to the masticatory muscles and lymph nodes.
- (b) The inspector should view the head, oral and nasal cavities. He should then examine in detail by viewing, palpation and incision the sub-maxillary (lymphonodi mandibulares), parotid (lymphonodi parotidei), and retropharyngeal lymph nodes (lymphonodi-retropharyngei). The tonsils should be removed under his supervision. He should view and incise the muscles of mastication. One or more linear incisions should be made parallel to the lower jaw with the external muscle of mastication and one incision into the internal muscle of mastication. The tongue should be viewed and palpated and, if necessary, an incision should be made into the root of the tongue without mutilation of the blade. The muzzle, lips and gums should be viewed.

Inspection of viscera

38. The following viscera should be examined:
- (a) Castro-intestinal tract; viewing of stomachs and intestines, palpation and, if necessary, incision of the mesenteric lymph nodes (lymphonodi mesenterici), provided they are not obviously diseased.
- (Note: In countries where the eradication of bovine tuberculosis has been accomplished the incision of the mesenteric lymph nodes in slaughtered cattle serves as a valuable indicator of the stability of the disease-free situation or a possible break-down)
- The oesophagus should be separated from its attachment to the trachea and viewed.
- (b) Spleen: viewing of organ, palpation and if necessary incision; whenever required a smear of the spleen pulp should be taken.

- (c) Liver: viewing of entire organ and palpation of parietal surface and area within the renal impression. Palpation should be done with sufficient pressure with the hand and fingers to detect deep cysts and abscesses within the liver. The portal lymph nodes (lymphonodi hepatici (portales)) should be incised provided they are not obviously diseased. The large bile duct should be opened up by an incision of at least 3 cm in length. Where necessary for reaching a diagnosis one or more incisions should be made deep enough to open up bile ducts and liver substance.
- (d) Lungs: viewing, palpation with both hands on entire organ. Viewing and incision of bronchial and mediastinal lymph nodes (lymphonodi tracheobronchiales et mediastinales) provided they are not obviously diseased. [Where lungs are used for human consumption an exploratory incision should open up the trachea and bronchi. A transverse incision across the lower part of the diaphragmatic lobe should open up the bronchi\*/
- (e) Heart: viewing of heart after pericardium has been opened up. One or more exploratory incisions into the heart should be made from base to apex or the heart can be everted for inspection and some shallow incisions without perforating the heart wall can be made.
- (f) Uterus: viewing, palpation and, if necessary, incision. If the last is made, every precaution should be taken to prevent any contamination of the premises, equipment and personnel.
- (g) Udder: viewing of the udder, palpation and, if necessary, incision. When the udder is destined for human food, palpation and incision of the supra-mammary lymph nodes (lymphonodi inguinales superficiales) and organ itself should be a routine procedure but care should be exercised when incising the udder to prevent contamination of the premises, equipment and personnel.
- (h) Kidneys: enucleation, viewing and, if necessary, palpation and incision.
- (i) Testicles (where they are saved for human consumption): viewing and palpation.

#### Inspection of carcasses

39. (a) The carcass should be examined to ascertain:
- (i) condition;
  - (ii) efficiency of bleeding;
  - (iii) colour;
  - (iv) condition of serous membranes (pleura and peritoneum);
  - (v) abnormalities;
  - (vi) cleanliness.
- (b) The diaphragm and any other muscle and bone surfaces which have been cut and exposed during the splitting of the carcass should be viewed.

(c) The following lymph nodes should be viewed, palpated and if necessary incised:

- (i) superficial inguinal (supra-mammary) (lymphonodi inguinales superficiales);
- (ii) external and internal iliac (lymphonodi iliaci);
- (iii) pre-pectoral (lymphonodi cervicales profundi caudales);
- (iv) renal (lymphonodi renales);
- (v) in all animals reacting to the tuberculin test and in those carcasses and viscera in which tubercular lesions are found, a sufficient number of lymph nodes should be examined to ensure the proper disposition of the carcass and viscera. A similar procedure should be carried out in all cases in which a systemic or generalized disease may exist.

#### Further inspection of suspect carcasses

40. If in any post-mortem examination lesions are found which are indicative of the possibility of a systemic or generalized disease a thorough examination by incision of the carcass and visceral lymph nodes should be made to ensure their proper disposition. Where necessary, the inspector may require laboratory tests to be carried out.

#### C. Calves

41. The post-mortem inspection of viscera and carcasses of calves is in principle the same as that for cattle. However in young calves the incision of the muscles of mastication and the opening of the heart may be omitted but particular attention should be paid to:

- (a) intestines;
- (b) serous membranes;
- (c) texture and development of muscles;
- (d) colour of carcass;
- (e) appearance of renal fat;
- (f) navel region;
- (g) joints.

#### D. Horse

42. The post-mortem inspection of the horse and other solipeds used for human consumption is in principle the same as for cattle but particular attention should be paid to the following:

#### Inspection of heads

The head should in countries where it is judged necessary be split lengthwise in the medial line and the nasal septum should then be removed for careful viewing.

The mucous membranes of the nasal cavity, larynx, pharynx and trachea should be viewed. The muscles of mastication are not incised.

#### Inspection for melanosis

43. All greyish or white horses should be examined as regards the muscles and lymph node of the shoulders beneath the scapular cartilage by loosening the detachment of one shoulder (melanosarcoma). The kidneys should be exposed and inspected by incision through the entire kidney.

E. Sheep and Coats

44. The inspector should carry out routine checks stated in sub-section VII.B.(35).

Inspection of heads

45. The surfaces of the head as well as the nasal and oral cavities should be viewed. Lymph nodes should only be incised when required.

Inspection of viscera

46. The following viscera should be examined:

- (a) Castro-intestinal tract; viewing of stomachs and intestines and if necessary palpation. Viewing and if necessary palpation and incision of associated lymph nodes
- (b) Spleen: viewing and if necessary palpation.
- (c) Liver: viewing and thorough palpation of organ and hepatic lymph nodes (lymphonodi hepatici (portales)), and if necessary incision of organ and lymph nodes.
- (d) Lungs: viewing and palpation of lungs, bronchial and mediastinal lymph nodes (lymphonodi tracheobronchiales et mediastinales), if necessary incision.
- (e) Heart: viewing after removal of pericardium.
- (f) Uterus: in adult animals viewing and if necessary palpation.
- (g) Udder: in adult animals viewing and if necessary palpation.
- (h) Kidneys: enucleation, viewing and if necessary palpation and incision. In lambs enucleation only if necessary.

Inspection of carcasses

47. The carcass and body cavities should be viewed. Principal lymph nodes should be palpated and if necessary incised.

F. Pigs

48. The inspector should carry out routine checks on the manner and methods of handling animals, stunning, shackling and bleeding as stated in sub-section VII.B.(35).

The post-mortem inspection of pigs used for human consumption is in principle the same as for cattle but particular attention should be paid to the following.

Inspection of heads

49. The viewing of the head should serve to detect any abnormalities and assess the cleanliness of the head.

The sub-maxillary lymph nodes (lymphonodi mandibulares), should be incised and the cut surfaces examined. The parotid (lymphonodi parotiedei), and

retropharyngeal lymph nodes (lymphonodi retropharyngei), should be incised if necessary.

Where *C. cellulosa* is prevalent the outer muscle of mastication and the root of the tongue should be incised and the blade of the tongue viewed and palpated.

#### Inspection of viscera

50. The following viscera should be examined.:

- (a) Gastro-intestinal tract: viewing of stomachs and intestines and if necessary palpation. Viewing, palpation and if necessary incision of associated lymph nodes. These lymph nodes should be incised if any lesions have been observed in the sub-maxillary lymph nodes.
- (b) Spleen: viewing and if necessary palpation and incision.
- (c) Liver and lymph nodes; viewing and palpation and if necessary incision.
- (d) Lungs: the bronchial lymph nodes (lymphonodi tracheo-bronchiales), should be palpated and if necessary incised. The lungs should be viewed and palpated.

*[Where lungs are used for human consumption the diaphragmatic lobe should be incised transversely to open up bronchi.]*

- (e) Heart: viewing after the pericardium has been opened. One or more exploratory incisions may be made.

Where *C. cellulosa* is prevalent the opening up of the heart and a deep incision into the septum should be an inspection procedure.

- (f) Uterus: viewing and, particularly where SOWS are concerned, palpation and if necessary incision. If the last is carried out every precaution should be taken to prevent any contamination of the premises, equipment and personnel.
- (g) Kidneys: enucleation, viewing and if necessary palpation and incision.

#### Inspection of carcasses

51. (a) The carcase should be examined visually to ascertain:

- (i) condition;
  - (ii) efficiency of bleeding;
  - (iii) colour;
  - (iv) condition of serous membranes (pleura and peritoneum);
  - (v) abnormalities;
  - (vi) cleanliness.
- (b) The diaphragm and any other muscle and bone surfaces which have been cut and exposed should be viewed. The site of castration should be palpated (assesses).
  - (c) The following lymph nodes should be viewed, palpated and if necessary incised:

- (i) superficial inguinal (supra-mammary) (lymphonodi inguinales superficiales);
  - (ii) iliacs (lymphonodi iliaci);
  - (iii) renal (lymphonodi renales).
- (d) Countries should have measures in force in their meat inspection system to protect the public adequately from trichinosis.

G. Camels

52. Post-mortem inspection should be conducted as in cattle.

SECTION VII

Retention of carcasses

53. Any carcase and viscera found to be diseased, suspected of disease or showing any abnormality which requires a more detailed examination should be identified and retained under the supervision of the inspector until a final decision has been given by the inspector.

SECTION VIII

Laboratory examination

54. (a) Laboratory facilities should be readily available to provide the inspector with the information he requires in doubtful cases involving abnormalities, diseases or residues and in which a microscopical inspection alone cannot provide the evidence required for passing a judgement on a carcase and viscera.
- (a) Samples should be properly identified and accompanied by fully explanatory information.
- (b) Care should be taken to ensure that samples arrive at the laboratory in good condition

APPENDIX IV

LIST OF FOOD COLOURS WHICH HAVE BEEN GIVEN AN ADI OR  
TEMPORARY ADI

| <u>Substance</u>  | <u>Colour Index Number</u> |
|---|----------------------------|
| Amaranth 2/   | 16 185                     |
| Anatto Extracts 1/ 2/   | 75 120                     |
| Beta-Apo-81 -Carotenal  | —                          |
| Beta-Apo-iS'-Carotenoic acid, methyl and ethyl esters           | —                          |
| Beta-Carotene   | —                          |
| Brilliant Blue FCF 2/   | 42 090                     |
| Canthaxanthine  | —                          |
| Chlorophyll   | 75 810                     |
| Chlorophyll copper complex                                      | 75 810                     |
| <u>Chlorophyllin copper complex, sodium and potassium salts</u> | —                          |
| Erythrosine 1/  | 45 430                     |
| Fast Green FCF  | 42 053                     |
| Indanthrene Blue RS 1/ 2/                                       | 69 800                     |

|                         |        |
|-------------------------|--------|
| Indigotine I/ 2/        | 73 015 |
| Patent Blue V I/ 2/     | 42 051 |
| <u>Ponceau 4R 1/ 2/</u> | 16 255 |
| Quinoline Yellow 1/ 2/  | 47 005 |
| Riboflavin              |        |
| Sunset Yellow FCF 2/    | 15 985 |
| Tartrazine 2/           | 19 140 |
| Turmeric 1/             | 75 300 |
| Wool Green BS 1/ 2/     | 44 090 |

1/ This substance has been given only a temporary ADI by the Joint FAO/WHO Expert Committee on Food Additives.

2/ According to information received from Governments, this substance is used in marking ink formulations.