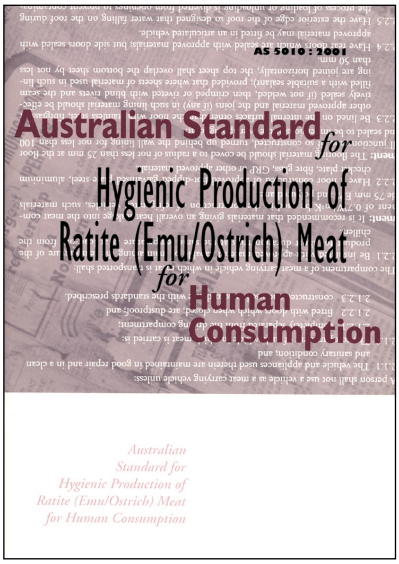
Australian Standard for Hygienic Production of Ratite (Emu/Ostrich) Meat for Human Consumption

SCARM Report 71



This book is available from **CSIRO** PUBLISHING through our secure online ordering facility at www.publish.csiro.au or from:

Customer Service
CSIRO PUBLISHING
PO Box 1139
Collingwood Victoria 3066
Australia

Telephone	+61 3 9662 7666
Freecall	1800 645 051 (Australia only)
Fax	+61 3 9662 7555
Email	publishing.sales@csiro.au

© Commonwealth of Australia and each of its States and Territories 2003

This work is copyright. You may download, display, print and reproduce this material in unaltered form only (retaining this notice) for your personal, non-commercial use or use within your organisation. All other rights are reserved. Contact **CSIRO** PUBLISHING, acting on behalf of the Primary Industries Ministerial Council, for all permission requests.

AS 5010:2001

Australian Standard for Hygienic Production of Ratite (Emu/Ostrich) Meat for Human Consumption

Australian Standard for Hygienic Production of Ratite (Emu/Ostrich) Meat for Human Consumption

SCARM Report No. 71

National Library of Australia Cataloguing-in-Publication

Agriculture and Resource Management Council of Australia and New Zealand.
Standing Committee on Agriculture and Resource Management

Australian Standard for Hygienic Production of Ratite (Emu/Ostrich) Meat for Human Consumption.

ISBN 0 643 06414 1 (paperback).
ISBN 0 643 06918 6 (on-line).

1. Ratite Industry – Standards – Australia. 2. Meat inspection – Australia. I. Title. (Series : SCARM report ; no. 71; AS 5010:2001).

664.9020994

© Commonwealth of Australia and each of its States and Territories 2001

First published 2001 (paperback).
First published on-line 2003.

This work is copyright and apart from any use as permitted under the *Copyright Act 1968*, no part may be reproduced by any process without the written permission of the publisher, CSIRO PUBLISHING, acting on behalf of the Agriculture and Resource Management Council of Australia and New Zealand. Requests and enquiries concerning reproduction and rights should be addressed to:

Publisher
CSIRO PUBLISHING
PO Box 1139,
Collingwood, Victoria 3066
AUSTRALIA

This book is available from:

CSIRO PUBLISHING
PO Box 1139
Collingwood, Victoria 3066
AUSTRALIA

Ph: +(61 3) 9662 7500
Fax: +(61 3) 9662 7555
Website: www.publish.csiro.au
Email: publishing.sales@csiro.au

Review of Standards

To keep abreast of progress in industry, Australian Standards are subject to periodic review and are kept up-to-date by the issue of amendments or new editions as necessary. It is important therefore that Standards' users ensure that they are in possession of the latest edition, and any amendments thereto.

Full details of all Standards and related publications will be found in the Standards Australia Catalogue of Publications; this information is supplemented each month by the magazine *The Australian Standard*, which subscribing members receive, and which gives details of new publications, new editions and of withdrawn Standards.

Suggestions for improvements to this Standard, should be addressed to:

ARMCANZ Secretariat
Department of Primary Industries and Energy
GPO Box 858
Canberra ACT 2601

CONTENTS

Preface v

1. Scope 1

2. Quality Performance Standards 2

3. Definitions 3

4. Quality Assurance Programs 5

5. Ratite Processing Establishment 7

6. Processing Procedures 8

7. Ante-mortem Inspection 10

8. Post-mortem Inspection and Disposition 12

9. Bibliography 14

Appendices

- A: Microbiological Criteria 15
- B: Physical Contamination Standards 16
- C: Residue Performance Standards 23
- D: Inspection Procedure for Ratites 24
- E: Post-Mortem Observations and Dispositions 25

AGRICULTURE AND RESOURCE MANAGEMENT COUNCIL OF AUSTRALIA AND NEW ZEALAND

The Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) consists of the Australian Federal, State/Territory and New Zealand Ministers responsible for agriculture, soil, water (both rural and urban) and rural adjustment policy issues.

The objective of the Council is to develop integrated and sustainable agricultural and land and water management policies, strategies and practices for the benefit of the community.

The Council is supported by a permanent Standing Committee, the Standing Committee on Agriculture and Resource Management (SCARM). Membership of Standing Committee comprises relevant Departmental Heads/CEOs of Commonwealth/State/Territory and New Zealand agencies as well as representatives of the CSIRO and the Bureau of Meteorology.

PREFACE

The Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) comprises the Australian Federal, State and Territory, and New Zealand Ministers responsible for agriculture, soil, water and rural adjustment policy issues.

In March 1995 the Ministerial Council determined that aspects of all existing national meat industry codes relevant to human health would be mandated by amendment of legislation in all States and Territories.

This decision was given effect by appointment of a Steering Group comprising Chairmen and Chief Executives of State and Territory meat hygiene authorities, the Australian Quarantine and Inspection Service, meat industry organisations, food safety technical advisers and the Australia New Zealand Food Authority.

The Steering Group commenced a fundamental review of existing Codes of Hygienic Practice to express mandatory national standards in outcome terms. This format is to be in line with the principles of quality assurance as expressed in the Australian Standard series AS/NZS ISO 9000 (1994). Process control shall be achieved through the application of Hazard Analysis Critical Control Point (HACCP) methodology as defined by the Codex Alimentarius Commission and will allow flexibility in techniques and facilities provided that standards relating to wholesomeness and safety have been met.

'*The responsibility for production of safe and wholesome meat should be shared by industry and the controlling authority. The use of the HACCP approach and quality assurance systems reinforces this joint responsibility. The controlling authority will supervise and audit these arrangements to ensure compliance with requirements.*' *Codex Alimentarius* Vol. 10 (1994).

This Standard is written in substantial compliance and consistency with Codex Alimentarius Volume 10. Minor technical variations reflect accepted Australian terminology or commercial industry practice, but with quality standards and performance criteria equivalent to those in the Codex.

Where an operator proposes a technique substantially different from those detailed in this Australian Standard, the assessment of equivalence shall be determined by the ARMCANZ Meat Standards Committee. This Committee will establish the methodology for determining the equivalence of benchmarks or standards. The proposer of the alternative technique shall supply sufficient supporting information to validate the procedure to the relevant Controlling Authority who will advise the ARMCANZ Meat Standards Committee. The submission must include a HACCP plan that ensures that equivalence is maintained. Where the ARMCANZ Meat Standards Committee cannot reach agreement on the approval of an alternative technique, the final decision shall be made by the Ministerial Council (ARMCANZ).

This publication has been approved as an Australian Standard. Other Standards in this series are:

Australian Standard for the Construction of Premises Processing Animals for Human Consumption (SCARM Report Number 55) AS4462:1997

Australian Standard for the Construction of Premises Processing Meat for Human Consumption (SCARM Report Number 53) AS4460:1997

Australian Standard for the Hygienic Production of Crocodile Meat for Human Consumption (SCARM Report Number 67) AS4467:1997

Australian Standard for the Hygienic Production of Game Meat for Human Consumption (SCARM Report Number 57) AS4464:1997

Australian Standard for the Hygienic Production of Meat for Human Consumption (2nd Edition)(SCARM Report Number 54) AS4461:1997

Australian Standard for the Hygienic Production of Natural Casings for Human Consumption (SCARM Report Number 68) AS5011:2001

Australian Standard for the Construction of Premises and the Hygienic Production of Poultry Meat for Human Consumption (2nd Edition)(SCARM Report Number 75) AS4465:2001

Australian Standard for the Hygienic Production of Rabbit Meat for Human Consumption (SCARM Report Number 59) AS4466:1997

Australian Standard for the Hygienic Production of Ratite (Emu/Ostrich) Meat for Human Consumption (SCARM Report Number 71) AS5010:2001

Australian Standard for the Transportation of Meat for Human Consumption (SCARM Report Number 56) AS4463:1997

1 SCOPE

This Standard applies to the construction and equipment of all processing premises where ratites are slaughtered for the production of ratite meat for human consumption. It contains the *minimum* construction, and hygienic production requirements for premises used for the production of wholesome ratite meat.

The overall goal of the standard is that there be no more that a one-log (10-fold) increase in the load of bacterial pathogens on the surface of the meat from the time of dressing until the product is packaged for sale or used as an ingredient for further processing.

Alternative techniques or procedures to those detailed in the standard may be used by operators providing compliance with the overall goal can be verified through the use of Hazard Analysis Critical Control Point (HACCP) based programs.

The Standard shall be applied at all ratite meat establishments, whether operating under a full-time meat inspection program (incorporating HACCP principles), or a HACCP based quality assurance arrangement approved and monitored by the controlling authority.

For the purpose of understanding how HACCP is implemented and audited in the Australian meat industry, ARMCANZ has produced an accompanying document, *A Guide to the Implementation and Auditing of HACCP (SCARM report No 60).*

This Standard is not intended to be applicable to meat retail premises, however many of the principles are relevant to such premises.

For the purpose of this Standard the word 'shall' has been used to clearly indicate that the requirements are mandatory. State and Territory authorities shall enforce compliance with the Standard.

The Standard is to be used in conjunction with:

- *Australian Standard for Construction of Premises Processing Meat for Human Consumption;*
- *Australian Standard for Construction of Premises Processing Animals for Human Consumption;*
- *Australian Standard for Hygienic Production of Meat for Human Consumption;* and
- *Australian Standard for Transportation of Meat for Human Consumption.*

Operation under this Standard requires compliance with the relevant Codes of Practice for the Welfare of Animals. It also requires the relevant provisions of Commonwealth, State and Territory Wildlife Protection Legislation to be observed.

This Standard applies as the *Australian Standard for the Hygienic Production of Ratite (Emu/ Ostrich) Meat for Human Consumption.*

2 QUALITY PERFORMANCE STANDARDS

OUTCOMES REQUIRED

The application of this Standard is based on the following quality criteria:

- microbiological safety;
- prevention of physical contamination;
- prevention of zoonotic disease associated with meat;
- prevention of harmful or unacceptable chemical residues;
- conformance with consumer image of product wholesomeness.

2.1 Microbiological safety

Means carrying a bacteriological load consistent with a safe and wholesome product.

Refer to Appendix A.

2.2 Physical contamination

Means contamination with material presenting a risk to product safety, including material likely to carry a heavy microbiological load.

Measurement criteria and standards are given in Appendix B.

2.3 Zoonotic disease

Means a disease or condition of animals capable of transmission from live or dead animals to humans.

For diseases and conditions of concern, together with required inspection procedures for detection refer to Appendix D and E.

2.4 Chemical residues

These are defined from time to time by national authorities. International standard definitions and Maximum Residue Limits (MRLs) are published in the *Codex Alimentarius*, Australian MRLs are detailed in the Australian Food Standards Code.

Procedures for sampling, testing and subsequent action are published in operating instructions issued by Federal and State authorities. Mandatory procedures and standards are given in Appendix C.

2.5 Product wholesomeness

Means free from diseases and conditions that, while not necessarily bearing direct risk to human health, affect the consumer image of product safety.

Procedures for detection and elimination of these conditions are given in Section 8 (Post-mortem Inspection and Disposition) and Appendix E.

3 DEFINITIONS

Approved Approved by the controlling authority.

Body The whole slaughtered animal prior to the completion of dressing.

Carcase The whole dressed body of a slaughtered ratite (the skeleton and attached musculature) excluding any part that has been severed or removed from the dressed body (eg. head, skin, feathers, viscera, blood).

Carcase parts Any tissue or structure removed from a carcase (eg. offal, head, feathers, skin, blood, etc).

Clean In relation to:
- ratite carcases or ratite meat means free from all visible contaminants. For example: ingesta, dust, rail grease, feathers, faecal material, bile, excretions and pathological conditions; and
- premises means surfaces of floors, walls, ceilings, equipment, appurtenances and utensils free of visible contamination, washed, sanitised and free from objectionable odours; and
- clothing means free from visible contamination.

Condemned In relation to a carcase or carcase part means that the carcase or carcase part is determined to be unfit for use for human or animal food, and requiring destruction.

Contamination The presence of objectionable matter, including substances or micro-organisms, that makes meat unwholesome.

Controlling Authority A person or a body that under a law of a State, Territory or the Commonwealth has statutory responsibility for meat hygiene.

Disease In relation to a ratite, means the presence of an infectious agent or pathological process that:
- affects the health of a ratite to an extent that would prevent acceptance of the carcases, the meat or the parts derived from the ratite for human consumption; or
- may not necessarily affect the health of the ratite, but may be transmitted to other animals or humans who contact the ratite or the carcase or who might consume meat from the ratite.

Dressed or dressing
- In relation to slaughtered ratites, the removal of head, feathers, skin, viscera (including or not including the kidneys), genital organs, bladder, feet up to the carpal and tarsal joints.

Edible Suitable for human consumption.

Edible blood Blood collected in full correlation with a carcase that has been inspected and passed as fit for human consumption.

Edible fat Fat, including both subcutaneous fat and mesenteric fat, collected in full correlation with a carcase that has been inspected and passed as fit for human consumption.

Edible offal Edible parts from a slaughtered ratite other than muscle meat.

Emu An Australian native flightless bird of the ratite family.

Emu meat The skeletal muscle of an emu (with or without accompanying fat), together with the sinew, nerve and blood vessels that ordinarily accompany the muscle tissue and that are not normally separated from it in the process of preparation for sale.

Emu meat product A product intended for human consumption containing emu meat.

Evisceration The removal from a carcase of the:
- gastrointestinal tract, its contents and associated organs;
- internal portions of the urinogenital tract and its contents (except kidneys, the removal of which is optional); and
- heart, lungs and liver.

Inedible Unsuitable for human consumption.

Inspector	A person appointed by the controlling authority or appointed by the registered company and approved by the controlling authority for the purpose of auditing quality assurance systems or ante-mortem and post-mortem inspection and control of hygiene in a processing premises.
Notifiable disease	A disease determined as notifiable by a relevant authority in the State or Territory in which the registered establishment is located.
Ostrich	A flightless bird of the ratite family.
Ostrich meat	The skeletal muscle of an ostrich (with or without accompanying fat), together with the sinew, nerve and blood vessels that ordinarily accompany the muscle tissue and that are not normally separated from it in the process of preparation for sale.
Ostrich meat product	A product intended for human consumption containing ostrich meat.
Operator	The person, owner or manager who at the time is in attendance and responsible for the operation of the registered establishment.
Potable	Means a water quality that is consistent with standards for drinking water in the respective State or Territory and is consistent with the standards detailed in the NH&MRC *Guidelines for Drinking Water Quality in Australia* (1987).
Quality Assurance (QA) arrangement	An arrangement between the controlling authority and the operator of a processing premise with an approved quality system, where company management takes responsibility for ensuring the production of wholesome meat. The controlling authority's role is to monitor the effectiveness of a company's approved QA system through an audit program to ensure compliance with the relevant provisions of this Standard.
Ratite	A flightless bird that includes species such as emus, ostriches and rheas.
Ratite processing establishment	An establishment that is registered by the controlling authority where ratites are processed for the production of ratite meat for human consumption.
Residues	The National Registration Authority for Agriculture and Veterinary Chemicals registers agriculture and veterinary chemical products. Maximum Residue Limits (MRL's) for agriculture and veterinary chemicals are stipulated in the Australian Food Standards Code. Meat products intended for export are subject to residue limits of the *Codex Alimentarius.*
Sanitise	Apply approved chemical and/or physical agents or processes to cleaned surfaces to minimise risk of contamination of meat by micro-organisms.
Slaughter	The irreversible loss of consciousness induced in a ratite by: • fatal damage to the brain; • stunning followed by bleeding to death; or • bleeding to death (in specified religious slaughter procedures only).
Sterilise	In relation to equipment or utensils used in the hygienic processing of animals, cleaned and immersed until sterilisation is effected, or treated by other effective means. For the purpose of this Standard it means 'make commercially sterile'.
Sticking/bleeding	Is the bleeding of a carcase by severing the large blood vessels to induce effective bleeding.
Stunning	The procedure by which a ratite is rendered unconscious before being bled to death.
Wholesome	Means: • will not cause food-borne infection or intoxication when properly handled and prepared for its intended use; and • does not contain chemical residues in excess of established limits; and • free of obvious physical contamination; and • free of defects recognised as unsafe (objectionable) to consumers; and • produced under adequate hygiene control.

4 QUALITY ASSURANCE PROGRAMS

OUTCOME REQUIRED

Where operations are conducted under a Quality Assurance arrangement, they conform to the essential elements of the Australian Model Standard, and Process Control is achieved through the application of the HACCP approach. The practical implementation of HACCP will be greatly enhanced if this section is read in conjunction with *A Guide to the Implementation and Auditing of HACCP*.

Where the Controlling Authority approves a quality assurance arrangement for the purpose of production and hygiene quality control of meat, as required under this Standard, the quality assurance arrangement shall conform to the following principles:

(a) The quality assurance arrangements shall be consistent with the quality management and quality assurance standards outlined by Standards Australia (AS/NZS ISO 9002). The essential elements of these arrangements shall reflect ISO 9002 Clauses under Section 4 — Quality System Requirements.
   - 4.1 Management responsibility (quality policy, organisation, management review)
   - 4.2 Quality system
   - 4.3 Contract review
   - 4.4 Design control — exclusion statement
   - 4.5 Document and data control (document approval and issue, document changes/ modification)
   - 4.6 Purchasing
   - 4.7 Control of customer — supplied product
   - 4.8 Product identification and traceability
   - 4.9 Process control
   - 4.10 Inspection and testing (including records)
   - 4.11 Control of inspection, measuring and test equipment
   - 4.12 Inspection and test status
   - 4.13 Control of non-conforming product
   - 4.14 Corrective and preventive action
   - 4.15 Handling, storage, packaging, preservation and delivery
   - 4.16 Control of quality records
   - 4.17 Internal quality audits
   - 4.18 Training
   - 4.19 Servicing
   - 4.20 Statistical techniques

(b) Process control (ISO 9002, Clause 4.9 above) shall be achieved through the application of the Hazard Analysis Critical Control Point (HACCP) approach, using the seven principles defined by the Food Standards Programme of the *Codex Alimentarius* Commission.

The seven principles are:

1. identify the potential hazard(s) associated with all stages of production. Assess the likelihood of occurrence of the hazard(s) at each stage and identify preventative measures.
2. determine the points/procedures/operational steps that can be controlled to eliminate the hazard(s) or minimise its likelihood of occurrence — Critical Control Point (CCP). A 'step' means any stage in food production and/or manufacture including raw materials, their receipt and/or production, harvesting, transport, formulation, processing, storage, etc.
3. establish critical limit(s) that must be met to ensure the CCP is under control.
4. establish a system to monitor control of the CCP by scheduled testing or observations.
5. establish the corrective action to be taken when monitoring indicates that a particular CCP is not under control.
6. establish procedures for verification which include supplementary tests and procedures to confirm that the HACCP system is working effectively.
7. establish documentation concerning all procedures and records appropriate to these principles and their application.

(c) Under a full-time meat inspection arrangement or as specified in the quality assurance program, animals and carcases shall be inspected in accordance with the Standard by company employees holding recognised meat inspection qualifications or other qualifications approved by the controlling authority.

(d) Where a quality control program incorporating full-time meat inspection system is applied, the quality control program shall include a company-managed HACCP system of process control (ISO 9002, Clause 4.9) as outlined in (b) above. In addition the quality control program shall include compliance with ISO 9002 Clause 4.8 — 'Product Identification and Traceability'.

(e) Controlling authorities shall institute:

1. a process of QA program development and approval (including amendments) which ensures that a manual accurately describes individual plant operations and which gives confidence that regulatory standards are consistently satisfied;
2. audit policies and procedures which are aligned with the Standards Association of Australia (AS 3911); and
3. corrective action and a sanctions policy which effectively address non-compliance with standards and fraud.

5 RATITE PROCESSING ESTABLISHMENT

OUTCOME REQUIRED

The construction of the premises facilitates hygienic processing of ratite carcases and prevents contamination of ratite carcases and ratite meat.

5.1 The construction of a ratite processing establishment shall comply, as appropriate, with the *Australian Standard for the Construction of Premises Processing Animals for Human Consumption.*

5.2 Ratite processing establishments shall include the following additional requirements:

(a) Raceways to stunning area shall be designed in such a manner as to facilitate the easy movement of ratites.

(b) Feather removal area shall be an enclosed area. The skinning and bleed area may open off this area. The opening from the feather removal area to the skinning and evisceration area shall be provided with measures to ensure that contamination from this area (aerosol and dander) is prevented.

6 PROCESSING PROCEDURES

OUTCOME REQUIRED

Consistent, routine slaughter and dressing procedures that minimise or eliminate risk of physical contamination and contamination of ratite meat by pathogenic micro-organisms

6.1 **Rest** – Ratites shall be adequately rested prior to slaughter.

6.2 **Feeding** – Feed shall be withheld from ratites for 24 hours prior to slaughter.

6.3 **Transportation** – Ratites shall be transported in a manner to prevent stress or injury.

6.4 **Restraining and stunning** – Ratites to be restrained and electrically stunned or made unconscious and insensible to pain by other approved humane methods prior to bleeding.

6.5 **Bleeding** – Bleeding shall be carried out immediately after stunning in a manner that prevents contamination.

6.6 **Head and legs removal** – Head and leg removal shall be done at a stage of processing and in such a manner as to minimise the risk of contamination to carcase meat. Head and leg removal may occur in the bled or de-feathering area provided measures are taken to prevent contamination of the exposed surfaces from feathers and dander.

6.7 **Dressing** – Shall be performed either in a hanging position or on a cradle system. Opening cut lines shall be performed by a spear cut.

Where cradle dressing is used, cradles are:
(a) located so that the wholesomeness of the meat during processing is not jeopardised; and
(b) of a height that will prevent any part of the exposed carcase from touching the floor.

Dressing shall proceed at a rate that allows adequate time:
(a) for ratites to be dressed in a hygienic and orderly manner;
(b) to avoid congestion in any area;
(c) to maintain physical separation of carcases where required; and
(d) for effective inspection.

If air is used to inflate carcases to assist skinning, the air shall be filtered to a food grade standard.

6.8 **Edible external carcase fat (subcutaneous fat)** – Shall be removed and retained until final carcase disposition is known.

6.9 **Venting** – Vents shall be removed in a hygienic manner that prevents leakage and cross contamination.

6.10 **Evisceration** – Shall be performed in such a manner that contamination of the carcase does not occur.

6.11 **Carcase splitting** – At the completion of dressing carcases may be split and the bones of the thorax and pelvis removed prior to chilling provided all meat is left attached by its natural attachments.

6.12 **Final wash** – At completion of dressing and inspection, and after all contamination visible on the carcase is removed by trimming, the carcases may be washed with potable water using minimal water pressure.

6.13 **Chilling** – Carcases shall be removed from the dressing area to a chiller within two hours of stunning.

(a) Hot carcases shall not be loaded into chillers containing chilled carcases if moisture condenses on chilled carcases or if chilled carcases warm up.

(b) When chillers are in use the doors shall be kept closed except during:

(i) loading and unloading of carcases or meat;

(ii) entry or exit of personnel.

(c) Chillers shall be clean before recharging with hot carcases.

(d) The chillers should be clear of edible product during cleaning. Where this is impractical, precautions shall be taken to prevent edible product becoming contaminated by splash.

(e) During primary chilling, carcases shall not touch each other, doors or walls.

(f) The temperature of carcases and sides shall be reduced to 7°C deep muscle temperature within 24 hours of stunning.

(g) Carcases shall not be removed from a chiller for transport unless all surfaces of the carcases are visibly dry and have a deep muscle temperature of 7°C or colder and transported as specified in the *Australian Standard for Transportation of Meat for Human Consumption* or under an approved HACCP based quality assurance program, under alternative conditions of temperature and duration to consistently prevent a greater than one-log increase in the bacterial pathogen load on the surface of the meat from the time of dressing until the product is packaged for sale or used as an ingredient for further processing.

(h) Lesser portions shall be stored at a maximum internal temperature of 5°C.

6.14 **Hygiene requirements** – The requirements of the Australian Standard for the Hygienic Production of Meat for Human Consumption apply, where appropriate to ratite meat processing, and in particular sections 5, 9 and 10.

6.15 **Microchips** – A system for the detection and removal of microchips in the final product shall be implemented.

7 ANTE-MORTEM INSPECTION

OUTCOME REQUIRED

That only ratites suitable for processing for human consumption are slaughtered.

Specific aims

7.1 The specific aims of ante-mortem inspection are to:

(a) prevent the processing of ratites showing evidence of disease or any other condition that would make the carcase or parts unfit for human consumption;

(b) separate for segregated slaughter ratites suspected of having a disease or any other condition that could make the carcase or part of it unfit for human consumption;

(c) prevent ratites that are grossly contaminated with extraneous matter from entering the processing area;

(d) ensure that all ratites and, in particular, injured ratites are treated humanely;

(e) detect the presence of exotic or other notifiable disease.

Requirements

7.2 All ratites presented for processing shall be:

(a) handled in a humane manner and adequately rested:

(b) either held in secure and clean lairages with an adequate supply of drinking water prior to slaughter or alternatively delivered direct to a processing plant and slaughtered that day provided it can be demonstrated that the well being of the birds is not compromised;

(c) examined by:

(i) an inspector with the assistance of company employees; or

(ii) a company nominee in a QA arrangement approved by the controlling authority.

(d) slaughtered within 24 hours of passing ante-mortem inspection or, if not slaughtered within that period, re-inspected.

(e) adequately identified up to post-mortem inspection.

7.3 Ratites may not be processed unless approved by an inspector or by other company personnel nominated in a QA arrangement approved by the controlling authority.

7.4 Ratites shall be examined to the extent necessary to determine their suitability for processing.

7.5 Normal procedure shall not preclude the admission of ratites known to be affected by certain notifiable diseases or residues for slaughter under special conditions agreed to by the controlling authority.

Prevention action (Disposition after ante-mortem inspection)

7.6 One of the following dispositions shall be applied to each ratite after ante-mortem inspection:

(a) passed as fit for routine processing;

(b) withheld from processing pending treatment for, or recovery from, an abnormal condition. These ratites may be resubmitted for another ante-mortem inspection at a time specified by an inspector;

(c) subjected to immediate emergency slaughter to prevent deterioration of an abnormal condition, provided the condition would allow all or part of the carcase to be passed for human consumption and processing would not jeopardise the hygienic production of meat;

(d) processed under restrictions that prevent unacceptable contamination of the processing floor and that permit more detailed post-mortem inspection;

(e) rejected as unfit for processing, and destroyed by humane means and then disposed of in an approved manner.

7.7 Ratites that are known to have been treated with, or exposed to, a drug, chemical or biological substance shall not be slaughtered unless any withholding period recommended on the product label has elapsed. When the withholding period of any drug for ratites for human consumption is not known, then the withholding period of 28 days recommended.

7.8 Where a suspected case of a notifiable disease is detected the animal health authority of the State or Territory in which the establishment is located shall be immediately notified in accordance with the law of that State or Territory.

Animal welfare

7.9 All operators shall prepare an animal care statement detailing how the requirement of the *Australian Model Code of Practice for the Welfare of Animals – Livestock (including Poultry) at Slaughtering Establishments* are to be met.

Notifiable disease

7.10 If the observations made at ante-mortem inspection suggest that a ratite displays symptoms of a notifiable disease the relevant government veterinarian shall be contacted as soon as possible. The affected ratites shall be withheld from slaughter until a course of action has been determined under relevant State or Territory legislation for the control of notifiable diseases in animals.

8 POST-MORTEM INSPECTION AND DISPOSITION

OUTCOME REQUIRED

Only wholesome ratite meat is passed for human consumption.

8.1 The examination of the carcase and body parts for disposition shall be carried out by a person with training and qualifications that enable the accurate recognition of the conditions described and their correct disposition.

8.2 Emphasis should be placed on normal healthy carcases and parts. Departures from normal as described in this section shall be dealt according to the dispositions described in Appendix E for each observation or set of observations. Where it suits the purposes of the operator, a more severe disposition may be selected rather than that acceptable for the condition described.

8.3 Where a condition carries a human health risk, failure to follow the described disposition or a more severe disposition shall be a critical non-conformity.

8.4 Where a condition while not carrying a significant risk to human health, does affect the wholesomeness of the product, failure to follow the described disposition shall be a major non-conformity.

8.5 Where the condition is considered to be a presentation fault, the failure to follow the described disposition shall be a minor non-conformity for each event.

8.6 Inspection points with adequate lighting shall be provided at appropriate locations in the establishment to facilitate the examination of the body and organ systems described in Appendix D. Retention rails and containers shall be provided in continuous systems to allow for a more thorough examination or treatment of suspect carcases, parts or offal when required.

8.7 The carcases, viscera and where appropriate head and edible fat shall be correlated at least until the point of carcase inspection. If not saved for animal food, the head may be discarded before inspection.

8.8 Any carcase, viscera or part that is diseased or suspected of being diseased shall be handled in a manner that ensures that other product is not contaminated, and minimises contamination of plant, equipment and personnel.

8.9 One of the following dispositions shall be applied to a carcase, part and viscera (including kidneys) following post mortem inspection:

(a) passed for human consumption;
(b) retained pending remedial treatment, laboratory findings or other examination before final disposition;
(c) saved as animal food or for pharmaceutical purposes;
(d) condemned as unfit for human consumption or animal food.

8.10 Any carcase, part or viscera retained for remedial treatment shall be clearly identified and controlled to ensure that the remedial treatment is carried out.

8.11 Any condemned carcase, part or viscera shall be clearly identified or denatured to preclude use for human consumption or animal food.

8.12 Post-mortem inspection shall include continuous monitoring for compliance with the acceptable quality level (AQL) system and as specified in the QA arrangement and standards by company management, Appendix B.

Exotic disease

8.13 If the observations made at post-mortem suggest that a ratite displays lesions of an exotic disease the relevant government veterinarian shall be contacted as soon as possible. The head, carcase and viscera shall be retained until a course of action has been determined by that veterinarian.

Requirement at post-mortem inspection

8.14 (a) Carcases and viscera shall be presented for inspection in a manner that allows inspection to be performed efficiently.

(b) Carcases and viscera and edible fat shall be correlated until completion of post-mortem inspection.

(c) Carcases and viscera shall be inspected by an authorised officer/person using procedures of observation and palpation as indicated in Appendix D. Additional procedures may be applied according to the discretion of an authorised officer/person.

(d) The disposition of carcases and viscera shall be as given in Appendix E.

(e) Any carcase or part that is diseased or suspected of being diseased or contaminated shall be handled by a method that will ensure that other product is not contaminated.

9 BIBLIOGRAPHY

Australian/New Zealand Standard (1994) AS/NZA ISO 9002: 1994 *Quality Systems – Model for Quality Assurance in Production, Installation and Servicing.*

Codex Alimentarius Committee on Food Hygiene (1994) *Codex Alimentarius*, Volume 10 – Code of Hygienic Practice for Fresh Meat.

Food Standards Code, Australia New Zealand Food Authority.

Joint FAO/WHO Food Standards Programme – Codex Alimentarius Committee on Food Hygiene (1994) General Principles of Food Hygiene – ALINORM 95/13.

Standing Committee on Agriculture and Resource Management (1995). *Australian Standard for Construction of Premises Processing Meat for Human Consumption* SCARM Report No. 53 AS 4460:1997. CSIRO Publishing, Melbourne.

Standing Committee on Agriculture and Resource Management (1997). *Australian Standard for Hygienic Production of Meat for Human Consumption* (Second edition). SCARM Report No. 54 AS 4461:1997. CSIRO Publishing, Melbourne.

Standing Committee on Agriculture and Resource Management (1996) *Australian Standard for Construction of Premises Processing Animals for Human Consumption*. SCARM Report No. 55 AS 4462:1997. CSIRO Publishing, Melbourne.

Standing Committee on Agriculture and Resource Management (1995) *Australian Standard for Transportation of Meat for Human Consumption.* SCARM Report No. 56 AS 4463:1997. CSIRO Publishing, Melbourne.

Standing Committee on Agriculture and Resource Management (1997) *A Guide to the Implementation and Auditing of HACCP.* SCARM Report No. 60. CSIRO Publishing, Melbourne.

Standing Committee on Agriculture (1986) *Australian Model Code of Practice for the Welfare of Animals – Livestock (including poultry) at Slaughtering Establishments.* CSIRO Publishing, Melbourne.

APPENDIX A

MICROBIOLOGICAL CRITERIA

Microbiological testing is required for process verification in any HACCP based quality assurance system in the meat industry. The primary application of testing is to monitor critical control points in production where a bacterial hazard is present.

Work surfaces, product surfaces and water must be monitored on a regular basis to verify the HACCP program. The schedule of testing used shall be documented with the HACCP program.

HACCP Validation: The initial testing and analysis carried out in order to establish that critical limits of a HACCP program are adequate and sufficient to control the likely hazards and to provide the outcomes for which it was designed.

HACCP Verification: The testing and analysis required by principle seven of the HACCP process in order to verify the ongoing effectiveness of the HACCP program. This ongoing testing is for on plant use and can be any one of the proven techniques that will achieve the desired results. Of particular importance is the consistency of testing so that trendlines of production can be established. The use of a standardised method would allow best practice comparisons across the country or between plants.

One-log Growth: In order to achieve food safety objectives operations associated with the chilling, boning or further processing of dressed carcases (including transportation and storage) should limit the growth of *E.coli* Biotype 1 to no more than a 1 log 10 increase in the numbers of organisms initially present at the completion of dressing.

It is important to note that microbiology is to be used as a tool to ensure that the process is delivering good results on a continuous basis. It is not used to judge the wholesomeness of individual pieces of product.

Types of Testing:

TVC – total viable count may be used to test the overall hygiene and the slaughter process. It always achieves a result but is limited in applications post-chilling. This measure is ideal for work surfaces.

***E.coli* Biotype 1** – is a very good indicator of enteric contamination. It also is very useful post-chilling because it is one of the major group of bacteria that stop growing at about 7°C. *E.coli* is best used for meat and meat surfaces.

Records shall be kept to enable benchmarks to be set and trends over time to be identified. While records need to be furnished to inspection authority personnel they will be considered 'commercial in confidence' and not public documents.

Sampling, transport of samples and testing methods must be standardised if meaningful results and trend analysis are to be achieved.

Because carcase contamination is not uniform and pathogen numbers are normally low microbiological testing cannot in itself guarantee freedom from pathogens. This is why emphasis must be placed on adequate process control at all times.

APPENDIX B

PHYSICAL CONTAMINATION STANDARDS

Acceptable Quality Level Monitoring of Physical Contamination of Carcase Meat and Cartoned Meat

For the purpose of this performance standard, physical contamination means visible physical contamination and includes such contaminants as faeces, ingesta, abscesses and grease.

For the purpose of this performance standard, Acceptable Quality Levels (AQL's) are used to monitor or assess physical contamination of meat (in a final product form) produced at, or introduced into, meat processing premises. Their use is based on a uniform system of inspecting a representative sample of product of a similar type that indicates that the product has obtained a predetermined quality level.

The AQL system is suitable for incorporation into approved programs of production based on quality assurance principles and serves as an adjunct to official auditing procedures for the assessment of compliance with company quality systems.

The AQL system can be used by management as a mechanism for monitoring standards achieved under a company's program of production and can be applied at any point in the production process to provide a mechanism for verification of the Hazard Analysis and Critical Control Point (HACCP) program.

AQL's can assist in determining any necessary remedial action based on an objective assessment process and can be applied by the regulating body or company staff. However, AQL's are not designed for use as regular policing 'tools'. Their use should complement other monitoring procedures such as process control audits that include the observation of carcases during routine inspection procedures and observing dressing procedures on the slaughter floor.

Where there is a failure to meet the Acceptable Quality Level the whole group of carcases or offals from the production run or consignment of cartons is required to be re-trimmed, re-sampled and re-inspected and another determination of its acceptability made. This process is to continue until such time as the product group is acceptable.

Objectives of the AQL System

1. **Wholesomeness** – To encourage the production of wholesome meat.
2. **Uniformity** – To design, implement, and maintain a re-inspection procedure that includes uniform sampling methods, defect standards and product acceptance and rejection criteria.
3. **Control** – To provide inspection personnel with a system of control that will ensure that meat, determined by the re-inspection criteria to be unwholesome, is withheld from trade until it is made acceptable.
4. **Information** – To provide a continuous monitoring system for determining the extent and nature of defects found in meat.
5. **Feedback** – To provide management and inspectors with objective information and to assist in determining the origins of dressing errors and other defects allowing necessary corrective action.

Acceptable Quality Levels

Based on the objective scoring system detailed on the Inspection Report Form, samples are deemed to be unsatisfactory if either:

(a) Defect score is more than 1.0; or
(b) Sample score is more than 0.3.

If unsatisfactory, the production run from which the sampling occurs is required to be reworked until quality levels are acceptable.

Procedure for AQL Monitoring

This procedure applies to all species of ratite. Persons responsible for AQL monitoring are to:

1. determine a manageable number of carcases or cartons that make up a consignment, production run, etc to be sampled;

   e.g. one day's production of 600 ratite carcases could be sampled by examining three runs (morning to smoko, smoko to lunch, lunch to finish) of 200 ratites each;

2. ensure carcases are sampled after the final wash and in a manner that all surfaces are viewed under adequate lighting;

3. ensure a representative sample is examined, using that sampling rate outlined on the AQL forms. Note that there are two AQL forms - one is for use with carcases, the other is for use with offals and cartoned meat;

4. ensure representative samples are selected randomly. Random numbers can be used for selecting an individual sample or a point in time at which a sample at a predetermined point in the processing line is selected;

5. record defects identified during AQL examination on the AQL form/s and make the necessary calculation;

6. ensure that those defects identified during examination are trimmed;

7. supply management with a copy of the AQL form/s on completion of the calculation;

8. ensure that the company retains and reworks the whole of the group of carcases, offals or cartons that have failed an AQL;

9. ensure that those carcases/offals/cartons reworked as the result of a failed AQL are subjected to actions outlined in 2, 3, 4, 5, 6, 7 and 8;

10. ensure that, for slaughter ratites, the frequency of sampling each species is as follows:

Under 100 head per month	Minimum of ten carcases (where necessary combine days to make up a minimum of carcases).
Under 100 head per week	One per week.
Under 100 head per day	Three times per week.
Over 100 head per day	At least daily

Use of the AQL Form

Points to be noted when using the form are as follows:

- Scoring is done on a *fault basis*. For instance, if one ratite carcase has two abscesses, two abscesses would be recorded in the relevant "box", and indicate their positions using the code.
- Faecal material/staining and ingesta material/staining are recorded by position and size, as this may give some indication of the sources and severity of the problem. The number of these defects in the sample is then totalled and recorded in the "scoring grid" under critical.
- GD is Greater Dimension. If the greater dimension of a condition (e.g. skin) is more than 100 millimetres and the relevant "box" (critical) is blocked out, the score is made in the next available "box" for that condition (major in the case of skin).
- Certain conditions are of an aesthetic nature rather than of public health concern. These conditions should be recorded (in the relevant "boxes" on the extreme right of the scoring grid) and be brought to management's attention. These "aesthetic faults" are ***not*** to be used when totalling either defects or weighted defects.
- Provision has been made for recording "other" staining, that is, other than that caused by ingesta or faeces. This is only to be used when the "other cause" is clear (e.g. bile).
- Parasites (non-transmissible to man) are recorded as follows:

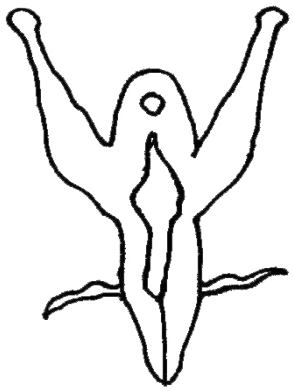
  major – less than 3 parasites
  critical – 3 or more parasites

- Foreign bodies (e.g. glass, splinters, metal fragments, plastic) are recorded as follows:

  minor – affects product appearance but not wholesomeness
  critical – affects product wholesomeness

- The area under "units with scored faults" is to be used to record the number or carcases (or quarters or sides, etc) that have faults. This total is then used for obtaining the Sample Score.
- Random numbers can be selected by using random number charts or computers and calculators with this function.

AQL Inspection Report for Ratite Carcase



Product Origin .....

Description .....

Quantity .....

Sample Size .....

Consigned to .....

Consigned from .....

Sampling Rate:

Total No:		Sample:	Total No:	Sample:
0 –20	}	10 Total (whichever is less)	201–300	17
21–40			301–400	20
41–70			401–500	22
71–100			501–650	25
101–150		12	651–800	28
151–200		14	>801	30

$$\text{Defect Score} = \frac{\text{Total of Weighted Defects}}{\text{Sample No.}} = \text{---------}$$

$$\text{Sample Score} = \frac{\text{Total No. of Defective Units}}{\text{Sample No.}} = \text{---------}$$

No of Units with scored faults
(Carcases/sides/quarters)

The sample is unsatisfactory if either:
(a) Defect score is more than 1.0; or
(b) Sample score is more than 0.3.

Comments/Action Taken

Inspector/Authorised Person: _____

Date: _____

Please indicate, in the appropriate space, the number and location (see diagrams) of defects found during inspection of carcases/sides/quarters.

	GD<25 mm	GD 25–100 mm	GD > 100 mm
Faecal material/staining (GD)			
Ingesta material/staining (GD)			

Scoring begins

	Minor	Major	Critical
Total faecal material/staining			
Total ingesta material/staining			
Other staining (GD)			
Feathers			
Remnants of viscera, spleen, liver			
>20 quills or 10–20 quills × 2 or more			
Skin (GD)			
Abscess			
Other pathological conditions (state)			
Rail fallout (GD)			
Dust marks (GD)			
Grease marks (GD)			
Hook marks (GD)			
Floor contact (GD)			
Total			
Weighting factor	× 1	× 4	× 10
Weighted defects			
Inspector/Authorised Person	.....		
Date	.....		

AQL Inspection Report for Cartoned Ratite Carcase

Product Origin .....

Description .....

Quantity .....

Sample Size .....

Consigned to .....

Consigned from .....

Sampling Rate:

Total No:		Sample:	Total No:	Sample:
0–20	}	10 Total (whichever is less)	201–300	17
21–40			301–400	20
41–70			401–500	22
71–100			501–650	25
101–150		12	651–800	28
151–200		14	>801	30

$$\text{Defect Score} = \frac{\text{Total of Weighted Defects}}{\text{Sample No.}} = \text{---------}$$

$$\text{Sample Score} = \frac{\text{Total No. of Defective Units}}{\text{Sample No.}} = \text{---------}$$

No of Units with scored faults
(Carcases/sides/quarters)

The sample is unsatisfactory if either:
(a) Defect score is more than 1.0; or
(b) Sample score is more than 0.3.

Comments/Action Taken

Inspector/Authorised Person: _____

Date: _____

Please indicate, in the appropriate space, the number and location (see diagrams) of defects found during inspection of carcases/sides/quarters.

	GD<25 mm	GD 25–100 mm	GD > 100 mm
Faecal material/staining (GD)			
Ingesta material/staining (GD)			

Scoring Begins

	Minor	Major	Critical
Total faecal material/staining			
Total ingesta material/staining			
Off condition (sour)			
Other staining (GD)			
Feathers			
>20 quills or 10–20 quills × 2 or more			
Skin (GD)			
Abscess			
Other pathological conditions (state)			
Rail fallout (GD)			
Dust marks (GD)			
Grease marks (GD)			
Hook marks (GD)			
Floor contact (GD)			
Foreign bodies			
Total			
Weighting factor	× 1	× 4	× 10
Weighted defects			
Inspector/Authorised Person	.....		
Date	.....		

APPENDIX C

RESIDUE PERFORMANCE STANDARDS

The provision of wholesome meat to the consumer requires an assurance that the product does not contain residues of chemicals that may be harmful to human health.

Residues may result from intentional treatment, from contamination or treatment of food sources, or from environmental contamination.

This assurance is provided on the basis of measures designed to ensure that the product contains no residues that exceed the Maximum Residue Limit (MRL), for that chemical as set by the Ministerial Council through the Australia New Zealand Food Authority after an application by the National Registration Authority. Similarly, Maximum Permissible Concentrations (MPC's) have been established for contaminants such as heavy metals. These limits are based on scientific evaluation and toxicology.

The National Residue Survey (NRS) commenced in 1961 as a monitoring program for chemical residues in agricultural commodities. It provides an estimate of the frequency of residues on a range of agricultural and veterinary chemicals and environmental contaminants in the individual commodities for targeted surveys and extension. The NRS provides assurance to Australia's trading partners and domestic consumers of the low residue status of these commodities. Inclusion of chemical and commodity combinations is based on risk profiling.

Residue compliance of meat produced at ratite meat processing establishments is based on:

- Participation in the NRS;
- Participation in any other residue programs as required by the Controlling Authority;
- Systems of animal identification and trace back when violative residues are detected; and
- Identification of appropriate management strategies of areas known to produce animals with violative residues.

The quality assurance systems of establishments shall contain a provision for consideration of the residue status of the animals processed.

APPENDIX D

INSPECTION PROCEDURE FOR RATITES

Head Inspection

Visual inspection of all head surfaces.
Option: Heads may be discarded before inspection.

Viscera Inspection

Trachea and oesophagus	visual examination
Proventriculus and gizzard	visual examination
Intestines	visual examination
Abdominal and thoracic air sacs	visual examination
Heart	visual examination and palpation
Liver	visual examination and palpation
Spleen	visual examination and palpation
Lungs	visual examination and palpation
Kidneys	visual examination and palpation

Carcase Inspection

All external and internal surfaces	visual examination

Additional Requirements

Palpation of suspect lesions and, where necessary, incision to detect disease conditions and/or pathological changes.

Notes

There are no lymph nodes in ratites.

POST-MORTEM OBSERVATIONS AND DISPOSITIONS

Primary Observation	Secondary Observation	Tertiary Observation	Possible Disease or Condition	Disposition	Non-Conformance[a]
Abscess	Soft pus	Only local involvement	Infection	Trim affected parts without spillage and condemn trimmings. Pass remainder for human consumption	Critical
	• more often necrotic, granulomatous or haemorrhagic oedematous areas	Systemic involvement	Infection	Condemn as Unfit for Human Consumption or Animal Food	Critical
Abscesses (multiple)	Soft pus • more often necrotic, granulomatous or haemorrhagic oedematous areas	Systemic reaction	Infection	Condemn as Unfit for Human Consumption or Animal Food	Critical
Abnormal Odour	Mild	No systemic change	Metabolic, Plant	Hold under refrigeration to determine if odour diminishes. If dissipated pass for human consumption or animal food. May be passed for animal food if odour remains.	Major

Primary Observation	Secondary Observation	Tertiary Observation	Possible Disease or Condition	Disposition	Non-Conformance[a]
	Mild	No systemic change	Chemical	If possibly harmful when consumed condemn as unfit for human consumption or animal food. Otherwise hold under refrigeration to determine if odour diminishes. Where due investigation identifies a suspect chemical refer to Food Standards Code for acceptability and if acceptable and dissipated pass for human consumption or animal food. May be passed for animal food if odour remains.	Critical
	Strong	No systemic change	Metabolic, Plant, Chemical	If possibly harmful when consumed condemn as unfit for human consumption or animal food. Otherwise hold under refrigeration to determine if odour diminishes. If dissipated pass for human consumption or animal food. May be passed for animal food if odour remains.	Critical
Air Sacculitis	Localised (involving 1 air sac)		Infection	Condemn affected tissues. Pass remainder for human consumption.	Minor
	Generalised involvement of more than one air sac or entire air sac system	Systemic	Infection	Condemn as unfit for human consumption or animal food.	Critical

Primary Observation	Secondary Observation	Tertiary Observation	Possible Disease or Condition	Disposition	Non-Conformance[a]
Anaemia	Slight change	No systemic involvement	Metabolic disease Infection Malnutrition	Pass for human consumption.	Minor
	Pronounced change	Systemic involvement	Metabolic disease Infection Malnutrition	Save for animal food or for pharmaceutical purposes.	Major
Arthritis	Single joint	No systemic involvement	Trauma/ infection	Condemn limb. Pass remainder as for human consumption.	Minor
	Multiple joints	No systemic involvement	Infection Other causes	Condemn limb. Pass remainder for human consumption.	Major
	Multiple joints	Systemic involvement	Infection Other causes	Condemn carcase as unfit for human consumption or animal food.	Critical
Aspergillosis	Localised (involving 1 air sac)		Infection	Condemn affected tissues. Pass remainder for human consumption.	Minor
	Generalised involvement of more than one air sac or entire air sac system	Systemic	Infection	Condemn as unfit for human consumption or animal food.	Critical
Bruising	Surface only		Trauma	Trim lesion and immediate surrounding tissue. Trimmings may be used for animal food. Pass remainder for human consumption.	Minor
	Deep	Extensive	Trauma	Trim lesion and immediate surrounding tissue. Pass remainder for human consumption.	Major

Primary Observation	Secondary Observation	Tertiary Observation	Possible Disease or Condition	Disposition	Non-Conformance[a]
Developmental abnormalities	No systemic involvement		Old trauma Congenital deformity	Trim lesion and immediate surrounding tissue. Trimmings may be used for animal food. Pass remainder for human consumption.	Minor
Ecchymosis	No systemic involvement		Improper stunning	Check stunning procedure. Trim lesion and immediate surrounding tissue. Trimmings may be used for animal food. Pass remainder for human consumption.	Minor
Egg Peritonitis	Systemic involvement		Infection Reproductive failure	Condemn as unfit for human consumption or animal food.	Critical
Emaciation	Systemic involvement		Nutritional stress	Save as animal food or for pharmaceutical purposes.	Minor
	Systemic changes		Bacteraemia	Condemn as unfit for human consumption or animal food.	Critical
Enteritis	No systemic involvement		Infection	Condemn gastro-intestinal tract.	Minor
	Systemic involvement		Infection	Condemn as unfit for human consumption or animal food.	Critical
Fever	Systemic involvement		Infection	Condemn as unfit for human consumption or animal food.	Critical
Gout	Localised (synovial)		Metabolic disease	Condemn affected parts. Pass remainder for human consumption.	Major
	Generalised (visceral)		Metabolic disease	Condemn as unfit for human consumption or animal food.	Critical

Primary Observation	Secondary Observation	Tertiary Observation	Possible Disease or Condition	Disposition	Non-Conformance[a]
Granuloma	No systemic involvement		Avian Tuberculosis Infection, Trauma	Condemn affected parts. Pass remainder for human consumption.	Critical
	Systemic involvement including loss of condition		Avian Tuberculosis Infection Trauma	Condemn carcase and parts for human consumption or animal food.	Critical
Green Urate			Bruising Liver disease	Evidence of liver pathology condemn carcase as unfit for human consumption or animal food. No liver involvement but due to bruising - assess as per bruising disposition.	Critical
Incomplete bleeding	No systemic change		Poor technique Emergency slaughter	Check bleeding procedure. Save as animal food or for pharmaceutical purposes.	Minor
Myopathy	Localised	No systemic involvement	Infection Trauma Dietary	Trim affected areas. Condemn trimmings. Pass remainder as fit for human consumption.	Major
	Extensive	No systemic involvement	Infection Trauma Dietary	Condemn as unfit for human consumption or animal food.	Critical
	Systemic involvement		Infection Trauma Dietary	Condemn as unfit for human consumption or animal food.	Critical

Primary Observation	Secondary Observation	Tertiary Observation	Possible Disease or Condition	Disposition	Non-Conformance[a]
Neoplasm	Localised	No systemic involvement	Tumour	Trim affected part. Condemn trimmings. Pass remainder as fit for human consumption.	Minor
	Extensive	Systemic involvement	Tumour	Condemn as unfit for human consumption or animal food.	Critical
Oedema	Slight	No systemic change	Trauma Infection Heart failure	Trim affected part. Condemn trimmings. Pass remainder as fit for human consumption.	Minor
	Extensive, no systemic change	Loss of condition	Trauma Infection Heart failure	Save as animal food or for pharmaceutical purposes	Major
	Extensive systemic involvement	Loss of condition	Trauma Infection Heart failure	Condemn as unfit for human consumption or animal food.	Critical
Pigmentation *** Note: Ratites have significant amount of pigmentation, eg: peritoneal lining, gonads and fascia covering limbs and body parts. This pigmentation is normal.**	No systemic change		Metabolic disease Congenital Unknown	Hold under refrigeration for re-inspection. If colour dissipates pass for human consumption. If not save for animal food or for pharmaceutical purposes.	Minor
Septicaemia	Systemic involvement		Infection	Condemn carcase as unfit for human consumption or animal food.	Critical

Primary Observation	Secondary Observation	Tertiary Observation	Possible Disease or Condition	Disposition	Non-Conformance[a]
Un-eviscerated carcase			Delays in processing	Disposition will depend upon a range of factors including ambient temperature, length of delay. Action should be taken to minimise deterioration. Where the bacterial safety of the carcase is compromised condemn as unfit for human consumption or animal food.	Critical
White Spotted Livers	Localised		Infection Parasites (emu)	Condemn liver. Pass remainder for human consumption.	Minor
	Systemic		Infection	Condemn as unfit for human consumption or animal food.	Critical

[a] = Failure to comply with disposition.