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**AMPMSY408**

**Perform ante and post-mortem inspection – Rabbits**

**Training support materials**

**Australian Meat Processing Training Package**

**Certificate III in Meat Processing**

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**Training support materials for AMPMSY408 Perform ante and post-mortem inspection – Rabbits**

**Rabbit farming in Australia**

Rabbits are mainly farmed intensively but are also shot in the wild. This unit covers only farmed rabbit – the inspection of wild game rabbits is covered in AMPMSY407 Perform post-mortem inspection – Wild game*.*

Rabbits are farmed primarily for the human consumption of their meat. This is usually supplied in whole-carcase form, though value-added products such as sausages. Chipolatas are also produced. Rabbit meat is mainly sold through European-style butchers and restaurants, with a limited market also in produce markets and supermarkets. The near-white meat from farmed rabbits varies considerably from the darkish meat of wild rabbits.

Farmed rabbits must be a recognised domestic breed or a hybrid of domestic breeds – they cannot be crossed with wild rabbits.

All meat produced is consumed domestically and supplied through restaurants and retail outlets (wholesalers, butchers and smaller supermarkets). Some wild rabbits are processed but must be supplied head shot for slaughter.

The number of processors has dropped significantly over the past twelve years and it is believed that there are now only five rabbit processors operating.

**Conducting ante-mortem inspection of rabbits**

**What is the difference between field shot and farmed rabbits?**

The rabbit meat industry in Australia was initially based on wild shot rabbits, but the introduction of calici virus some years ago decimated the wild rabbit population and allowed farmed rabbit production to briefly prosper.

A google search indicated that there are three farmed rabbit processors in Australia in 2024.

Field shot rabbits generally have a dressed weight of about 750 gms to 1.00Kg. On the other hand, farmed rabbits are slaughtered at 11-12 weeks of age and dress out at between 1.25- 1.5 Kg.

The flesh of farmed rabbits is white compared to wild rabbits.

The procedures, processes and disposition for field shot rabbits are described under the unit AMPA3127 *Perform post-mortem inspection - wild game*.

Although the legislative base for farmed game and wild shot game is different, the processes and procedures at post-mortem inspection is virtually identical, but farmed rabbits require ante-mortem inspection by law.

This unit is for rabbits that have been raised as domestic animals on farms. These domestic rabbits are slaughtered at purpose-built abattoirs and since they are delivered to the abattoir live, require ante-mortem inspection as well as post-mortem inspection.

**What are the main reasons for ante-mortem inspection?**

The main reason for ante-mortem inspection for all species is to detect those animals that may not be suitable for slaughter due to disease or other reason such as chemical residue that could render the carcase unfit for human consumption.

It is particularly important for those conditions that may not be detectable at post-mortem inspection.

Ante-mortem inspection can be separated into two parts:

* examining animals before slaughter so that the inspector can identify and segregate animals that show signs of a disease, condition or abnormality
* deciding what action will be taken with those animals that do have a disease, condition or abnormality.

When carrying out ante-mortem inspections, the inspector must:

* detect the presence of suspected exotic or notifiable diseases
* prevent the slaughter of any animal that shows signs of a condition or disease which would make the carcase or carcase parts unsuitable for human consumption
* segregate animals that show signs of, or are suspected of, having a disease or condition, so they can be slaughtered separately and given detailed post-mortem inspection
* prevent animals that are grossly contaminated with faeces, dirt, dust or other material from entering the slaughter floor
* ensure animal welfare standards are maintained at all times, particularly ensuring that injured animals are treated humanely and quickly.

Workplaces will have different ways of carrying out ante-mortem inspections. Inspectors must follow the workplace procedures and instructions. Quality Assurance (QA) and Hazard Analysis Critical Control Point (HACCP) procedures must also be followed to prevent obviously diseased or contaminated stock entering the slaughter floor.

**What regulatory requirements apply when conducting ante-mortem inspection?**

TheAS4466: *1997 Australian Standard for the Hygienic Production of Rabbit Meat for Human Consumption (AS4466:1997)* details the requirements for the ante-mortem and post mortem inspection of rabbits at both export and domestic rabbit processing establishments.

More specifically the requirements of ante-mortem inspection are detailed in Part 10 of the standard. PART 10 of this Australian standard requires that o*nly animals suitable for processing for human consumption are slaughtered.*

This means that:

10.2 All animals presented for processing shall be:

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

(b) held in secure and clean cages with an adequate supply of drinking water prior to slaughter;

(c) examined by:

1. an inspector with the assistance of company employees; or
2. 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, reinspected or condemned;

(e) adequately identified up to postmortem inspection.

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

10.4 Animals shall be examined to the extent necessary to determine their suitability for processing.

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

**What are the principles and procedures for the humane handling of rabbits?**

The following codes of practice form the basis of animal welfare when slaughtering all animals including rabbits.

* Australian Model Code of Practice for the Welfare of Animals, Number 10: Animals at Slaughtering Establishments
* Operational Guidelines for the Welfare of Animals at Abattoirs and Slaughterhouses.

Animal welfare is described in greater detail in the following animal welfare unit: AMPA3002 *Handle animals humanely while conducting ante-mortem inspection*.

***Specific rabbit animal welfare issues***

Rabbits are generally delivered to the processing plant in cages from the farm.

Rabbits are social animals and are most comfortable when in their family group. So it is important that rabbits are not mixed with strange rabbits in the holding shed prior to slaughter. So it is best to keep them in the cages they were delivered in until the point of slaughter.

Essential requirements of the *AS4466:1997 Australian Standard for the Hygienic Production of Rabbit Meat for Human Consumption* are:

* the holding facility at the abattoir must be separate from the slaughter floor
* rabbits must be stunned prior to slaughter by an approved method and then bled without delay.

**What are the signs of common conditions responsible for abnormalities at ante-mortem and how can they be detected?**

Visible abnormalities need to be detected at ante-mortem inspection. Appendix C details the condition’s that can be seen at ante and post-mortem inspection and the appropriate dispositions. The Appendix details conditions seen at ante mortem such as:

* abscesses
* ring worm
* dermatitis
* fractured limbs
* eye infections
* emaciation.

**What are chemical residues and how are they detected?**

The provision of wholesome meat to the consumer requires an assurance that the product does not contain residues of chemicals which may be harmful to human health. The Standard details the requirements in Appendix D.

Residues may result from intentional treatment of an animal with a veterinary drug or chemical for therapeutic purposes. Residues may also result from chemical contamination of the rabbit’s feed or water by a herbicide or pesticide.

This assurance is provided on the basis of measures designed to ensure that the product contains no residues which exceed the Maximum Residue Limit (MRL), for that chemical as set by the Food Safety Council of Australia through the National Foods Authority. Similarly, maximum permitted concentrations (MPC's) have been established for contaminants, such as heavy metals. These limits are based on scientific evaluation, and toxicology.

It would be wise to check MICOR for any additional chemical tests required for a specific market prior to agreeing on a specification.

The **NRS** provides assurances to Australia's trading partners and domestic consumers of the low residue status of these commodities. In addition the NRS conduct random sampling of product, mainly at retail.

The quality assurance systems of slaughter establishments must have provisions in place for consideration of the residue status of animals purchased usually by means of a statutory declaration as to residue status of the animals from the farmer.

The invisible abnormalities that may be present at ante- mortem inspection such as chemical residues can only be assessed by a detailed inspection of the paper work accompanying the animals such a way bills, vendor declarations and statutory declarations or by individual testing of samples from slaughtered animals.

Individual testing of animals is only conducted if there are some doubts as to the chemical residue status of animals. For routine processing the statutory declarations from the farmer are considered sufficient.

It is vital that the management of the abattoir supply a declaration from the farmer either by hard copy or by electronic means to the meat safety inspector or the person nominated by the company to perform ante-mortem inspection prior to ante-mortem inspection.

This is an essential part of the ante-mortem inspection process.

In order to maximize the ability to detect common visible conditions responsible for abnormalities ant ante-mortem inspection it is important that effective procedures are carried out. The AS4466:1997 *Australian Standard for the Hygienic Production of Rabbit Meat for Human Consumption* does not specify how ante-mortem inspection is to be conducted, but there are ‘best practice’ procedures that should be followed.

The meat safety inspector can vary these procedures according to:

* company requirements
* type of animal e.g. young rabbits are less likely to have disease than older animals.

Rabbits are delivered to the slaughtering plant in cages. Ante-mortem inspection should be conducted by a visual inspection of the rabbits at rest in the cages. This is because some signs of sickness or disease will not be seen when the animals are being moved.

It is also very important to look for any animal that is not displaying ‘normal’ behaviour i.e. if it is doing something different to the rest of the group.

There is no point in taking rabbits out of their cages to inspect them in motion as is done for large animals at abattoirs, but taking the odd animal out of a cage to view its action in motion or for a more detailed examination is a useful part of the ante-mortem process.

***Humane handling***

It is very important that any handling or moving of animals is done quietly and humanely.

Animals that are not handled or moved correctly may become stressed. Stress can affect meat quality.

***Signs of common conditions***

Signs which may indicate disease, conditions or abnormality in rabbits include:

* separating themselves from the rest of the animals
* lying down when the rest are standing
* dullness, listlessness, head down, not alert
* very poor condition – emaciated
* short, shallow, rapid or loud breathing
* hunched up
* scouring, bloody diarrhoea i.e. dysentery
* excessive salivation
* tongue protruding
* excitement, i.e. excessively active and erratic behaviour
* lameness and/or swollen joints
* lesions in or around eye, i.e. myxomatosis
* blood, pus or other abnormal discharges from nose, mouth, anus, vulva or penis
* enlargement or abnormality of scrotum, anus, vulva, penis or udder
* swelling cysts, abscesses or abnormal growths
* skin blotching
* abnormal enlargement of belly
* broken limbs
* wounds
* faecal contamination.

**What are the procedures for humane destruction?**

If animals are suffering it is vital that they are euthanized as soon as possible.

Suffering animals include animals with severe injuries such as broken legs. These can either be put up for emergency slaughter or humanely euthanized.

Other animals that may be suffering include animals that are moribund or near death, these need to be destroyed immediately and the body condemned.

The usual method for rabbits is by use of the captive bolt used for slaughter or by cranio-occipital dislocation.

Workplace instructions must be followed for this procedure.

**What are the procedures for emergency and suspect slaughter?**

Emergency slaughter animals are slaughtered as soon as possible.

Only injured animals should be handled in this way.

Sick animals should be rejected from slaughter and either disposed of humanely or withheld from slaughter for treatment.

Animals are that are to be treated may not leave the abattoir premises for treatment as abattoirs are considered by all state authorities to be quarantine areas.

After successful treatment particular care needs to be taken to ensure that no chemical residues are present in the animals. This is achieved by ensuring withholding periods for drugs administered are strictly met.

Animals showing evidence of heavy faecal contamination should also be put up as a lot at the end of the shift so that special procedures can be put in place to ensure cross contamination is minimised.

All suspects should be put up for slaughter at the end of a shift/day and workplace instructions must be followed for these procedures.

**What WHS requirements apply when conducting ante-mortem inspection of rabbits?**

The WHS principles for the meat industry are explained in the training material for *AMPCOR204 Follow safe work policies and practices*.

Possible WHS hazards when conducting ante-mortem inspection of rabbits could be:

* zoonotic diseases i.e. diseases transmissible from animals to humans and include: pasteurellosis, ringworm, mycobacteriosis, cryptosporidiosis and external parasites. Rabbits can transmit bacteria through bites and scratches.
* slips, trips and falls
* injury from animals.

Ways of preventing or controlling these hazards are contained in workplace WHS policies and procedures. Some examples of these may be:

* wearing and using appropriate Personal Protective Equipment (PPE)
* implementing all personal hygiene requirements
* vaccination against zoonotic diseases (if appropriate)
* wearing appropriate footwear
* being aware of the location of animals at all times.

**What are the QA aspects of ante-mortem inspection?**

The QA practices that apply to the meat industry are explained in the training material for AMPCOR203 *Apply quality assurance practices*.

All personnel conducting ante-mortem inspections and making dispositions must have a good understanding of and follow work instructions and SOPs detailed in the company quality assurance manual and Hazard Analysis Critical Control Points (HACCP) plan. Some of these could include:

* identification of hazards, such as faecal contamination
* preventative action
* control methods
* record keeping
* traceback to property of origin
* delivery dockets
* vendor declarations/statutory declarations.

**Making an ante-mortem disposition**

**What dispositions can be made at ante-mortem?**

The AS4466:1997 *Australian Standard for the Hygienic Production of Rabbit Meat for Human Consumption* Appendix A details the abnormalities likely to be found at post-mortem inspection and their disposition. Appendix A is reproduced in the post-mortem section of this module.

The list is quite extensive but in practical terms the main abnormalities likely to be detected in rabbits on a routine basis in descending order of frequency are:

* abscesses
* pneumonia (fever)
* bruising and injuries
* myxomatosis
* calici virus infection (pneumonia).

It is worth noting that if one animal from a batch from a farm has any of the above conditions, other animals from the same farm are likely to have the same condition(s).

After ante-mortem inspection, one of the following dispositions will be made about each animal. The animal will be:

* passed as fit for routine processing
* withheld from processing pending treatment for or recovery from an abnormal condition. These animals may be resubmitted for another ante-mortem inspection at a time specified by an inspector. Note: on export abattoirs suspect animals must be held for veterinary inspection
* subjected to immediate emergency slaughter to prevent deterioration of an abnormal condition, provided the condition would allow all or part to be passed for human consumption and processing would not jeopardise the hygienic production of meat
* processed under restrictions which prevent unacceptable contamination of the processing floor and which permit more detailed post-mortem inspection
* rejected as unfit for processing and destroyed by humane means and then disposed of in an approved manner.

The following actions should be taken after ante-mortem inspection:

* a record of ante-mortem inspection of animals rejected for human consumption or passed as suspect or emergency slaughter be maintained
* animals that are deemed to be affected by diseases or conditions should be segregated from healthy animals while awaiting slaughter
* groups of rabbits that exhibit signs or symptoms of stress must be rested before slaughter
* animals 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 lapsed
* animals that are condemned must be humanely slaughtered
* dead animals are removed quickly for disposal.

The workplace procedures will detail how it is to be done

**What are the requirements for segregating stock?**

Rabbits should remain in their cages with their peer group until the point of slaughter. Mixing rabbits from different groups will result in fighting and stress.

After performing ante-mortem inspection, any animals that are showing signs of a disease, condition or abnormality must be segregated from the healthy animals for further detailed inspection. This will also include animals with faecal contamination. The inspector or authorised person must then make a disposition and decide what action to take.

Animals are segregated in four ways after ante-mortem inspection:

1. Injured animals are identified for immediate emergency slaughter.
2. The bulk of the animals will be passed as fit for human consumption.
3. Animals with localized disease e.g. lameness or with a vendor declaration that indicates exposure to chemicals are identified as suspect for separate slaughter preferably at the end of the shift. These animals may also be withheld from slaughter until their condition improves or their chemical residue status is confirmed or abated i.e. after the relevant with holding period has passed.
4. Animals with generalized disease that render them unfit for human consumption are condemned.

**What are the signs of emergency or notifiable diseases?**

The list of notifiable diseases varies a little from State to State depending on local circumstances. This list can vary from time to time.

Note: Although all exotic diseases are notifiable not all notifiable diseases are emergency or exotic diseases.

Inspectors need to be alert to and recognise the signs of some of the more serious notifiable diseases.

Since notifiable diseases vary from State to State inspectors will need to contact the relevant State animal health authority for further information on the most likely or common notifiable diseases in the state.

Note: Not all notifiable diseases will be evident at ante-mortem, a few are detectable only at post-mortem

Apart from a few conditions most of the list of notifiable diseases, do not apply to rabbits. The following do apply and the meat inspector needs to be alert to them:

* foot and mouth disease
* rabies
* spongiform encephalopathy
* infectious papilloma virus
* shope papilloma virus.

Note: Rabbits are used to cultivate the foot and mouth disease virus for vaccination purposes.

Malignant tumours are notifiable in some states.

The workplace procedures should have an up to date copy of notifiable diseases for each State/Territory and who to contact if a notifiable disease is suspected.

**What are the notification procedures for emergency or notifiable diseases?**

The control of notifiable diseases is the responsibility of State/ Territory animal health authorities.

The workplace instructions will detail who needs to be contacted if a notifiable disease is suspected.

All slaughtering premises are required to have an Emergency Animal Disease Preparedness (EADP) plan in place. This should detail the various responsibilities of people on the premises and who should be contacted should an exotic disease be suspected.

The workplace procedures will detail this.

**Monitoring the stunning and slaughter of rabbits**

**What are the types of stunning equipment are used on rabbits?**

There are two types of stunning of rabbits approved for use in Australia.

* automated electric stunning with the current applied through water using typical poultry stunning equipment
* captive bolt stunning.

Carbon dioxide stunning is not recommended as the rabbits react adversely when placed in the carbon dioxide atmosphere.

The most important thing is to ensure that whatever stunning system is in place it has been approved by the relevant authority.

Another method approved overseas is cranio-occipital dislocation (wringing the neck).

Cranio-occipital dislocation is achieved by placing the rabbits head in a holding device and pulling the animal in such a way that the head is dislocated from the rest of the body. The only disadvantage is that in older rabbits the muscles of the neck may be strong enough to prevent dislocation.

Restraint in this circumstance is manual restraint by the operator.

**What are the requirements for effective stunning and slaughter?**

Part 11 of AS4466:1997 *The Australian Standard for the Hygienic Production of Rabbit Meat for Human Consumption* requires that rabbits are restrained by an approved manner and electrically stunned or made unconscious and insensible to pain by other approved humane method.

Captive bolts are usually spring loaded or air operated rather than cartridge operated. The only problem is restraint as the skin over the head can slide and when the bolt is fired it could slide off the head.

Manual restraint is probably the most effective restraint under these circumstances.

The stunning operations at each site will be governed by the site workplace procedures. These workplace procedures and policies will depend on the species and category of stock being processed.

To achieve an effective stun, workers need to have an understanding of the stunning process and be trained in the correct use of the stunning equipment. Effective stunning with a captive bolt stunner depends on five main factors:

1. trained and competent operatives
2. accurate positioning of the equipment over the target area
3. use of the correct strength of cartridge/air pressure for the animal being stunned
4. the velocity and diameter of the bolt
5. proper maintenance and daily cleaning of the equipment.

The main cause of improper captive bolt stunning is incorrect positioning of the equipment. This is often due to the animal moving its head at the last moment so that the bolt is not in the correct spot when fired. To overcome this problem, operators must be adequately trained and the restraining equipment must be constructed so as to:

* prevent substantial movement of the animal forwards, backwards and sideways
* restrict movement of the animal's head
* allow for the stunning device to be applied to the target area on the animal’s head.

The use of the correct strength of cartridge/air pressure is vital for proper stunning and the manufacturer’s specific instructions should be followed at all times.

**How is the effectiveness of stunning assessed?**

Certain physical signs should be observed in the stunned animal in order to satisfy the operator that the stun has been effective.

These are:

* the animal collapses immediately
* a tonic and clonic phase can be observed – at first the legs are all tucked under, and then the front legs will extend, but the hind legs will remain tucked under, and only slowly extend. This is the ‘tonic phase’. Over a period of time, the animal will start to convulse and the legs may kick violently. This is the ‘clonic phase’.
* no rhythmic breathing
* fixed, glazed expression in the eyes
* no corneal reflex
* relaxed jaw.

**What corrective action must be taken in the event of ineffective stunning or bleeding?**

Animals may suffer when stunning procedures fail.

There must be provision for appropriate back-up stunning equipment to be available to minimise pain, distress or suffering to the animals.

If the initial stun is not fully effective then a number of actions have to be taken. These will be described in the work instructions. They must cover both corrective action (i.e. resolving the immediate issue) and preventive action (i.e. preventing it from happening again).

The immediate action, upon the discovery of an ineffectively stunned animal or an animal showing signs of sensibility on the bleed-line, must be to re-stun. Animals showing signs of sensibility on the bleed-line must also be re-stuck after re-stunning.

If ineffective stunning becomes a recurring or consistent problem then it is important to:

* report this to the supervisor
* check the voltage/charges/air pressure being used
* check the placement of the stunner
* check the routine maintenance of the stunner.

In most plants, stunning is monitored daily to ensure:

* that the animals are being stunned effectively first time
* that the stun/stick intervals are observed
* that excessive numbers do not build up in the stun/stick areas
* the use of incorrect voltages, cartridges, air pressure or gas levels or the incorrect placement of stunning equipment.

**What regulatory requirements apply to the assessment of stunning and bleeding?**

Part 11 of AS4466:1997 *The Australian Standard for the Hygienic Production of Rabbit Meat for Human Consumption* requires that rabbits are restrained by an approved manner and electrically stunned or made unconscious and insensible to pain by other approved humane method.

Part 4 also requires an Approved Programme to be in place.

* The following codes of practice form the basis of animal welfare when slaughtering rabbits
* Australian Model Code of Practice for the Welfare of Animals, Number 10: Animals at Slaughtering Establishments
* Operational Guidelines for the Welfare of Animals at Abattoirs and Slaughterhouses.

***Stun/stick interval***

Rabbits should be bled as soon as possible after stunning. In most plants this is achieved by decapitation immediately after stunning. The decapitation is usually done by the same person who is manually restraining the rabbit for stunning.

The stun/stick interval is less than 30 seconds.

Workplace procedures will detail how stunning assessment and bleeding is to be achieved

Further details about monitoring stunning can be found in the module AMPA3003 *Assess effective stunning and bleeding.*

**Anatomical structure of rabbits**

**Identify the basic skeletal and body structures of rabbits relevant to post mortem inspection**



**Rabbit skeleton**

*(Provided by Nottingham University)*

The basic anatomy of rabbits is the same as all mammals. The main difference other than size is the fact that rabbits have a large caecum where digestion takes place.

All visceral organs must be inspected as part of the post-mortem inspection process. Any that are abnormal in shape size or appearance must be considered when judging the suitability of the carcase for human consumption.

Note: Lymph node inspection as occurs in all other species at post-mortem inspection is not possible due to their small size.

**Conducting post-mortem inspection of rabbits**

**What are the main reasons for post-mortem inspection?**

The main reason for post-mortem inspection is to identify those conditions that can affect the suitability of a carcase and its parts for human consumption.

It is an organoleptic inspection i.e. it is an inspection by physical means of a carcase and all its parts using all of an inspector’s senses, including:

* visual inspection (observation)
* palpation
* incision and
* smell where appropriate.

If any doubts arise as to the suitability of the meat for human consumption the carcase and its parts can be retained and samples taken and sent to a laboratory for analysis.



**Rabbit carcase**

*© Eddie Andriessen*

**What are regulatory requirements are associated with post-mortem inspection?**

The AS4466:1997 *Australian Standard for the Hygienic Production of Rabbit Meat for Human Consumption* details the requirements for the ante-mortem and post-mortem inspection of rabbits at both export and domestic rabbit processing establishments.

The outcome required in Part 12 is that only wholesome meat is passed for human consumption

In addition at export processing plants the following requirements also need to be met.

*Export Control Act 2020*

*Export Control (Rabbit and Ratite Meat and Rabbit and Ratite Meat Products) Rules 2021*

*Manual of Importing Country Requirements*

**What are the procedures and processes for conducting post-mortem inspection of rabbits and identifying and detecting abnormalities?**

***Carcase inspection***

* examine entire body surface
* examine for superficial wounds, bruises, fractures, abscesses and cysts etc
* examine the parietal surfaces of the carcase for cysts, abnormal adhesions, abscesses etc.

***Viscera inspection***

* examine lungs, liver, heart, kidneys and gastro intestinal tract for cysts, abscesses, abnormal enlargement and surface focal haemorrhages.

***Judgement***

Disposition of abnormalities detected is detailed in Appendix A of the standard.

If any carcase or carcase part is found to be diseased or suspected of any disease that may render the carcase or its part unfit for human consumption the carcase or part shall be condemned.

**What WHS, hygiene and sanitation requirements apply when conducting post-mortem inspection?**

The company work instructions will set down all the WHS and hygiene and sanitation requirements for working on the slaughter floor and when conducting post mortem inspections.

These will require the inspector to:

* wash hands between carcases or when contaminated
* wear PPE like aprons and boots which can be cleaned regularly and easily
* follow the sanitary sequence which is to handle edible product (heart, lung, kidney) before handling inedible materials (intestines)
* sterilise knife between carcases and when contaminated and after steeling
* change uniform if it is grossly contaminated
* wash hands before and after work.

These practices will protect health and minimise cross contamination.

Inspectors should always wear the Personal Protective Equipment (PPE) set down in the company work instructions or WHS policy.

PPE will include:

* hand protection like mesh and cut-resistant gloves
* hearing protection
* footwear
* aprons
* uniforms
* hair net.

It is important to handle diseased or contaminated product that may require trimming in a way that avoids contamination of clean parts of the carcase. This may involve holding the affected parts with a hook and trimming from a clean area to remove offending material.

The workplace will also have a ‘dropped meat policy’ for product that accidently contacts the floor. This will need to be followed if product is dropped.

**What QA issues relate to post-mortem inspection?**

There are a number of quality assurance issues that relate to post mortem inspection. They will be detailed in the Company’s Quality Assurance program and in the work instructions. Issues that will be covered include:

* ensuring carcases and carcase parts are correctly presented for post-mortem inspection
* performing the correct procedure according to the Australian Standard and export market requirements if applicable
* ensuring only wholesome product is passed for human consumption
* ensuring trace-back requirements to ante-mortem inspection is maintained
* ensuring correlation is maintained between carcase and viscera, until after disposition has been made
* retaining carcases and carcase parts for veterinary examination (export plants only) or laboratory examination when required
* limiting cross contamination during inspection
* ensuring, where appropriate, the quality and integrity of the product is maintained
* the maintenance of records as required by the workplace instructions.

**What are the signs of common conditions responsible for abnormalities at post-mortem and how are they detected?**

The AS4466:1997 *Australian Standard for the Hygienic Production of Rabbit Meat for Human Consumption* Appendix A details the abnormalities likely to be found at post mortem inspection and their disposition. Appendix A is reproduced below.

The list is quite extensive but in practical terms the main abnormalities likely to be detected in rabbits on a routine basis in descending order of frequency are:

* abscesses
* pneumonia (fever)
* bruising and injuries
* myxomatosis
* parasitic infections especially cysts
* calici virus infection (pneumonia).

It is worth noting that if one animal from a batch from a farm has any of the above conditions, other animals from the same farm are likely to have the same condition(s).

**Appendix A**

| **Primary observation** | | **Secondary observation** | **Tertiary observation** | **Possible diseases or conditions** | **Disposition** | **Significance of observation on product quality** |
| --- | --- | --- | --- | --- | --- | --- |
| Abscess | | Soft pus | Only local involvement | Infection e.g.  Pasteurellosis  Melioidosis  Staphylococcosus | Trim affected parts & condemn trimmings and associated lymph nodes. Pass remainder for human consumption | Critical |
| Soft pus | Systemic involvement  (fever swollen lymph nodes) | Bacteraemia, septacaemia  Pasteurellosis  Melioidosis  Staphylococcosus | Condemn carcase and parts for human consumption or petfood | Critical |
| Abscess multiple | | Soft pus | Minimal systemic involvement | Pasteurellosis  Melioidosis  Staphylococcosus | Condemn carcase and parts for human consumption or petfood | Critical |
| Abscess granuloma | | Hard pus | Multiple abscesses | Pseudotuberculosis  Tuberculosis | Condemn carcase and parts for human consumption or petfood | Critical |
| Abscesses in the liver | | Pin point grey and white foci | With or without systemic involvement | Listeriosis | Condemn carcase and parts for human consumption or petfood | Minor |
| Small yellowish white nodules |  | Coccidiosis | Condemn liver, pass rest for human consumption | Major |
| Abnormal odour | | Mild | No Systemic involvement | Metabolic, plant sexual | Hold under refrigeration to determine if odour diminishes. If dissipated pass for human consumption or petfood | Major |
| Mild | No Systemic involvement | Chemical | If possibly harmful when consumed condemn as unfit for human consumption or petfood.  Otherwise Hold under refrigeration to determine if odour diminishes. Where due investigation identifies a suspect chemical refer to food standards code for acceptability. If acceptable and dissipated pass as fit for human consumption. May be passed for petfood if odour remains | Critical |
| Strong | No Systemic involvement | Metabolic, plant chemical sexual | If possibly harmful when consumed condemn as unfit for human consumption or petfood Otherwise Hold under refrigeration to determine if odour diminishes. If diminished pass for human consumption or petfood. May be passed for petfood if odour remains |  |
| Anaemia | Slight change | | No systemic involvement | Gastrointestinal parasites  Metabolic disease | Pass for human consumption | Minor |
| Pronounced change | | No systemic involvement | No systemic involvement | Save for petfood or pharmaceutical purposes | Major |
| Arthritis | Single joint | | No systemic involvement | Trauma previous infection | Trim affected part. Condemn trimmings. Pass remainder for human consumption | Minor |
| Multiple joints | | No systemic involvement | Previous infection  metabolic disease  congenital condition | Trim affected part. Condemn trimmings. Pass remainder for human consumption | Major |
| Multiple joints | | No systemic involvement | Necrobacillosis | Condemn carcase as unfit for human consumption or petfood | Critical |
| Bruising | Surface only | |  | Trauma | Trim lesions immediately around tissues. Trimmings can be used for petfood. Pass remainder for human consumption | Minor |
| Deep | |  | Extensive trauma | Trim lesions immediately around tissues. Trimmings can be used for petfood. Pass remainder for human consumption | Minor |
| Congested blood vessels | No evidence of fever | | Lung congested | Heat stress | Pass for human consumption or petfood | Critical |
| Systemic involvement | | Evidence of fever | Pneumonia  Salmonella  Calici virus | Condemn as unfit for human consumption or petfood | Critical |
| Contamination | Slight | |  | Poor dressing technique | Trim affected parts. Condemn trimmings. Pass remainder for human consumption or petfood | Critical |
| Gross | |  | Poor dressing technique | Condemn as unfit for human consumption or petfood | Critical |
| Cysts (fluid filled cavity) |  | |  | C. pisiformis  M. serialis | Trim lesions immediately around tissues. Trimmings can be used for petfood. Pass remainder for human consumption | Minor |
| Dermatitis | No systemic involvement | |  | Fleas  Mites  Tick | Skin carcase. Pass remainder for human consumption | Major |
| Developmental abnormalities | No systemic involvement | |  | Congenital abnormality | Trim lesions immediately around tissues. Trimmings can be used for petfood. Pass remainder for human consumption | Minor |
| Ecchymosis | No systemic involvement | |  | Improper stunning | Trim lesions immediately around tissues. Trimmings can be used for petfood. Pass remainder for human consumption | Minor |
| Emaciation | No systemic involvement | |  | Nutritional stress | Save as petfood or pharmaceutical purposes |  |
| Systemic involvement | |  | Bacteraemia and disease conditions | Condemn as unfit for human consumption or petfood | Critical |
| Fatty liver | No systemic involvement | |  | Metabolic disease | Save as petfood or pharmaceutical purposes  Not to be used for human consumption | Minor |
| Fibrotic tracts in the liver | No systemic involvement | |  | T. pisiformis  M. serialis | Condemn liver. Pass remainder for human consumption | Minor |
| Fistula | No systemic involvement | |  | Staphylococcosus  Necrobacillosis | Trim affected parts. Condemn trimmings. Pass remainder for human consumption or petfood | Critical |
| Systemic involvement | |  | Staphylococcosus  Necrobaciullosis  Bacteraemia | Condemn as unfit for human consumption or petfood | Critical |
| Flystrike | Minor | | No systemic involvement | Flystrike | Trim affected parts. Condemn trimmings. Pass remainder for human consumption or petfood | Minor |
| Systemic involvement | | Only local lymph nodes involved | Flystrike | Trim affected parts and regional lymph nodes Condemn trimmings. Pass remainder for human consumption or petfood | Critical |
| Systemic involvement | | Fever evident | Flystrike | Condemn as unfit for human consumption or petfood | Critical |
| Gastro intestinal inflammation | No systemic involvement | | No peritonitis | Gastro intestinal parasitism | Condemn GI tract. Pass remainder for human consumption or petfood | Critical |
| Necrosis of large intestine , caecum and ileum | | With or without peritonitis | Bacillus piliformis  (Tyzards disease) | Condemn as unfit for human consumption or petfood | Critical |
| Systemic involvement | | With or without peritonitis | Salmonellosis  Bacteraemia | Condemn as unfit for human consumption or petfood | Critical |
| Genital tract scabs | Vagina or prepuce affected | |  | Spirochaetosis | Trim affected parts. Condemn trimmings. Pass remainder for human consumption or petfood | Minor |
| Grass seeds | No systemic involvement | |  | Grass seeds | Trim affected parts. Condemn trimmings. Pass remainder for human consumption or petfood | Minor |
| Systemic involvement | |  | Grass seeds | Condemn as unfit for human consumption or petfood | Major |
| Healed fractures | Localised with no systemic involvement | |  | Old trauma | Trim affected parts. Condemn trimmings. Pass remainder for human consumption or petfood | Minor |
| Systemic involvement | |  | Rickets old trauma | Trim affected parts. Condemn trimmings. Pass remainder for human consumption or petfood | Major |
| Impaction | Fluid filled abdomen | | Emaciation | Mucoid enteropathy | Condemn as unfit for human consumption | Major |
| Incomplete bleeding | No systemic involvement | |  | Poor technique | Check bleeding procedure. Save for petfood or pharmaceutical purposes | Minor |
| Jaundice | Slight | | No systemic involvement | Metabolic disease | Hold under refrigeration for re-examination if improved pass for human consumption or petfood | Minor |
| Pronounced | | No systemic involvement but synovia and cartilage involved | Metabolic disease | Hold under refrigeration for re-examination if improved pass for human consumption or petfood. If insufficient change petfood or pharmaceutical only | Major |
| Lymphadenitis | Systemic involvement | |  | Salmonellosis  Necrobaccillosis  Melioidosis  Bacteraemia | Condemn as unfit for human consumption or petfood | Critical |
| Mange | No systemic involvement | |  | Mange mites | Skin carcase. Pass remainder for human consumption | Minor |
| Mastitis | Localised | |  | Bacterial infection | Trim affected parts. Condemn trimmings. Pass remainder for human consumption or petfood | Major |
| Extensive | |  | Bacterial infection | Condemn as unfit for human consumption or petfood | Critical |
| Myositis | Localised | | No systemic involvement | Metabolic disease | Trim affected parts. Condemn trimmings. Pass remainder for human consumption or petfood | Major |
| Extensive | | No systemic involvement | Metabolic disease exertional myositis | Condemn as unfit for human consumption or petfood | Critical |
| Localised | | Regional involvement | Trauma | Trim affected parts. And regional lymph nodes. Condemn trimmings. Pass remainder for human consumption or petfood | Critical |
| Nasal and eye discharge | Extensive | |  | Pasteurellosis  Myxomatosis  Rabbit pox | Condemn as unfit for human consumption or petfood | Critical |
| Neoplasm | Localised | | No systemic involvement | Various | Trim affected parts. And regional lymph nodes. Condemn trimmings. Pass remainder for human consumption or petfood |  |
| Extensive | | Systemic involvement | Various | Condemn as unfit for human consumption or petfood | Critical |
| Oedema | Slight | | No systemic involvement | Gastro intestinal parasites | Trim affected parts. Condemn trimmings. Pass remainder for human consumption or petfood | Minor |
| Extensive.  No systemic involvement | | Loss of condition | Gastro intestinal parasites & Bacteraemia | Save as petfood or pharmaceutical purposes | Major |
| Pigmentation | No systemic involvement | |  | Metabolic disease  Congenital  unknown | Hold under refrigeration for re-examination if improved pass for human consumption or petfood | Minor |
| Pitting of kidneys | No systemic involvement | |  | Nosematosis | Condemn kidneys pass remainder for human consumption | Major |
| Pleural &/or peritoneal adhesions | No systemic involvement | |  | Past infection  Old trauma | Trim affected serosal surfaces and condemn trimmings. pass remainder for human consumption | Minor |
| Systemic involvement | |  | Salmonella  E. coli  Bacteraemia  Pneumonia | Condemn as unfit for human consumption or petfood | Critical |
| Pneumonia | Systemic involvement | |  | Salmonella  Pasteurellosis  Bacteraemia  Pneumonia | Condemn as unfit for human consumption or petfood | Critical |
| Pus | Discharge from eyes, nostrils, skin rash | |  | Rabbit pox | Condemn as unfit for human consumption or petfood | Critical |
| Ringworm | No systemic involvement | |  | Mycotic infection | Skin carcase. Pass remainder for human consumption | Critical |
| Ulcer | Localised | |  | Ulcerative pododermatitis | Trim affected parts and condemn trimmings. Pass remainder for human consumption | Major |
| Systemic change | |  | Ulcerative pododermatitis | Condemn as unfit for human consumption or petfood | Critical |
| Uneviscerated  Carcase |  | |  | Only as part of an approved process | Disposition will depend on a range of factors including ambient temperature, length of delay. Action should be taken to minimise deterioration. Where bacterial safety of carcase is compromised condemn as unfit for human consumption or petfood | critical |
| Wounds | No systemic involvement | |  | Fight wounds, dog bites, trauma | Trim affected parts and condemn trimmings. Pass remainder for human consumption | Major |
| Systemic involvement | |  | Fight wounds, dog bites, trauma | Condemn as unfit for human consumption or petfood | Critical |

**What are the types and symptoms of emergency (and/or notifiable) diseases that can be detected at post-mortem?**

The AUSVETPLAN defines an emergency animal disease as:

*'A disease that is (a) exotic to Australia or (b) a variant of an endemic disease or (c) a serious infectious disease of unknown or uncertain cause or (d) a severe outbreak of a known endemic disease, and that is considered to be of national significance with serious social or trade implications.’*

Specific animal diseases are termed as emergency because of their potential, in most cases, for very serious and rapid spread causing major economic impact to livestock industries and the economy. Some of these diseases can also be spread from animals to humans (zoonoses). These diseases would also have a major impact on our international markets. An outbreak of an emergency disease would mean the immediate closure of all our international markets. Depending on the market and disease it could take Australia years to regain access. Most emergency diseases are exotic ie they are not found in Australia but some like anthrax are endemic ie are already in Australia.

All emergency animal diseases are also ‘notifiable diseases’.

The list of notifiable diseases varies a little from State to State depending on local circumstances. This list can vary from time to time.

Note: Although all exotic diseases are notifiable not all notifiable diseases are exotic diseases.

Inspectors need to be alert to and recognise the signs of some of the more serious notifiable diseases.

Since notifiable diseases vary from State to State inspectors will need to contact the relevant State animal health authority for further information on the most likely or common notifiable diseases in the state.

Note: Not all notifiable diseases will be evident at ante-mortem, a few are detectable only at post-mortem.

Apart from a few conditions most of the list of notifiable diseases, do not apply to rabbits. The following do apply and the meat inspector needs to be alert to them:

* foot and mouth disease
* rabies
* spongiform encephalopathy
* infectious papilloma virus
* shope papilloma virus.

Note: Rabbits are used to cultivate the Foot and mouth disease virus for vaccination purposes.

Malignant tumours are notifiable in some states.

**What regulatory requirements apply when handling an affected carcase?**

Carcases may be identified at post-mortem inspection as having:

* a pathological condition
* gross contamination
* another abnormality requiring further treatment and/or a more detailed inspection.

They may be directed to the retain rail to undergo further treatment and inspection. The post-mortem inspector marks these carcases or carcase parts with the relevant retain tag, as per workplace procedures.

There needs to be an area set aside for re-inspection purposes. It should only be used for this purpose. The equipment needed is:

* lighting, to 600 lux
* handwash and equipment sterilisation facilities and liquid soap
* condemned meat bin/barrow/chute
* cutting equipment – saw, knife etc.
* product wash facilities

The requirements for retaining a carcase will depend on whether the plant is domestic-registered or export-registered. The requirements are generally as follows.

|  |  |
| --- | --- |
| **Action** | **Explanatory notes** |
| Supervise | retain rail personnel in the detection and removal of pathology, contamination or other abnormality requiring treatment. |
| Inspect | all external and internal carcase surfaces, including cut muscle, to ascertain if the reason for retaining has been rectified  all carcase parts (viscera) that have been retained to assist with disposition. |
| Palpate | lymph nodes and suspect lesions and, where necessary, incise to detect disease conditions and/or pathological change. |
| Sanitary sequence | Observe  **palpate**  incise.  NB: Wash hands after handling material unfit for human consumption. Thoroughly sterilise knife after trimming material unfit for human consumption. |

**Note:** for further information refer to AMPA3046 *Undertake retain rail operations.*

The question of disposition i.e. what to do with the retained carcase and its parts is a question that should be addressed in conjunction with Appendix A of the Australian standard for Rabbits

But in the end it is up to the meat inspector to make the decision. The decision should be made on good scientific principles.

When making disposition on a carcase, an organ or any other parts the inspector can make a disposition on:

* the total carcase (including its parts)
* a part of the carcase
* pass as suitable for human consumption and remove the retain tags
* retain requiring further inspection and apply a retain tag and supervise the segregation of the carcase and/or carcase parts in the retain facility
* retain requiring further treatment and apply a retain tag and supervise the segregation of the carcase and/or carcase parts in the chiller retain facility
* relegate to an inedible purpose other than condemnation, i.e. animal food or pharmaceutical purposes; identify the carcase and/or carcase parts as suitable for the designated purpose, e.g. pet food only and supervise the removal of the carcase and/or carcase parts to the designated processing area
* identify the carcase and/or carcase parts as condemned by the application of the condemned stamp or the application of ink and/or disposal in a condemned tub/bin or chute.

**What hygiene and sanitation and WHS requirements apply when handling an affected carcase?**

The company work instructions will set down all the hygiene requirements for working on the slaughter floor and for handling affected carcases.

These will require the inspector to:

* wash hands between carcases or when contaminated
* wear all PPE like aprons and boots which can be cleaned regularly and easily
* follow the sanitary sequence which is to handle edible product (heart, lung, kidney) before handling inedible materials (intestines)
* sterilise knife between carcases and when contaminated and after steeling
* change uniform if it is grossly contaminated
* wash hands before and after work.

These practices will protect health and minimise cross contamination.

Inspectors should always wear the Personal Protective Equipment (PPE) set down in the company work instructions or WHS policy.

PPE will include:

* hand protection like mesh and cut-resistant gloves
* hearing protection
* footwear
* aprons
* uniforms
* hair net.

It is important to handle diseased or contaminated product that may require trimming in a way that avoids contamination of clean parts of the carcase. This may involve holding the affected parts with a hook and trimming from a clean area to remove offending material.

The workplace will also have a ‘dropped meat policy’ for product that accidently contacts the floor. This will need to be followed if product is dropped.

**Retaining carcases**

**What are the procedures for retaining carcases on the slaughter floor?**

When minor defects cannot be removed by an inspector on the slaughter floor or if a carcase requires a more detailed assessment the carcase may be passed onto the retain rail for further treatment and assessment.

Carcases on the chain can be identified in a number of ways to indicate the pathology or defects that need to be removed or re assessed in the retain rail. This includes knife cuts, tie-on tags, stick-on tickets, plastic tags and formal approved retain tags (ECA4).

Workplace procedures will detail how this is to be done.

These tags are temporary tags and are removed by the trimmer on the retain rail after the defects have been addressed.

The ECA4 Tag or equivalent on the other hand can only be removed by an authorised person. It is generally used for more permanent control over product where more detailed assessments need to be done to determine the suitability of the product for human consumption.

**What are the procedures for retaining carcases in a chiller?**

If carcases are to be retained in the chiller because it may take some time for laboratory results to return, the carcases to be retained must not only be identified by tags but also need to be locked in such a way by a meat safety inspector or other authorised person, so that it cannot be used for human consumption until the results of tests have been received.

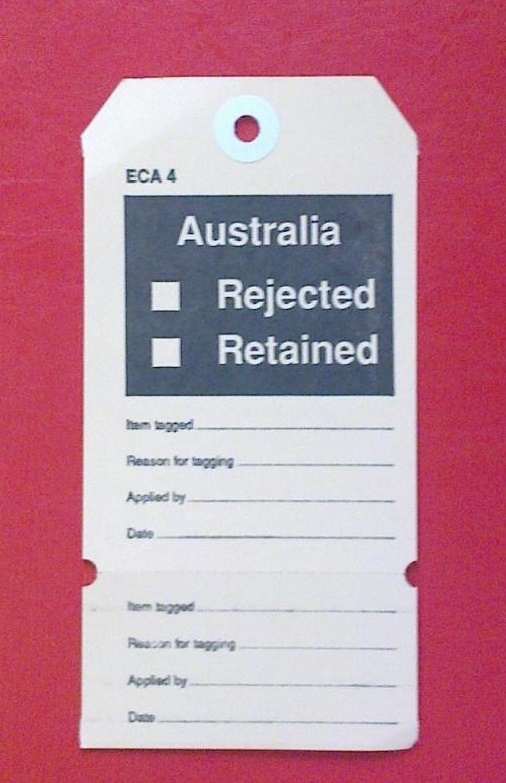
Carcases may be locked on the rail or in a special cage.

Records need to be maintained of any such actions in the ECA4 register. In general the ECA4 is filled out by the person applying it. It has four requirements for details:

* item tagged
* reason for tagging 3
* applied by
* date.

This information is recorded onto both sections of the ECA4 tag. The lower tear off section is then recorded into to ECA4 register and the final disposition recorded when complete.

Workplace procedures will detail how this is to be done.



**ECA4 tag**

**PPE requirements for post-mortem inspection**

**What PPE is required to perform post-mortem inspection?**

Personal Protective Equipment to be used will be set down in the work instruction and WHS procedures. PPE may include:

* protective hand and arm covering
* protective head and hair covering
* head wear
* coat and apron
* work safety or waterproof footwear
* protective boot covers
* ear plugs/muffs
* eye and facial protection
* waterproof clothing.

**What workplace requirements apply when using PPE?**

According to the *National Guidelines for Health and Safety in the Meat Industry*:

*‘ PPE and clothing are those items of equipment worm by an employee to minimise or eliminate exposure to specific occupational hazards’*

The emphasis is always on eliminating the hazards thereby making it unnecessary for workers to wear Personal Protective Equipment (PPE). However, it is not always possible to eliminate the hazards, and PPE may be required to protect the worker from the consequences of exposure. For example, workers may be required to wear ear plugs to reduce the likelihood of deafness resulting from exposure to an excessively noisy environment. Workers in the meat industry are frequently required to wear PPE. In this case it is the employer’s responsibility to ensure PPE is:

* assigned to the worker for their exclusive use
* cleaned and maintained after use
* stored when not in use
* inspected and repaired regularly
* checked for continued functioning and effectiveness.

It is also the employer’s responsibility to ensure training is provided as appropriate. Workers should receive training about:

* proper use of PPE
* the deficiencies and restrictions of PPE
* fitting PPE and how to test for fit
* use of PPE
* maintenance of PPE
* storage of PPE
* identification of faults in PPE
* procedure for replacing PPE.

**How should PPE be used, maintained and stored?**

Workers are responsible to:

* wear PPE as instructed by the supervisor and as set out in the work instruction
* fit PPE to ensure it is used to maximum benefit
* check for any faults and replace it if faulty
* follow maintenance procedures as instructed by the supervisor and set out in work instructions
* store PPE as instructed.

Examples of specific PPE are included in the *National Guidelines for Health and Safety in the Meat Industry*.

**Taking pathological and residue samples**

**How are lesions and tissues necessary for determining dispositions identified?**

The type of lesions and tissues necessary for determining dispositions will depend on the nature of the abnormality and the nature of the suspected disease condition. It is vital under these circumstances that there is an accurate record of the property of origin of the animal so that trace back can be instituted if necessary.

For other conditions the list below indicates what suitable specimens should be taken.

**What are the requirements for collecting and submitting specimens?**

Sometimes in order to make a correct disposition on product at post mortem inspection or to confirm suspicion of a notifiable disease it will be necessary to take samples for laboratory analysis.

In each State or Territory there is usually a Veterinary Laboratory where samples can be sent for analysis. Detailed information on the collection and handling of samples for each laboratory should be obtained directly from the laboratory. Most Laboratories have a manual that will outline the collection and handling requirements. The following is a brief guide of the samples required for various types of tests.

**Bacteriology**

Swabs of tissue e.g. heart blood, intestinal content, in transport medium and /or 30 ml of chilled lesion, fluid or tissue e.g. liver, lung, intestine in a screw-capped container.

**Biochemical tests**

Full 10 ml plain and Lithium/ heparin blood tube.

**Gross Pathology**

Representative samples of affected tissue with any adjacent normal tissue.

**Haematology**

Full 10 ml EDTA blood tube and blood smear.

**Histopathology**

A representative sample of affected tissue with adjacent normal tissue. Tissue should be 1 cm thick in ten times their volume of buffered formalin solution.

**Parasitology**

Approximately 30g of faeces for faecal egg count.

**Serology**

A full 10 ml plain blood tube.

**Toxicology**

Approximately 50 ml of ingesta, faeces or flesh tissue.

**Virology**

Full 10 ml plain tube and EDTA blood tubes.

30 ml of fresh chilled tissue e.g. heart, spleen or swab of lesion or tissue in PBGS.

**How are specimens for residue testing taken?**

Specimens for residue testing will vary according to the type residue that is suspected. For example if cadmium is suspected kidney samples will be taken. If pesticides are suspected samples could include meat or offal such as livers.

It is vital under these circumstances that there is an accurate record of the property of origin of the animal so that trace back can be instituted if necessary.

The workplace instructions will describe what samples to take. If not the relevant authority responsible for meat safety in each state will provide advice.

The relevant laboratory doing the testing will also advise what type of specimen they require.

**How are results interpreted?**

The interpretation of the results of residue sampling will be determined by the laboratory. They will advise if the result is below or over the regulatory limit for that residue.

If the result is over the regulatory limit public health authorities will decide what is to happen to the carcase.

**Bibliography**

These publications were used to develop this training material.

Eddie Andriessen *Meat Safety Quality and Veterinary Public Health in Australia 11th edition* Penny Farthing Publishing PO Box 190 Woodville SA

Food Standards Australia New Zealand *Australian Standard for the Hygienic Production of Rabbit Meat for Human Consumption (AS4466:1997)* CSIRO Publishing

Commonwealth Department of Agriculture

*Export Control Act 2020*

*Export Control (Rabbit and Ratite Meat and Rabbit and Ratite Meat Products) Rules 2021*

*Manual of Importing Country Requirements*

*National Residue Survey – Approved Laboratories for Chemical Residue Testing*

Note: Other than Eddie Andriessen’s book all of the above can be accessed at Elmer 3

<http://www.agriculture.gov.au/export/food/meat/elmer-3>

**Additional resources**

Registered Training Organisations (RTOs) should refer to the Unit-by-Unit listing of resources on the MINTRAC website [www.mintrac.com.au](http://www.mintrac.com.au) for additional resources to support the delivery of this Unit.

RTOs which develop or identify additional resources are encouraged to advise MINTRAC so that these can also be added to the Unit-by-Unit listing.

**The Exam Generator**

The Exam Generator is a question bank containing hundreds of questions related to meat safety and Quality Assurance. There are two CDs in the set – one for RTOs (Albert) to create the exams and a student CD (Eddie) that creates electronic practice exams containing all the same questions.

**Meat Inspection Currency tool**

The Meat Inspector Currency exam generator generates quizzes for the assessment of the currency of a meat inspector’s knowledge.