Targeted Residue Testing Programs
(NORM, TART, NARM, START, PTART)

For the Testing of
Carcases, Export Meat, and Meat Products

November 2017
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1. Introduction

1.1 Targeted Monitoring, Compliance and Prevention

Targeted monitoring, compliance testing, and residue prevention projects are designed to meet particular management objectives relating to chemical residue that pose a high or a potential risk to access by Australian products to domestic and export markets. Department on-plant veterinary officers organise to collect* samples and dispatch for testing in accordance with industry requirements. Results are released to the relevant authorities and to industry for action where necessary. Domestic sampling is organised by the National Residue Survey (NRS) through the Company QA Managers.

Targeted programs include:

- National Organochlorine Residue Management program (NORM)
- Targeted Antibacterial Residue Testing program (TART)
- National Antibacterial Residue Minimisation program (NARM)
- Sheep Targeted Antibacterial Residue Testing program (START)
- Pig Targeted Antibacterial Residue Testing program (PTART)

Establishments need to address risks not addressed or species not covered by the industry programs listed above in their approved arrangements.

Note: *Some samples maybe collected by establishment personnel with the control and accountability for sampling protocols and program compliance still held with the On-Plant Veterinarian (OPV).
2. Testing arrangements for the National Organochlorine Residue Management (NORM) Program

The NORM program was established to manage the risks of persistent organochlorine (OC) contaminants being detected in beef products. The program focuses on the active management of OC broad-acre and point-source contamination at the farm level to minimise trade risks to the beef industry and to prevent OC contaminants in food products exceeding domestic food standards.

2.1 Scope

This procedure applies to establishments testing product under the NORM Program.

2.2 Background

Organochlorine (OC) residues in meat (DDT, dieldrin etc) became a significant issue for Australian market access to the USA in 1987 and have required ongoing management. In early 1994, the Residue Management Group (a predecessor to SAFEMEAT) reviewed the OC residue situation after the successful completion of a property clearance program that existed from 1987-1994. The outcome was the development and implementation of the NORM Program, a program aimed at identifying risk properties and implementing active management at the farm level through on-farm quality assurance.

2.3 Discussion

In 1995, all cattle properties were allocated an OC chemical residue status based on their previous testing history. All property statuses are listed on the NLIS database, which is maintained and managed by Meat and Livestock Australia (MLA). Properties classed as ‘clear’ (C) are referred to as ‘no ERP status’. Saleyard operators and abattoir management access the NLIS database before sale or slaughter to determine the OC status and the relevant contaminant testing rates.

Industry funding for test costs is available only for testing undertaken on sentinel animals within the first year following discovery of the OC risk and the assigning of a ‘T’ status to the property. Properties eligible for this funding have ERP statuses with an ‘F’ suffix. Properties that have been assigned a ‘T’ status for longer than 1 year have a ‘V’ suffix, indicating that payment for testing is to be under commercial arrangements between the abattoir and the vendor.
The testing rates and payment arrangements are listed below:

<table>
<thead>
<tr>
<th>OC Risk Category</th>
<th>ERP Status</th>
<th>Property Risk Status</th>
<th>Testing rate</th>
<th>Product Fate^</th>
<th>Payment Testing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>T4</td>
<td>Very High</td>
<td>100% of lots, &lt;10 in lot, 1 targeted sentinel; 10 – 20, 2 targeted sentinels; &gt;20, 3 targeted sentinels</td>
<td>Test sentinel(s) &amp; hold all if a test result &gt;50% MRL test all companions</td>
<td>Commercial arrangements apply¥</td>
</tr>
<tr>
<td></td>
<td>T3F</td>
<td>High</td>
<td>100% of lots, 1 targeted sentinel</td>
<td>Test sentinel &amp; hold all if a test result &gt;50% MRL test all companions</td>
<td>Industry funding§</td>
</tr>
<tr>
<td></td>
<td>T3V</td>
<td>High</td>
<td>100% of lots, 1 targeted sentinel</td>
<td>Test sentinel &amp; hold all if a test result &gt;50% MRL test all companions</td>
<td>Commercial arrangements apply¥</td>
</tr>
<tr>
<td></td>
<td>T1F and T2F</td>
<td>Reduced</td>
<td>100% of lots, 1 targeted sentinel</td>
<td>Test &amp; hold sentinel if a test result &gt;50% MRL test all companions</td>
<td>Industry funding§</td>
</tr>
<tr>
<td></td>
<td>T1V and T2V</td>
<td>Reduced</td>
<td>100% of lots, 1 targeted sentinel</td>
<td>Test &amp; hold sentinel if a test result &gt;50% MRL test all companions</td>
<td>Commercial arrangements apply¥</td>
</tr>
</tbody>
</table>

^ While test and hold is recommended for export abattoirs, domestic abattoirs may decide to operate on a test and release basis for OC Risk categories other than T4 which must be test and hold. Where a test and hold arrangement applies, it is recommended that results be known prior to slaughter of the balance of the lot.

¥ Any testing undertaken is a commercial matter between the abattoir and the vendor.

§ Industry funding is available for tests of sentinel animals for T1F, T2F, and T3F risk categories for 12 months from the time of initial risk discovery. Following this period these statuses will change to T1V, T2V and T3V and payment for testing will be a commercial matter between the abattoir and the vendor.
2.4 Sample collection and dispatch

For sample collection and dispatch instructions for this program refer to the “NRS Sample Collection and Dispatch manual” supplied by NRS to all OPVs and QA Managers annually. Additional manuals are supplied by NRS upon request to nrs@agriculture.gov.au at nil cost.

The NRS manual also contains the laboratory addresses to send targeted samples to. This is titled as the “NRS approved laboratories”.

**OC CODES TO BE ENTERED ON THE NRS LABORATORY Residue testing SUBMISSION FORM (this form is available from NRS upon request)**

There are 2 components to the code and it is essential to mark BOTH on the laboratory submission form:

1. the OC Risk Category (ERP Status) **AND**
2. the reason why the animal is to be tested, *e.g.* T2/S or T2/A or T1/M or N

2.5 Responsibilities and Reporting Requirements

2.5.1 Establishment management

i) To implement the NORM program as above.

ii) Bring to the attention of the department of any cattle from targeted properties or sourced from properties quarantined for residues prior to presentation for slaughter.

iii) Exclude from export the carcase and offal of cattle tested and found to contain residues above the relevant importing country standard.

iv) In consultation with the OPV condemn the carcase/s and offal of cattle tested and found to contain residues above the standards set in the Australia and New Zealand Food Standards Code.

2.5.2 Department On-plant veterinary officers (OPVs):

i) To verify the effectiveness of the establishments NORM program.

ii) Verify the establishment ensures that the source property for the animals is accredited under LPA on-farm food safety program, or equivalent, that addresses organochlorine risks. If animals are not sourced from properties that can demonstrate organochlorine risks are managed sentinel animals should be tested to assess the risk.

iii) Retain the carcase and offal of tested animals with an ERP T status (T1V, T2V, T1F, T2F, T3V, T3F and T4V).

iv) Determine final disposition based on the laboratory test result and notify the establishment of final disposition of the carcase, carcase products and offal.

v) Notify the Area Technical Manager (ATM) of any results where the targeted animal carcase is eligible to be released to the domestic market.
Final Carcase Disposition

vi) Each target animal under an OC risk category (T1V, T2V, T1F, T2F, T3V, T3F and T4V) is to be tested on a ‘test and hold’ basis and final disposition is made based on laboratory results e.g. if the laboratory result is:

i) greater than the Australian MRL then the carcase is to be condemned and disposed of under department supervision.

ii) greater than the MRL of the proposed importing country, but less than the Australian MRL, then the carcase may be released to the domestic.

iii) less than the MRL of the proposed importing country and the Australian MRL, then the carcase may be released to the domestic market, for export or for further processing.

2.5.3 Area Technical Managers

i) Verify that export registered establishments have an approved NORM testing program included under their approved arrangement.

ii) Notify the relevant State/Territory authorities responsible for domestic meat inspection of laboratory results and final carcase disposition of targeted animal carcasses intended for release to the domestic market.

2.5.4 Laboratories

i) Laboratories are required to report results according to contractual arrangements to the department OPV(s) and NRS.

2.5.5 NRS

i) NRS is to report all laboratory results to the relevant State/Territory Residue Coordinator and to department’s Export Meat Program Food Safety unit, Export Standards branch and NRS management.
3. Targeted Antibacterial Residue Testing (TART) Program – antibacterial confirmatory testing for suspect adult cattle

The purpose of this program is to manage the risk of antibacterial residues that exceed the relevant standards in cattle, other than bobby calves, slaughtered at export abattoirs. For bobby calves see the NARM testing program.

3.1 Scope
This procedure applies to all establishments slaughtering cattle for export.

3.2 Background
The presence of antibacterial residues in meat products has the potential to restrict market access of Australia’s produce. SAFEMEAT has reviewed both the NARM and TART programs:

- The NARM program only applies to bobby calves.
- The TART program provides an antibacterial confirmatory testing capability to the DEPARTMENT On-Plant Veterinarian (OPV) when suspected that cattle (other than bobby calves) may recently been treated with antibacterial medications.

3.3 Discussion
Of particular interest within the TART program are cull dairy cows, cattle from hospital penned feedlot cattle and cull bulls.

**NOTE:** The TART, START and PTART programs only apply to cattle, sheep and pigs respectively. For species other than bovine, ovine or porcine, if a residue is suspected, contact the Director of the Export Meat Program via the ATM to gain authorisation from the NRS for testing.

3.4 Sample collection and dispatch
For sample collection and dispatch instructions for this program refer to the “NRS Sample Collection and Dispatch manual” supplied by NRS to all OPVs and QA Managers annually. Additional manuals are supplied by NRS upon request to nrs@agriculture.gov.au at nil cost.

The NRS manual also contains the addresses to send Targeted sample. This is listed as the NRS “Approved laboratories” found on ELMER3 or the information material library (IML).
3.5 Responsibilities

3.5.1 Establishment management

i) To implement an effective TART program under the establishment’s approved arrangement.

ii) Bring to the attention of the department any cattle identified by the National Vendor Declaration (NVD) as receiving recent antibacterial treatment - including all cattle for which the vendor has answered “Yes” to the relevant question on the NVD in respect of such treatment (i.e. Are any of the cattle in this consignment still within a Withholding Period (WHP) or Export Slaughter Interval (ESI) following treatment with any veterinary drug or chemical?).

ii) Exclude from export the carcase and offal of cattle tested and found to contain residues above the relevant importing country standard.

iii) Condemn the carcase and offal of cattle tested and found to contain residues above the Australian Standard (Australia and New Zealand Food Standards Code).

3.5.2 Department on-plant veterinary officers (OPVs)

i) To verify effectiveness of the establishment’s TART program.

ii) Identify targeted animals suspected of having received recent antibacterial treatment, collect, and dispatch tissue samples.

OPVs must use their professional judgement to select animals (at ante-mortem), condemns or carcasses (at post-mortem) suspected to have received recent antibacterial drug treatment.

iii) Ensure the carcase, carcase parts and offal of tested animals that pass post-mortem inspection are retained under the department’s supervision until receipt of confirmatory analysis results. Note, if sample was collected from a condemned animal, the carcase and carcase parts are disposed of following normal procedures and are not to be held.

iv) Ensure a copy of the laboratory results is given to the establishment.

v) Sample any cattle identified by the NVD as receiving recent antibacterial treatment.

vi) Are to notify the establishment of the final disposition of the carcase and offal based on the laboratory test result, and

vii) For targeted animal carcases that are to be released to the domestic market; consult with the ATM to ensure the relevant State/Territory authorities responsible for domestic meat inspection are notified of laboratory results and final carcase disposition.
**Targeted animals may include:**

<table>
<thead>
<tr>
<th>cattle</th>
<th>cattle exhibiting signs of:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- identified by the NVD as recently treated with antibacterials</td>
<td>Endocarditis</td>
</tr>
<tr>
<td>- suspected of being recently treated with antibacterials</td>
<td>Injection sites</td>
</tr>
<tr>
<td>- with blue dye in the udder</td>
<td>Injury or inflammatory conditions</td>
</tr>
<tr>
<td>- known or suspected to have been in the hospital section of a feedlot</td>
<td>Mastitis</td>
</tr>
<tr>
<td>- Condemned animals that would have progressed through the human food chain, this includes both animals condemned at ante-mortem as well as on the slaughter floor during post mortem inspection.</td>
<td>Metritis</td>
</tr>
<tr>
<td></td>
<td>Pericarditis</td>
</tr>
<tr>
<td></td>
<td>Peritonitis</td>
</tr>
<tr>
<td></td>
<td>Pleuritis</td>
</tr>
<tr>
<td></td>
<td>Pneumonia</td>
</tr>
<tr>
<td></td>
<td>Septicaemia, pyemia or generalised disease.</td>
</tr>
</tbody>
</table>

**Final Carcase Disposition**

Carcases and carcase parts that have passed post-mortem inspection are retained pending laboratory results (i.e. **test and hold**). Carcases and carcase parts of condemned animals are disposed of following normal procedures and are not required to be held pending lab results. For product retained on a ‘**test and hold**’ basis and final disposition is made based on laboratory results e.g. if the laboratory result is:

i) greater than the Australian MRL then the carcase is to be condemned and disposed of under department supervision.

ii) greater than the MRL of the proposed importing country, but less than the Australian MRL, then the carcase may be released to the domestic market.

iii) less than the MRL of the proposed importing country and the Australian MRL, then the carcase may be released to the domestic market, for export or for further processing.

The department will notify the relevant state and territory domestic meat regulator of the laboratory test outcome and the final carcase disposition.

**3.5.3 Area Technical Manager**

i) Verify establishments have the TART program included in their approved arrangement and effectively implemented.

ii) Where necessary, for product deemed not fit for export but eligible for human
consumption for the domestic market, liaise with relevant State authorities.
The following table details the samples that must be collected for the TART program.

Samples should be collected, packaged, stored and dispatched according to the current NRS Sample Collection and Dispatch Manual (contact NRS at nrs@agriculture.gov.au for copies).

<table>
<thead>
<tr>
<th>TART program</th>
<th>Sample</th>
<th>Test Type</th>
<th>Recording of Sample Details</th>
<th>Consignment notes 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle suspected of antibacterial drug treatment</td>
<td>Kidney (^1)</td>
<td>Test &amp;hold (^2)</td>
<td>New On Demand Sample - AMK in TART</td>
<td>TART</td>
</tr>
</tbody>
</table>

1. Kidney is the preferred tissue. Muscle tissue could be sent for testing if kidney is not available, **but do not sample injection site granuloma.**

2. Carcase and associated parts from condemned animals are disposed of following normal procedures and are not to be held. For samples collected from product destined for the food chain, carcasses (entire carcase or boned) and all carcase parts of targeted cattle that pass post-mortem inspection must be retained under department supervision until the test results become available.
   - No meat product from any other carcass may be placed in the same carton, irrespective if it is from another targeted animal awaiting test results

3. Use relevant program consignment notes: refer to the current NRS Sample Collection and Dispatch Manual.

- Tissue samples are to be sent to an [NRS approved laboratory](#) listed on ELMER3 or on the Information Material Library (IML).

- **NRS will meet the cost** of freighting tissue samples to the laboratory and the laboratory analysis costs for samples submitted by OPV’s under the TART Program.

### 3.5.4 Laboratories

Laboratories are required to report results according to contractual arrangements to department OPVs and NRS

### 3.5.5 NRS

NRS is to report all laboratory results to the relevant state/territory residue coordinator and to department’s Export Meat Program Food Safety unit, Export Standards branch and NRS management.
4. The National Antibacterial Residue Minimisation (NARM) Program – Bobby Calves

The purpose of this program is to manage the risk of antibacterial residues that exceed the Australian maximum residue limits (MRLs) in bobby calves slaughtered at export abattoirs. The testing component of the NARM program sets out the required testing rates for Microbial Inhibition Testing (MIT) of bobby calf urine and provides for confirmatory testing of ALL MIT screen positives to support state department extension and prosecution activities.

4.1 Scope

This procedure applies to export registered establishments slaughtering bobby calves. A bobby calf is a young bovine animal weighing no more than 80 kg live weight or 40 kg dressed weight.

4.2 Background

The presence of antibacterial residues in meat products has the potential to restrict market access of Australia’s produce. In response, the department introduced testing and monitoring programs for bobby calves. Testing of a percentage of slaughter throughputs is required to address the concerns of sensitive markets.

The abattoir NARM program applies only to bobby calves while the abattoir TART program will continue to provide a testing capability to the department where they suspect cattle, other than bobby calves, may have been recently treated with antibacterials.

The NARM program monitors for 5 main classes of antibacterials:

- sulphonamides
- aminoglycosides
- macrolides
- tetracyclines
- beta-lactams (e.g. penicillins)

4.3 Discussion

In recognition of changes made in international and Australian tolerances and general improvements in the bobby calf MIT violation rates at Australian abattoirs, the department and industry agreed in 2006 to the adoption of set testing rates for bobby calves.

The aim of the program is to:

a) minimise unnecessary testing of calves which are free from antibacterial residues,

b) encourage producers to only supply animals which have not been treated, or which
have complied with appropriate treatment withholding periods

c) encourage establishment managers to support producer feedback and favour livestock purchase contracts that extend the responsibility for control of residues to the farm of origin.

Establishment management and department on-plant veterinary officers should work co-operatively with local state and territory animal health authorities and dairy producer groups to further reduce antibacterial residues in slaughter calves.

4.4 Sampling

4.4.1 Establishment Management

i) A valid national vendor declaration (NVD) should be obtained from all persons in the supply chain from farm to abattoir who have had custody of the animals, including those who aggregate animals from different farms prior to supply to the abattoir.

- Post sale summaries are acceptable provided they contain all relevant information and the original NVD remains available on the request of establishment management.
- Animals presented for slaughter without the required documentation must be withheld from slaughter until the consignor supplies the documentation.

ii) Each animal is to be tested on a ‘test and hold’ basis.

iii) Export establishments must test urine from bobby calves at the following rates:

<table>
<thead>
<tr>
<th>Testing level</th>
<th>Declaration status</th>
<th>Calves to be tested</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Bobby calves accompanied by a valid signed NVD AND identified by a National Livestock Identification System (NLIS) device to enable tracing to property of origin.</td>
<td>5%</td>
</tr>
<tr>
<td>B</td>
<td>Bobby calves not identified with an NLIS device to enable tracing to property of origin - State authorities need to be notified, as this is a breach of legislation.</td>
<td>100%</td>
</tr>
</tbody>
</table>

iv) A system must be implemented to ensure that the percentage of calves screen tested is consistent with the above table. Where practical, establishment management are encouraged to target individual properties and/or regions with a history of problems. The rate of screening for targeted testing is at the discretion of the establishment however, the overall rate of testing must not be less than the general rates specified above.

v) The urine screen test must be conducted with the Microtech MIT A test kit or
For those establishments that slaughter bobby calves for export to Canada, testing must be with both the Microtech MIT A and B test kits or equivalent.

vi) The carcase and offal of calves found to be MIT positive must be excluded from the export chain.

vii) All laboratories performing urine screening for antibacterial residues must:

a) participate in and be found proficient by the ongoing NRS proficiency-testing program for MIT testing;

b) screen urine samples submitted for antibacterial residue testing using the method/s for which the laboratory has demonstrated its proficiency.

viii) The following table details the samples that must be collected for each component of the NARM bobby calf program:

<table>
<thead>
<tr>
<th>NARM program</th>
<th>Sample</th>
<th>Test Type</th>
<th>Recording of Sample Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bobby calf screen</td>
<td>Urine ¹</td>
<td>Test &amp; hold ³</td>
<td>NARM Monthly MIT results report and MIT Positive Reporting Sheet</td>
</tr>
<tr>
<td>Bobby calf confirmatory (following urine positive)</td>
<td>Kidney²</td>
<td>Test &amp; hold ³</td>
<td>On Demand Sample – AMK in NARM</td>
</tr>
</tbody>
</table>

1. Screen urine with MIT A for all markets and MIT A and MIT B for Canada.
2. Kidney is the preferred tissue. Muscle tissue will be acceptable only where kidney tissue is unavailable.
3. Screened carcases may be transferred to an off-site boning room provided it is under department supervision and suitable tracing and recall procedures are in place.
4. Screened carcases may be boned under department supervision with other department retained meat products until the test results become available.
   o No meat product from any other carcase may be placed in the same carton, irrespective if it is from another targeted animal awaiting test results.

ix) For sample collection and dispatch instructions for this program refer to the “NRS Sample Collection and Dispatch manual” supplied by NRS to all OPVs and QA Managers annually. Additional manuals are supplied by NRS upon request to nrs@agriculture.gov.au at nil cost.

x) NRS sampling consumables (bags, security satchels, boxes etc) and NARM program consignment notes (approved laboratory pre-printed addressed) are to be used. Refer to the NRS Sample Collection and Dispatch Manual.

x) All tissue samples are to be sent to an NRS approved laboratory. This laboratory list can be found on ELMER3 or the information material library (IML).
NRS will meet the laboratory analysis and freight costs for samples collected from calves identified with a NLIS device to enable tracing to property of origin.

- The contracted laboratory will invoice NRS when the analysis is completed.

Testing costs for calves not identified with a NLIS device are to be met by the establishment.

- Confirmatory testing, from calves not identified with a NLIS device, is at the discretion of the establishment but would be required for a disposition decision to be made other than condemnation of the carcase and offal as “not fit for human consumption”. Such condemnation would also result in the product being ineligible for pet food.

REPORTING

i) The establishment must report the number of MIT positive results to the OPV on a daily basis, along with carcase identification information (NLIS, RFID, NVD, zone size) to enable the collection of confirmatory tissue samples.

ii) Identify any producer who returns a confirmed positive result and communicate the positive result back to the producer immediately as 100% of their incoming animals will be flagged to be tested under a KV status.

iii) On a monthly basis and within five working days from the end of the month, the following information is provided to NRS using the Checklist #2 provided below.

CHECK LIST 1 --- A MIT POSITIVE NOTIFICATION

Immediately of a notification of a MIT positive screen, please send a detailed email to NRS@agriculture.gov.au containing;

- a photo of the MIT POSITIVE PLATE
- a photo of corresponding NLIS Ear tag
- the NVD for the bobby calf (the owner’s PIC only, not the Trader’s PIC)
- within the email the positive calf’s NLIS number
- within the email the actual positive plate zone size (mm)
- within the email the NRS kidney (or where no kidney, muscle) sample number created and sent to the NRS approved laboratory listed on ELMER3 for NARM tissue testing.

CHECK LIST 2 --- Monthly NARM reporting to NRS

- Establishments’ monthly NARM figures are to be detailed into an email and sent to NRS@agriculture.gov.au by the 5th working day of the following month.
• A detailed email to NRS@agriculture.gov.au must contain;

  [ ] the MONTH and YEAR
  [ ] the number of bobby calves processed that month in total
  [ ] the number of screenings performed that month
  [ ] the number of POSITIVE MIT screenings that month (include NLIS numbers for screen positive calves)
  [ ] the Establishment Registration number provides NRS with all contact details)

NOTE: NRS do not require the list of negative calf NLIS numbers.
4.5.2 Department on-plant veterinary officers (OPVs)

i) Collect kidney tissue samples (muscle may be acceptable IF kidney is not available) from calves that test positive in the urine screen for confirmatory analysis.

ii) Samples should be collected, frozen, stored and dispatched by courier direct to an approved laboratory. Refer to NRS Sample Collection and Dispatch manual.

iii) Ensure that the carcase and offal of calves tested and found to be MIT positive are excluded from export unless a confirmatory result allows. Where agreed by the relevant State authorities these carcases and offal may be diverted to the domestic market provided any conditions (e.g. confirmatory testing and compliance with MRL) are met. Such diversion must be undertaken in consultation with the ATM.

vi) Monitor the adequacy of:
   a) individual animal identification
   b) establishment testing levels and segregation systems
   c) establishment MIT screening procedures
   d) establishment compliance with reporting requirements
   e) performance in NRS MIT proficiency testing

v) Record results of such monitoring and report deficiencies to establishment management and ATM as appropriate.

vi) Monitor the validity of NVDs that accompany calves and/or that post-sale summaries comprise an accurate record of the relevant NVDs.

vii) Have all information related to a MIT positive sample directed to the NRS daily and check the monthly NARM reporting requirements are sent to NRS within 5 working days from the end of the month.

Disposition

The screen positive animal carcase is to be processed or condemned based on the results of the confirmatory laboratory analysis.

- Establishment management may choose to condemn carcases on the basis of screen positives prior to confirmatory results becoming available (if samples have been submitted for confirmatory analysis) or where calves are inadequately identified and where effective trace back is not possible.

- Department on-plant veterinary officers must verify the disposal of all condemned carcases and associated offal.

FINAL DISPOSITION OF CARCASE
Each target animal is to be tested on a ‘test and hold’ basis and final disposition is made based on laboratory results e.g. if the laboratory result is:

i) greater than the Australian MRL then the carcase is to be condemned and disposed of under department supervision.

ii) greater than the MRL of the proposed importing country, but less than the Australian MRL, then the carcase may be released to the domestic market.

iii) less than the MRL of the proposed importing country and the Australian MRL, then the carcase may be released to the domestic market, for export or for further processing.

4.5.3 Area Technical Managers

i) Verify establishments have the NARM program included in their approved arrangement and effectively implemented.

ii) Where necessary, for product deemed not fit for export but eligible for human consumption for the domestic market, liaise with relevant State authorities.

4.5.3.1 Preventive Action and/or Corrective Action

In any quality control program for residues, it is important that Corrective Actions be available to eliminate or manage the detection of positive screen tests, such as:

i) Trace back of confirmatory tests above ½ MRL in order to improve residue management of calves and resolve concerns over future animals sourced from the property involved.

ii) Targeting calves from properties with a history of MIT positives for screening.

iii) modification of stock purchasing practices by the abattoir to avoid purchasing from suppliers of stock that repeatedly contain animals that test positive, inclusion of additional declarations in contracts, etc.

4.5.4 Laboratories

The table below indicates the NARM program reporting requirements for laboratories:

<table>
<thead>
<tr>
<th>Antibacterial Residue Testing Program</th>
<th>Test Type</th>
<th>Authority Requiring Laboratory Results Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bobby calf screen</td>
<td>NARM URINE SCREEN</td>
<td>• NRS • QA Manager of submitting abattoir • Department OPVs at submitting abattoir</td>
</tr>
<tr>
<td>Bobby calf confirmatory</td>
<td>NARM TISSUE</td>
<td>• NRS</td>
</tr>
</tbody>
</table>

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(following urine positive) | CONFIRMATORY | • State/Territory Residue Coordinator
• QA Manager of submitting abattoir
• Department OPVs at submitting abattoir

4.5.5 **NRS**

i) NRS is to report all laboratory results to the relevant state/territory residue coordinator and to the department’s Export Meat Program Food Safety unit, Export Standards branch and NRS management.

The purpose of this program is to manage the risk of antibacterial residues that exceed the relevant standards in sheep and lambs slaughtered at export abattoirs.

5.1 Scope
This procedure applies to export registered establishments slaughtering sheep and lambs for export.

5.2 Background
The presence of antibacterial residues in meat products has the potential to restrict market access of Australia’s produce. The START program provides an antibacterial confirmatory testing capability to department on-plant veterinary officers (OPVs) when sheep or lambs are suspected to have been treated recently with antibacterial medications. The START program covers all sheep and lambs suspected of receiving recent antibacterial treatment.

5.3 Discussion
To address the concerns of export markets including the US, EU and Japan, department OPVs are encouraged to use the laboratory confirmatory capability provided by the START program to have samples tested when antibacterial residues are suspected.

**NOTE:** The TART, START and PTART programs only apply to cattle, sheep and pigs respectively. For species other than bovine, ovine or porcine, if a residue is suspected, contact the Director of the Export Meat Program via the ATM to gain authorisation from the NRS for testing.

5.4 Sample collection and dispatch
For sample collection and dispatch instructions for this program refer to the “NRS Sample Collection and Dispatch manual” supplied by NRS to all OPVs and QA Managers annually. Additional manuals are supplied by NRS upon request to nrs@agriculture.gov.au at nil cost.

The NRS manual also contains the addresses to send targeted samples. This is listed as the NRS “Approved laboratories” found on ELMER3 or the information material library (IML).

5.5 Responsibilities and Reporting Requirements

5.5.1 Establishment Management

i) Bring to the attention of the department OPVs of any sheep and lambs identified by the NVD as receiving recent antibacterial treatment – including all sheep and lambs for which the vendor has answered “Yes” to the relevant question on the NVD in
respect of such treatment (i.e. Are any of the sheep or lambs in this consignment still within a Withholding Period (WHP) or Export Slaughter Interval (ESI) following treatment with any veterinary drug or chemical?).

ii) Exclude from export the carcase and offal of sheep and lambs tested and found to contain residues above the relevant importing country standard.

iii) In consultation with the OPV condemn the carcase/s and offal of sheep/lambs tested and found to contain residues above the standards set in the Australia New Zealand Food Standards Code.

5.5.2 Department on-plant veterinary officers (OPVs)

i) Identify animals suspected of having received recent antibacterial treatment, collect and Dispatch tissue samples.

ii) Provide copies of laboratory results to establishment management.

iii) Retain the carcase and offal of tested animals that passed post-mortem inspection until confirmatory analysis results are received. Note, if sample was collected from a condemned animal, the carcase and carcase parts are disposed of following normal procedures and are not to be held.

iv) Sample any sheep and lambs identified by the NVD as receiving recent antibacterial treatment.

v) Notify abattoir management of the final disposition of the carcase and offal based on the laboratory test result.

vi) Notify the ATM of any results where the targeted animal carcase is eligible to be released to the domestic market.

**Targeted animals may include:**

<table>
<thead>
<tr>
<th>Sheep and lambs</th>
<th>- sheep and / or lambs exhibiting signs of:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- identified by the NVD as recently treated with antibacterials</td>
<td>Endocarditis</td>
</tr>
<tr>
<td>- suspected of being recently treated with antibacterials</td>
<td>Injection sites</td>
</tr>
<tr>
<td>- with blue dye in the udder</td>
<td>Injury or inflammatory conditions</td>
</tr>
<tr>
<td>- known or suspected to have been in the hospital section of a feedlot</td>
<td>Mastitis</td>
</tr>
<tr>
<td>- Condemned animals that would have progressed through the human food chain, this includes both animals condemned at ante-mortem as well as on the slaughter floor during post mortem inspection.</td>
<td>Metritis</td>
</tr>
<tr>
<td></td>
<td>Pericarditis</td>
</tr>
<tr>
<td></td>
<td>Peritonitis</td>
</tr>
<tr>
<td></td>
<td>Pleuritis</td>
</tr>
<tr>
<td></td>
<td>Pneumonia</td>
</tr>
<tr>
<td></td>
<td>Septicaemia, pyemia or generalised disease</td>
</tr>
</tbody>
</table>
The following table details the samples that must be collected for the START program:

<table>
<thead>
<tr>
<th>START program</th>
<th>Sample</th>
<th>Test Type</th>
<th>Recording of sample details</th>
<th>Consignment notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheep and lambs suspected of receiving recent antibacterial drug treatment</td>
<td>Kidney ¹</td>
<td>Test &amp; hold ²</td>
<td>New On Demand Sample – AMK in START</td>
<td>START</td>
</tr>
</tbody>
</table>

1. Kidney is the preferred tissue. Muscle tissue could be sent for testing only if kidney is not available, but do not sample injection site granuloma.
2. Carcase and associated parts from condemned animals are disposed of following normal procedures. For samples collected from product destined for the food chain, carcasses (entire carcase or boned) and all carcase parts of targeted sheep that pass post-mortem inspection must be retained under department supervision until the test results become available.
   - No meat product from any other carcase may be placed in the same carton, irrespective if it is from another targeted animal awaiting test results
3. Use relevant program consignment notes: refer to the current NRS Sample Collection and Dispatch Manual

5.4.2 Use NRS sampling consumables (bags, security satchels, boxes etc) with the specially provided consignment notes (Approved laboratory address is pre-printed) for the START program. These can be ordered from NRS through the sample ordering facility in the IMS.

5.4.3 Samples should be collected and stored according to the NRS Sample Collection and Dispatch Manual with frozen samples being dispatched to the laboratory as soon as practicable.

FINAL DISPOSITION OF CARCASE

Carcases and carcase parts that have passed post-mortem inspection are retained pending laboratory results (i.e. test and hold). Carcases and carcase parts of condemned animals are disposed of following normal procedures and are not required to be held pending lab results. For product retained on a ‘test and hold’ basis and final disposition is made based on laboratory results e.g. if the laboratory result is:

i) greater than the Australian MRL then the carcasse is to be condemned and disposed of under department supervision.

ii) greater than the MRL of the proposed importing country, but less than the Australian MRL, then the carcase may be released to the domestic market.

iii) less than the MRL of the proposed importing country and the Australian MRL,
then the carcase may be released to the domestic market, for export or for further processing.

5.5.3 Area Technical Managers

i) Verify establishments have the START program included in their approved arrangement and effectively implemented.

ii) Where necessary, for product deemed not eligible for export but complying with Australian requirements and therefore eligible for human consumption for the domestic market, liaise with relevant state authorities.

5.5.4 Laboratories

i) Laboratories are required to report results according to contractual arrangements to:
   • Department OPVs
   • NRS

5.5.5 NRS

i) NRS is responsible to report violative laboratory results to the relevant state or territory residue coordinator, Export Standards branch and to the department’s Export Meat Programs.
6. Targeted Antibacterial Residue Testing (PTART) Program – antibacterial confirmatory testing for suspect pigs

The purpose of this program is to manage the risk of antibacterial residues that exceed the relevant standards in pigs slaughtered at export abattoirs.

6.1 Scope

This procedure applies to all establishments slaughtering pigs for export.

6.2 Background

The presence of antibacterial residues in meat products has the potential to restrict market access of Australia’s produce.

- The PTART program provides an antibacterial confirmatory testing capability to department On-Plant Veterinarian (OPV) when suspected that a pig may recently been treated with antibacterial medications.

6.3 Discussion

Of particular interest within the PTART program are culled backfatters and selectively marked finishers.

**NOTE:** The TART, START and PTART programs only apply to cattle, sheep and pigs respectively. For species other than bovine, ovine or porcine, if a residue is suspected, contact the Director of the Export Meat Program via the ATM to gain authorisation from the NRS for testing.

6.4 Sampling

For sample collection and dispatch instructions for this program refer to the “NRS Sample Collection and Dispatch manual” supplied by NRS to all OPVs and QA Managers annually. Additional manuals are supplied by NRS upon request to nrs@agriculture.gov.au at nil cost.

The NRS manual also contains the addresses to send PTART samples. This is listed as the NRS “Approved laboratories” found on ELMER3 or the information material library (IML).

6.5 Responsibilities

6.5.1 Establishment Management
i) To implement an effective PTART program under the establishment’s approved arrangement.

ii) Bring to the attention of the department any pigs identified by the PigPass as receiving recent antibacterial treatment - including all pigs for which the vendor has answered “Yes” to the relevant question on the PigPass in respect of such treatment (i.e. Are any of the pigs in this consignment still within a Withholding Period (WHP) or Export Slaughter Interval (ESI) following treatment with any veterinary drug or chemical?).

ii) Exclude from export the carcase and offal of pig tested and found to contain residues above the relevant importing country standard.

iii) Condemn the carcase and offal of pig tested and found to contain residues above the Australian Standard (Australia New Zealand Food Standards Code).

6.5.2 Department on-plant officers (OPVs)

i) to verify effectiveness of the establishment’s PTART program.

ii) identify targeted animals suspected of having received recent antibacterial treatment, collect, and dispatch tissue samples.

OPVs must use their professional judgement to select animals (at ante-mortem), condemns or carcasses (at post-mortem) suspected to have received recent antibacterial drug treatment. Condemns can be sampled.

ii) ensure the carcase, carcase parts and offal of tested animals that pass post-mortem inspection are retained under the department’s supervision until receipt of confirmatory analysis results. Note, if sample was collected from a condemned animal, the carcase and carcase parts are disposed of following normal procedures and are not to be held.

iii) Ensure a copy of the laboratory results is given to the establishment.

vi) sample any pigs identified by the NVD as receiving recent antibacterial treatment.

Targeted animals may include:

<table>
<thead>
<tr>
<th>PIG</th>
<th>- pigs exhibiting signs of:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- identified by the PigPass as recently treated with antibacterials</td>
<td>Endocarditis</td>
</tr>
<tr>
<td>- suspected of being recently treated with antibacterials</td>
<td>Injection sites</td>
</tr>
<tr>
<td>- with blue dye in the backfatters udder</td>
<td>Injury or inflammatory conditions</td>
</tr>
<tr>
<td>- known or suspected to have been in</td>
<td>Mastitis</td>
</tr>
<tr>
<td>-</td>
<td>Metritis</td>
</tr>
</tbody>
</table>
the hospital section of a piggery
- Condemned animals that would have progressed through the human food chain, this includes both animals condemned at ante-mortem as well as on the slaughter floor during post mortem inspection.

| Pericarditis |
| Peritonitis |
| Pleuritis |
| Pneumonia |
| Septicaemia, pyemia or generalised disease. |

The following table details the samples that must be collected for the PTART program.

Samples should be collected, packaged, stored and dispatched according to the current NRS Sample Collection and Dispatch Manual (contact NRS at nrs@agriculture.gov.au for copies).

<table>
<thead>
<tr>
<th>PTART program</th>
<th>Sample</th>
<th>Test Type</th>
<th>Recording of Sample Details</th>
<th>Consignment notes 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pig suspect of antibacterial drug treatment</td>
<td>Kidney 1</td>
<td>Test &amp; hold 2</td>
<td>New On Demand Sample - AMK in PTART</td>
<td>PTART</td>
</tr>
</tbody>
</table>

1. Kidney is the preferred tissue. Muscle tissue could be sent for testing but only if kidney is not available, **but do not sample injection site granuloma**.

2. Carcase and associated parts from condemned animals are disposed of following normal procedures. For samples collected from product destined for the food chain, carcasses (entire carcase or boned) and all carcase parts of targeted pigs that pass post-mortem inspection must be retained under department supervision until the test results become available.
   - No meat product from any other carcass may be placed in the same carton, irrespective if it is from another targeted animal awaiting test results

3. Use relevant program consignment notes: refer to the current NRS Sample Collection and Dispatch Manual.

- For NARM program samples: NRS sampling consumables (bags, security satchels, boxes etc) and NARM program consignment notes (approved laboratory pre-printed addressed) are to be used. Refer to the NRS Sample Collection and Dispatch Manual

- **All tissue samples are to be sent to an NRS approved laboratory.** This laboratory list can be found on ELMER3 or the information material library (IML).

- NRS will meet the cost of freighting tissue samples to the laboratory and the laboratory analysis costs for samples submitted by OPV’s under the PTART Program.
FINAL DISPOSITION OF CARCASE

Carcasses and carcase parts that have passed post-mortem inspection are retained pending laboratory results (i.e. test and hold). Carcases and carcase parts of condemned animals are disposed of following normal procedures and are not required to be held pending lab results. For product retained on a ‘test and hold’ basis and final disposition is made based on laboratory results e.g. if the laboratory result is:

i) greater than the Australian MRL then the carcase is to be condemned and disposed of under department supervision.

ii) greater than the MRL of the proposed importing country, but less than the Australian MRL, then the carcase may be released to the domestic market.

iii) less than the MRL of the proposed importing country and the Australian MRL, then the carcase may be released to the domestic market, for export or for further processing.

6.5.3 Area Technical Managers

i) Verify establishments have the PTART program included in their approved arrangement and effectively implemented.

ii) Where necessary, for product deemed not fit for export but eligible for human consumption for the domestic market, liaise with relevant State authorities.

6.5.4 Laboratories

i) Laboratories are required to report results according to contractual arrangements to DEPARTMENT on-plant officers and NRS.

6.5.5 NRS

i) NRS is to report all laboratory results to the relevant state/territory residue coordinator and to department’s Export Meat Program Food Safety unit, Export Standards branch and NRS management.