



# final report

Project Code: A.MIN.0129  
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Date published: June 2013  
PUBLISHED BY  
Meat and Livestock Australia Limited  
Locked Bag 991  
NORTH SYDNEY NSW 2059

## Meat Inspector Skills Currency

Meat & Livestock Australia acknowledges the matching funds provided by the Australian Government and contributions from the Australian Meat Processor Corporation to support the research and development detailed in this publication.

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## **Abstract**

AMPC/MLA has funded the development of an e-learning resource to assess the currency of any individual's meat inspection knowledge. This project forms part of the meat industry's strategy to ensure the competency of company personnel performing post and ante-mortem inspection.

In addition to being able to assess the currency of a meat inspector's knowledge the industry also wanted to ensure that candidates were supported through the process and given opportunities to revise.

The project has now been finalised with:

- the modification of the existing MINTRAC exam generator to enable it to generate quizzes for the assessment of the currency of a meat inspector's knowledge
- the development of e-learning materials which allow candidates to revise/review post and ante mortem inspection training materials prior to undertaking a currency assessment.

## Executive summary

AMPC/MLA has funded the development of an e-learning resource to assess the currency of any individual's meat inspection knowledge. This project forms part of the meat industry's strategy to ensure the competency of company personnel performing post and ante-mortem inspection.

In addition to being able to assess the currency of a meat inspector's knowledge the industry also wanted to ensure that candidates were supported through the process and given opportunities to revise.

The project has now been finalised with the completion of the two distinct components of this project:

- an e-learning resource that enables a candidate to revise post and ante mortem inspection training materials prior to sitting a currency assessment
- an exam generator that delivers quizzes that assess the currency of a meat inspector's knowledge.

### E-learning revision materials

The materials in the candidate revision resource cover:

- post and ante mortem procedures
- DAFF work instructions
- Australian Standard 4696
- common endemic diseases seen at post mortem
- common endemic diseases seen at ante mortem
- a library of photographs of pathology and ante mortem conditions
- emergency and notifiable diseases
- exotic diseases.

The e-learning materials are complimented by a self- testing program which allows candidates to prepare effectively before the formal currency assessment. This revision and self-testing program will be available in electronic format to all candidates preparing for the meat inspection currency assessment.

The materials have been trialled by SA TAFE, Response, Verto and the Southern Queensland Institute of TAFE. These four RTOs are the largest providers of meat safety inspector training in the country. Reviewers from these organisations supplied considerable feed-back and this has been incorporated into the existing material.

**The MINTRAC exam generator** and software have been modified to enable the assessment of the currency of a meat inspector's knowledge. The exam generator's photographic content and library of questions have been upgraded to enable a more comprehensive and targeted assessment of currency. The upgrades also mean the exam generator assessment quizzes parallel the self-testing quizzes from the revision software.

The currency assessment tool has also been completed and this allows candidates to nominate the areas in which they wish to be assessed. The options are initially whether this is for sheep or cattle followed by the candidate nominating which of the following topics they wished to be assessed in:

- post mortem procedures in domestic slaughtering establishments
- post mortem procedures in export slaughtering establishments
- diseases and dispositions at post mortem
- ante mortem procedures at domestic establishments
- ante mortem procedures at export establishments
- diseases and dispositions at ante mortem.

The assessment includes disease recognition exercises using photographs taken from MINTRAC's extensive library.

The currency assessment quiz questions are randomly generated from a library of 500 plus questions and 150 photographs so no currency assessment paper is the same, which reduces the chances of collusion.

The first step in the roll out of these products will be to engage with industry directly and via the QA manager's network to make them aware of the availability of the tool and the advantages of certifying the competency of meat safety officer's returning to or joining a company's meat inspection team. This interaction will also develop guidelines for the use of the assessment tools and greater understanding of what constitutes competency/adequate knowledge.

The advantages for industry are they now have an assessment tool that can be used to screen new employees and existing staff to ensure they possess sufficient to be able to operate competently performing inspection duties. This gives management a way of systematically addressing their duty of care when introducing new inspection staff.

Regulators too have been looking for a tool to reassess their own staff and assist them in keeping their staff's knowledge current. In some jurisdictions inspectors have to be registered and regulatory officials have had issues assessing the currency of applicants who have been out of the industry for some time and with old qualifications. This currency assessment tool allows regulators to have an objective assessment of an inspector's knowledge before accepting their registration.

The software will also be distributed through the Training Manager's Network and be demonstrated at the Training Manager Network meetings. The network meetings are attended by the staff of all the major RTOs delivering meat safety qualifications. It is likely that RTOs will assume responsibility for conducting the currency assessments on behalf of their client processors so it is critical.

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# 1 Background

Both regulators and corporate customers are increasingly requiring evidence to demonstrate that companies are assessing the currency and competency of meat inspectors prior to appointment and before returning to inspection duties after a break. Indeed it is possible that some will require routine reassessment of meat inspection (MI) competency.

Accuracy and currency of meat inspection determinations are critical aspects of ensuring that a safe, quality product is produced by the industry.

This project seeks to work with industry stakeholders to develop a program of currency assessment through which practicing and aspirant meat inspectors, at both levels III and IV, can demonstrate currency of knowledge and skill. Where a shortfall in competency is identified, employers will be to identify skills and knowledge gaps and undertake appropriate self-paced training and/or practice under supervision prior to reassessment.

This project will provide meat processing companies with a ready-to-use competency and currency assessment tools. In particular the program will focus on currency in the areas of: · Hygienic dressing disease and pathology recognition · understanding regulatory requirements for carcase, head and offal post mortem inspection · company work instructions and SOPs · where relevant ante mortem inspection procedures · animal welfare

## 2 Project objectives

MINTRAC will, in conjunction with major stakeholders:

- identify critical areas of meat inspection competency which need currency assessment
- develop, trial and validate ready-to-use assessment tools which will be added to the exam generator
- develop self-paced e-learning training materials for meat inspectors who do not meet the currency of competency requirements.

## 3 Methodology

### 3.1 Scope and consultation

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#### 3.1.1 Scope of activities

The scope of the project was defined by the activities undertaken by meat inspectors in both domestic and export establishments. This limited the areas of interest to post and ante mortem inspection as these form the core of the activities undertaken by contemporary meat inspectors.

The scope of the relevant required knowledge then became that relating directly to post and ante mortem inspection:

- physiology of sheep and cattle
- DAFF post and ante mortem inspection procedures for AAOs and FSMAs
- inspection procedures as set out in the Australian Standard 4696
- diseases and dispositions.

### 3.2 Diseases and dispositions

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The scope of the diseases to be covered in terms of those to be identified by candidates was determined after consultation with Dr Andriessen, MI practitioners, State regulators and MI trainers across the country. In addition the project team took account of those diseases and

conditions reported on by Animal Health Australia in their EDIS data base. The dispositions were taken directly from Australian standard 4696.

### **3.3 Meat Inspection Procedures**

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MI procedures relevant to the new Australian Export Meat Inspection Service were covered by utilising the latest DAFF work instructions and SOPs. This section will have to be updated as and when there are changes to these documents.

The information relevant to inspection procedures in domestic establishments was extracted from the Australian Standard AS4696 and in particular Schedules 2 and 3.

### **3.4 The exam generator**

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The **MINTRAC exam generator** and software have been modified to enable the assessment of the currency of a meat inspector's knowledge. The aim of the modification was to enable RTOs and other bodies assessing the currency of a candidate's knowledge of post and ante mortem inspection to be able to

- Nominate single areas of knowledge to be assessed which would include
  - Post and ante mortem
  - Specific species
  - Diseases
  - Inspection procedures
  - Pysiology
- Expand the number and range of images available
- Number of type of questions drawn from
  - True and false
  - Multiple choice
  - Short answer
  - Disease recognition from images
  - Division of topics

The modifications made to the generator were required to enable currency exam designers adequate sub sections when choosing questions. This was needed so that particular common or important diseases can always be covered in any randomly generated quiz. For instance exams can now be designed such that liver fluke and CLA will always appear in a currency assessment paper for sheep post mortem inspection.

### **3.5 E-learning revision materials**

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The content in the e-learning resource was designed to give potential candidates the materials needed to revise for a particular currency assessment eg post mortem for sheep. The e-learning tool was designed to give candidates access to materials such as DAFF work instructions or copies of the Australian Standard 4694 which they otherwise might find difficult to access.

However, most importantly the revision tool was designed to give candidates the ability to generate self-assessment quizzes. These quizzes are to be generated with randomly selected questions from the same bank of questions as used by the exam generator.

## 4 Results and discussion

### 4.1 The exam generator

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The **MINTRAC exam generator** and software have been modified to enable the assessment of the currency of a meat inspector's knowledge. The exam generator's photographic content and library of questions have been upgraded to enable a more comprehensive and targeted assessment of currency. The upgrades also mean the exam generator assessment quizzes parallel the self-testing quizzes from the revision software.

The currency assessment tool has also been completed and this allows candidates to nominate the areas in which they wish to be assessed. The options are initially whether this is for sheep or cattle followed by the candidate nominating which of the following topics they wished to be assessed in:

- post mortem procedures in domestic slaughtering establishments
- post mortem procedures in export slaughtering establishments
- diseases and dispositions at post mortem
- ante mortem procedures at domestic establishments
- ante mortem procedures at export establishments
- diseases and dispositions at ante mortem.

The assessment includes disease recognition exercises using photographs taken from MINTRAC's extensive library.

The currency assessment quiz questions are randomly generated from a library of 500 plus questions and 150 photographs so no currency assessment paper is the same, which reduces the chances of collusion.

The modifications made to the generator have focused on giving the designers adequate sub sections so that particular diseases and organs will also be covered in any randomly generated quiz. For instances liver fluke and CLA will always appear in a currency assessment paper for sheep post mortem inspection.

### 4.2 E-learning revision materials

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The materials in the candidate revision resource cover:

- post and ante mortem procedures
- DAFF work instructions
- Australian Standard 4696
- common endemic diseases seen at post mortem
- common endemic diseases seen at ante mortem
- a library of photographs of pathology and ante mortem conditions
- emergency and notifiable diseases
- exotic diseases.

The materials used are taken with editing from existing MINTRAC materials which have trialed and edited for the last five years.



The e-learning materials are complimented by a self- testing program which allows candidates to prepare effectively before the formal currency assessment. This revision and self-testing program will be available in electronic format to all candidates preparing for the meat inspection currency assessment.

The materials have been trialled by SA TAFE, Response, Verto and the Southern Queensland Institute of TAFE. These four RTOs are the largest providers of meat safety inspector training in the country. Reviewers from these organisations supplied considerable feed-back and this has been incorporated into the existing material.

### **4.3 The rollout of the currency assessment tools**

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The first step in the roll out of the currency assessment tools will be to engage with industry directly and via the QA manager's network. The aim will be to

- make them aware of the availability of the tool and
- the advantages of certifying the currency of existing meat safety officer's
- the advantages of certifying the currency of meat safety officer's returning to or joining a company's meat inspection team.

This initial trialling of the currency assessment tool will also assist MINTRAC in developing guidelines for the use of the assessment tools and a greater understanding of what constitutes a realistic measure of an adequate current meat inspection knowledge.

Regulators too have been looking for a tool to reassess their own staff and assist them in keeping their staff's knowledge current. Likewise some jurisdictions register meat inspectors and this currency tool will give them an objective measure of the currency of a meat inspector's knowledge.

The software will be distributed through the Training Manager's Network and be demonstrated at the Training Manager Network meetings. The network meetings are supported by and attended by the staff of all the major RTOs delivering meat safety qualifications.

It is likely that RTOs will assume responsibility for conducting the currency assessments on behalf of their client processors so it is critical that they have a full understanding of how to use both the exam generator and the e-learning revision materials..

## **5 Success in achieving objectives**

### **5.1 Identification of critical areas of meat inspection competency which need currency assessment**

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The scope of the project was defined by the activities of meat inspectors in both domestic and export establishments. This limited the areas of interest to post and ante mortem inspection as these form the core of the activities undertaken by contemporary meat inspectors. In identifying the areas of knowledge critical to meat safety inspection the project team consulted extensively with experienced trainers and practitioners

The critical areas of required knowledge for post and ante mortem inspection that were identified were:

- physiology of sheep and cattle
- post and ante mortem inspection procedures for export and domestic plants
- inspection procedures as set out in the Australian Standard 4696

- diseases and dispositions as set out in the Australian Standard 4696.

### 5.1.1 Physiology of sheep and cattle

The physiology focuses principally at the level of organs and systems but only in so much as to give inspectors an understanding of where symptoms are seen and how the disease or disorder impacts on the animal. The topics covered include:

- cells, tissues and organs
- musculoskeletal system
- blood, the circulatory and lymphatic systems
- respiratory system
- digestive system
- urinary and reproductive systems
- the skin – integumental system.

### 5.1.2 Meat Inspection Procedures

MI Procedures relevant to the new Australian Export Meat Inspection Service were covered through the latest DAFF work instructions and SOPs. This section will have to be edited as and when there are changes to these documents.

The information relevant to inspection procedures in domestic establishments was extracted from the Australian Standard AS4696 and in particular Schedules 2 and 3.

### 5.1.3 Diseases and dispositions

The scope of the diseases to be covered in terms of those to be identified by candidates was determined after consultation with Dr Andriessen, MI practitioners, State regulators and MI trainers across the country. In addition the project team took account of those diseases and conditions reported on by Animal Health Australia in their EDIS data base.

The dispositions describe relate directly to the information set out in the Australian Standard AS4696 and in particular Schedules 2 and 3.

## **5.2 Development, trial and validation of ready-to-use assessment tools which will be added to the exam generator**

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There are now in excess of 500 questions that can be accessed from the MINTRAC exam generator to be used in currency assessment quizzes on the various areas of post and ante mortem inspection covered.

The questions first developed for the exam generator and specifically relating to beef and sheep meat inspection activities were largely focused on the Australian Standard AS4696. These questions have been trialed and refined over the last five years with RTOs delivering the Certificate III in meat safety. However in addition, and as part of this project, an additional 270 new questions have been developed focused on:

- the AEMIS work instructions and SOPs developed by DAFF
- the range of common livestock diseases and disorders
- emergency livestock diseases.

The questions have been screened and reviewed by experienced meat safety trainers from SA TAFE, Response, Verto and the Southern Queensland Institute of TAFE. The reviewed

questions have now been loaded into the latest version of the exam generator and all new meat safety inspection students will be assessed using this new bank of questions.

The questions also include a wide range of photographs of pathology which require the candidate to identify the disease/condition and the appropriate disposition.

### **5.3 Development of self-paced e-learning training materials for meat inspectors who do not meet the currency of competency requirements**

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The issue of having to reconfirm one's knowledge and understanding of a subject can be a threatening issue even for those who are highly competent in their field. The e-learning revision tools give candidates a real opportunity to refresh their knowledge surrounding inspection but just as importantly get comfortable with dealing with answering quizzes.

The materials in the candidate revision resource cover:

- post and ante mortem procedures
- DAFF work instructions
- Australian Standard 4696
- common endemic diseases seen at post mortem
- common endemic diseases seen at ante mortem
- a library of photographs of pathology and ante mortem conditions
- emergency and notifiable diseases
- exotic diseases.

The materials used are taken from existing MINTRAC materials which have been trialled and edited for the last five years.

The e-learning materials are complimented by a self- testing program which allows candidates to prepare effectively before the formal currency assessment. This revision and self-testing program will be available in electronic format to all candidates preparing for the meat inspection currency assessment.

These e-learning materials now offer the candidate a great opportunity to practice and become confident before undertaking a currency assessment. The nature of employment of meat inspectors has changed radically over the last five years and inspectors are often integrated into the plants QA team and in some cases even the management team. These individuals may not have full time inspection duties but have to be competent and current when they move back onto the chain as inspectors.

Additionally, if a candidate does not make it through a currency assessment the first time there is now support materials for them to go back and revise those areas where their knowledge was not adequate.

## **6 Impact on meat and livestock industry – Now and in five years time**

### **6.1 Impact on meat and livestock industry – Now**

#### **6.1.1 Impact on meat processing companies**

Meat processing companies are now in a position to objectively evaluate the currency of the knowledge of meat inspection staff and demonstrate a duty of care in terms of the competency of the inspection staff deployed. This tool was always meant to be a reserve or just in time asset for the industry to address the requirements of regulators, customers and importing countries.

These assessment tools also represent a potential employee screening tool to assess the currency of an applicant's meat inspection knowledge.

#### **6.1.2 Impact on regulators**

Regulators too have been looking for a tool to reassess their own staff and assist them in keeping their staff's knowledge current. Likewise some jurisdictions register meat inspectors and this currency tool will give them an objective measure of the currency of a meat inspector's knowledge.

As at no other time people are moving in and out of out of employment as meat inspectors and this is creating problems for regulators and this is creating issues for them as to who should be registered based on concerns about how old their qualification is and how current their experience.

#### **6.1.3 Impact on RTOs delivering meat safety courses**

The impacts on RTOs will be varied. In the first instance it may represent a small business opportunity for them in terms of servicing the demand for currency assessment test being conducted on a fee for service basis.

The currency test will however also represent a bottom line for the level of competency their graduates achieve. If recent graduates are unable to pass a currency assessment on post and ante mortem it may reflect poorly on the training received.

#### **6.1.4 Impact on new and existing workers**

The currency assessment for new and existing workers represents a shift in the challenges faced in the workplace for meat inspectors and hopefully will be indicative of an increased requirement for professionalism.

### **6.2 Impact on meat and livestock industry – Five Year's time**

#### **6.2.1 Impact on meat processing companies**

In five years time meat processing companies will have established control over the competency of the meat inspectors they employ. The companies will be able to focus any professional development activities for groups or individuals based on weaknesses identified through currency assessment. It will also have enabled the industry to have demonstrated to customers and overseas markets that it has placed an importance on maintaining inspector competency and assessing the competency of new inspectors before they have joined the workforce.

### 6.2.2 Impact on regulators

Regulators too will have established control over the competency of the meat inspectors they employ. Regulators will also be able to focus any professional development activities for groups or individuals based on weaknesses identified through currency assessment. In particular via updates to the assessment and revision tools they will be able to focus on critical issues such as exotic disease recognition.

Regulators will also have had a ready to use, low cost and objective tool for measuring the currency of a meat inspector's knowledge prior to accepting their registration. This will mean that the regulator will be able to demonstrate a greater duty of care over the maintenance of this register.

Likewise if needed in the future the currency assessment tool can be easily expanded to cover the underpinning knowledge for the Animal Welfare Officer qualification, the slaughtering Units of competency, HACCP Units or any other Unit where markets or customers are requiring the demonstration of currency.

### 6.2.3 Impact on RTOs delivering meat safety courses

The RTOs will have been delivering a model of currency assessment for five years which may give them the confidence and expertise to sell the same type of service into other industries.

More importantly as the sophistication of this tool develops it will provide not only a very useful teaching aid but also an invaluable measure of how capable their students are as measured against an external yard stick.

The currency test will also have been putting a bottom line under meat safety inspector courses for five years and non-performing RTOs whose students struggle to pass the currency assessment may struggle to attract students or more importantly employers willing to pay their course fees.

### 6.2.4 Impact on new and existing workers five years on

The currency assessment exams will hopefully have achieved part of its purpose by establishing an increased requirement for knowledge and professionalism in the occupation.

## **7 Conclusions and recommendations**

### **7.1 Future initiatives utilising the assessment and e-learning materials**

What will need to follow on from this project is formal trials of the currency tools to ensure they address the needs of the industry, customers and regulator. This test generator will continue to evolve, grow and be modified in response to feed-back from users. It is also likely that if the tool is effective it will be expanded to assess currency for Animal Welfare Officers, MHA monitors and HACCP practitioners.

In addition, the issue of a currency register will need to be addressed through consultation with industry, DAFF and the state regulators.

