# Final report

## Technical advisor for the adoption of disease and defect data standards


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# Abstract

MINTRAC manages the collection of sheep health data for the National Sheep Health Monitoring Project (NSHMP) from 10 establishments across the nation and has brought this experience to assist in the development and implementation of the National Disease and Defect guidelines.

The guideline was developed under an MLA project led by Food & Veterinary Services and MINTRAC was able to bring its experience and knowledge of sheep diseases and defects to identify the most relevant sheep health conditions and the nomenclature used in processing facilities. The guideline can now be integrated into the sheep health data delivered from the NSHMP to the MLA group data platform and into the myFeedback portal.

MINTRAC has had discussions with processing plant managers, QA managers and third-party providers of meat inspection services to advance the collection of sheep health data and the uptake of the National Disease and Defect Data Guideline.

MINTRAC has also provided advice on how meat inspector competency can be verified and documented. This verification is used in the NSHMP in conjunction with routine data review to ensure the reliability of the feedback to producers.

The development and implementation of the guideline represents an opportunity for the industry to collect and compare animal health data gathered in sheep processing establishments across processors and regions.

# Executive summary


## Background

MINTRAC was contracted to provide technical advice for the creation and adoption of Disease and Defect Data Guideline and for the recording of animal health data by the sheep and lamb processing industry. The guideline has been developed to enable animal health data to be recorded using a uniform code so it can be gathered and collated from red meat processing plants. The adoption of this guideline will enable standardised animal feedback to producers allowing them to get a clear idea of the prevalence of diseases and defects in their flock.

## Objectives

MINTRAC was to provide technical support and advice to assist in finalising the draft disease and defect data guidelines for small stock species in terms of individual and mob-based data collection.

MINTRAC was also to provide technical support and advice to processors, and their meat inspection services around implementing the draft data guidelines at plants not participating in the NSHMP or the Health for Wealth (H4W) red meat pilot trials.

## Methodology

MINTRAC contributed to the development of the National Disease and Defect Guideline via the industry working group, as well as direct representation to the industry working group coordinator and IT consultant.

MINTRAC held meetings with sheep processors not currently in the NSHMP or H4W trials in Victoria, South Australia and Western Australia to seek their interest in participating in a national sheep health data base to provide producer feedback via MLA's myFeedback system.

Third party providers of meat inspection were briefed on data gathering options in the event of their clients opting to collect animal disease and defect data to contribute to the MLA group data platform that would support myFeedback.

## Results/key findings

The animal data currently captured from sheep processors in the NSHMP is now using nomenclature compatible with the National Disease and Defect data guidelines, and can be coded before being stored in the MLA group data platform. This animal health data can then be provided as feedback to producers that access MLA's myFeedback system.

Major sheep processing plants (see Appendix 2) that are not currently part of the NSHMP have been interviewed and have expressed interest in participating in a national health data base. Third party providers of meat inspection have also been briefed on the guideline and data collection options available if the plants they service start collecting sheep health data.

Participating plants will now be able to provide sheep health data to producers within their supply chain via myFeedback, and will also be able to access national and regional data on the prevalence of diseases and defects.

## Benefits to industry

The sheep meat industry now has the ability to gather animal health data in a uniform manner using standardised coding and nomenclature for the diseases and defects of greatest concern to the processors and producers. Processors will be able to identify:

- the prevalence of diseases and defects nationally, in specific regions and in the animals processed at their plants.
- the prevalence of these diseases and defects in mobs from specific PICs.
- the seasonal trends in these diseases and defects.

Animal health data can be collected from any number of plants using this Guideline, and thus provide feedback to producers via myFeedback. This will provide producers with a detailed report on the diseases and defects found by meat inspectors in a direct consignment to an abattoir. In time, as states other than Victoria implement individual RFID requirements for ovine animals, this data will become available on an individual animal basis rather than being mob based.

## Future research and recommendations

In order that producers can routinely access animal disease and defect data when consigning sheep and lambs for processing, effort will need to be put into:

- recruiting more plants into gathering data and routinely forwarding it to a national data base so producers can access it via myFeedback.
- providing processors with access to options/technical solutions to enable meat inspectors to accurately record animal disease and defects data across the processing floor (such as voice recognition technology currently being implanted by the NSHMP)
- promoting myFeedback to producers, and the advantages of accessing and responding to the animal disease and defect data feedback.

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# 1. Background

## 1.1 The National Disease and Defect Data Guideline

### 1.1.1 The development of the National Disease and Defect Data Guideline

The National Disease and Defect Guideline has been developed so that animal disease and defect data can be gathered at red meat processing establishments and uploaded to a national data base. This data base would have significant benefits for both producers and processors.

Processors will have objective measures of the extent of diseases and defects and be able to identify the prevalence of these diseases at PICs, regional and national level. Producers will be able to access this data from a national base (myFeedback) and receive feedback on the health status of the animals they consigned for processing.

The development of the National Disease and Defect Guideline was overseen by an MLA industry working group coordinated by Food and Veterinary Services, with the advice of an IT data base specialist.

### 1.1.2 The development of the MLA myFeedback portal

The MLA myFeedback system will enable producers to access disease and defect data for animals processed via direct consignment at participating establishments. The data will enable producers to make informed decisions on animal husbandry practices based on the health status of their flock. The usefulness of the portal will be greatly enhanced as more establishments participate in the gathering of animal disease and defect data and upload this data to the national data base.

### 1.1.3 The existing national sheep health database

Sheep health data has been gathered by Animal Health Australia (AHA) from nine sheep processing establishments for over fifteen years as part of the National Sheep Health Monitoring Program (NSHMP). The NSHMP data is linked to the individual PICs from direct consignment (over the hooks). It has also been used to populate the Endemic Diseases Information Services (EDIS) data base. To date, producers have been able to access this sheep health data for their PIC via the MLA's Livestock Data Link (myFeedback's predecessor).

For EDIS data to be used in the future in myFeedback, it was necessary to ensure it was compatible with the National Disease and Defect Guideline. This required agreement on the nomenclature and the code to be used for individual diseases and defects by the industry working group.

This is important to ensure EDIS data will be compatible with data from any other establishments that utilise the guideline, and independently upload data to the MLA group data platform.

### 1.1.4 Recruiting new plants

There are currently nine plants submitting data to the NSHMP and it can be expected that this data will flow to MLA. However, the usefulness of myFeedback to producers will be enhanced as additional processors are gathering data and participating in a national data base. The larger the number of processors involved, the more opportunities there are for producers to receive feedback on their livestock. When there is nation-wide, compulsory electronic identification of sheep,

feedback for saleyard vendors may also be possible. Currently, only mob-based feedback on direct consignments is possible.

# 2. Objectives

The following objectives were set for this project and the results are detailed under each heading:

*1) Provide technical support and advice on further developing the draft disease and defect data guidelines for small stock species in terms of individual and mob-based data collection.*

MINTRAC attended and participated in the industry working group meetings and provided direct advice on the diseases and defects that can be reliably detected at post- mortem in sheep and lambs. MINTRAC also discussed the codes for diseases and defects with the IT specialist and identified/agreed on coding that aligns with the data currently collected by the NSHMP. MINTRAC also consulted with MLA on how coding should be applied to data currently uploaded from EDIS. It was agreed that the coding should be attached to the data as it was uploaded by MLA into myFeedback from EDIS.

*2) Provide technical support and advice to processors, their meat inspection services and software vendors around implementing the draft data guidelines from lairage to post-mortem inspection in plants outside of the H4W red meat pilot trials. This will involve ensuring the accuracy and consistent reporting of disease and defect data against the draft data guidelines. This will include identifying and recording gaps in the current draft data guidelines.*

MINTRAC has consulted with nine additional export works (non-H4W plants) to discuss the collection of sheep disease and defect data, with the aim of making it available to producers via myFeedback.
MINTRAC has discussed the collection of animal disease and defect data on the processing floor with three providers of meat inspection services.
MINTRAC has discussed the meat inspection verification procedures (See Appendix 1) currently used in the NSHMP to assess and document meat inspector competency in detecting and identifying diseases and defects at chain speed. This exercise is followed up immediately by remedial tutoring and reassessment if required for any individual inspector.

*3) Provide technical support to processors around making the required amendments to their software programs to capture and report disease and defect data.*

With chain speeds in many plants running at 12 plus per minute, plants are looking to a non-paper-based reporting system; be that screen or voice recognition-based recording technology. Discussions on achieving accurate and realistic recording processes formed part of discussions with both the plants and third-party providers. Encouraging the involvement of non-NSHMP plants will be easier when a range of data collection technologies such as voice recognition have been implemented successfully in pilot plants.

*4) Monitoring the disease and defect data collection and electronic reporting to ensure that the systems are achieving the objectives.*

MINTRAC has developed a meat inspection verification procedure for NSHMP plants. This would be appropriate for assessing the competency of meat inspectors in detecting and identifying diseases and defects at chain speed. The assessment outcomes of inspectors can be recorded on the chain, hands free, using software and a voice recognition program. This can be made available to any of the

parties involved in data collection.

An automated system of flagging data can also be utilised to identify recordings that might be out of the normal or greatly more than the average prevalence for the plant or PIC. These recordings can be checked with the relevant inspector(s) to ensure they are valid.

*5) Review the disease and defect data collected by processing plants to identify any inconsistencies with their data and ensure it is consistent with the draft data guidelines for peri-mortem information.*

The program is not at the stage that non-NSHMP plants are submitting data so there is no requirement to check the accuracy of any incoming data. The agreement with MLA is that any data *coming* through EDIS from NSHMP plants will be coded by MLA prior to being uploaded to myFeedback.

*6) Review and validate the data captured and collected by the processors to identify any data issues or errors before this data is released to producers. This may involve assisting meat inspectors understanding the importance of collecting this data and if any disposition accuracy issues are occurring in the data.*

While not undertaken as part of this project, MINTRAC has provided feedback to meat inspectors when recorded data is suspect. Similarly, MINTRAC has, as part of the NSHMP, provided professional development programs for inspectors to improve accuracy of recordings on conditions such as grass seeds and OJD detection. All meat inspectors are briefed on the use of the data collected, particularly its importance to producers making animal husbandry decisions.

*7) Provide technical support and advice to the Industry Working Group around finalizing and managing the draft data guidelines for peri-mortem information.*

MINTRAC worked with the industry working group and IT specialist to finalise the small stock guideline and codes (see Appendix One) that are to be used for recording the diseases and defects identified at post-mortem inspection.

*8) Prepare and review supportive documentation and materials for ISC to use. This may include:*

- *Record current gaps or issues with the current draft data guidelines and highlight the required action.*
- *Assist with finalizing the draft data guidelines for capturing, analyzing and reporting animal disease and defect information.*

MINTRAC reviewed the guideline and the codes. After the review and adjustment, MINTRAC regards the guideline as fit for purpose. It can be used to name, record and code significant diseases and defects identified at post-mortem inspection.

*9) Provide input into the documentation developed around the framework for the management of the national data guideline for animal disease and data.*

Food and Veterinary Services reported at the end of the guideline development project, that a finalised version of the *Australian National Guideline for the Development, Collection and Reporting of Animal Health Disease and Defect Data through the Supply Chain* was presented with the working

group's full endorsement, to the Australian Meat Industry Language and Standards committee for industry endorsement at the August 2022 meeting.

This endorsement was received. MINTRAC is ready to contribute to the revision or further development of the guideline on request from MLA or ISC.

# 3. Methodology

## 3.1 Development of the disease and defect data guidelines

### 3.1.1 Industry Working Group

MLA recruited an industry working group to review and oversee the development of a *National Guideline for the Development, Collection and Reporting of Animal Health Disease and Defect Data*. MINTRAC contributed to this working group specifically commenting on the list of diseases and defects, processor information requirements, and the suitability of codes.

### 3.1.2 Comparison with National Sheep Health Monitoring Program data base

MINTRAC worked with the consultants to ensure the compatibility of the existing collection of data for EDIS with the data requirements of the myFeedback. This needed the diseases and defects in the guideline to include all those for which data is collected by processing plants participating in the NSHMP.

In addition, the codes utilised by the guideline had to be applicable to the way in which sheep disease and defect data is reported. A lot of the detail that can be gathered by utilising the full range of codes is not applicable to the way post-mortem observations are reported in the NSHMP. For this reason, the codes were expanded to allow for the limited range of health details that could be captured by inspectors on the slaughter floor given chain speeds.

## 3.2 Engaging with non-NSHMP sheep/lamb processing plants to participate in myFeedback

While it is anticipated that data from the plants currently participating in the NSHMP will automatically flow to MLA and myFeedback, there are still many plants that are not collecting animal data or contributing to a national database. Obviously, the larger the pool of national sheep disease and defect data, the greater the number of producers who could benefit from a feedback portal.

As part of this project, MINTRAC engaged with sheep and lamb processors not currently in the NSHMP to promote animal disease and defect data collection and the benefits of contributing to a national database.

# 4. Results

## 4.1 The suitability of National Guideline for the Development, Collection and Reporting of Animal Health Disease and Defect Data

Due to MINTRAC and AHAs participation with the industry working group, the guideline includes all the diseases and defects that:

- can be detected and identified at post-mortem inspection on lamb and sheep chains.
- are of relevance to the producers and processors.

MINTRAC has also had input into the coding options for data as set out in the guideline, and the final version of the guideline has made it possible for NSHMP data to be coded accurately before it is uploaded to the MLA group data platform.

## 4.2 Increasing processor participation in the collection of sheep and lamb health data

In order that the maximum number of producers have access to sheep disease and defect data through myFeedback, the maximum number of processors must contribute data to the national sheep health database.

Because the data from NSHMP plants is expected to flow through to the MLA as a matter of course, MINTRAC has concentrated on engaging with large non NSHMP plants. MINTRAC briefed managers from these plants on the benefits of collecting animal disease and defect data and contributing to a national database.

In Victoria, MINTRAC visited four major export plants that are not currently gathering sheep disease and defect data and facilitated the demonstration of myFeedback. In WA, MINTRAC presented to managers at four export plants, outlining the benefits for both the processor and producers of myFeedback.

# 5. Conclusion

The National Guideline for Animal Disease and Defect data is a ready to use and will assist industry to construct uniform feedback which is critical when enabling producers to access comprehensive data from slaughtering establishments.

For processors, the collection of animal disease and defect data at ante-mortem and post-mortem inspection gives them an understanding of the factors impacting carcase and offal yields. It also identifies the PICs supplying livestock with undesirable levels of disease or defects, e.g. grass seeds. This enables processing companies to give specific advice to individual producers in their supply chain.

Additionally, with access to a national animal disease and defect database, both producers and processors can gain insight on the prevalence of specific diseases and defects. This information may help inform a purchasing strategy on future consignments.

Currently, there are nine sheep/lamb processing establishments providing animal disease and defect data to producers via Livestock Data Link. To make the new feedback system myFeedback, more valuable to producers, an effort must be made to expand the number of processors collecting animal disease and defect data at post-mortem inspection and uploading it to the national database.

# 6. Future research and recommendations

**Recommendation 1**

The future value of myFeedback to sheep producers is dependent on maximising the number of processors collecting sheep disease and defect data at post-mortem inspection. This will require ISC to actively engage with processors to supply data.

**Recommendation 2**

Increasingly, small stock processors are utilising high-speed chains of 10 plus sheep per minute. Recording the sheep health data manually on these chains is problematic. To ensure the accuracy of the data collection, technology will need to be implemented that enable inspectors to record data without impacting on their inspection role.

This will require input from software developers and hardware providers to potentially custom develop a solution for each site. This in turn may involve MLA playing a role in the uptake and adoption of the technology, simplifying the process for plants commencing animal disease and defect data collection.

# 7. Appendix

## Appendix 1: Meat Inspector Verification (MIV) process

The following is an outline of the current process being used for Meat Inspector Verification (MIV) for the NSHMP.

Step 1 – Visit plants to conduct MIV.

Visits are planned to conduct MIV. Time spent at the plant will vary depending on the number of inspectors. For a facility that has approximately 10 inspectors, 2 days should be allowed to conduct the inspection.

Step 2 – Conducting the verification.

Each inspector will be assessed at both the viscera and carcase inspection stations on the chain. The assessor will spend approximately 30 minutes on each station with each inspector. The Inspector will identify the disease conditions seen in the carcases/viscera. The assessor will note if the call is correct, misdiagnosed or if the inspector misses a condition.

If the assessor notices several instances where something is missed on misdiagnosed, they will provide training to the inspector before the verification continues.

Step 3 – Compiling the data and processing the reports.

After the verification is complete, all data is collated. Analysis is conducted on the inspection team and then on each individual inspector. The plant can request if they would like individual and team reports, or just a team report. Reports are sent to the site contact no later than 2 weeks after visiting the facility. The analysis conducted on the results is simply a percentage breakdown of the conditions seen and if they were correct, misdiagnosed, or incorrect. The conditions that are noted as being missed or misdiagnosed will be identified in the report and will have the frequency noted next to them too.

Step 4 – Remedial Action

NSHMP staff will be available to provide remedial coaching for meat inspection staff if the verification procedures suggest this is required, and as requested by the inspector's employer be that the processor or third-party provider.

Equipment needed to conduct MIV.

The following is a list of the equipment used during a MIV.

- A laptop with the NASP Voice Recognition program in the MIV version. A laptop with sufficient memory and processing speed must be used as the program will not be able to run correctly. The laptop must also have Bluetooth capability or can have a dongle plugged in.
- A 3M Peltor WS ProTac XPI Headset. This is a Bluetooth headset that is worn by the assessor and connects to the laptop with the program so the results of the verification can be recorded with ease.
- Dragon dictate. This program links the NASP Voice recognition program to the commands given by the assessor. Without this program, voice commands will not be received by the computer and interpreted correctly.
- Access to Microsoft Excel and Word or a similar program. Excel is needed to analyse the results from the verification. Word is needed to be able to write the reports.

# Appendix 2: NSHMP and Non NSHMP plants consulted re the adoption of the guideline as part of this project.

**Victoria**

In Victoria, MINTRAC met with QA and plant managers at five plants to assess their interest in gathering sheep disease and defect data, and their potential involvement in myFeedback.

All these plants expressed interest in collecting data and adopting the guideline except for one, who felt they needed further internal discussion before committing to the routine collection of data.

**Western Australia**

In Western Australia, MINTRAC met with QA and plant managers at four plants.

Management at three of the four plants expressed a keen interest in the collection of data, and myFeedback as a producer feedback portal. The additional plant was concerned about comparisons between meat inspection outcomes from plant to plant and a potential loss of suppliers etc.

**Others**

MINTRAC also consulted with one other company, over several meetings, to assess their willingness to supply sheep disease and defect data to the national database. This would enable more producers to access data and increase to volume of data available for national benchmarking.