final report

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National Sheep Health Monitoring Project

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Abstract

The National Sheep Health Monitoring Project (NSHMP) has been in operation for twelve years and involves lines of sheep being monitored by qualified meat inspectors and company-based personnel for animal health and welfare conditions. During the period January 2018 to May 2019, approximately 9.1 million sheep were inspected for 19 conditions monitored for in participating abattoirs outside of South Australia. During this period further improvements have been made to the data collection method, as well as a trial of voice recognition technology to improve data accuracy and ease of collection. All data has been provided to the Livestock Data Link (LDL), which allows producers to access the animal health feedback within a short period of their sheep being sent to the abattoir. Additional work on extension and producer adoption of preventative actions such as biosecurity needs to occur in the project in future.

Executive summary

The National Sheep Health Monitoring Project (NSHMP) has had a successful 18 months of operation, with over nine million sheep inspected outside of South Australia for the 19 conditions inspected for. The NSHMP currently monitors around 25% of all sheep (lamb and mutton) slaughtered in Australia (when South Australia is included). All animal health data has been entered in the Endemic Disease Information System (EDIS), which has then been included in the Livestock Data Link (LDL) portal, making it available to producers submitting direct lines to participating abattoirs.

The NSHMP will continue as an Animal Health Australia (AHA) project, with future work being focused on data collection accuracy and validation, as well as extension to producers on the conditions, potential economic impacts to their enterprises, and what they can do to mitigate risks. This will include the benefits of adopting biosecurity and other management practices to help minimise the prevalence of inspected conditions, if they are present in their sheep. The conditions inspected for in the NSHMP are estimated to cost producers and processors over $110 million annually, so it is likely that significant benefits to industry will result when this feedback is acted upon.

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1 Background

The National Sheep Health Monitoring Project (NSHMP) commenced in 2007 to monitor lines of adult sheep in abattoirs for animal health conditions that reduce farm profit through productivity losses or increase meat processing wastage.

The NSHMP monitors lines of sheep in abattoirs for animal health conditions that reduce farm profit through productivity losses or increase meat processing wastage. Monitoring occurs in up to 12 domestic and export processing plants located in all states, except Queensland.

Lines of sheep are monitored by qualified meat inspectors for a range of sheep health and welfare conditions. The data from the inspection is collected, checked and entered into a national database – the Endemic Disease Information System (EDIS).

The NSHMP aims to:

- monitor sheep for a range of significant animal health diseases and conditions which reduce productivity in the sheep value chain or can impact on market access
- provide feedback to producers about the conditions occurring in their flock
- enhance productivity within the sheep value chain by improving the quality of product entering the chain
- explore options for a comprehensive and cost-effective animal disease surveillance system and post-mortem inspection service that will provide accurate and timely animal health information.

The NSHMP was reviewed in 2016 by Greenleaf Enterprises, who estimated that the conditions inspected for in the project cause approximately $110 million annually.

The NSHMP sits within the Sheep Health Project at Animal Health Australia and is part of the On-farm and Supply Chain Biosecurity Program. The project is supported by Sheep Producers Australia and WoolProducers Australia.

2 Project objectives

Objectives for this MLA Donor Company project were:

- Monitor lines of sheep in fourteen participating processing plants located in all states, except South Australia (the SA Enhanced Abattoir Surveillance Program value adds to the National Sheep Health Monitoring Project (NSHMP) in that state and is part-funded by MDC in project P.PSH.0852).
- Capture data on the occurrence of nineteen significant endemic diseases and conditions in sheep that can be identified by examining viscera and carcases.
- Enter the data in the national Endemic Disease Information System (EDIS) database.
- Integrate the NSHMP data into the Livestock Data Link (LDL) feedback portal to producers.

3 Methodology

3.1 National Sheep Health Monitoring Project

3.1.1 Background

Monitoring occurred in ten domestic and export processing plants located in all Tasmania, Victoria, New South Wales (NSW) and Western Australia. There are currently no participating plants in Queensland and South Australian plants are covered under a separate MDC project (P.PSH.0852).

Lines of sheep are monitored by qualified meat inspectors and company-based personnel for a range of livestock production health and welfare conditions. The data from the monitoring is collected and entered into a national database - the EDIS. South Australia value add to the NSHMP through additional state industry funding in their Enhanced Abattoir Surveillance Program (EASP).

3.1.2 Diseases and conditions that are inspected for in the NSHMP

Nineteen significant animal health conditions are monitored for at participating abattoirs throughout Australia:

- Arthritis
- Bladder worm
- Bruising
- Cheesy Gland
- Cirrhosis
- Dog bites
- Fever/ septicaemia
- Grass seeds
- Hydatids
- Knotty gut/ pimply gut
- Liver fluke
- Lung worm
- Nephritis
- Pleurisy
- Pneumonia
- Rib fractures
- Sarcocystis
- Sheep measles
- Vaccination lesions

The disposition by meat inspectors for these conditions is made based on gross visual examination and/or palpation of the carcass and viscera.
Ovine Johne's disease (OJD) monitoring is now on request in most participating abattoirs, but only for sheep over two years of age. As this disease is notifiable and requires sampling and testing to be carried out when it is suspected in a consignment, it is not included in the regular project reporting (nor LDL).

3.1.3 Reporting to producers

Some state Departments of Agriculture/Primary Industries provide producers who send direct lines to abattoirs with individual animal health feedback reports on the lines inspected (South Australia, Victoria, Queensland). No feedback is provided on indirect (e.g. saleyard) lines as traceability cannot be guaranteed, and lines may be mixed.

Data from the NSHMP has been included in Integrity Systems Company's (ISC) LDL since June 2017, allowing producers to access it soon after their sheep are inspected in the participating abattoirs. Data on lines back to May 2016 is available for producers in the LDL portal.

4 Results

4.1 Inspection of sheep for animal health diseases and conditions

Sheep numbers inspected for the 19 conditions in abattoirs outside of South Australia are provided in Table 1 below (as reported by the EDIS on 14 May 2018). No plants currently participate in Queensland (although Queensland sheep may be inspected in NSW and Victorian abattoirs). An additional 2,687,050 sheep were inspected in South Australian abattoirs as part of the EASP in the same period (nearly all at Lobethal after the Murray Bridge plant burnt down).

Table 1. Summary of sheep inspected within each state, Jan 2018 – May 2019 (SA excluded).

State	Sheep inspected
NSW	5,578,282
Tasmania	554,674
Victoria	1,353,357
WA	1,643,084
Total	**9,129,397**

Locations of the participating abattoirs are shown below in Figure 1.

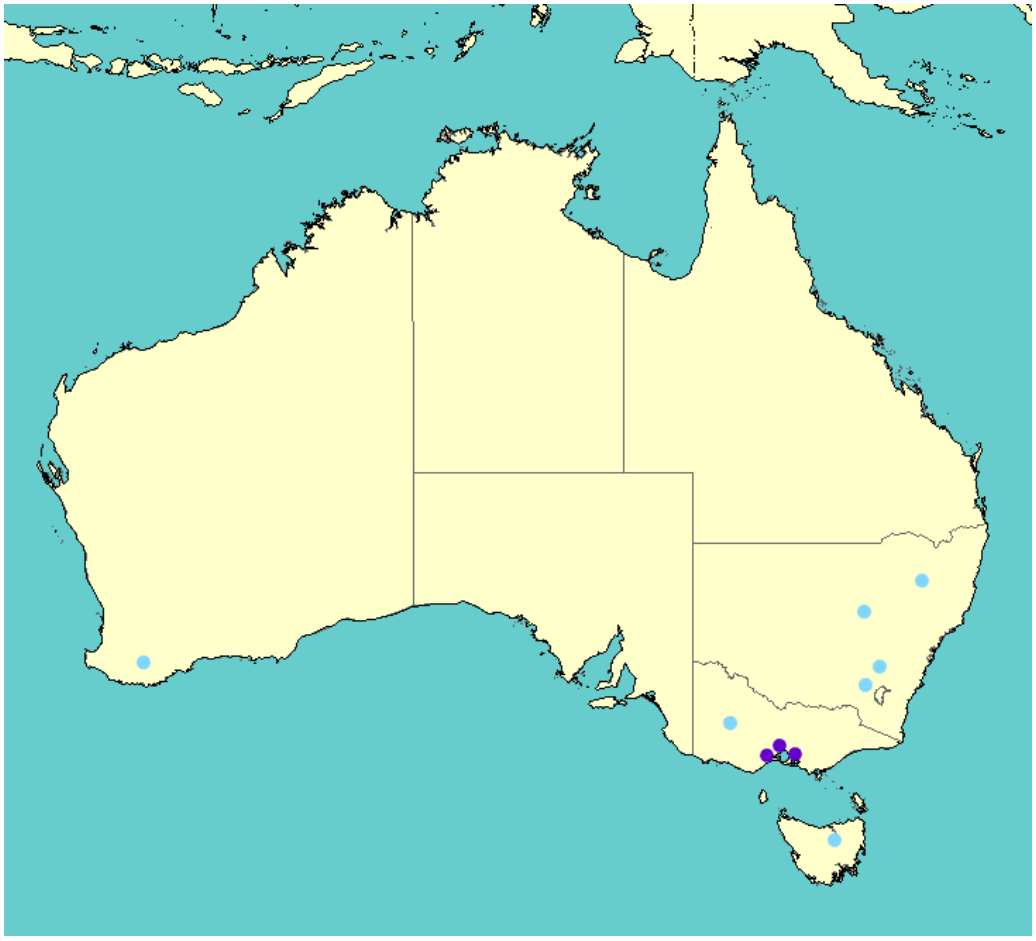

Figure 1. Locations of abattoirs participating in the NSHMP outside of SA. Blue circles = full time monitoring, purple circles = part time monitoring.

4.2 Reporting and analysis

The 2017-18 NSHMP Annual Report was produced during this period and provides information on the more common diseases and conditions inspected for in the project, provided at a state level. It is available at: www.animalhealthaustralia.com.au/nshmp/. The 2018-19 Annual Report will be produced in August 2019 and will be published on the same webpage.

All data is provided to the ISC on a daily basis, to upload into the LDL feedback portal and provide it directly to producers who access it. Three years of animal health data is now available in the portal (May 2016 - May 2019).

5 Discussion

5.1 NSHMP

5.1.1 Data collection

The trial of voice recognition technology to enable easier and more accurate data collection by inspectors has been a success. It shows nearly 100% accuracy once set up (e.g. trained to recognise a new voice) and has been used in several plants (of varying levels of noise and chain speed) and by several different people. AHA plans to roll this technology out to plants that may wish to use it.

Work is continuing (with MINTRAC) to make the transfer of data from abattoirs to EDIS (and thus to LDL) as soon as possible after the inspection is completed. Issues do occur with this process at present due to resourcing limitations. Adoption of electronic National Vendor Declarations (eNVDs) by abattoirs would help to solve some of this issue, as transcription issues occur with the current paper-based system.

5.1.2 Reporting to producers

Animal health feedback letters are sent by some state departments (Queensland regularly, Victoria every few months). Other state departments have either sent it sporadically or not at all, which has meant that producers have not been able to access their information. This contrasts to the EASP, where letters are sent out to producers twice weekly.

Provision of the data to LDL has allowed producers in all states the ability to access the data soon after it is collected. There may still be an issue for some producers to access the information when they are not comfortable with information technology or have internet connectivity issues.

The animal health feedback needs to be bolstered with communications, extension and tools that enable producers to understand any diseases or conditions that may be found in their sheep and make decisions about what they can do about them. Producer adoption of preventative and biosecurity measures will benefit them as well as the sheep and wool industries in general.

In future, provision of the data to producers benchmarked against other flocks in the region, as well as their previously submitted lines, will allow them to know how their biosecurity and disease management programs are working. Regional level information will also allow government and local

extension services to communicate developing issues with other producers who have not directly consigned sheep to abattoirs (e.g. if they only sell through saleyards).

Five workshops have been held at two of the NSHMP abattoirs in this time inviting producers to hear about the project, LDL, and some of the conditions affecting their sheep. This has been a successful collaboration with the abattoirs, MINTRAC, ISC and Zoetis, and more workshops will be held in the near future. Extension and adoption of preventative management practices (e.g. vaccination, biosecurity, and invasive animal control) is pivotal to seeing economic benefits from the project eventuate.

6 Conclusions/recommendations

The NSHMP has had a successful 18 month period, with over nine million sheep inspected outside of South Australia for the 19 diseases and conditions monitored for. The NSHMP currently inspects around 25% of all sheep (lamb and mutton) slaughtered in Australia (with South Australia included).

AHA, with the help of MINTRAC, has entered all data into the EDIS and this has been uploaded to LDL on a daily basis. Three years of animal health feedback is now available in the portal to producers who have submitted lines of sheep directly to participating abattoirs.

AHA will continue to work with MINTRAC and participating abattoirs to improve the data collection and its accuracy, through using technologies such as voice recognition.

Recommendation 1: Validation of the submitted data for accuracy is further developed within the project.

Recommendation 2: Further work on extension to producers for the NSHMP occurs. This should help foster adoption of increased biosecurity and other preventative management activities on farm to provide benefits to enterprises, regions and nationally.

This recommendation may be met through the new National Sheep Industry Biosecurity Strategy, developed by Sheep Producers Australia and WoolProducers Australia, which will feature an increased level of biosecurity extension for the sheep and wool industries.