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Prepared by: Heidi Goers and Penny Craig
South Australia Lamb Development Team

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Meat & Livestock Australia
Locked Bag 991
NORTH SYDNEY NSW 2059

Sheep Feedback Systems

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1 SUMMARY AND RECOMMENDATIONS

In order for producers to supply a sheep meat product that achieves greater consistency, and meets market specifications and standards for meat eating quality, a uniformed feedback system is required across the industry. This in turn will benefit the processors by improving efficiencies during processing and increasing the processors ability and confidence to supply markets and maximise the value of products.

Currently the data collected and reported back to producers varies significantly between processing plants.

Producers require a simple and easy to read summary report on their line(s) of sheep, and in addition, the ability to access more detailed reports and information for those seeking more information to benefit their sheep production. Key feedback areas required by producers include weight, fat, trim, health, yield, skins, dentition and MSA compliance.

Over all, the ability for individual plants to provide majority of the information proposed by producers, is considered high, as is the ability to provide this information in a format desired by producers. The feedback reports proposed are the ideal, and therefore all fields in the reports may not be completed by all processors initially, particularly in the areas where recommendations have been made for further industry development to occur.

Recommendations:

1 The standard feedback system should comprise of a standard feedback summary report distributed by individual processors in addition to a central web database where producers, agents and processors can log on to access more detailed reports and information. The log in process must be secure, restricting access to individuals own information.
2 The report templates in section 5.5. should become the national standard for slaughter feedback
3 The proposed feedback system (recommendation 1, details in section 5.6) to be explored further
    3.1 Seek feedback from processors on the proposed feedback system
    3.2 Seek feedback from AQIS on the proposed feedback system
    3.3 collaboration between MLA and the E-surveillance and Enhanced Abattoir Surveillance project teams to establish the best approach for capturing and managing disease/trim/health data
    3.4 Do a cost analysis to determine the direct and indirect costs of developing and implementing the system
4 Processors, AQIS and producers be involved through all stages of exploration and development of a standard national feedback system
5 Communication and collaboration occur between MLA the E-surveillance project team and the Enhanced Abattoir Surveillance project team
6 Following the development of a national standard system an education strategy be developed and implemented

7 A simple, accurate and cost efficient instrument be developed to objectively measure fat depth in mm and become the industry standard
8 A new method/technology be explored and developed to measure lean meat yield which is simple, easy to use, cost efficient and advantageous for both the processor and the producer
9 AUSMEAT be approached on the issue of standard meat trimming

Contents

2 BACKGROUND

Meat and livestock Australia (MLA) have undertaken research and development into defining and improving lamb and sheep meat eating quality through the lamb and Sheep Meat Eating Quality (SMEQ) program. The SMEQ program is now underpinned by Meat Standards Australia (MSA).

It was identified in the initial development of the MSA sheep meat program that a uniform system of reporting feedback and conformance to the standards will be of critical importance for communication to producers. An efficient feedback system will enable on farm production efficiency to be improved through better on-farm management leading to improved quality.

To date, no uniform or 'off the shelf' system has been developed for processors that enable the recording of carcase traits outside of basic AUS-MEAT feedback requirements.

The SA Lamb Development Team (SALDT) were contracted to this project, with involvement from the SE Prime Livestock Achievers (SEPLAs) to investigate the possible components required to develop a feedback system for processors involved in the MSA sheep meat supply chain to provide relevant slaughter information to producers.

The system would require the effective capture of relevant information with traceability at slaughter and the transfer of this information to producers in a meaningful way. The emphasis of feedback information should be related to MSA guidelines but may also explore other carcase information such as contamination and organ health/disease.

3 OBJECTIVES

- Identify critical feedback required by producers from processors to improve product quality and the ability to consistently meet market specifications

- Document current data collection practices and feedback systems used in selected processing plants and their ability to accommodate new/improved feedback opportunities

- Document current data collection and feedback systems of selected hardware/software providers, their capabilities and ability to accommodate new/improved feedback opportunities

- Identify opportunities and limitations of a national feedback system for sheep with a particular focus on MSA

4 METHODOLOGY

4.1 Project scoping

A project team was established including members from the SALDT, SEPLA's and MLA.

- Project Manager - Heidi Goers (Executive Officer SALDT/Rural Solution s SA Livestock Consultant)
- Site visit facilitator – Penny Craig (SEPLA coordinator/ Solly Business Services Extension Officer)
- Producer members – from SALDT and SEPLA
- MLA representatives – Sarah Strachan and Mark Inglis

A team meeting was held in November 2007 to discuss

- The final brief for the project
- The MSA sheep program and requirements
- What could be taken from the MSA program for beef
- Critical feedback requirements
- Requirements for processor and software meetings

4.2 Processor and software meetings

Meetings were held with selected processors and software providers in SA, NSW, VIC, WA and QLD to determine:

Processor Meetings

- What processors want to get out of a feedback system
- Current data and information being collected
- Current feedback systems
- Ability and opportunities to include the 'ideal feedback' identified by the project team (into current processes or with new processes introduced)
- Impact of introducing new or additional feedback
- Software currently being used on the slaughter floor (data capture) and in the office (analysis/report)
- Processor markets

Software providers

- Current data collection and feedback systems available for processors and what they offer
- Capabilities of the company
- Ability to accommodate opportunities for improved feedback systems
- Requirements for processors utilising software
- Any discrepancies between processors and software provides on what is currently provided
- Which processors they work with

The processor and software meetings plus itinerary were organised by MLA with producer member attendance organised by Heidi and Penny.

Processor and software meetings involved:
- MLA Staff member who provided introductions
- Penny Craig or Heidi Goers who facilitated meeting discussions
- 1-2 producer members (2-3 for SA sites)
- 2-3 abattoir/software staff

Sites visited include:

Processors
Castricum Brothers (Dandenong, VIC)
T&R Pastoral (Murray Bridge, SA)
Tatiara Meat Company (Bordertown, SA)
GoodChilds (WA)
Hillside (Narrogin, WA)
Pittsworth Abattoir (Pittsworth (QLD)
Killarney Abattoir (Killarney, QLD)
Peel & Valley (Tamworth, NSW)

Software Providers
Yartoo (Adelaide, SA)
Existco (West Perth, WA)
Sastek (Brisbane, QLD)
Cedar Creek Software (Brisbane, QLD)
Triton (Coorparoo, QLD)

A meeting was also held with David Pethick in WA to discuss the lamb supply chain and current research being undertaken relevant to the scope of this project.

4.3 Establish recommendations

A project team meeting was held after all the processor and software provider meetings had been completed to discuss the findings and consolidate the recommendations to MLA regarding:
- The data that should be feedback from processors to producers to prompt management and practice change that would result in increased numbers of animals meeting MSA requirements and overall greater consistency in the supply and quality of lamb and sheep meat
- The design and content of a standardised feedback sheet across processing plants
- The “ideal” standardised feedback system/strategy for implementation Australia wide
- What needs to be done to progress

5 RESULTS AND DISCUSSION

5.1 MSA Sheep Meat

Program overview:

The objective of the MSA Sheep Meat program is to provide knowledge and skills necessary to manage all sheep categories to MSA best practice requirements and provide a consistent high eating experience for consumers eating MSA graded products.

MSA Sheep Meat is a whole of supply chain approach with each Industry sector to be registered with MSA; on-farm, processors (3 levels of licensing available) and retailers/foodservice.

Critical eating quality control points include:

On farm	Processing	Retail/foodservice
- Breed - Age - Nutrition, growth path and finishing system - Fat scores - Stress and handling pre-slaughter	- Pre-slaughter management - Electrical stimulation - Hanging method - Ageing - Managing ph/temp decline relationship	- Purchase specifications - Ageing requirements - Type of cut and the cooking method used

The sheep system is a lot based grading system with some individual characteristics. Carcases are either graded MSA or not, unlike the beef system which has a 3,4,5 star grading system for cuts meeting MSA standards.

Feedback requirements:

Producers need to know the percent of each kill lot that do not make the MSA grade and the reasons why. Including reasons caused by the processor.

Consistency and accuracy of assessment data is considered critical for the system to work. Currently the measure for fat is using palpation, this was not considered to be consistent or accurate. There are objective methods of assessment available, such as GR probes, however these are not used due to the required increase in labour and/or skills required and the reduction in the number of carcasses that can be processed in a day. Viascan is a commercial available product that is providing accuracy and consistency however it is felt to be only viable in large plants.

Key considerations identified when developing a feedback system include:
- The system must be simple
- Feedback must be meaningful and useful for producers to ensure it makes a difference
- Feedback and measurements must be standardised and consistent
- The system must link with NLIS
- Reasons for un-grade need to be clearly defined with recognition of carcase damage due to the processor

For a product to meet MSA requirements it must meet the following carcase criteria:

Standard	**Factors causing standards not to be met**
Young Lamb ≥ 16 kg HSCW Lamb /Hogget /Mutton ≥ 18 kg HSCW	Nutrition Inaccurate weighing/ dressing % estimate Trim
YL/L/H/M ≥ FS 2	Nutrition Inaccurate FS assessment Breed effect
No sick or injured animals Or excessively damaged carcases	Disease, Bruising (some processor influence) Poor handling/ transport
Completed NVD (to obtain breed and dispatch to slaughter data)	Incomplete paper work
pH temperature window conformance	Poor nutrition pre-slaughter Stress pre-slaughter Breed effect (Merinos) Sale pathways (Processor management systems are significant)
Dentition (L/H/M)	Inaccurate mouthing Management - selling animals too late
Adequate fat distribution	Turning animals off too early Inconsistent growth pathway Breed effect

Considerations to be taken from the beef program:

It takes time for the market to pay premiums for MSA grade products, however the sheep industry should piggyback off the beef system.

The beef system is very cumbersome. The sheep system needs to be a lot simpler. With the beef system it took some time to ensure standardised and accurate data sets were being achieved.

Processing is a competitive business and processors can be unwilling to share information.

5.2 Critical feedback

The project team identified the following as critical feedback to be provided from the processor to the producer.

Category	Feedback	Importance	Ability to provide
Weight	Number and percentage of animals per 2 kg Weight ranges Individual weights Average weight Total weight	Must have	High
Fat	Number and percentage per fat score (associated with weight) Fat depth in mm Individual fat scores & fat depth	Must have	Score – high Accuracy - low
Trim	Number of animals trimmed, part of carcase trimmed and reason for trimming Number of condemns and reason (part and full)	Must have	High
Health	number of animals with health conditions, and health condition specified	Would be good to have	High
Yield	Lean Meat Yield (LMY), number of animals per 2 % range Individual LMY measurements Muscling – subjective measure if no LMY	Must have	Low
Skins	$/head % ribby % affected by seeds Wool length Wool type Wool brand/ID Other Faults (over crutch/ hygiene)	Must have	Medium
Dentition	Stock class – lamb/mutton Number of teeth	Must have	high
Offal	Health status	Would be good to have	Low – high (depending on works)
Individual ID	NLIS and RFID number matched to plant number Weight Fat LMY	Not there yet	Low (due to numbers of producers using e-tags)
Value based payment	Identifying where premiums or discounts occur Where fit in with the processor grid	Must have	High
MSA	% of each kill not making grade and reason	Must have	High
General	Date and time of kill Gross value Average c/kg Total number in consignment Where to go for more information	Must have	High

5.3 Processors meetings

Data collection, management and feedback varied considerably between the plants visited. A summary of current data collected and feedback for each processing plant is provided below.

Plant	Current data collected	Current feedback
1	Weights and fat Yield % over whole carcase Condemnations (AQIS) Extensive skin data (by skin department) Age	Weight and Yield grid Fat Animals per 2 kg wt range Price category and weight grid Individual wt data if requested Number and % of animals per 1% yield range Health problems affecting >5% Number of condemns and deaths Key lamb performance indicators Skins - % per wool length range, % per specified fault Stock class (Lamb, hogget, mutton)
2	Weights & Fat Disease information through PIRSA AHS program Condemnations (AQIS) Seeds On back skin assessment Offal condemnation Age Wool roll test where >2 inches	Animals per 1 kg weight range by fat score Health report generated through PIRSA program Photo if seeds severe Stock class (lamb v mutton)
3	Weights & Fat Seeds (type, number, location) Condemnations (AQIS) On back skin description	Animals per 2 kg wt range Weight and fat grid Separate seed report Number of condemnations and deaths Number dirty
4	Weights & Fat Condemns Trim Age	Weight and fat grid Animals per 2 kg wt range > 12 kg and <28 kg Number condemned Reason for trim where affecting 20 + Stock class (lamb, hogget, mutton)
5	Weight & Fat Offal problems (AQIS) Every animal aged	Individual weights (by animal ID if available) Weight, fat score, price grid Individual fat depth Number condemned and reason Number of teeth
6	Weight & Fat Bruising Contamination Trimming information Abses Age Sex	Individual weights Individual fat scores Bruising Number of teeth Sex

7	Weight & Fat Number condemned (full and partial) Seed Skin wool length	Individual weight Individual Fat score and depth Full condemns - separate sheet Partial condemns reference to body part condemned Number of teeth NLIS if available MSA if make grade
8	Weight & fat Condemns (AQIS) Dog bite Gras seeds (photo sent to buyer) Skins	Individual weights Fat score 1-5 and fat depth Condemns Stock type

A detailed summary of individual Processor meetings can be found in appendix 1 and examples of current feedback reports in appendix 2.

Opportunities identified through the processor visits for improved feedback systems are summarised below

- Get more out of viascan
- Electronic (individual) identification
- Objective measure of fat
- Access and provide data on skins collected pre-slaughter
- Secure web-based system with standard interface plus flexibility for producers to access more information

Issues identified include:

- Inconsistency in fat measurement across works
- Suggestion for national penalties for fat
- Uptake of uniform system would depend on the input required
- Chain speed must not be reduced or labour requirements increased with any changes proposed, as this will limit uptake
- Use of viascan is price prohibitive
- Ability to integrate changes in to the current systems
- Ability to get standard system across plants as software and programs vary to meet individual plant requirements

The following provides an overview of what is currently happening relating to the key feedback requirements identified in section 5.2 and the opportunities and limitations to the development of a standard feedback system for the sheep industry.

Fat - All sites visited record information on fat in the form of fat scores for all carcases. Feedback is provided on fat, generally using the 1-5 scoring system with some also providing the fat depth in mm. Feedback varies from individual fat scores to number of carcases per fat score to a fat score/weight grid.

There are concerns with the accuracy and consistency of the manual palpation technique for assessing fat score. An objective measure is desirable, however it must be easy to use, not slow the chain or increase labour requirements. A suggestion raised was to look in the medical profession for some options to explore.

Ability to achieve critical feedback requirements for fat

- Number of animals per fat score, preferably with weight – This information is currently collected by plants and it is an AUSMEAT mandatory requirement to provide feedback on fat and hot standard carcase weight to vendors. There is the capability to standardise the way the data is reported, as a fat score and weight grid, given the required information is already collected, however existing software in plants may not have the capacity to present the data in this form.
- Uniform objective measure for fat – Will depend on the ability to develop an efficient objective measure that does not slow the chain, increase labour and is an economical option for large and small plants.
- Fat depth in mm – This is only likely if and when an efficient objective measure becomes available.
- Adequate fat cover – Is a requirement for MSA grading and therefore is only likely to be assessed in MSA registered plants on MSA lines.

Weight – All sites record weights for all carcases and provide feedback on weight. Feedback varies from listing of individual carcase weights, number of carcases by weight range to a weight/fat score grid. The weight ranges used vary between plants.

Ability to achieve critical feedback requirements for weight

- Number of animals per 2 kg weight range within the processing companies weight ranges – Weights are currently recorded for each carcase therefore it should not be difficult to change the way the data is presented back to producers, however it is likely that this would require adjustments to existing software in plants or introducing new software. The efficiency and costs of such changes would need to be analysed.

Trim and health status – Trim and health information varies significantly between plants and feedback to producers is minimal (generally numbers but not reasons). Often reasons will only be feedback to producers if a significant number of animals are affected. AQIS inspectors identify carcases (generally through a tagging system) for trimming and condemnations however carcases are only generally recorded as damaged and the reason for damage is not specified. The tags used by AQIS would have to follow the carcase to the scales (currently removed after trimming) to be recorded and even then the reason would only be categorised, not specific.

Information collected by AQIS should be fed into the processor system, and then included in producer feedback. In doing this there would be a standard format for animal health information. It is recommended that this occurs in conjunction with AQIS to develop something that works for all parties and include the required interfaces at plant and AQIS work stations. The opportunity to gather additional data if required should also be explored with AQIS.

A number of processors are concerned that recording more health information will slow the chain speed or require additional labour, as it is anticipated that an additional recording station would be required:

It is considered important to minimise unnecessary trim. The issue of standard trim was highlighted following concerns regarding the variation in the amount of carcase removed with the secondary neck cut, when only a small amount needs to be removed. The need to develop a gauge or something similar, on the tool used to do the secondary neck cut was identified.

Ability to achieve critical feedback requirements for trim

- Number of animals trimmed, part of carcase and reason – The key issue that will need to be overcome is slowing of the chain and increasing labour requirements in order to provide this additional information to the vendor. The most likely approach is through the AQIS inspectors
- Number of condemnations and reasons – as for point above
- Is damage at the fat score site – this information is not currently recorded and the likelihood of recording it in the future is low.

Yield – The use of viasacan is considered to be price prohibitive by many plants. There were also some issues identified with the software, inconsistency in viascan weights compared with plant weights and concerns regarding the technology not quite being proven. A number of plants were not aware of the technology.

Lean meat yield information is seen as an advantage and many plants would reconsider the use of viascan if the above issues were overcome. There is also interest in alternate measures of lean meat yield. Current research is exploring a measure of lean meat yield through the weight of a specified muscle, which if successful would be a practice determined accessible by all plants.

Ability to achieve critical feedback requirements for yield

- Lean meat yield – Currently viascan is the only measure of lean meat yield and the technology is considered to be price prohibitive for many plants. Standardised feedback on lean meat yield is unlikely until a more cost efficient system is developed allowing uptake by both small and large plants.
- Muscling – Currently there is no way of recording muscle

Skins – data on skins is generally collected and managed by separate skin divisions, however some plants do not collect any information. Current feedback to producers is minimal, often feedback is only provided on skins if there is a major problem identified. It would appear there is no opportunity to get feedback on graded skins for an individual lot, due to the logistics of the treatment process. However, there maybe an opportunity to use data collected pre slaughter from on the back skin assessments.

Ability to achieve critical feedback requirements for skins

- % ribby, % affected by seed, wool length, type and other faults i.e. over-crutch, hygiene – It would appear that providing feedback on graded skins on a lot basis is not possible, however accessing and providing feedback from ‘on the back’ skin assessments pre-slaughter may be an opportunity. Skins are generally managed by a separate skins unit and data would have to be transferred into the main system used by the processor.

Offal – There are only two sites who provided details regarding offal. AQIS record if there is a problem with offal but it is not linked to individual lots.

Ability to achieve critical feedback requirements for offal

- Health status – Carcase trim and health are considered higher importance to offal feedback. AQIS are probably in the best position to be able to collect this information. It is recommended to explore the option of providing this feedback with them.

Sex – The majority of plants do not collect data on the sex of animals, there is no current advantage seen in collecting this data

Ability to achieve critical feedback requirements sex
- Male v Female – It is unlikely that this data will be collected until there is a clear benefit identified.

Age – Generally plants only specify between lamb and mutton (not hogget)

Individual ID – Some plants are currently set up to handle individual carcase identification (electronic ear tags) and other plants are thinking about options or have plans in place as they believe individual electronic ID will become industry standard in the near future.

Ability to achieve critical feedback requirements for individual ID
- Weights for individual animals linked to NLIS tag – with many plants looking into individual electronic identification any feedback system developed needs to accommodate for this.

MSA – Three of the plants visited are currently registered and grading for MSA sheep, with another about to start.

The MSA carcase standards include –
- Hot standard carcases weight and fat score targets for different stock classes
- No sick, injured or excessively damaged carcases
- Completed NVD for breed and dispatch data
- Dentition (determines HSCW and FS targets)
- Adequate fat distribution

Ideally a standard feedback system for both MSA and non MSA lines which is easy to follow and interpret and clearly shows why carcases in MSA lines do not meet the grade is required. For non MSA lines the MSA compliance fields would remain blank or be removed.

Ability to achieve critical feedback requirements for MSA
- % of each kill lot not making the MSA grade and reasons why - The most difficult area to get feedback will be trim and health status, as discussed above. The trim and health of animals impacts on the hot standard carcass weight targets and standard for no sick, injured or excessively damaged carcases to make the MSA grade.

5.4 Software meetings

There are no major problems that can be seen regarding the software capability to develop a standard feedback system. There is currently a central feedback system used in the beef industry and therefore it should not be an issue for lamb.

Potential limiting factors may include the potential cost to establish the system and the direct costs to processors to upgrade and implement new systems where required, plus indirect costs were the chain speed has to be slowed to accommodate the feedback system or extra labour is required.

Without specific parameters it is impossible to estimate the cost of implementing a standardised feedback system. Once potential systems have been identified, the costs of these systems will need to be explored in more detail to determine the feasibility and likely uptake of the different options. Some rough costs provided through the visits include:

- Adding additional files to an existing data station would be fairly cheap
- The costs in developing a central database would be in the initial setup, not in ongoing management
- Designing a standard feedback sheet shouldn't be too expensive
- Touch screed station to record trim and condemnations would cost somewhere around $7500
- Software to interface with a touch screen system in the retain area is a couple of thousand dollars

Some suggestions for a standard feedback system for the sheep industry include:

1. Central database/web system - data to be exported in a common form to a central database. Producers and processors log on to access and download data. It is considered that generally anyone can generate CSV format from their system.
2. Software providers work to standard feedback report - develop a standard face to feedback reports which software providers work to. Feedback to be sent from individual plants (manual or electronic)
3. Single software program to generate feedback report – Design a single software program to be used by all plants. Data to be exported from existing programs in a common form to the feedback report program to generate standard reports.

Some options for feedback reports

1. Standard report with all fields completed by all plants
2. Feedback report with compulsory and voluntary entry fields
3. Web based system – standard interface (report) plus ability for producers to access more data and view and download it in different formats (i.e. graphs)

Other considerations:

- Data needs to be presented in standard way (same categories)
- Data needs to be collected the same way to enable comparison between plants
- Standard system with aspects that can be turned on and off

Processors must be involved at all stages of exploration and development, to maximise uptake. It is also critical that processors see the benefits of improved and standardised feedback for their business.

5.5 Presentation of feedback

Feedback must be presented back to producers in an easy to read format. This will enable information to be extracted and interpreted leading to management and practice changes on-farm to increase the numbers of animals meeting MSA requirements, market specifications and overall to achieve greater consistency in the supply and quality of lambs and sheep meat.

It is recommended that a standard feedback summary sheet is provided to all producers selling sheep over the hooks, with a more detailed slaughter and skin report available upon request.

The feedback summary should contain:

- General details including owner name, PIC, lot number, species, date of kill and time kill started and finished
- A weight and fat grid, showing both the number and percentage of animals per weight/fat category. Weights should be in 2kg ranges and fat described as fat score with the associated fat depth range.
- A yield summary showing the number of animals and percentage per 2% yield range
- A health summary, showing the conditions identified and the % of animals affected
- A summary including total number in the consignment, total weight, average carcase value, average skin price and gross value
- Skin comment
- MSA summary showing the number and percentage of animals that were MSA compliant

The detailed slaughter report should contain:

- General details as per the feedback summary
- A table with body no., NLIS/RFID no., dentition, stock type, weight, yield %, trim (code), condemn (code), MSA compliant (Y/N), c/kg and total value ($)
- On the last sheet of this report the MSA requirements at processing which are influenced by management should be listed
- In the footer of each page there should be a condemn/trim code for the abbreviations used in the table.

The detailed skin report should contain information on:

- % ribby
- % seed affected
- Average wool length (mm)
- Wool type
- % with branding/ID
- Other faults
- Additional comments

The proposed templates (design/layout) for these reports are provided on the following pages.

SLAUGHTER SUMMARY REPORT

Owner:
PIC:
Lot number:
Species:

Date of kill:
Time kill started:
Time kill finished:

Grid Summary: Number and percentage of animals per FS and weight range

Fat class Fat depth (mm) HSCW	FS 1 (0-5)	FS 2 (5.1-10)	FS 3 (10.1-15)	FS 4 (15.1 – 20)	FS 5 (20.1 +)	Total
0-14 kg						
14.1 – 16 kg			5 (3%)			5 (3%)
16.1-18 kg		10 (7%)	25 (17%)	5 (3%)		40 (27%)
18.1 – 20 kg		15 (10%)	45 (30%)	10 (7%)		70 (47%)
20.1 – 22 kg		5 (3%)	20 (13%)			25 (17%)
22.1- 24 kg			10 (7%)			10 (7%)
24.1 – 26 kg						
26.1 – 28 kg						
28.1 - 30 kg						
30 + kg						
Total		30 (20%)	105 (70%)	15 (10%)		150 (100%)

Target specifications

Yield

	<50 %	50.1-52%	52.1– 54%	54.1–56 %	56.1–58 %	58.1 –60%	>60%
Number							
%							

Health Summary

Condition	% infected

MSA Summary

	Number	%
MSA Compliant		

Skin Comment

Summary

Total number in consignment:
Number condemned:
Total weight:
Average weight:

Average carcase value c/kg:
Average skin price $/head:
Gross value:

A detailed slaughter report and skin report is available on request

DETAILED SLAUGHTER REPORT

Owner:
PIC:
Lot number:
Species:

Date of kill:
Time kill started:
Time kill finished:

Body No.	NLIS/ RFID No.	Dent.	Stock type	Weight	Fat depth (mm)	Yield %	Trim (code)	Condemns (code)	MSA compliant (Y/N)	C/kg	Total value ($)

MSA requirements: (at processing, influenced by management)
Dentition 0 ≥ 16 kg HSCW and ≥ FS 2 (6 mm)
Dentition 1-8 must be ≥ 18 kg HSCW and ≥ FS 2 (6mm)
No sick or injured animals or excessively damaged carcases
Adequate fat distribution across carcase

Condemn/trim code:

Part of carcase affected				***Reason***			
1	Hind leg	6	Belly	A	Arthritis	G	Grass Seeds
2	Chump	7	Brisket	B	Bruising		Etc.
3	Loin	8	Neck	C	Cancer		
4	Fore quarter	9	Whole carcase	Co	C. Ovis		
5	Shank			D	Dog bite		

DETAILED SKIN REPORT

Owner:
PIC:
Lot number:
Species:

Date of kill:
Time kill started:
Time kill finished:

Average price ($)	
% ribby	
% seed affected	
Average wool length (mm)	
Wool type	
% with brand/ID	
Other	

Comments:

5.6 Feedback systems

The preferred option for a feedback system is a standard feedback summary sheet and a centralised web database containing more detailed information.

The standard summary report (template shown in section 5.5) would be generated by individual processing plants and distributed direct as per their current system to producers.

Detailed slaughter data from processors would be exported in a common form and sent to a secure central web database. Producers would then be able to log in and access their data using their PIC and a registered password. If producers do no have internet access agents can be provided a login and password to access data on behalf of their clients. There would also be opportunity for processors to log on and access data from their plant.

In the interim of the web system being developed processors would also need to provide the detailed slaughter report and detailed skin report (shown in section 5.5) to producers upon request.

Key features of the web system would include the ability to:
- View and print the standard detailed slaughter report and detailed skins report
- View and print data in a range of formats (i.e. graphs)
- Download raw data into excel
- Have access to tools as per the MSA beef system including the ability to benchmark performance

The web system should also provide relevant links, contacts and information on
- MSA
- Dentition categories and descriptions for stock classes
- Conditions resulting in condemnation or trimming and how to manage them
- Tips on getting the most out of slaughter feedback reports

Introducing a standard feedback system across industry will require processor and AQIS involvement through all stages of exploration and development to ensure engagement and uptake of the feedback system as a national standard. Processors need to see the benefits for their business and will need to be supported through implementation.

Data requirements:

The ability to provide the information required for the proposed feedback reports will vary between feedback categories and between works. Therefore there will be some fields in the reports that will only be completed by some processors.

The data required to provide feedback for ***weight and fat*** is already collected by processors, however the way this information is reported will be different and may require some modifications to software programs to generate the required format. The one piece of information not collected by majority of plants is the fat depth (in mm) which is preferred over fat scores due to the perceived inaccuracy of the manual palpation technique. While there is the ability to objectively measure fat depth at the GR site with a GR probe, the measurement can not be conducted quickly enough on the chain. An alternate instrument needs to be developed which is simple, accurate

and cost and time efficient to enable fat depth to be reported and to improve the confidence in fat data and utilisation of this information. While processors would be encouraged to report fat as fat depth (in mm), those measuring fat via manual palpation will only be able to report on fat scores until a more efficient objective measure is developed.

Some work will be required to improve and standardise the way ***health and trim*** information is collected and managed. Currently AQIS conduct inspections in export abattoirs for health issues in the yards pre slaughter and then on the slaughter chain and give direction to slaughter staff regarding condemnation and trim, where issues are identified. Reasons for full condemnation are recorded and kept by AQIS and a report is provided to producers on request. Data is recorded manually and then entered into the system. Recording of data outside of full condemnations is dependent on the individual works.

Working with AQIS to capture and feed the required data into the processor's data system is seen as the best prospect for providing the required health and trim feedback.

Information needing to be collected and reported includes the part of the carcase affected and the reason for the condemnation/trim of individual carcases.

The reasons to be specified in the condemn/trim code of the detailed slaughter report will need to be determined based on the current reasons for condemnation and trim at slaughter. A code for poor fat distribution, relating to MSA non-compliance should also be included, as this is the only reason for MSA non-compliance not addressed by other fields in the detailed slaughter report.

The health summary on the slaughter summary report will only list the conditions (reasons for condemnation/trim) identified in that line of sheep and show the percentage of animals affected.

There are two other existing projects being undertaken which relate to the capture and reporting of disease information in abattoirs. To prevent duplication, maximise the benefit for industry and make best use of resources it will be critical for all these project teams to liaise and work closely together as they progress. The related projects identified include:

Enhanced Abattoir Surveillance program – a SA program which provides feedback to producers on 21 diseases/ conditions identified at slaughter. Producers receive a letter identifying the percentage of animals infected by each disease/condition monitored plus information sheets on the identified diseases/conditions. The program is endorsed and funded by Primary Industries and Resources SA, AQIS and SA Sheep Advisory Group. Currently the program is being run in two processing plants in SA. The program is looking to incorporate benchmarking of data so producers know where they sit, and comparisons can be made between regions and stock classes. An on-line system is also being considered for producers to access data to replace the manual distribution system.

E-surveillance program – is a national program facilitated by Animal Health Australia (AHA) and MLA. The program has two key components. The first is to explore the types of surveillance systems which involves a review of projects undertaken in relation to electronic data capture and management, the evaluation of possible applications of such information systems in Australia for sheep and beef, identifying current situations in processing plants and making recommendations for investment in research and/or

the development of a pilot project to evaluate the usefulness of such information systems. The second component is a cost benefit analysis looking at the cost of endemic disease and benefits of an E-surveillance system.

A more detailed overview of these programs can be found in appendix 3

Currently viascan is the only technology available for measuring ***yield,*** however uptake of the technology is minimal (two plants in Australia), primarily due to its cost. Providing information on yield and having a yield based payment system is considered beneficial for both the producer and processor, therefore it would be advantageous for industry if a new method/technology was developed for measuring Lean Meat Yield which was simple, easy to use and cost efficient. Until this occurs feedback on yield could only be provided by those processors using viascan, other processors would leave the yield related fields in the reports blank.

There is potential for providing feedback on ***skins*** from pre-slaughter (on the back) assessments, however it will depend on the information collected by the skins divisions and if this information is recorded in an electronic form which can be sent to the processors main data system.

Individual ID is not seen as a high priority by majority of commercial producers at the current time. Demand may be driven from producers in the future if the cost of e-tags is reduced to a cost effective level, however it is more likely to be driven by the consumer. Currently producers do not see the value in individual ID and are happy with feedback being provided on a lot basis.

NLIS needs to be incorporated into the feedback reports to accommodate for plants who have or are looking to put reading systems in place and for those producers using e-tags. Where this does not apply the field will remain blank.

Feedback on ***MSA*** compliance must be provided for MSA lines processed in registered plants. Feedback on MSA compliance is easily incorporated into the standard reports, with majority of the reasons for non compliance being addressed under the proposed feedback fields. A description of MSA requirements is to be included on the feedback form so producers can identify reasons for specific lambs being non compliant. For non MSA registered plants and non MSA lines of stock MSA specific fields will remain blank.

An education strategy will be required to let industry know about the new feedback system, the benefits and how to get maximum value from the system. The education strategy should target both producers and agents and where possible involve local processors, utilising both media and face to face events. There may be opportunity to have processors host some larger forums/events with MLA focussing on the role of feedback systems in the supply of consistent and quality meat products and MSA sheep.

Processor requirements:

- Collect required data
- Develop systems to generate standard reports (work with own IT staff and software suppliers)
- Send summary report to producers (and the detailed slaughter and skin reports in the interim of a web system being established)
- Export slaughter data to the central web database in CSL file

MLA requirements:

- Engage processors and AQIS and explore the potential of establishing the feedback system proposed
- Work with and support processors, AQIS and other relevant groups to implement the feedback system
- Develop and maintain the central database web system

6 CONCLUSION AND RECOMMENDATIONS

The development of national standards for feedback systems across the sheep industry is a critical step forward that will benefit the whole industry.

A uniform and easy to read feedback report providing key information to prompt management and practice changes on-farm will provide a valuable tool to improve their production system and profits. The information provided and improvements made on farm will also assist in increasing the supply of consistently high quality lamb and sheep meat products, benefiting the processor, consumer and industry as a whole.

The implementation of uniform feedback will improve the consistency in supply of quality products to processors and the receival of more animals with in market specifications. This will improve returns for processors by increasing chain efficiency and marketable product as trimming and condemnation will be reduced.

The consumer and industry also benefit with greater consistency in quality resulting in more enjoyable eating experiences and increased demand for the product.

A standard system will also enable comparison of data between plants and across the industry.

Recommendations:

1 The standard feedback system should comprise of a standard feedback summary report distributed by individual processors in addition to a central web database where producers, agents and processors can log on to access more detailed reports and information. The log in process must be secure, restricting access to individuals own information.

2 The report templates in section 5.5. should become the national standard for slaughter feedback

3 The proposed feedback system (recommendation 1, details in section 5.6) to be explored further
   - 3.1 Seek feedback from processors on the proposed feedback system
   - 3.2 Seek feedback from AQIS on the proposed feedback system
   - 3.3 collaboration between MLA and the E-surveillance and Enhanced Abattoir Surveillance project teams to establish the best approach for capturing and managing disease/trim/health data
   - 3.4 Do a cost analysis to determine the direct and indirect costs of developing and implementing the system

4 Processors, AQIS and producers be involved through all stages of exploration and development of a standard national feedback system

5 Communication and collaboration occur between MLA the E-surveillance project team and the Enhanced Abattoir Surveillance project team

6 Following the development of a national standard systems an education strategy be developed and implemented

7 A simple, accurate and cost efficient instrument be developed to objectively measure fat depth in mm and become the industry standard

8 A new method/technology be explored and developed to measure lean meat yield which is simple, easy to use, cost efficient and advantageous for both the processor and the producer

9 AUSMEAT be approached on the issue of standard meat trimming

7 APPENDIX 1 – DETAILED MEETING REPORTS

7.1 Processor 1

Summary of data currently collected and current feedback:

Data type	Collected	Feedback
Weight	yes	Weight and yield grid Animals per 2 kg weight range Total and average weight Price category grid by weight range Individual weight data if requested by supplier
Fat	yes	fat
Yield	Yield over whole carcase (%)	Yield and weight grid Number and % per 1% yield range Total and average yield weight
Trim & Health	Condemnations (AQIS)	Health problems if affecting >5% of total numbers Number of condemnations Number dead on arrival Number dead in pen
Skins	Extensive data collected by skins department	% per wool length range % per fault category (broad wool, stain, discoloured, fleece rot, black tip, raddle marks, seed, other) & degree ribbing price
Offal		
Age		Lamb v hogget v mutton
Sex	No	
Other	Number lambs in current and previous consignments Supply date Location and details of supplier	Key performance indicators (yield and payment) – producers lambs over time v producers in region v all producers

Summary of opportunities for improving feedback:

- Getting more out of viascan

Summary of issues surrounding improved feedback:

- Inconsistency in fat scores across works – there needs to be national penalties for fat
- Uptake of uniform system would depend on required input of information.

Software utilised:
All the information collected on the slaughter floor goes into a central computer system.

Current situation and future opportunities for data collection and feedback:

Fat – Fat is measured at the GR site using viascan

Health status - animal health problems are only recorded and feedback to the supplier if it is greater than 5% of the total numbers. When a problem is recorded the supplier receives a feedback sheet on the problem. Any condemnations (documented by AQIS) are put on the feedback sheets that the supplier receives.

Yield – Viascan is used in the plant, with approximately 40% of lambs getting paid on viascan in a 12 month period. However the number of lambs going through, that get paid on viascan varies throughout the year. They have found viascan to be a screening process for quality lambs, as producers seeking payment on yield are supplying lambs of better quality. The company is keen to explore how they can get more out of the viascan technology. Viascan feedback goes directly to producers instead of through the agents.

Individual ID - Currently bobby calve kills are tracked on an individual basis. This requires the chain to be slowed and results in an extra $5 per head charge. Calves are scanned at the point of kill then the tags go on at the shoulder puller. To keep track of carcases between scanning and the shoulder puller each carcase in the kill lot is counted in order. If there is a fall on the chain then it is called upstairs to let the people know at the shoulder puller that there is a gap in the chain and it is body number x.

For sheep carcases to be individually tracked in the future a system would have to be implemented which did not significantly slow the chain speed. The company sees a number of options for tracking lambs individually. One example is to have a bar code on the ganval. Individual tracking could only go as far as the boning room.

Sex – data is not currently collected on the sex of animals

Opportunities and issues- The company would be happy to look into a uniformed feedback sheet, however uptake would depend on the information required to be fed into it.

The company sees consistency in fat scores across works as the number one thing for the industry to move forward. There needs to be penalties for fat score 5 lambs at a national level.

There needs to be work done with agents to get consistency in animals supplied to the plant

7.2 Processor 2

Summary of data currently collected and current feedback:

Data type	Collected	Feedback
Weight	Weights for each carcase	Number per 1kg wt range by fat score Total and average weight
Fat	1-5	Number per FS by weight range
Yield		
Trim & Health	Disease info through PIRSA AHS program Condemnations (AQIS)	Health report from PIRSA AHS program
Skins	Seeds On back skin assessment	Photo of seeds if severe
Offal	Condemnation (not on individual lot basis)	
Age	Lamb v mutton	Lamb v mutton
Sex	No	
Other	Wool roll test where wool > 2.5 inches	

Summary of opportunities for improving feedback:
- Electronic identification
- Provide data on skins collected pre-slaughter
- Objective measure of fat
- Secure web-based feedback system with standard interface plus flexibility for producers to access more information

Summary of issues surrounding improved feedback:
- Speed chain must not be reduced
- Use of viascan is price prohibitive
- Ability to integrate into current systems
- Ability to get standard system across plants as software and programs vary to meet individual plant requirements

Software utilised:
Several software systems are used with significant investment into getting the programs to talk to each other. RAMS, a Yartoo program (SA) is used on the kill floor, a Cedar Creek (QLD) program is used for livestock receivals and Sastek (QLD) program in production at a second plant.

Current situation and future opportunities for data collection and feedback:

Individual ID - For electronic tags to be used successfully through the system the chain speed must be maintained at 10 carcases per minute. In terms of reading frequency up to two standard frequencies could be handled, but ideally there would only be one type. A checking system must also be in place to pick up and handle misreads.

Skins - Majority of skins are done by the company, they are graded and sent to another site. Skins are assessed on the animals back by independent buyers. Seed issues identified on the slaughter floor are fed back to the manager and if severe, photos are taken and sent back to the supplier. There are 400-600 skins tested per shift to get an average and damage is recorded. Skin data is recorded by the skin division.

Providing skin grade feedback on individual lots is logistically not possible. Skins are only graded after salting, and with tumblers holding 500 skins it is not economic for skins to be managed on a lot basis. However there may be an opportunity for the data recorded at valuing (before slaughter) to be fed back to the producer. It would have to be confirmed with the skins manager if the information collected could be feedback to the central computer system.

This plant has a policy to test lots for wool roll if skin length is greater than 2.5 inches. If tests are positive for wool roll animals are shorn prior to slaughter.

Health status - Condemnations are identified and tagged (colour coded) by AQIS these animals go on the retain rail and once trimming has occurred the tag is removed. Carcases are only recorded as damaged at the computer. To enable the reason for damage to be recorded the AQIS tag would have to follow the carcase to the computer, and even then the tags are not specific to identify individual health issues.

The company is involved in the PIRSA Animal Health Surveillance program which provides feedback on a range of diseases and conditions identified in lines of lambs sold direct.

Yield - The use of viascan was price prohibitive last time the company looked into it (~40c/hd) and it was felt that the technology was not quite proven. Lean meat yield information would be an advantage as premiums could be paid for quality sheep. If it was less price prohibitive the company would reconsider the use of viascan.

Dentition - Currently there is no specification between ewe and hogget, only lamb and mutton

Weight - If producers wish they can get a list of all the weights (to 0.2kg).

Fat Scores - currently measured via manual palpitation at the grading station on the kill floor for individual lots. Fat score is verified with a GR knife on a percentage of animals and is audited by AUSMEAT. They are happy to move to a different system for measuring fat as long as it doesn't require any extra labour and is quick enough to not affect the speed of the chain.

Applying fat penalties has issues during low supply. If the company applies penalties and others don't they will not get the lambs.

Sex – The sex of sheep are currently not recorded as there is no current advantage

Offal - Tracking of offal condemnation is all done manually, data is not directly linked to individual lot numbers, however it can be linked to producers from the day and cross checked with future incidences.

Opportunities and issues – A new system would need to fully integrate into the current systems with integration between AQIS, MSA data etc. Key board/touch screens need to be laid out well to ensure information can be entered into the computer quickly (keyboards are preferred over touch screens). Recording of

additional information must be quick and efficient and must not slow the chain, with all data being collected before the chiller.

Changes need to occur as part of the IT programming/development - can't be tacking things on to the current system. Assistance would be required at the processor end. All the processor IT people and the developers of the software would need to come together to get a uniform system to work.

The company would be happy with a secure system which integrates back to a website so producers/processors can log on and access their data. Such a system should have a standard interface plus flexibility for producer to pull down more information and in different formats if desired. The system must have appropriate checks in place and be facilitated by a central organisation. Data from different programs would need to be converted into a single file type.

It will be difficult to get a standard system across plants as systems are built in house to meet individual requirements

7.3 Processor 3

Background:
The works is 90% export, with the US taking about 60% of the export produced. The company is looking to supply to the European markets, however these markets have strict trace back and on-farm auditing requirements.

30-40% of the lambs are sourced out of the market, the rest of the lambs are sourced direct with 10% purchased off farm. A significant portion of supply (95%) occurs through agents, even local and regular clients continue to use agents.

Animal welfare and traceability are seen as big issues. The company would like to see compulsory on farm independent auditing which would open up more markets for lamb.

Summary of data currently collected and current feedback:

Data type	Collected	Feedback
Weight	Weights of each carcase	Number per 2 kg weight range (between 14 and 28 kg) Weight and Fat grid Total and average weight
Fat	1-5	Fat and weight grid
Yield		
Trim & Health	Seeds (type, number, location) Condemnations (AQIS)	Separate seed report Number dead on arrival Number condemned Number dead in yards Number dirty
Skins	Price On back skin description	
Offal		
Age		Lamb v Hogget v mutton
Sex		
Other		

Summary of opportunities to improve feedback:
- AQIS to potentially record more data

Summary of issues surrounding improved feedback:
- Who will pay
- Must not slow the chain or increase labour
- Majority of lambs are supplied through agent not the producer
- Processors opinion is that producers don't want to log onto web for feedback
- Manual palpation as a measure of fat score is not accurate

Software utilised:
Software being used is Triton for the livestock and plant. This is then written with Novision software package.

Current situation and future opportunities for data collection and feedback:

The company has a policy for feedback to be received by the supplier on the day following kill.

Weight - Weights are currently recorded and provided to producers as number of lambs with in 2kg weight ranges

Fat score - Fat scores are recorded and feedback to producers. Manual palpitation is used to asses fat, which occurs at the scales. QA do an hourly check on the scale operator. The company does not penalise or pay on fat as they believe the manual palpitation method is not accurate enough. There is a need for an accurate method of measuring fat at high speed that is cost effective, it is important that it does not require extra labour or slow the kill chain.

Yield – The company has tried Viascan, the technology was considered good, however there were some issues with the software which stopped them from using the technology. With the requirement for viascan data to be sent to Brisbane it was not provided in time to meet the next day feedback policy of the company. If they could have it integrated into the company system it might work.

The other problem identified was inconsistency in weights, with the viascan weights not matching the weights recorded through the company's system. The system is also expensive and would require a fee to be charged to suppliers for feedback, however some suppliers do not want to pay for it.

If the technology could be condensed to a compact system and it was possible for the two systems to work together the company would revisit using the technology.

Health Status – Health issues are considered a greater problem in mutton compared with lamb. There are three AQIS inspectors assessing pathology and condemnation. Carcases are tagged with a yellow or green tag to indicate a pathology or contamination issue. Tagged carcases are moved to the trim line for trimming before re-inspection, the tag is then removed and the carcase returned to the chain. Certificates are provided on condemned carcases, however part trims do not get recorded.

The company is reluctant that pathology information can be provided in the feedback. Issues with recording more information include, reduced chain speed, extra labour and therefore extra costs to the company.

One area the company is vigilant on is seeds. This issue is managed separately to other pathology issues, QA use I-leader, an electronic system to record and report on seed. Trial kills are used to minimise the occurrence of significant seed problems in the plant. Prior to a delivery of the main lot of lambs, 10 lambs are killed to test for seeds and feedback provided back to the supplier on seed type, number, position and if the rest of the consignment is accepted or rejected.

Traceability is critical for market access. Individual trace back is not essential but on-farm auditing (preferably annually) is required to achieve access to every market possible. The company also has a problem with vendor declarations not being completed correctly.

Skins - are tendered twice a day. A description is recorded manually by lot number pre-kill (on the back). The information is then entered into excel. The skins division is a separate division and therefore the information is handled separately.
If there is a big problem then the producer does get feedback, if not only a skin price is received. Given the data is recorded in excel there may be an opportunity for the information to be fed into the main systems and provided as feedback. However skin descriptions do not specifically identify the reason for a reduced price.

Opportunities and issues –There are many opportunities for improving data collection and feedback but are they economical and who is going to pay for it were issues raised by the processor. Recording extra data must not slow the chain speed or increase labour requirements. The company believes a central collection point for feedback data will not work, as most of the lambs come through agents. It is also felt that majority of producers do not want to log onto a computer to access feedback.

Could AQIS be utilised more to collect extra data?

It is felt that many companies are not even meeting the AUS-MEAT feedback standards, with feedback sheets being shown to auditors but not actually going out to producers.

7.4 Processor 4

Background:
The company targets domestic kill with 19-20kg lambs dressed weight. Currently 50 percent of lambs are source from the saleyards and 50 percent off-farm. Currently electrical stimulation is not used, however the company is looking into it.

Summary of data currently collected and current feedback:

Data type	Collected	Feedback
Weight	Weights for each carcase	Weight & fat grid Weights 2 kg range >12 kg and < 28 kg Total weight Average weight
Fat	FS for each carcase	Weight & fat grid, fat scores 1-5
Yield		
Trim & Health	Condemns Trim	Number of animals condemned Reason for trim where affecting 20+ animals in lot
Skins		Incorporated into price of lamb
Offal		
Age	Yes	Lamb v hogget v mutton
Sex	No	No
Other		

Summary of opportunities for improved feedback:

- Comfortable with uniform feedback system provided it is easy to use

Summary of issues regarding improving feedback:

- System must be easy to use and training be provided

Software utilised:

The company uses software on the slaughter floor with the Sastec system.

Current situation and future opportunities for data collection and feedback:

Currently the producers get feedback the next day. The feedback gets faxed to the buyer (company buyer) and then he distributes it to the producers.

Weight and fat - Weights and fat scores are provided on a grid. The company is currently in the process of including a section relating to damage on the feedback sheet.

Weights and fat scores are taken at the station at the end of the chain. Fat is measured by manual palpitation. Previously a probe was used, however the company moved away from this due to breakdowns of the equipment, lag time in having this machinery fixed and time required to train people in the use of equipment. AUS-MEAT conducts a surprise audit once a month, which includes a check on fat assessment. The supervisors also do an hourly check with a knife and ruler.

The company would only go back to using the probe if it was driven by the customer. It would be good if a technology was available to measure fat where someone could just sit and not have to think about it.

The company has penalties for fat scores 1 and 5.

Skins – Are incorporated into the price of the lambs. Skins are reported on a separate sheet for internal use.

Health status - The company provides feed back to producers on diseases where 20 plus lambs are trimmed in a lot for a reason such as arthritis or dog bites. They can trace back to individual lots. They have shire (local council) meat inspectors.

Yield – Viascan would be considered if the customer demanded it, however this is unlikely at the current time as 50% of the kill is for a domestic company and the other 50% for contract. The company would be interested in technology to do Lean meat yield (other than viascan).

Age - The company provides age feedback.

Sex - Feedback is currently not provided on the sex of lambs

MSA - If driven by the customer then the company will go to MSA lamb.

Opportunities and issues – The company is comfortable with a uniform feedback system as long as it is easy to use. If a uniform system was developed training with the program would be required and any new program(s) would need to be idiot proof.

7.5 Processor 5

Summary of data currently collected and current feedback:

Data type	Collected	Feedback
Weight	Weights for each carcase	Individual weights (by animal ID if have electronic ear tag) Weight/Fat score/price grid Total and average weight
Fat		Individual Fat depth Fat score/weight/price grid
Yield		
Trim & Health		Number animals condemned and reason
Skins		
Offal	Problems recorded by AQIS	
Age	Every animal aged	Number of teeth
Sex	No	
Other		

Summary of opportunities for improved feedback:

- Comfortable with a central information system

Software utilised:

The company run on a Sastec program. There are electronic links at the office computer. An electronic tracker automatically takes data from the Sastec program and matches it with an individual carcass, to enable animals to be individually traced through the system.

Current situation and future opportunities for data collection and feedback:

The company currently provides very good producer feedback and have there own website that producers can log onto to obtain their feedback.

Individual ID - The plant is set up for individual animal tracking with an electrical identification on the ganvil. Animals with an electronic tag can be tracked to the boning room.

Weight and fat - Feedback is provided on individual weights. Currently there are large penalties for anything over fat 4 and for fat 1 and for anything over or under weight specifications. Weight and fat grids (including price) are provided to producers.

Trim - The company is currently in the process of developing a touch screen computer to record trim information.

Offal - AQIS record if there is any problem, this will be recorded on there system when a station is put in. Currently at grading a problem will only be recorded if it is obvious.

Age - Every animal is mouthed, identified and recorded at grading.

Sex - The sex of the animal is not recorded unless they are displaying secondary sexual characteristics.

Yield - The reason why viascan is not used is the politics and cost. However a bigger problem is the calibration with mixed lots of stock coming through.

If there was technology to calculate lean meat yield from a primal, this would suit the company as they can track animal to the boning room and from should be able to generate an ID to stay with the cut following this point. If done on the legs they can track the legs until they are split.

Opportunities – The company is comfortable with a central system as long as individuals can only access their data. A standard sheet is also feasible.

7.6 Processor 6

Background:
The company is a domestic works. They do some service kills, with the majority of the stock sourced out of sale yards. They kill around 2000-2500 lambs, hogget and mutton a month on a per order basis. The company kills all sorts of breeds and are operating five days a week. There is no boning done on site.

Summary of data currently collected and current feedback:

Data type	Collected	Feedback
Weight	Weight of each carcase (NLIS available)	Individual weights Total weight
Fat	FS of each carcase (NLIS available)	Individual FS
Yield		
Trim & Health	Bruising Contamination Abses Trimming information	Bruising
Skins	No	
Offal		
Age/dentition	yes	Number of teeth
Sex	yes	Male v female
Other		

Software utilised:
The company uses the Triton software company

Summary of opportunities for improved feedback:
- No problems seen with a centralised database system

Current situation and future opportunities for data collection and feedback:

If a producer sells direct and requests it they can receive feedback information via fax. With the software they are running the company is able to customise their feedback information.

Fat - Currently measured by manual palpitation, with random knife and ruler checks. They are not looking at changing how they are currently measuring fat. Payment is not based on fat.

MSA - The company have submitted a funding application for an electrical stimulator, which will enable them to take on MSA lamb. As the majority of lambs are sourced out of the saleyard the company plan to put lambs on a farm and feed them for three weeks before processing them, so they meet the requirements of MSA lamb.

Trim & Health - Bruising, Contamination and Abses is recorded. When a person trims a carcase they will walk over and tell the person on the scale, who will then enter the information into the system.

Skins - There is no feedback provided on skins. The skins are salted on site, graded after salting and then tendered.

Individual Identification - They have the capability handle electronic NLIS tags

Opportunites – The company does not see a problem with uploading a file to a centralised database.

7.7 Processor 7

Background:
The company do about 90% as service kill and would be sourcing about 70% direct off farm. The plant operates five days a week killing around 1400 lambs per day. They are currently doing MSA lamb. While they do not have a stimulator, they do have a chiller that cools slow enough to meet MSA requirements. Currently all MSA lamb is being sourced from a local feedlot. MSA lambs are run through first so they will spend enough time in the chiller to be shipped out that evening. Lambs are purchased on a per head basis.

Summary of data currently collected and current feedback:

Data type	Collected	Feedback
Weight	Yes	Weight of each carcase
Fat	1-5	Depth and score for each carcase
Yield		
Trim & Health	Condemn and partial condemn Bruising can get collected Seed	Full condemns – separate sheet Partial condemns – reference to part of body condemned
Skins	Price Length	
Offal		
Age/dentition		Number of teeth
Sex		
Other		NLIS if available If MSA grade

Summary of opportunities for improved feedback:
- Comfortable with a central feedback system
- Inclusion of vendor name and PIC number on feedback sheet

Software utilised:
The software system is one that they have developed themselves.

Current situation and future opportunities for data collection and feedback:

Fat - Fat is measured by manual palpitation. The GR knife will not keep up with the speed of the kill chain.

Trim and health – Condemnations and partial condemnations are recorded. Bruising can get collected***.*** Trims are not collected (can only record if it is a standard or non-standard trim)***.*** At this stage they are only sending out separate feedback sheets on full condemns. Any issues with seed are feedback with the condemnations.

Skins - are graded by the skins department. Skin is decided on purchase based on wool length. There is potential to feed back wool length and price.

Individual ID - Currently if there is a problem the company can only trace back to a lot on the kill floor and in the boning room they can only trace back to a run.

They are currently running calves through on the small stock chain on an individual animal tracking system. If they move to individual animal tracking it will be similar to the way they currently do beef.

Opportunities – The company can not see a problem with a centralised system, as the only cost they can see is a bit of adjusting with the computer system to be able to upload. Once this has been done there will be no ongoing cost.

They would like to see the vendor name and PIC number on the feedback sheets so producers are sure that it is there lambs.

7.8 Processor 8

Background:
The company processes 4500 a day, five days a week. They target 18-26kg lambs, although sometimes they will do bag lambs. 1300-1600 are processed for a domestic company, 2000 for their own brand and the remaining lambs are contract kill.
Around 50% of lambs are sourced off farm and 50% through the saleyards. They have there own buyers.

The company are currently looking into new technology including:

- Installation of a RFID reader and chip on the ganvel enabling individual tracking of animals
- A robot vacuum cleaner (to clean the back legs)
- A second robot vacuum cleaner
- An automatic brisket cutter

Summary of data currently collected and current feedback:

Data type	Collected	Feedback
Weight	Weight for each carcase	Individual weights
Fat	Fat for each carcase	FS 1-5 and fat depth
Yield		
Trim & Health	Condemns (AQIS) Dog bite Grass seeds (photos sent to buyer)	condemns
Skins	Wool length & problems pre slaughter	
Offal		
Age/dentition		Stock type
Sex		
Other		

Summary of opportunities for improving feedback:

- Electronic measure of fat
- The company could not see any problem with a centralised feedback system

Software utilised:
The company uses the Sastec software company. They had not heard of Viascan.

Current situation and future opportunities for data collection and feedback:

The information collected at the plant is hooked up to an external office where all the admin, feedback and payments are done.

Producers are encouraged to come in and have a look at their stock.

Individual ID – The company are in the process of exploring the installation of a RFID reader and chip on the ganvel enabling individual tracking of animals. Currently they can only trace per lot/mob. They will be tracing everything when the new system is in place.

Fat - The company feels an electronic measure of fat is required, they need something that is accurate and quick. Previously the company had a machine that measured fat but it broke down and was never put back in. Fat is currently measured by manual palpitation.

Payment is made on fat and weight, with fat scores 1 and 5 penalised.

Health Status – Photos are taken of grass seeds and sent to the buyer. They won't tend to buy back off that producer again. It is left up to the buyer to provide feedback on seeds back to the producer.

AQIS manually record information about condemns on a sheet and then this is put onto the producers feedback sheets.

They have a QA sheet which dog bite and grass seeds are recorded on.

The company feel that is important (for the producer) that something is developed such as a gage on the tool they use to do the secondary neck cut, Currently the amount being removed can vary greatly and only a small amount needs to be taken off, so the over trimming is costing producers money.

Skins – Are assessed in the morning in the pens. Wool length and any problems are recorded (the processor wears any tear damage) and allocate a price based on this.

Opportunities – The company could not see a problem with a centralised system

7.9 Software company 1

Summary of opportunities for improving feedback:

- Any feedback system setup is possible
- Central system with a uniform feedback sheet and information provided electronically

Any system set up is possible and what is being suggested is already occurring in WA with the processor they work with. All that is required is a list of the data required and an idea of how the output should look.

The company provided the following suggestion of how the system might work:

1. Up loading data to a central system
2. Uniform producer feed back
3. Electronic version of the feedback that can be sent to the producer so they can analysis there own data.

Grain fed versus grass fed was suggested as data that would be good to be recorded in addition to the proposed feedback list.

7.10 Software company 2

Summary of opportunities for improving feedback:
- Viascan accreditation for FS
- Central data system for lamb seen as a possibility

Viascan will process 1200 carcasses/hour and provides information on:
- Total lean meat yield
- Leg yield (kg and %)
- Loin yield (kg and %)
- Shoulder yield (kg and %)

It is recommended that the database is regularly updated but there is not the need to calibrate in each plant. Discussions are currently occurring with MLA to conduct some more bone outs to update the database.

Currently there are only 2 works in Australia with Viascan. However there are other plants in New Zealand and other overseas countries using the technology.

Currently viascan is not accredited for fat measurement however they are trying to achieve this accreditation. If this occurs the technology could be provided solely for fat or yield measurement or for both. This would require different pricing structures depending on the measurements to be taken.

Plants have a number of options in relation to the use and payment of viascan depending on if the plant buys the equipment outright or leases the equipment and what they are using the equipment to do.

There is no issue with the ability to integrate an increase in the amount of data recorded on plant. They have both the hardware to capture the data and the software programs to interface with this hardware

There is currently a system in place for beef to upload data to a central database and therefore is not seen as an issue for lamb. The company can also host a central database system if required.

Currently their systems can operated independently of the main office, ie if there was a breakdown at any of the risk points in the system, for example the floor to the computer in the office, the data captured on the floor would still keep recording.

A question identified is - does viascan need to be demanded by the producers for it to be taken up in the plants and some of the cost shared?

7.11 Software company 3

Summary of opportunities for improving feedback:
- Traceability post chiller

Summary of issues surrounding improving feedback:
- AQIS inspectors offering resistance to recording health problems and variability in interpretation
- Require an agreed language/format
- Data must be collected in the same way for comparison

Companies purchase the software and then no more information comes back to the company. They provide both the software and hardware required.

Data collection use to finish at hot standard carcass weight (i.e. as soon at the carcase entered the chillers), now there are more processors looking at tracing through the boning room.

AQIS inspectors are offering resistance in recording health problems even though they have the equipment (hardware and software) to record this information. There can be a national ruling about how something is to be done, but each inspector can interpret it differently and they can choose how the ruling is going to be implemented.

They are currently in the process of RFID development to track each carcass and are exploring this opportunity with one processor using read/write tags on the ganvel. In terms of tag frequency (on the animal) it will not matter.

The current methods for measuring fat (Hendersy probe and Ultra sound) should not slow the chain down in their opinion.

To achieve a successful standard system it is felt that there needs to be an agreed language/format for lamb, as there is in beef.

Considerations for standardising feedback
- There needs to be a standard way of delivering the information
- The data needs to be standardised (i.e. same categories)
- The processors need to be collecting the data in the same way (other wise can not compare between plants)

The software system is all automatic. As soon as the kill is finished the data is ready for processing. Once payment is put through the system the feedback sheet is ready.

A touch screen station that could record trim/condemnation data costs about $7500.

7.12 Software company 4

Summary of opportunities for improving feedback:
- Standard system with aspects that can be turned on and off

Summary of issues surrounding improving feedback:
- Capture of health data will be difficult (due to slowing of chain) until electronic individual ID is available
- Suitability of a centralised system may depend on age of programs used in plants and therefore cost to upgrade where required

Programs developed for processors track from live animal to hot standard carcase weight and fat. They are now starting however to trace into the processing room and inventory in shipping.

Traditionally processors would buy the package, now they can subscribe based on a monthly fee, by doing this it means they get the upgrades etc. More companies are going this way.

The company provides a standard package (they don't have customised versions) and they can turn on/off the bits the processor wants or doesn't to make it compatible with their own operations.

Animal health information capture:
On a high speed chain (or a plant processing over 2000 a day) it is considered that a processor would struggle to capture animal health information until there is individual body traceability
.
Fat measurement:
There was a push on using an AUS-MEAT probe but now it does not get used.

The cost of the software to interface with a touch screen system in the retain area is a couple of thousand dollars.

The company is currently investigating and implementing an alternative system to RFID, which uses a laser label on the ganval.

The age of programs that processors are currently using may be a problem when developing a centralised database. There maybe a too big a cost in upgrading their existing system.

Recently the company has updated their system for both beef and sheep, and their technology is now capable of incorporating electronic individual carcass tagging.

They make the touch screen themselves, all other hardware is bought in and then they have the software which is compatible with all of this.

7.13 Software company 5

Summary of opportunities to improve feedback
- Develop standard face to feedback report and processors export data from their existing system in a standard form (feed back can be manual or via a database)
- Feedback report with compulsory and voluntary data entry fields

Summary Issues/considerations surrounding improved feedback:
- Processors want to be using a single system as much as possible
- Need to ask the processors what specifications they require for their business

Background:
The company supports and developed RAMS (Realtime Abattoir Management System) originally developed for Metro Meat International. The aim was to maintain the strengths of RAMS but also to enhance the product with the utilisation of industrial PC and touch screen based software.

Major meat industry customers include Cargill Beef Australia, T&R Pastoral, WAMMCO international. Other key customers include PIRSA, Rural Chemicals Group (developed the InFinder system), Musicorp, Filinders Medical Centre, Finlaysons Lawyers and MD Fassina Group.

The company specialises in the development and support of custom software, not just for the meat industry.

Abattoir management systems - Daisy System:
- AQIS approved code of practice
- MSA grading (Yartoo approved MSA software developer)
- Interface with NLIS and viascan
- Live weight capture
- Kill chain data entry stations
- Sophisticated objective grading of carcases on the kill floor
- Automatic and manual boning input (weighing carcases prior to the boning room)
- Fully automatic and manual carton weighing stations
- GS1 compliant barcodes, foreign languages, conveyor routing barcodes
- Individual piece weigh labelling with totalling into completed cartons
- Order processing
- Chiller assessment
- Warehouse and store management (wireless handheld scanners etc)
- Inventory management, stock take
- Interfaces to and from customer specific systems

Developing a standard feedback system for processors:

The MSA beef system seems to work well. A decision needs to be made on what data processors must record. The data from the kill floor can then be put in a standard form which can be used to generate a generic feedback sheet. Having a standard form is critical.

There is opportunity to have feedback at 2 levels depending on where individual processors are at
- basic feedback sheet - where data collection and feedback to producers is compulsory (i.e. all fields must contain data)
- detailed feedback summary - to provide additional feedback if it is available (processors may collect some or all of this data, where data is not collected this part of the feedback sheet will be blank)

It is critical that processors are involved in the development and implementation of the system rather than just forcing requirements on them. Processors must see the benefits of improved and standardised feedback for them and be encouraged to go beyond the compulsory data and take steps towards providing the voluntary data (at a time when they feel comfortable to do so).

There is potential to increase data capture using efficiently laid out touch screens. Programmable keyboards are recommended over touch screen. Screens can be reconfigured to enable extra data to be entered on the kill floor.

There is opportunity to develop a standard feedback report to producers across processing plants if data is exported from processors current systems in a common form (generally anyone can generate CSV format from their system)
- Manual feedback (fax/email) - need to develop a standard sheet face which software providers would work to

- Web based (Central database with producer/processor login) – export data in standard form to database

It is difficult to estimate the costs associated with developing a standard feedback system when there are no specifics to work on. Adding additional fields to an existing data entry station would be fairly cheap – make changes/test etc (would be paying standard rates across industry). The design of a feedback sheet shouldn't be too expensive, maybe a couple of days. For a central database the cost is in the initial setup not in the ongoing management.

7.14 David Pethick

The meeting with David was to discuss his thoughts about important aspects of the lamb supply chain. Also raised where some future possibilities of new technologies.

The most important aspect of eating quality is the pH decline. Another important aspect is fat - there should be no less then 6mm of fat on the carcase.

Lean meat yield is also considered important. Current research is exploring a measure of lean meat yield can be achieved by weighing a particular muscle that is calibrated to calculating lean meat yield. Other work includes some algorithms to show the benefits of using viascan for assessing lean meat yield.

Other technologies being investigated include an automated grading system and cat scanning for automated boning.

8 APPENDIX 2 – EXAMPLES OF CURRENT FEEDBACK REPORTS

Example 1

SHEEP Body List

Processing date: "26/02/2008"

Body List

Lot reference 201

Body#	Lot reference	Body wgt	Cypher	Sex	Dentition	Tag 2/PIC	NLIS RFID	Client	Farmer	Fat score	Bruising	Hot wgt
1	201	19.00	*L*	Male	0	QICT0007		CLIFTON BUTCHERY	PASSMORE	3		19.00
2	201	19.40	*L*	Male	0	QICT0007		CLIFTON BUTCHERY	PASSMORE	3		19.40
3	201	18.20	*L*	Male	0	QICT0007		CLIFTON BUTCHERY	PASSMORE	3		18.20
4	201	19.20	*L*	Female	0	QICT0007		CLIFTON BUTCHERY	PASSMORE	5		19.20
5	201	19.00	*L*	Female	0	QICT0007		CLIFTON BUTCHERY	PASSMORE	4		19.00
6	201	21.00	*L*	Male	0	QICT0007		CLIFTON BUTCHERY	PASSMORE	4		21.00
7	201	18.00	*L*	Female	0	QICT0007		CLIFTON BUTCHERY	PASSMORE	4		18.00
8	201	18.80	*L*	Female	0	QICT0007		CLIFTON BUTCHERY	PASSMORE	3		18.80
9	201	19.20	*L*	Male	0	QICT0007		CLIFTON BUTCHERY	PASSMORE	4		19.20
10	201	19.60	*L*	Male	0	QICT0007		CLIFTON BUTCHERY	PASSMORE	4		19.60
11	201	17.80	*L*	Female	0	QICT0007		CLIFTON BUTCHERY	PASSMORE	4		17.80
12	201	20.60	*L*	Male	0	QICT0007		CLIFTON BUTCHERY	PASSMORE	4		20.60
13	201	21.80	*L*	Female	0	QICT0007		CLIFTON BUTCHERY	PASSMORE	4		21.80
14	201	20.60	*L*	Female	0	QICT0007		CLIFTON BUTCHERY	PASSMORE	4		20.60
15	201	17.00	*L*	Male	0	QICT0007		CLIFTON BUTCHERY	PASSMORE	3		17.00
Totals for Lot reference 201		**289.20**										**289.20**

Sheep Market Report

Example 2

Producer

Species Lamb

Lot Number P38

Date 08-Feb-08

Grid Summary

Fat Class		1				2		3		4		5			
Fat Depth		0-3mm		3.1-5mm		5.1-10mm		10.1-15mm		15.1-20mm		20.1+mm		Total	
Hot Weight		Head	Wgt	Head	Wgt	Head	Wgt	Head	Wgt	Head	Wgt	Head	Wgt	Head	Wgt
0-12kg	Hd														
	Wt														
12-14kg	Hd														
	Wt														
14-16kg	Hd					2								2	
	Wt						31.7								31.7
16-18kg	Hd					20		2						22	
	Wt						349.9		34.9						384.8
18-20kg	Hd					49		19						68	
	Wt						924.1		366.7						1290.8
20-22kg	Hd					12		18						30	
	Wt						249.9		375.9						625.8
22-24kg	Hd					1		6						7	
	Wt						23.7		136.0						159.7
24-26kg	Hd							1		1				2	
	Wt								24.3		24.9				49.2
26-28kg	Hd														
	Wt														
28+kg	Hd														
	Wt														
Total	Hd					84		46		1					
	Wt						1579.3		937.8		24.9				

Total Head: 131

Total Weight: 2542.0

Average Weight: 19.4

Condemmed: 0

Example 3

Vendor: On Account Of:

Booking:
Reference:

Grid: LAGRID9 8/02/2008 Species: Sheep Lot: 244

ACTUAL WEIGHT		FAT DEPTH					
		Score1	**Score2**	**Score3**	**Score3**	**Score4**	**Score5**
	0-12	0.00	0.00	0.00	0.00	0.00	0.00
	12.1-14	50.00	50.00	50.00	50.00	50.00	50.00
	14.1-15	50.00	70.00	70.00	70.00	50.00	50.00
	15.1-16	100.00	140.00	140.00	140.00	60.00	50.00
	Head	**1**	**2**				
	Weight	**16.4**	**33**				
	16.1+	120.00	160.00	160.00	160.00	120.00	60.00
	Head	**1**	**2**				
	Weight	**17.6**	**34.2**				
	17-17.9	140.00	200.00	200.00	200.00	160.00	120.00
	Head	**8**	**30**				
	Weight	**152.6**	**576.4**				
	18-20	150.00	320.00	320.00	320.00	250.00	150.00
	Head	**4**	**34**	**2**			
	Weight	**83**	**715.4**	**40.8**			
	20.1-22	150.00	320.00	320.00	320.00	250.00	150.00
	Head	**1**	**12**	**3**	**1**		
	Weight	**22.4**	**274**	**69.4**	**22.6**		
	22.1-24	150.00	320.00	320.00	320.00	250.00	150.00
	24.1-25	150.00	270.00	270.00	270.00	220.00	150.00
	25.1-28	120.00	260.00	260.00	260.00	200.00	120.00
	28.1+	120.00	210.00	210.00	210.00	150.00	120.00

Total Head: 101 Total Weight: 2,057.80 Avg Weight: 20.37 Avg Rate: 290.99

…example 3

			----------Carcase Details----------				
Body	Cat	Den	Fat	HotWt	Prc/KG	Grs Val	Condemn
278	L	0	6	19.4	3.20	62.08	
279	L	0	8	21.8	3.20	69.76	
281	L	0	7	18	3.20	57.60	
282	L	0	6	22	3.20	70.40	
283	L	0	8	20	3.20	64.00	
284	L	0	7	21.8	3.20	69.76	
285	L	0	9	20	3.20	64.00	
286	L	0	4	20.6	1.50	30.90	
287	L	0	6	22.8	3.20	72.96	
288	L	0	6	20.8	3.20	66.56	
289	L	0	6	16.8	1.60	26.88	
290	L	0	3	21.6	1.50	32.40	
291	L	0	6	18.6	3.20	59.52	
292	L	0	8	21.2	3.20	67.84	
293	L	0	6	17.2	2.00	34.40	
294	L	0	9	20	3.20	64.00	
295	L	0	3	18.6	1.50	27.90	
296	L	0	9	20.2	3.20	64.64	
297	L	0	3	18.8	1.50	28.20	
298	L	0	9	20	3.20	64.00	
299	L	0	7	20.2	3.20	64.64	
300	L	0	6	20.2	3.20	64.64	
301	L	0	7	20.2	3.20	64.64	
302	L	0	12	20.4	3.20	65.28	
303	L	0	8	20.4	3.20	65.28	
304	L	0	10	23.2	3.20	74.24	
305	L	0	8	21.8	3.20	69.76	
306	L	0	6	18.4	3.20	58.88	
307	L	0	7	21.6	3.20	69.12	
308	L	0	8	19.6	3.20	62.72	
309	L	0	8	20.4	3.20	65.28	
310	L	0	12	23.6	3.20	75.52	
311	L	0	12	23.2	3.20	74.24	
312	L	0	9	19	3.20	60.80	
313	L	0	3	18	1.50	27.00	
314	L	0	6	18.6	3.20	59.52	
315	L	0	13	22.6	3.20	72.32	
316	L	0	6	20	3.20	64.00	
317	L	0	6	18.8	3.20	60.16	
318	L	0	10	22.8	3.20	72.96	
319	L	0	6	16.2	1.60	25.92	
320	L	0	9	22	3.20	70.40	
321	L	0	8	21.8	3.20	69.76	
322	L	0	8	22.6	3.20	72.32	
323	L	0	7	21.2	3.20	67.84	
324	L	0	10	21.4	3.20	68.48	
325	L	0	6	20	3.20	64.00	
326	L	0	6	20.4	3.20	65.28	
327	L	0	7	20.8	3.20	66.56	
328	L	0	6	21.2	3.20	67.84	
329	L	0	7	19.8	3.20	63.36	
330	L	0	7	23	3.20	73.60	
331	L	0	8	22.8	3.20	72.96	
332	L	0	4	19.6	1.50	29.40	
333	L	0	6	19.2	3.20	61.44	
334	L	0	7	21.8	3.20	69.76	
335	L	0	7	20.8	3.20	66.56	
337	L	0	7	18.4	3.20	58.88	
338	L	0	4	19.4	1.50	29.10	
339	L	0	3	19.6	1.50	29.40	
340	L	0	7	21.4	3.20	68.48	
341	L	0	7	19.8	3.20	63.36	
342	L	0	6	20.6	3.20	65.92	
343	L	0	7	23.2	3.20	74.24	
344	L	0	9	22.6	3.20	72.32	
345	L	0	3	17.6	1.40	24.64	
346	L	0	6	17	2.00	34.00	
347	L	0	3	19	1.50	28.50	
348	L	0	6	19.4	3.20	62.08	
349	L	0	6	18.4	3.20	58.88	
350	L	0	3	20.2	1.50	30.30	
351	L	0	9	22.2	3.20	71.04	
352	L	0	8	20.2	3.20	64.64	
353	L	0	7	19.8	3.20	63.36	

…example 3

354	L	0	9	21.4	3.20	68.48
355	L	0	2	19.6	1.50	29.40
356	L	0	3	20.6	1.50	30.90
357	L	0	7	19	3.20	60.80
358	L	0	7	19.4	3.20	62.08
359	L	0	6	19.4	3.20	62.08
360	L	0	9	18.2	3.20	58.24
361	L	0	6	18.6	3.20	59.52
362	L	0	9	21.4	3.20	68.48
363	L	0	6	22.4	3.20	71.68
364	L	0	10	23.6	3.20	75.52
365	L	0	7	22.8	3.20	72.96
366	L	0	8	20.8	3.20	66.56
367	L	0	10	19.6	3.20	62.72
368	L	0	6	20.2	3.20	64.64
369	L	0	11	20.4	3.20	65.28
370	L	0	11	22.6	3.20	72.32
371	L	0	10	21.2	3.20	67.84
372	L	0	6	19.4	3.20	62.08
373	L	0	6	22	3.20	70.40
374	L	0	3	22.4	1.50	33.60
375	L	0	9	20.8	3.20	66.56
376	L	0	6	20.6	3.20	65.92
377	L	0	6	18.4	3.20	58.88
378	L	0	3	16.4	1.20	19.68
379	L	0	7	20.8	3.20	66.56
380	L	0	6	19.2	3.20	61.44
Total Kill for Date: 8/02/2008			101 Head	2,057.80 kg		$5,988.04

Grid Summary

	Bodies	%	Total Weight	Avrg Weight	Avrg Value	Total Value	Condemns
Total	101	100.00	2,057.80	20.4	59.29	$5,988.04	0

Weight Class Summary	**Bodies**	**%**	**Total Weight**
1 Very Lean (0 to 5mm)	15.0	14.9	292.0
2 Lean (5 to 10mm)	80.0	79.2	1,633.0
3 Medium (10 to 15mm)	6.0	5.9	132.8
18 Wgt Class 18 16-18k	8.00	7.9	137.20
20 Wgt Class 20 18-20k	36.00	35.6	693.00
22 Wgt Class 22 20-22k	40.00	39.6	839.20
24 Wgt Class 24 22-24k	17.00	16.8	388.40
Total	101.00	100.00	2,057.80

Fat Class Summary

Total	101.0	100.0	2,057.80

Example 4

CONDEMN CODES

Whole Condemns

0	Whole Carcase

Partial Condemns

1	Head Off
2	1 Fore Trotter Off
3	2 Fore Trotters Off
4	1 Hind Trotter Off
5	2 Hind Trotters Off
6	1 Fore Hock or Shank Off
7	2 Fore Hocks or Shanks Off
8	1 Hind Hock or Shank Off
9	2 Hind Hocks or Shanks Off
10	1 Fore Leg Off
11	2 Fore Legs Off
12	1 Hind Leg Off
13	2 Hind Legs Off
14	Part Ribs Out
15	All Ribs Out
16	Jowl Trimmed Off
17	1 Fore Leg Skinned or Trimmed
18	2 Fore Leg Skinned or Trimmed
19	1 Hind Leg Skinned or Trimmed
20	2 Hind Leg Skinned or Trimmed
21	Brisket Trimmed Off
22	Part Brisket Trimmed Off
23	Belly Trimmed
24	Abscess Removed Leaving Hole F/quart
25	Abscess Removed Leaving Hole Middle
26	Abscess Removed Leaving Hole H/quart
27	Carcass Totally Skinned
28	Part Vertebrae Removed
29	Tail Trimmed Out
30	Anal Channel Trimmed
31	Forequarter Condemned
32	Hindquarter Condemned
33	Partially Skinned

Condemn Reasons

A	Contamination
B	CLA
C	Emaciation
D	Jaundice
E	Malignancy
F	Arthritis
G	Fever
H	Septicaemia
I	Ovis
J	Fracture
K	Abscesses
L	Gangrene
M	Cancer
N	Miscellaneous
O	Bruising

…example 4

Production for: ***On 21-Feb-2008***
Lot# AO621 Vendor: ***Trim: S*** ***Animal Type: Lamb***

Body#	NLIS	Sex	Den	Cyph	Fat Dep	Fat Class	Grade	Butt	Brui	Dest	Body Weight HCW	Body Weight HSCW	Body Weight Class	Tail/Tattoo	Ear
780		N	0	*L*	15	3				O	20.90	20.90	22		
781		N	0	*L*	15	3	MSA			O	20.00	20.00	20		
782		N	0	*L*	15	3	MSA			O	19.00	19.00	20		
783		N	0	*L*	15	3				O	17.50	17.50	18		
784		N	0	*L*	15	3	MSA			O	24.20	24.20	26		
785		N	0	*L*	15	3	MSA			O	22.20	22.20	24		
786		N	0	*L*	15	3	MSA			O	19.50	19.50	20		
787		N	0	*L*	15	3	MSA			O	21.70	21.70	22		
788		N	0	*L*	15	3	MSA			O	19.60	19.60	20		
789		N	0	*L*	10	2				O	17.80	17.80	18		
790		N	0	*L*	15	3	MSA			O	19.00	19.00	20		
791		N	0	*L*	15	3	MSA			O	20.10	20.10	22		
792		N	0	*L*	15	3	MSA			O	19.20	19.20	20		
793		N	0	*L*	15	3				O	17.80	17.80	18		
794		N	0	*L*	15	3	MSA			O	20.70	20.70	22		
795		N	0	*L*	20	4	MSA			O	20.20	20.20	22		
796		N	0	*L*	15	3	MSA			O	19.20	19.20	20		
797		N	0	*L*											
Condemn Reason	Bruising				**Part Condemned**	Full Carcass Condemn									
798		N	0	*L*	15	3	MSA			O	19.80	19.80	20		
799		N	0	*L*	15	3	MSA			O	21.10	21.10	22		
800		N	0	*L*	15	3				O	17.00	17.00	18		
801		N	0	*L*	15	3	MSA			O	20.90	20.90	22		
802		N	0	*L*	15	3	MSA			O	22.10	22.10	24		
803		N	0	*L*	15	3	MSA			O	20.40	20.40	22		
804		N	0	*L*	15	3				O	20.30	20.30	22		
805		N	0	*L*	15	3				O	20.50	20.50	22		
806		N	0	*L*	15	3				O	21.80	21.80	22		
807		N	0	*L*	15	3	MSA			O	20.20	20.20	22		
808		N	0	*L*	15	3	MSA			O	19.60	19.60	20		
809		N	0	*L*	15	3				O	17.70	17.70	18		
810		N	0	*L*	15	3	MSA			O	20.30	20.30	22		
811		N	0	*L*	15	3	MSA			O	20.20	20.20	22		
812		N	0	*L*	15	3	MSA			O	24.50	24.50	26		
813		N	0	*L*	15	3	MSA			O	22.30	22.30	24		
814		N	0	*L*	15	3				O	21.20	21.20	22		
815		N	0	*L*	15	3	MSA			O	20.20	20.20	22		

# of Bodies: 135 ***Total Weight: 2,732.60*** ***Ave Weight: 20.39*** ***Ave Fat: 16***
 # Fully Condemned: 1 ***# MSA Graded: 100***

…example 4

Detailed Kill Floor Body List

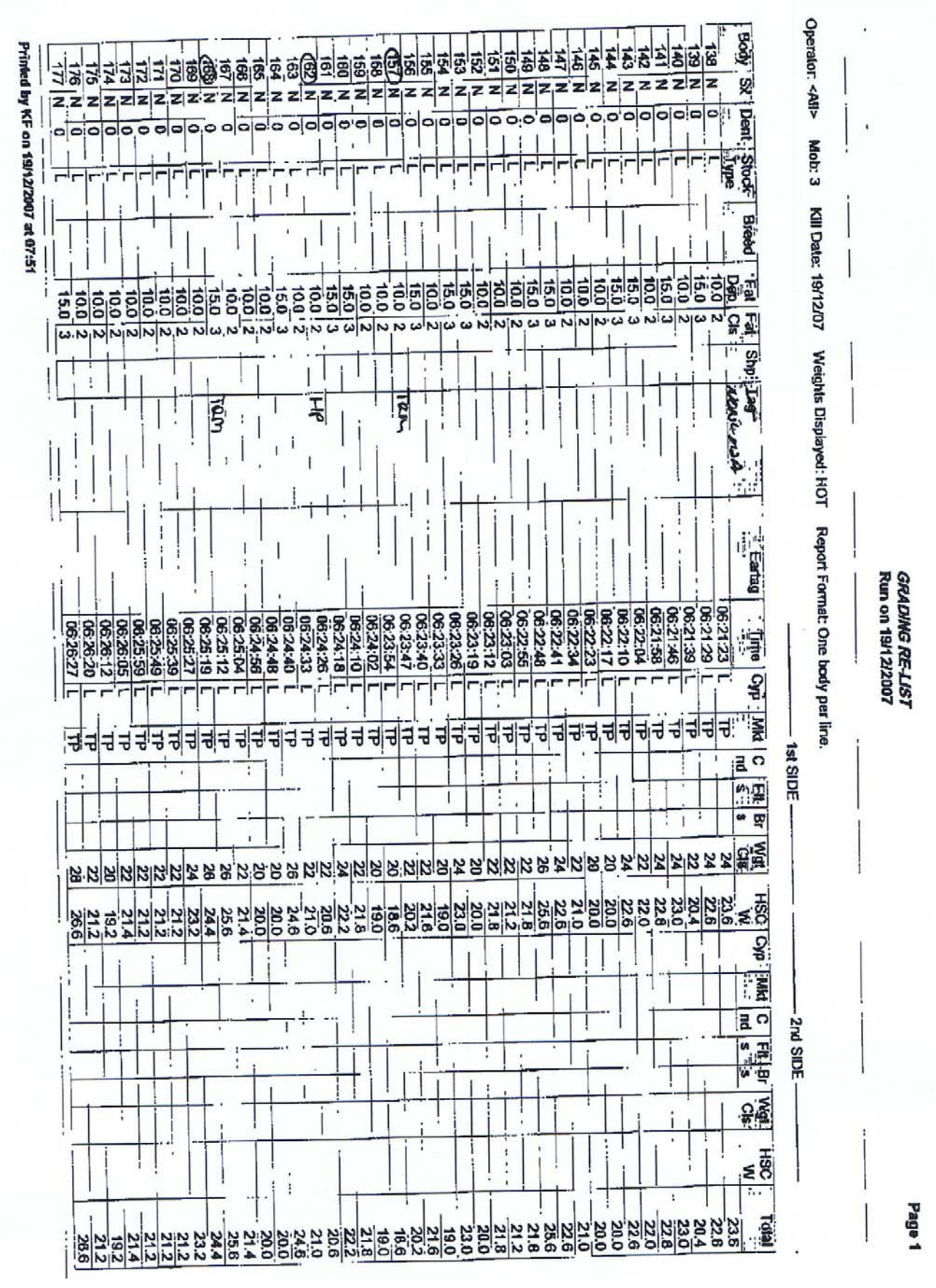
Date Printed: 21-Feb-2008 **Page Number:** 1

Production for: ***On: 21-Feb-2008***

Lot# AO621 Ve ***Trim: S*** ***Animal Type: Lamb***

Body#	NLIS	Sex	Den	Cyph	Fat Dep	Fat Class	Grade	Butt Brui	Dest	Body Weight HCW	Body Weight HSCW	Body Weight Class	Tail/Tattoo	Ear
681		N	0	*L*	15	3			O	16.80	16.80	18		
682		N	0	*L*	15	3			O	21.30	21.30	22		
683		N	0	*L*	15	3			O	20.90	20.90	22		
684		N	0	*L*	20	4			O	23.50	23.50	24		
685		N	0	*L*	15	3	MSA		O	25.40	25.40	26		
686		N	0	*L*	15	3	MSA		O	21.10	21.10	22		
687		N	0	*L*	15	3	MSA		O	20.40	20.40	22		
688		N	0	*L*	15	3	MSA		O	18.60	18.60	20		
689		N	0	*L*	15	3	MSA		O	21.10	21.10	22		
690		N	0	*L*	15	3	MSA		O	21.50	21.50	22		
691		N	0	*L*	15	3			O	18.90	18.90	20		
692		N	0	*L*	15	3	MSA		O	19.20	19.20	20		
693		N	0	*L*	15	3			O	17.10	17.10	18		
694		N	0	*L*	15	3			O	18.70	18.70	20		
695		N	0	*L*	10	2			O	19.90	19.90	20		
696		N	0	*L*	15	3			O	19.90	19.90	20		
697		N	0	*L*	15	3	MSA		O	18.70	18.70	20		
698		N	0	*L*	15	3	MSA		O	19.70	19.70	20		
699		N	0	*L*	15	3	MSA		O	19.70	19.70	20		
700		N	0	*L*	15	3	MSA		O	19.30	19.30	20		
701		N	0	*L*	15	3			O	21.30	21.30	22		
702		N	0	*L*	15	3	MSA		O	19.80	19.80	20		
703		N	0	*L*	15	3	MSA		O	19.40	19.40	20		
704		N	0	*L*	15	3	MSA		O	20.90	20.90	22		
705		N	0	*L*	15	3			O	22.30	22.30	24		
706		N	0	*L*	10	2	MSA		O	19.40	19.40	20		
707		N	0	*L*	15	3	MSA		O	19.90	19.90	20		
708		N	0	*L*	15	3	MSA		O	19.50	19.50	20		
709		N	0	*L*	15	3	MSA		O	20.20	20.20	22		
710		N	0	*L*	20	4	MSA		O	22.60	22.60	24		
711		N	0	*L*	15	3	MSA		O	20.80	20.80	22		
712		N	0	*L*	15	3	MSA		O	21.30	21.30	22		
713		N	0	*L*	15	3	MSA		O	18.40	18.40	20		
714		N	0	*L*	15	3	MSA		O	22.80	22.80	24		
715		N	0	*L*	15	3	MSA		O	19.80	19.80	20		
716		N	0	*L*	10	2			O	17.30	17.30	18		
717		N	0	*L*	15	3	MSA		O	21.30	21.30	22		
718		N	0	*L*	15	3	MSA		O	18.80	18.80	20		
719		N	0	*L*	15	3			O	18.80	18.80	20		
Part Condemned 2 Fore Hocks or Shank														
720		N	0	*L*	15	3	MSA		O	26.50	26.50	28		
721		N	0	*L*	15	3	MSA		O	18.70	18.70	20		
722		N	0	*L*	15	3	MSA		O	19.50	19.50	20		
723		N	0	*L*	20	4	MSA		O	19.90	19.90	20		
724		N	0	*L*	15	3	MSA		O	19.40	19.40	20		
725		N	0	*L*	15	3	MSA		O	20.10	20.10	22		
726		N	0	*L*	10	2	MSA		O	19.00	19.00	20		
727		N	0	*L*	15	3	MSA		O	21.80	21.80	22		

Example 5



GRADING RE-LIST
Run on 19/12/2007

Page 1

Operator: <All> Mob: 3 Kill Date: 19/12/07 Weights Displayed: HOT Report Format: One body per line.

1st SIDE — 2nd SIDE

Body	Sx	Dent	Stock Type	Breed	Fat Depth	Fat Cls	Shp	Tag	Eartag	Time	Cyp	Mkt	C md	Fit s	Br s	Wgt Cls	HSC W	Cyp	Mkt	C md	Fit s	Br s	Wgt Cls	HSC W	Total
138	N	0	L		10.0	2				06:21:23	L	TP				24	23.6								23.6
139	N	0	L		15.0	3				06:21:29	L	TP				24	22.6								22.6
140	N	0	L		10.0	2				06:21:39	L	TP				22	20.4								20.4
141	N	0	L		15.0	3				06:21:46	L	TP				24	23.0								23.0
142	N	0	L		10.0	2				06:21:58	L	TP				24	22.8								22.8
143	N	0	L		15.0	3				06:22:04	L	TP				22	22.0								22.0
144	N	0	L		15.0	3				06:22:10	L	TP				24	22.6								22.6
145	N	0	L		10.0	2				06:22:17	L	TP				20	20.0								20.0
146	N	0	L		10.0	2				06:22:23	L	TP				20	20.0								20.0
147	N	0	L		10.0	2				06:22:34	L	TP				22	21.0								21.0
148	N	0	L		15.0	3				06:22:41	L	TP				24	22.6								22.6
149	N	0	L		15.0	3				06:22:48	L	TP				26	25.6								25.6
150	N	0	L		10.0	2				06:22:55	L	TP				22	21.8								21.8
151	N	0	L		10.0	2				06:23:03	L	TP				22	21.2								21.2
152	N	0	L		10.0	2				06:23:12	L	TP				22	21.8								21.8
153	N	0	L		15.0	3				06:23:19	L	TP				20	20.0								20.0
154	N	0	L		15.0	3				06:23:26	L	TP				24	23.0								23.0
155	N	0	L		10.0	2				06:23:33	L	TP				20	19.0								19.0
156	N	0	L		15.0	3				06:23:40	L	TP				22	21.6								21.6
157	N	0	L		10.0	2				06:23:47	L	TP				22	20.2								20.2
158	N	0	L		10.0	2				06:23:54	L	TP				20	18.6								18.6
159	N	0	L		15.0	3				06:24:02	L	TP				20	19.0								19.0
160	N	0	L		15.0	3				06:24:10	L	TP				22	21.8								21.8
161	N	0	L		15.0	3				06:24:18	L	TP				24	22.2								22.2
162	N	0	L		10.0	2				06:24:26	L	TP				22	20.6								20.6
163	N	0	L		10.0	2				06:24:33	L	TP				22	21.0								21.0
164	N	0	L		15.0	3				06:24:40	L	TP				26	24.6								24.6
165	N	0	L		10.0	2				06:24:48	L	TP				20	20.0								20.0
166	N	0	L		10.0	2				06:24:56	L	TP				22	21.4								21.4
167	N	0	L		10.0	2				06:25:04	L	TP				26	25.6								25.6
168	N	0	L		15.0	3				06:25:12	L	TP				26	24.4								24.4
169	N	0	L		10.0	2				06:25:19	L	TP				24	23.2								23.2
170	N	0	L		10.0	2				06:25:27	L	TP				22	21.2								21.2
171	N	0	L		10.0	2				06:25:39	L	TP				22	21.2								21.2
172	N	0	L		10.0	2				06:25:49	L	TP				22	21.2								21.2
173	N	0	L		10.0	2				06:25:59	L	TP				22	21.4								21.4
174	N	0	L		10.0	2				06:26:05	L	TP				20	19.2								19.2
175	N	0	L		10.0	2				06:26:12	L	TP				22	21.2								21.2
176	N	0	L		10.0	2				06:26:20	L	TP				22	21.2								21.2
177	N	0	L		15.0	3				06:26:27	L	TP				28	26.6								26.6

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…example 5

DATE; 28. 2. 08

MHA Lot	Mob N°	Lot N°	Operator	Category	Number	Identification	CCE	F/Lot	DESC	WGT	Total	S/Value	COND	Hide Ass
	1	30	CFA	LAMB	300	forbes	Export				(300)			A.C
	2			-			-							
	3	33	Kachel	-	355	RF BJ williamson	-				(355)			B.C
	4			-			-							
	5	32	Bris	-	501	Simson	-							A.C
	6	32	-	-	502	Frampton	-							A.C
	7	31	-	-	724	Dubbo	-				(1800)			A.C
	8	28	-	-	73	Tamworth	-							B
	9			-			-							
	10	33	CFA	-	36	Inverell	-	38"						B
	11	33	-	-	148	—	-							B.
	12	33	-	-	121	Glen - innes	-				(1675)			B
	13	33	-	-	294	Burgee	-							A.C
	14	30	-	-	57	HORAN	-							A.C
	15	30	-	-	82	Flaggy	-							B.C
	16	30	-	-	175	Dunedoo	-							A.B
	17	30	-	-	762	Forbes	-							A.C
	18													
	19													
	20													
	21													
	22													
	23													
	24													
	25													
	26													
	27													
	28													
	29													
	30													
	31													
	32													
	33													

CCE = Customer Country eligibilit
SA = Saudi eligible
NSA = Non Saudi eligible
EU = European Union

A = SHORT SHAWN WOOL
B = UP TO 1 INCH
C = UP TO 2 INCH
D = DIRTY

E = OVER 2 INCH
F- DAGGY
S- MAY CONTAIN SEED
W = DAMP

P- POOR CONDITION

TOTAL 4130
CONDEMNED
TOTAL KILL
TOTAL WEIGHT

GRADING RE-LIST
Run on 28/02/2008

Operator: <All> Mob: 1 Kill Date: 28/02/08 Weights Displayed: HOT Report Format: One body per line.

Basicut

---------- 1st SIDE ---------- ---------- 2nd SIDE ----------

Body	Sx	Dent	Stock Type	Breed	Fat Dep	Fat Cls	Shp	Tag	Eartag	Time	Cyp	Mkt	C nd	Flt s	Br s	Wgt Cls	HSC W	Cyp	Mkt	C nd	Flt s	Br s	Wgt Cls	HSC W	Total
1	N	0	L		0.0					06:03:10	L	CH				26	25.8								25.8
2	N	0	L		0.0					06:05:23	L	CH				28	33.4								33.4
3	N	0	L		0.0					06:05:24	L	CU				26	24.6								24.6
4	N	0	L		0.0					06:05:26	L	CH				28	27.2								27.2
5	N	0	L		0.0					06:05:28	L	CH				28	30.4								30.4
6	N	0	L		0.0					06:05:29	L	CH				28	32.6								32.6
7	N	0	L		0.0					06:05:30	L	CH				28	27.8								27.8
8	N	0	L		0.0					06:05:31	L	CH				28	29.0								29.0
9	N	0	L		0.0					06:05:32	L	CH				28	30.0								30.0
10	N	0	L		0.0					06:05:37	L	CU				24	23.8								23.8
11	N	0	L		0.0					06:05:44	L	CH				26	25.6								25.6
12	N	0	L		0.0					06:05:53	L	CH				28	33.8								33.8
13	N	0	L		0.0					06:06:05	L	CH				28	32.8								32.8
14	N	0	L		0.0					06:06:11	L	CH				28	27.2								27.2
15	N	0	L		0.0					06:06:16	L	CH				28	32.8								32.8
16	N	0	L		0.0					06:06:21	L	CH				28	30.8								30.8
17	N	0	L		0.0					06:06:28	L	CH				28	27.0								27.0
18	N	0	L		0.0					06:06:36	L	CH				26	25.6								25.6
19	N	0	L		0.0					06:06:44	L	CH				26	25.8								25.8
20	N	0	L		0.0					06:07:00	L	CH				28	29.2								29.2
21	N	0	L		0.0					06:07:10	L	CU				26	24.4								24.4
22	N	0	L		0.0					06:07:17	L	CH				28	27.6								27.6
23	N	0	L		0.0					06:07:25	L	CH				28	33.0								33.0
24	N	0	L		0.0					06:07:30	L	CH				28	35.2								35.2
25	N	0	L		0.0					06:07:41	L	CH				26	25.8								25.8
26	N	0	L		0.0					06:07:43	L	CH				28	29.4								29.4
27	N	0	L		0.0					06:07:50	L	CH				28	28.0								28.0
28	N	0	L		0.0					06:08:20	L	CH				28	29.2								29.2
29	N	0	L		0.0					06:08:32	L	CU				24	23.6								23.6
30	N	0	L		0.0					06:08:39	L	CH				28	26.8								26.8
31	N	0	L		0.0					06:08:46	L	CH				28	28.0								28.0
32	N	0	L		0.0					06:08:50	L	CU				26	25.0								25.0
33	N	0	L		0.0					06:08:55	L	CH				28	26.4								26.4
34	N	0	L		0.0					06:09:02	L	CH				28	27.0								27.0
35	N	0	L		0.0					06:09:06	L	CH				26	25.4								25.4
36	N	0	L		0.0					06:09:12	L	CH				26	26.0								26.0
37	N	0	L		0.0					06:09:22	L	CH				28	35.2								35.2
38	N	0	L		0.0					06:09:25	L	CU				24	23.4								23.4
39	N	0	L		0.0					06:09:38	L	CU				26	24.8								24.8
40	N	0	L		0.0					06:09:48	L	CH				26	25.8								25.8
41	N	0	L		0.0					06:09:51	L	CH				26	25.8								25.8

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9 APPENDIX 3 – RELATED PROJECTS

Enhanced Animal Surveillance Program

The Enhanced abattoir Surveillance Program provides feedback to sheep producers on animal health conditions for lines of lambs with a PIC code that can be traced back to property.

The program builds on the existing OJD abattoir surveillance program. AQIS inspectors record data on 21 diseases/conditions and this information is provided to PIRSA who forward the results to producers.

Feedback to producers includes a table identifying the conditions identified in the line of animals and the % of animals infected for each condition. Producers also receive an information sheet on the conditions identified, providing a definition of the condition plus details relating to infestation, cause, diagnosis, prevention and consequences.

Currently the program is being run in T&R and Lobethal. They have AQIS inspectors on the plant for majority of the time, some other plants do not have full time AQIS inspectors. The next step would be to approach TMC to be involved in the program.

There is also work occurring nationally. This is being lead by Ian Links in NSW and Laurna Citer of Animal Health Australia. NSW is currently only collecting data (not reporting it back to producers), it is also believed there is some activity occurring in TAS, WA and VIC.

Data collection at T&R commenced in Dec 2006, with producer feedback commencing early 2007. The program was then introduced into Lobethal in May 2008.

While negotiations occurred initially with the processing plant to enable the program to be conducted, ongoing program work and communications is predominately with AQIS rather than the processor.

Feedback from the producers and AQIS regarding the program has been very positive. Inspectors where already observing carcases, however the information was not formally being reported, therefore is was not a large step for AQIS.

The program is endorsed and funded by PIRSA, AQIS and the SA Sheep Advisory Group. SASAG fund some of the inspectors wages and PIRSA cover salary for project administration, data management and feedback.

After June 08 the program is looking to benchmark the data collected to give producers an indication of where they sit and what is the norm. Benchmarking will include regional analysis of data and comparison of lamb versus adult sheep.

The option of an on-line system is also being considered where producers can log on using their PIC number to get the feedback, this would replace the current manual system of providing feedback in the mail.

Contact:
Rachel Gibson, PIRSA Animal Health – 08 8391 7126

E-surviellance program

The feasibility of an E-surveillance system for a national animal health system is currently being explored by AHA and MLA under the direction of a coordination group. Representation on this group includes AQIS, AHA, MLA, Australian Meat Industry Council, Cattle council of Australia, Sheepmeat Council of Australia .

It was identified that an electronic form of data collection would improve the capacity to collect and store reliable data and that the information obtained could be used for a number of purposes for the benefit of the industry.

Two consultancies are being undertaken as an initial step

Consultancy 1 – Review of surveillance data capture systems in abattoirs to be conducted by SARDI. This consultancy is managed by MLA and aims to

- Identify similar projects that have been undertaken, both in Australia and internationally, to investigate the application of electronic information management to the capture of surveillance data in abattoirs and the quantification of the benefits derived from these systems.
- Evaluate the possible applications of such information systems in the Australian context for the beef and sheep industries
- Identify the current situation in processors, including the systems, information collected, and utilisation of information
- Make recommendations on options for investment in research an/or the development of a pilot project to evaluate the usefulness of such information systems in Australian abattoirs

Consultancy 2 – To identify conditions of significant wastage and loss within the supply chain, the costs associated with these conditions and the likely benefits to stakeholders flowing form the implementation of an E Surveillance system. This consultancy is being managed by AHA.

Contacts:
Laurna Citer, Animal Health Australia – 02 6232 5522
Ian Jenson, Meat and Livestock Australia
Andy Pointon, SARDI – 08 8207 7838
Jan Jackowiak, SARDI – 08 8207 7946