

Australian Standard Alternative Equivalent Techniques: Risk-based Review of Post-mortem Inspection of Spleens of Sheep and Goats

1. Rationale and description of the alternative technique

Industry concerns were raised over the need to Palpate spleens of sheep and goats, irrespective of whether or not they are intended for human consumption.

This is seen to be out of step with practices in similar industries overseas where it is well established that the spleen of sheep and goats plays no practical assistance in reaching a disposition for other viscera or the carcass.

Current and alternative post-mortem inspection techniques for Schedule 2 AS4696 (Anon 2007; 2020) for sheep and goat spleens

Current (AS4696:2007 Schedule 2)

Alternative (AS4696:2007 Schedule 2) - AMRG Guideline 2020:1

Spleen – palpate

Spleen - observe

Palpation and/or incision may be used where gross abnormalities are suspected and to assist with determining disposition judgement – refer to AMRG alternative techniques Guideline 2020:1, Schedule 2, Table 4 (Anon 2020).

There are no changes to disposition judgements for spleens in Schedule 3 of the AMRG Guideline 2020:1, alternative techniques Guideline AS4696:2007 (Anon 2020).

This recommendation updates inspection techniques for sheep and goat spleens on a risk-basis and making them equivalent with practices overseas. It is also noted that viscera are identified as ‘carcass parts’ under AS4696 (cl 10.12), and require further treatment to be fit for human consumption (cl 10.14) (Anon 2007).

2. Background and supporting information

The project aimed to “quantify the effect on food safety and wholesomeness of changing from Palpation to Observe for the detection of gross abnormalities of spleens of sheep and goats”, and in particular to:

1. Determining the foodborne hazard significance of gross abnormalities of spleens;
2. Quantifying the industry prevalence of gross abnormalities of spleens;
3. Determining the role of gross abnormalities of the spleen in informing carcass disposition judgment;
4. Quantifying the effectiveness of the detection of gross abnormalities using Observation by comparing with the combined rate of gross abnormalities detected by Observation and Palpation;

5. Quantifying the effect on food safety of gross abnormalities undetected by Observation;
6. Reviewing the potential for cross-contamination of spleens that might result from Palpation;
7. Recommending alternative inspection arrangements for spleens of sheep and goats that provide equivalent food safety and wholesomeness outcomes.

3. Key findings

1. Gross abnormalities of spleens of public health significance most likely to occur include Anthrax and enlargement due to Salmonellosis.
2. The prevalence of gross abnormalities of spleens detected by Observation and Palpation combined was 0.0528% (n=29) in 54,915 sheep inspected and 0.0432% (n=21) in 48,577 goats examined across the main production zones nationally.
3. The most commonly occurring gross abnormality in both species was abscessation due to Caseous Lymphadenitis (CLA) accounting for 83% of detected gross abnormalities in sheep spleens and 81% in goats.
4. The sensitivity of detection of gross abnormalities by Observation for sheep was 83% (=24/29) and 90% (=19/21) for goats.
5. Five abnormalities in sheep and two in goats were detected via by palpation alone, and all of these abnormalities were consistent with CLA infection.
6. In terms of increase in non-detection of gross abnormalities on a throughput basis the reduced sensitivity of inspection by 'Observation only' leads to an increase in the non-detection rate of 0.91/10,000 sheep spleens and 0.41/10,000 goat spleens.

4. Assessments of any adverse effects of the alternative technique

Post-mortem inspection and/or disposition

It is evident that inspection of sheep and goat spleens has negligible significance for determining final carcass disposition.

Food safety

The prevalence of gross abnormalities of spleens of food safety significance is negligible. Palpation of spleens may lead to contamination of edible tissues.

Product wholesomeness (including non-detection rates)

Any increase in non-detection of gross abnormalities resulting from omission of palpation is negligible.

Product integrity

Not applicable.

Animal health surveillance (including zoonoses)

The occurrence of gross abnormalities of spleens provide little information for final carcass disposition, which is likely to be evident elsewhere (e.g. cachexia).

Animal welfare surveillance

Gross abnormalities detected in the spleen do not inform animal welfare judgements.

5. Relevant publications

Anon (2007) Australian Standard for the Hygienic Production and Transportation of Meat and Meat Products for Human Consumption. FRSC Technical Report 3, AS 4696:2007.

Anon (2020) Australian Meat Regulators Group Guideline 2020:1. Post-Mortem Meat Inspection – Alternative techniques to Schedule 2 and 3 of AS 4696:2007.

CAC (Codex Alimentarius Commission) (2005) *Code of Hygienic Practice for Meat*. CAC/RCP 58-2005.

Pointon, A.M., Hamilton, D.H. and Kiermeier, A. (2018). Assessment of the post-mortem inspection of beef, sheep, goats and pigs in Australia: Approach and qualitative risk-based results. *Food Control*, 90,222-232. <https://doi.org/10.1016/j.foodcont.2018.02.037>

Pointon, A.M., Hamilton, D.H. and Kiermeier, A.K. (2019a). Equivalence of alternative post-mortem inspection techniques for Caseous Lymphadenitis in Sheep and Goats in Australia. *Veterinary Record*. 185 (2), 54 <https://doi.org/10.1136/vr.105353>