



Food Act 2008 (WA) Fact Sheet 17

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

Version 2 – March 2019

Rationale and description of the alternative technique

Industry-wide problems with Caseous Lymphadenitis (CLA) has been a major issue for the Australian sheep and goat industry for many decades accompanied by significant financial losses to producers.

However, with the advent of vaccination and reduced sheep dipping for lice there has been a substantial reduction in prevalence and current post-mortem inspection procedures have been reviewed accordingly.

Additionally, CLA is not a public health risk and palpation has been demonstrated to result in contamination of edible tissue that may result in a poorer food safety outcome.

Despite these improvements in animal health extensive post-mortem inspection procedures remain in the Australian Standard 4696 for inspection of sheep and goats for CLA in Australia (Anon 2007) when compared to other countries.

Proposed alternative inspection sites and procedures for CLA in sheep and goats – V=visual (observe), P=palpate, I=incise, E=excise, D=discard. Alternative procedures are shaded

Lymph Node/Organ	Current ¹	Alternative
Pre-Scap. (Superficial Cervical) LN	P/E-D	P
Int. Iliac LN	P	V
Ischiatic LN	P	P
Lumbar LN	P	V
Pre-crural LN	P/E-D	P
Popliteal LN	P	P
Superficial Inguinal LN	P/E-D	V
Bronchial & Mediastinal LN	P	V/P²
Portal LN	V	V
Mesenteric LN	V	V
Lung	P	V/P²
Spleen	P	V
Liver	P	V
Kidney	V	V

¹ Anon (2007)

² Depending on whether lungs are not / are saved for human consumption; if yes, then current procedures are maintained, i.e. opening of bronchi and observation of internal surfaces.

No changes to Schedule 3 are recommended.

Background and supporting information

The overall objective of the validation study was to provide evidence to support the equivalence of alternative post-mortem inspection procedures of sheep and goats for CLA with the current standard.

Initial studies on sheep and goats addressed national data gaps with regard to:

- current national prevalence;
- pattern on distribution of multiple lesions within affected carcasses;
- sensitivity of current and alternative inspection procedures;
- cumulative effect of inspection from most to least common sites.

The national prevalence and distribution of lesions of Caseous Lymphadenitis (CLA) on an individual carcass basis was recorded on 54,915 sheep and 48,577 goats in five sheep and three goat abattoirs over 4 months in Australia in 2017.

Key Findings

These assessments found the national CLA prevalence was 7.7% in 54,915 sheep and 3.0% in 48,577 goats.

A total of 843 sheep and 132 goats had multiple CLA lesions.

The most common carcass sites for CLA lesions in **sheep** in decreasing prevalence were prescapular (4.8%), pre-crural (1.8%) and Ischiatic (0.5%) lymph nodes. Prevalence in offal was 1.6% with lesions in mediastinal lymph nodes (0.7%) and lungs (0.8%) the main sites.

For **goats**, the most common carcass sites in decreasing prevalence were prescapular (2.1%) and pre-crural (0.4%). Prevalence in offal was 0.3% of carcasses with lesions with mediastinal lymph nodes (0.1%) and lungs (0.1%) the main sites.

Ranking inspection sites by cumulative inspection effectiveness was determined and used to inform the selection of alternative procedures for evaluation of equivalence with the current standard.

This resulted in a comparison of the effectiveness of alternative procedures that were reduced to palpating the four most commonly affected sites of CLA lesions with visual assessment of other sites. These include pre-scapular, Ischiatic, pre-crural and popliteal lymph nodes.

To provide a basis for demonstrating the equivalence of alternative inspection procedures with the Australian Standard 4696 the sensitivity of current inspection procedures for detecting CLA was estimated by an expert panel. The sensitivity of detection of CLA lesions under current inspection procedures was estimated to be 90%.

Under current procedures this results in 86 sheep and 34 goat carcasses with CLA lesions being missed per 10,000 carcasses inspected. Of these, the clear majority are estimated to have CLA lesions in edible sites (from the baseline survey results), namely 76.4 and 31.6 per 10,000 sheep and goats inspected, respectively.

Under alternative procedures it was estimated that an additional 48 sheep and 10 goat carcasses with CLA lesions would be missed per 10,000 carcasses inspected. Of these 38.2 sheep and 5.6 goat carcasses per 10,000 inspected would contain CLA only in routinely non-edible tissue sites.

Hence, only an additional 10.2 sheep and 4.9 goat carcasses per 10,000 inspected, with CLA in edible tissue sites, are estimated to be missed as a result of implementing an alternative procedure.

Furthermore, the majority of carcasses will be boned either here or overseas, presenting processors with another opportunity to remove any affected lymph nodes as most will be exposed and trimmed off with the surrounding connective tissue i.e. further risk mitigation.

Any effect on determining final carcass disposition judgment from conducting the alternative procedures is also likely to be negligible, as the inspection of the sites most commonly affected remain unchanged i.e. palpated.

Assessments of any adverse effects of the alternative technique

Post-mortem inspection and/or disposition

The alternative inspection procedures effectively target affected carcasses and there is no change to disposition judgements.

Food safety

CLA is not a foodborne risk. Reduced palpation limits the potential for contamination of edible tissues.

Product wholesomeness (including non-detection rates)

The detection of CLA lesions in edible tissues is unchanged. There is a minor increase in non-detection rates of CLA lesions in non-edible tissues.

Animal health surveillance (including zoonoses)

The alternative inspection procedures effectively detect affected carcasses.

Animal welfare surveillance

The alternative inspection procedures effectively detect affected carcasses.

Product integrity

Not applicable.

Useful Resources

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.

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* Volume 90, Pages 222-232 August 2018, <https://doi.org/10.1016/j.foodcont.2018.02.037> (including Supplementary Material)

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The information contained in this Fact Sheet was provided to the Australian Meat Regulators Group in support of this change to the meat inspection procedures content in the Australian Standard for the Hygienic Production and Transportation of Meat & Meat Products for Human Consumption (AS 4696:2007).

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