



## Sheep CRC Practical Wisdom Case Studies

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# Erupted permanent incisor teeth not in wear

## The impact on eating quality

In 2018 the Sheep Industry Taskforce and the Australian Meat Industry Language and Standards Committee endorsed a change to the definition of lamb in Australia.

Following approval by the Australian Government, the current definition 'A female, castrate or entire male that has 0 permanent incisor teeth' will change to

'an ovine animal that:

(a) is under 12 months of age; or

(b) does not have any permanent incisor teeth in wear.'

This means a lamb is able to cut its two permanent incisor teeth, as long as they are not in wear. Under the new definition, the length of time a lamb is considered a lamb will be extended by an average of four weeks (Holmes Sacket 2008; Wiese *et al.* 2005).

Eating quality has been at the centre of the decision about whether to change the current definition of lamb, with a significant body of research conducted to gauge the eating quality differences in sheep of different ages.

Research (Wiese *et al.* 2005) found that a minor change to the definition of lamb – such as one or two permanent incisors having erupted but not being in wear – produced no discernible difference in eating quality compared with lambs with only milk teeth.

In contrast, several research studies (Pethick *et al.* 2005, 2006, 2007; Thompson *et al.* 2008; and Hopkins *et al.* 2007) concluded that the eating quality of hoggets (particularly leg cuts) was generally inferior to the eating quality of lambs. The implication is that a major change to the lamb definition – for example, where two fully erupted permanent incisor teeth are in wear – would negatively affect the eating quality of lamb.

### Summary of findings of animal age and eating quality experiments

The following is a summary of research findings showing the relationship between animal age and eating quality.

#### 'The effect of animal age on the eating quality of sheep meat' (Pethick *et al.* 2005)

This research compared eating quality of lambs (no erupted permanent incisors) with hoggets (2-4 permanent erupted incisors).

##### Key findings:

- leg cuts of lamb eat better than hogget
- there was no difference in the eating quality of grilled short loin of lambs versus hoggets.

#### 'Genotypic and age effects on sheep meat production' (Hopkins *et al.* 2007)

This research compared eating quality of animals slaughtered at 4, 8, 14 and 22 months of age.

##### Key findings:

- leg cuts of lamb are more tender than hogget
- lamb is lighter in colour than hogget.

#### 'Eating quality of commercial meat cuts from Australian lambs and sheep' (Pethick *et al.* 2006)

This research compared eating quality of lambs (no erupted permanent incisors) with hoggets/young mutton (2-4 permanent incisors).

##### Key findings:

- leg cuts of lamb eat better than hogget
- there was little difference in the eating quality of loins across the age groups.

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**‘Marbling biology – growth & development, gene markers and nutritional biochemistry’ (Pethick *et al.* 2007) and ‘The effect of muscling EBV’s on sheep meat eating quality’ (Thompson *et al.* 2008)**

This research compared eating quality of lambs with hoggets.

**Key finding:**

- poorly grown and finished hoggets have a higher risk of lower eating quality due to low intramuscular fat.

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**‘Effect of teeth eruption on growth performance and meat quality in young sheep’ (Wiese *et al.* 2005)**

This research compared eating quality of lambs with milk teeth, partially erupted permanent incisors and fully erupted permanent incisors. The study was conducted on three farms with three flocks representing the three genotypes that contribute to the prime lamb industry in Australia: Merino; first cross; second cross. Eating quality was assessed by carcass and other objective meat quality attributes, as well as by sensory assessments by consumers and a trained panel.

**Key findings:**

- meat from young sheep with partially erupted teeth is unlikely to be inferior in eating quality to meat currently classified as lamb
- the eating quality of the loin is relatively insensitive to animal age.

## References

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