‘Clean, Green and Ethical’ finishing of prime lambs

Applying the principles

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To meet consumer expectations for meat of consistent, good eating quality

More prime lambs are being finished on grain-based diets

Consumers are concerned about:

Ethics & Animal Welfare

Welfare, stress & eating quality are all interrelated
Potential welfare issues with grain-based diets

Enterotoxaemia (Pulpy kidney)
Acidosis & Urinary calculi (Urolithiasis)

**Enterotoxaemia:** Death of animals - VACCINATE

**Acidosis:** Subclinical through to death of animals

**Urinary calculi:** Chronic pain and ultimate death

**Acidosis & Urinary calculi can be avoided**
Avoiding acidosis & urinary calculi

Both disorders associated with:

- Reduced saliva production –
  - Less buffers in the rumen from saliva – Acidosis
  - Less P via saliva, more via kidneys - Urinary calculi

Saliva production linked with rumination
Avoiding acidosis & urinary calculi

Rumination stimulated by:

- Scratchy fibre in the rumen – “Scratch factor”
  - The more rumination & salivation
    - The less acidosis & urinary calculi

Diet must provide adequate scratchy fibre
Other factors contributing to acidosis

Milling starchy grains:

More substrate available to microbial enzymes
(Substrate availability – first law of enzyme kinetics)

Lactate prod’n exceeds use by lactate organisms

Lactic acid builds-up in rumen – Acidosis

Don’t mill starchy grains for prime lambs
Other factors contributing to acidosis

Heat stressed lambs:

Lambs often pant when heat stressed
More CO2 expired - less bicarbonate in saliva
Ruminate less if pant - less saliva into rumen
Reduced capacity to buffer acids in rumen

Heat stress exacerbates acidosis
Other factors that contribute to urinary calculi

**Calcium deficient diets:**
Less Ca available to take P & Mg into bone
More P & Mg excreted via kidneys

**Dietary excesses:**
Excess: RDP, Phosphorus & Magnesium
More ammonia, P & Mg excreted in urine
(Magnesium-ammonium-polyphosphate calculi)

Excess fat/oil: Ca-soaps formed – Ca deficiency

**Feed appropriate levels of nutrients**
Key indicators of good welfare for prime lambs fed grain-based diets

The diet is complete for purpose

The dung is Ok – lotfed lambs should not scour

The lambs ruminate “chew-the-cud” >50% of the time when not eating, “happy-happy” lambs

The lambs play in their pen around dusk

STOP using the term “grain-poisoning”
Clean & **Green** aspects of CGE finishing prime lambs

**Clean:**

- Hormone implants (HGP’s) are not used
- Discourage use of Virginiamycin (EEC markets)

**Green:**

- Faecal starch: Cattle>>lambs – smell/pollution
- Methane from fibre diets>starch-based diets
- Lasalocid may reduce: Methane from short-fed lambs
  - Ammonia from lot-fed lambs

**Lambs ahead of cattle for CGE finishing**