ELECTRIC STUNNING OF CATTLE AND SHEEP IN NEW ZEALAND

A BRIEF HISTORY
• Electrical stunning introduced in early 70s for Animal Welfare concerns
• Initially full kill stunning
• Current flows from head, through body to back or legs stopping the heart

A BRIEF HISTORY
• Head only stunning introduced due to demand for “Halal” slaughtered sheep
• Current flow across brain only
• Manual, and Automatic machines in use

A BRIEF HISTORY
• Electrical Stunning of Cattle first trialled in early 80’s by MIRINZ
• Driven by demand for “Halal” slaughtered meat
• Current flows from Nose to Neck

Typical Head Only Stunning (Sheep)

Typical Head Only Stunning (Cattle)
IS IT HUMANE?

• When the brain is subjected to an electrical current there is an immediate, massive release of neurotransmitters, instantly producing a state of unconsciousness

• Also results in an epileptic condition

THE POST STUN PHASES

• TONIC – Animal is unconscious and still

• CLONIC – Animal shows paddling/kicking movements. Remains unconscious

• RECOVERY – Kicking is subdued. Consciousness returns

THE POST STUN PHASES

MINIMUM STUN PARAMETERS

• Minimum current and time for stun to be successful
  - Cattle 1.1A x 1.0sec
  - Sheep 1.0A x 1.0sec

• Stunners are calibrated to exceed these parameters

• Built in software verifies minimum parameters are met

WILL THE ANIMAL RECOVER

• Electrical current does no damage to the brain

• Unless there is an intervention (Throat Cut and Bleed out) animal will recover

• Recovery trials are rare due to animal welfare concerns. When done are under supervision of vets.

ANIMAL RECOVERY
ACCEPTANCE BY MUSLIM COMMUNITIES

- Head Only Stunning is exclusively used for pre-slaughter stunning for the "Halal" market
- Plants servicing "Halal" market require accreditation from approved certifying authority i.e. FIANZ (Federation of Islamic Association of New Zealand) and AFIC (Australian Federation of Islamic Councils)
- Ritual Throat cut to be carried out by approved Muslim slaughter man

ACCEPTANCE BY ANIMAL WELFARE AUTHORITIES

- Vets on plant of Ministry of Primary Industries Verification Services (MPI VS)
- Responsible for Hygiene and Animal Welfare of all procedures.
- Not involved in "Halal" verification

ACCEPTANCE BY ANIMAL WELFARE AUTHORITIES

- Routinely observe stunning/bleeding processes
- Stun is effective
- Bleed out occurs before consciousness returns

STUN MONITORING

- As the stun does no physical damage to the animal it is critical to eject and bleed out as quickly as possible
- Stunner should deliver time/current exceeding proven minimum requirements
- Software in stunner monitors stun, triggers stun fail indication if requirements are not met
- In Beef stunners failed stun stops exit door from opening

STUN MONITORING

- Stun operator needs to rely on ‘STUN FAIL’ software to check stunns
- No time to physically check animals
- Equipment must be checked and verified daily

NEW PRODUCTS

- STUN DATA LOGGER
  - Date and Time
  - Stun Duration
  - Current Rise Time
  - Time Above Minimum Preset Current
  - Typical Voltage
- Driven by EU demands
- Not yet mandatory, but will be within a few years for all electrical stunners
CONCLUSIONS

• Head Only Electrical Stunning satisfies a number of requirements
• Humane
• Halal compliant
• Reliable
• Safe to use

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