

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

Typical Head Only Stunning (Sheep)



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 (Cattle)



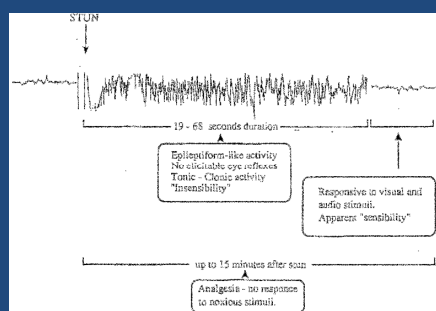
IS IT HUMANE?

- 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



REF: Electrical Stunning and Slaughter in NZ
K. V. Gilbert, 1993

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 stuns
- 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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