EBLEX Funded Study 1

Stress response in sheep when using a V-shaped restrainer for individual restraint in accordance with the legislative requirements for non-stun religious slaughter - compared

Study 1 - Objectives

Objective 1
To measure the effect on sheep of only allowing one animal on the v-restrainer, to slaughter, at a time compared with normal group loading of the v-restrainer and sequential slaughter of the queued animals.

Objective 2
To compare the effect on sheep of using a normal static pen to load onto a v-restrainer with the effect of using a rotating pen (a pen with rotating gates and a rotating floor) to load.

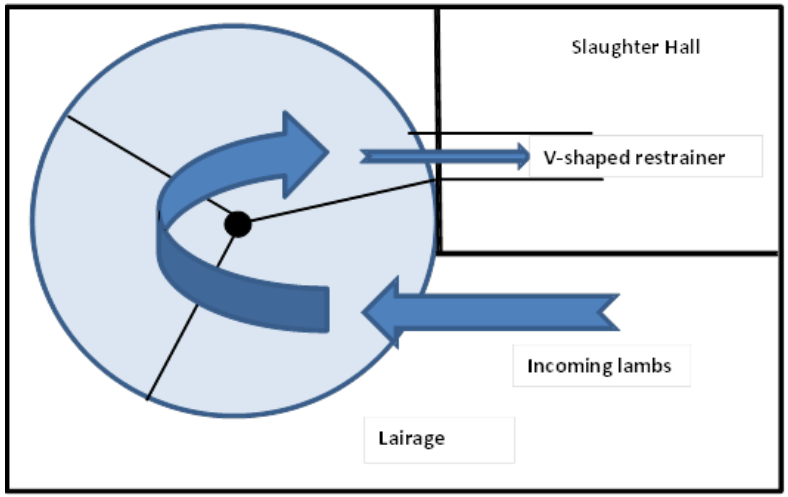
Study Design

- A commercial slaughterhouse, routinely carrying out non-stun halal slaughter.
- 200 sheep – all lambs from the same flock, delivered the evening before and held overnight in lairage. Randomly assigned to treatment groups.
- Treatments – Individual (I) or group (G) loading of v-restrainer with Static (S) or rotating (R) loading pen
- Applied to 20 groups, each of 10 sheep in the following randomised order:-
  IS, GS, IR, GR; GR, GS, IR, IS; IR, GS, IS, GR; IR, GS, GR, IS; GS, IS, GR, IR
- All animals, in all treatments were electrically stunned as actual stunning method was not relevant to and did not interfere with the results of the handling method.

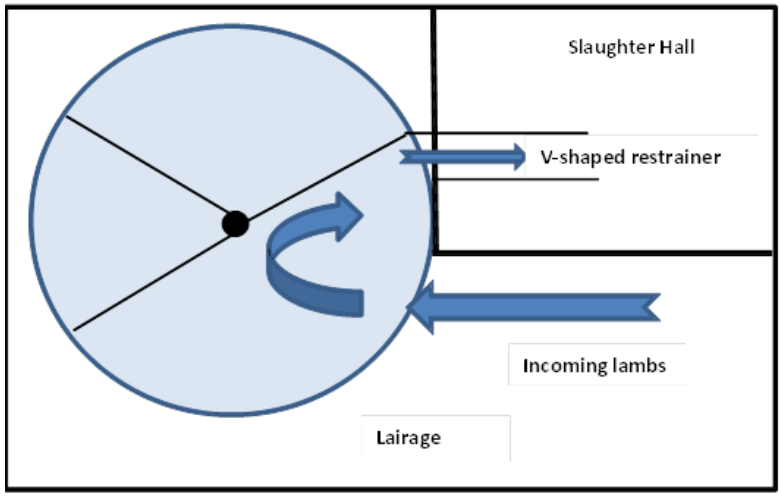
Study Design

Study Design

Rotating setup



Static setup



Measurements

- Blood samples collected immediately post neck cut. Analysed for levels of plasma cortisol, creatine kinase and lactate.

- Behavioural measurements – captured from video recording of the loading pen and direct observations make on the restrainer:-
  - Number and duration of attempts by a lamb to voluntarily approach the restrainer
  - Number and duration of the approaches made by the handler to a lamb throughout loading
  - Number and duration of handling events for each lamb
  - Number and duration of holding back lamb at base of restrainer
  - Loading time (from moment group was introduced to the pen)
  - Number of escape attempts per lamb during loading
  - Number of escape attempts once loaded at the bottom of the restrainer

Blood results

In comparison with the alternative treatments…….

Group loading:-

- Cortisol ↓ Lactate ↓ Creatine Kinase NS

Rotating pen:-

- Cortisol NS Lactate ↓ Creatine Kinase ↓

Behaviour results - Loading

Voluntary approach – No significant differences (trend for better in group)

Approach by handler – Less in group loading (by approx. 9 sec/lamb)

Handling events – Less in group loading (by approx. 3 seconds/lamb

Holding back lamb – Less in group loading (by approx. 20 sec/lamb)

Loading time per group – Reduced in group loading by 145 seconds

Escape attempts during loading - Less likely in group loading (OR 0.189)

Behaviour results - Pen

Voluntary approach – No significant differences

Approach by handler – Less in rotating pen (by approx. 17.5 sec/lamb)

Handling events – No significant differences

Holding back lamb – No significant differences

Loading time per group – No significant differences

Escape behaviour in pen - No significant differences

Behaviour results - interaction

Probability of an escape attempt once loaded:-

- Individual Rotating p = 0.80
- Individual Static p = 0.55
- Group Static p = 0.33
- Group Rotating p = 0.22

Conclusions

Individual loading of sheep into the v-restrainer caused a greater level of stress and distress to the animals than group loading and restraint

There was some advantage in reducing the stress of loading animals by use of a rotating pen compared with a static pen when animals were group loaded.

The study is published in the journal:-
‘Animal Welfare’ 2014 vol 23 p251 - 258