RESTRAINT AND BLEEDING IN SLAUGHTER
WITHOUT STUNNING
METHODS OF RESTRAINT FOR CATTLE

• Simplest methods are
  – use of head collar
  – halter
  – neck yoke
  – cradle (calves)

• Restraint box is important and can be costly equipment at the commercial enterprises

• Forbidden methods of restraint are specified in OIE Chapter 7.5
METHODS OF RESTRAINT FOR SHEEP

- Holding body in upright position
- Upright mechanical straddle
- Lateral manual restraint
- Crush or mechanical clamp
- Mechanical upright restrainer conveyor
- Casting
- Preferred methods; straddle type upright restraint static or in restrainer conveyor
SHEEP RESTRAINT
RESTRAINT OF CATTLE PRIOR SLAUGHTER WITHOUT STUNNING

- Calm and confident handling that leads to efficient restraint followed by fast bleeding is essential.
- Unprofessional handling and poor restraint will very likely cause animal to struggle and fight back.
- Observations indicate that calm animals lose sensibility and collapse more quickly after bleeding than cattle with visible signs of agitation.
ATTRIBUTES OF IDEAL CATTLE RESTRAINT PRIOR TO SLAUGHTER WITHOUT STUNNING

• Comfortable natural posture
  – Upright standing position; or alternatively lying in lateral recumbency (not dropped or catsed)
• Optimal pressure on body and neck/head
• Head restraint exposes neck for cut
• Animal not fighting restraint
  – unable to move head/neck (various techniques)
• Restraint maintained only to prevent self harm after cut
RESTRAINT BOX - FUNCTIONS

Minimises poor slaughter to protect welfare:
- keeps stress level to a minimum
- prevents an animal moving
  - forward and backward
  - to sides
  - From falling as it loses consciousness
- exposes neck and stabilises head for sticking (in some cases blocks visual stimuli)
- protects operator
CRITICAL POINT

• Entrance to the restraining box – critical point in terms of handling of cattle i.e. animal must enter the box willingly
• Design of chin lift and head restrainer
• Pressure that cattle are exposed to when restrained
• Restraint should be easy and fast to release - maintained only to prevent self harm after cut
MOVING TO THE RESTRAINING BOX

- Entrance to the restraining box – critical point in terms of handling of cattle
- Important in audits
- Has to be very well designed
- Experienced handlers
- In the best practices - animal must enter the box willingly
- However at many large throughput plants active handling is needed
RESTRAINING BOX ENTRANCE
SUGGEST WHY MOVING CATTLE TO THE RESTRAINING BOX IS POTENTIALLY MORE DIFFICULT THAN HANDLING ELSEWHERE

It's QUESTION TIME!!
KEY PROBLEMS

Usually it is a break point between:

• outdoor and indoor area
• quiet and noisy environment
• bright and dark
• area where cattle are still in the group and area where one animal is forced to enter alone
• different floor structures
• Sometimes looks like dead end
HOW TO MAKE SITUATION TO CATTLE EASIER

• by keeping noise around the box area to the minimum
• designing stunning box way that creates an impression of “passing through” area
• installing diffuse light above the stunning box
• putting false floor (same as floor in the box) cca 1,5 m before the entrance to the box
DESIGN BOX WAY THAT CREATES AN IMPRESSION OF “PASSING THROUGH” AREA
APPROPRIATE LEVEL OF DIFFUSE LIGHTING IS AN ESSENTIAL
CATTLE HESITANT TO ENTER THE BOX
CATTLE ENTERS BOX
ENTRANCE
HEAD RESTRAINT
PREVENTING ANIMALS FROM MOVING: ASPCA BOX
UPRIGHT RESTRAINT
UPRIGHT RESTRAINT
ALTERNATIVE DESIGNS

• These that tick off most aspects mentioned
• Eventually position an animal on side exposing neck for bleeding
• Rotation boxes – 90 degrees
• Mark IV box

Possible concerns: more complex equipment, slower practice, potentially higher stress
MARK IV BOX
SHEEP AND GOAT RESTRAINT
SHEEP AND CATTLE RESTRAINT IN CONVEYORS
UNACCEPTABLE PRACTICES
Shackling / hoisting conscious cattle and sheep
RECAPITULATION VIDEO
Restraining is highly stressful therefore animal must never be left in the restraining box waiting

- Keep cattle calm, calm cattle fall unconscious faster and are easier to deal with. Assess by vocalisation – < 1 in 20

- Animal must never be moved into the restraining box until slaughterman has a sharpened knife and is ready to immediately perform the cut.

- Minimize time that the animal is fully restrained for bleeding.
  - Time of restraint should be under 10 seconds before sticking
BLEEDING
(General recommendations)

To protect animal welfare it is crucial that cutting of blood vessels supplying the brain is performed so bleeding is:

• RAPID
• PROFUSE later PULSATILE
• COMPLETE
BLEEDING – HOW IT SHOULD BE CARRIED OUT

• Transverse neck cut ideally in one move
• Bleeding has to be carried out as soon as possible
• Both carotids must be severed
• Bleeding has to be fast (massive)
• If poor flow is observed another cut should be made
ATTRIBUTES OF GOOD BLEEDING FROM AW POINT OF VIEW OR THINGS THAT ARE GOING TO MAKE A DIFFERENCE

• CALM ANIMAL
• SHARPNESS AND SIZE OF A KNIFE
• POSITION OF A CUT (C1 VERSUS C3)
• SPEED OF CUTTING
CALM ANIMAL

• Humane handling – i.e. animal walks from lairage towards restraint box because it is alert and aware of handler whose presence it wants to avoid (no other actions are required)

• Restraining box/device is well designed so animal enters it willingly

• Animal is restrained with minimal necessary pressure – a calm animal does not object to closeness, just excessive pressure
During bleeding by severing both carotids in high neck 2 crucial welfare issues occurs

1) aspiration of blood
2) ‘false’ aneurysms
ASPIRATION OF BLOOD

• Occurs in 19 - 58 % cases
• It is stressful and can be painful
• It is of concern depending where the blood enters trachea (at which stage)
• Bleeding an animal at C1 cuts off n.vagus and eliminates transmission of sensory signals from the respiratory tract
Do some cattle take a long time to lose consciousness?

- 8% of cattle took longer than 60 s to collapse
- 2/174 took more than 4 minutes to collapse

According to N.Gregory, 2010
FALSE ANEURYSMS - BLOOD CLOTTING

- In other N,Gregory study on 350 cattle 71% of the cattle that took > 75 sec to collapse had large aneurysms (> 3 cm diam.) in the cardiac end of an artery.
- In average aneurysms occurs in 8-10 % of cattle when cut is made at C3 level.
- But only in 1% of cattle if cut is made at C1 level.
SHARPNESS AND SIZE OF A KNIFE

• Less movement necessary – single deep cut
• Less physical pressure required in cutting
• Smooth wound edges – less blood clotting and less pain
• **Test**: knife has to cut in one smooth move A4 sheet of paper held by tips of two fingers
• Knife has to be a one and half to twice the width of neck
SIGNS OF LOSING CONSCIOUSNESS

- IF UPRIGHT: Loss of posture is a first sign of losing consciousness

- IF ON SIDE: relaxation of body (especially tail) and loss of blink reflex is best sign of losing consciousness
BLEEDING OF SHEEP
RECAPITULATION VIDEO
ASSURING IRREVERSIBLE UNCONSCIOUSNESS

EYES STRAIGHT AHEAD WITH NO CORNEAL REFLEX, NO MUSCLE TONE, NO RHYTHMIC BREATHING
THANK YOU FOR YOUR ATTENTION

Organisation mondiale
de la santé animale

World Organisation
for Animal Health

Organización Mundial
de Sanidad Animal