Observations on Stunning Placement in Cattle

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Guidelines for selection of the most appropriate site for conducting euthanasia in cattle

“The point of entry should be at the intersection of two lines each drawn from the inside corner of the eye to the base of the opposite horn (or slightly above the ear in cattle without horns).
Evaluation of 3 Anatomical Sites for Conducting Euthanasia in a Holstein Cow

1. Medial canthus (inside corner) of the eye to the top of the ear (opposite side)
2. Medial canthus (inside corner) of the eye to the base of the horn
3. 1 ½ inches above the intersection of #2
Inside corner of the eye to top of the ear
Inside corner of the eye to top of the ear

Bolt held perpendicular to the forehead

Bolt enters too far forward and nearly misses brain tissue completely
At the intersection of 2 lines each drawn from the inside corner of the eye to the base of the horn on the opposite side
Inside Corner of the Eye to the Base of Horn

Pin held perpendicular to the forehead

Direction of pin travel will cause massive brain destruction particularly if pin is oriented slightly toward the foramen magnum
Inside Corner of the Eye to the Base of Horn

Pin angled toward the foramen magnum

Significant damage to brain tissue but angling pin toward the foramen magnum as shown not advised
Site: 1 ½ inches above the intersection of 2 lines each drawn from the inside corner of the eye to the base of the horn on the opposite side
Inside Corner of the Eye to the Base of Horn (1 ½ inches above)

Pin held perpendicular to the forehead

Effective stunning, but lower site is preferred
Path of the bullet used to kill this cow

Bullet appears to have missed the brain completely
Anatomical sites in an AngusXHereford Steer

3 Anatomical Sites

1. Medial canthus (inside corner) of the eye to the top of the ear (opposite side)

2. Medial canthus (inside corner) of the eye to the base of the horn

3. 1 ½ inches above the intersection of #2
Inside corner of the eye to top of the opposite ear

AngusXHereford Steer

Pin misses brain completely

Brain
Inside corner of the eye to top of the opposite ear

AngusXHereford Steer

Holstein Cow
At the intersection of 2 lines each drawn from the inside corner of the eye to the base of the horn on the opposite side

AngusXHereford

Pin is rostral (forward), but stun site correct
At the intersection of 2 lines each drawn from the inside corner of the eye to the base of the horn on the opposite side.
Anatomical Sites for Proper Stunning

Incorrect Stun

Correct Stun

Cross section of scull after penetrating captive bolt

Cross section of scull after penetrating captive bolt
Anatomical location for proper stunning of cattle is on the intersection of 2 lines each drawn from the top of the eye to the base of the horn on the opposite side.
Alternative Method for Site Selection

- Approximately 1 to 1½ inches above the intersection of 2 lines each drawn from the inside corner of the eye to the base of the opposite horn

From Shearer and Nicoletti, Procedures for Euthanasia of Livestock
In Summary,

• Many of the current recommendations on selection of the most appropriate anatomical site for conducting euthanasia in cattle are incorrect
  – The site most commonly used is too low and in many cases misses the brain completely
In Summary,

• Anatomical location for proper stunning of cattle is
  – on the intersection of 2 lines each drawn from the top of the eye to the base of the horn on the opposite side or,
  – 1 - 1 1/2 inches above the intersection of 2 lines each drawn from the inside corner of the eye to the base of the opposite horn
  • There may be breed differences but use of above guidelines should provide consistent results
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