

The following comments relate to the Section 10 on humane killing.

Regarding the standards. I think the standards need to be more specific about what methods are approved and not approved. It may be dealt with as follows:

Approved humane killing methods are limited to: gunshot, captive bolt or blunt trauma to the head, and veterinary administered intravenous agents; bleeding must only be used as a primary method if the aforementioned primary methods are unavailable; pithing must only be used as follow up method associated with a captive bolt.

Methods not approved include: bleeding as a primary method if firearm, captive bolt or veterinary administered agents are available, blunt trauma to animals greater than 10 kg, drowning, asphyxiation, electrocution, and intravenous injection of caustic chemicals or any other method that does not result in rapid loss of consciousness followed by death while unconscious.

Regarding the recommended position and direction of fire guidelines. Suggest the recently developed MLA diagrams be used – they are anatomically correct. The existing side view diagrams in the draft standards and guidelines are anatomically incorrect with respect to positioning of the ears relative to the brainstem. The brainstem, which should be targeted, lies between the ear attachments. For poll shots a simpler and more easily remembered recommendation, and one with consistently better outcome, is to aim between the base of the ears. This simple advice covers both point of entry and direction of aim.

In the notes where it says the diagrams are representative and individual anatomical differences should be taken into account - this can be made redundant if you use the MLA diagrams and make it understood that if the base of the ears are used as the external anatomical landmarks, because *the brainstem lies midway along an imaginary line drawn between the base of the ears*, all will be well.

Regarding captive bolt devices. To say the length of the bolt should be appropriate for the class of sheep is irrelevant. Most models penetrate to a maximum depth of 55 mm (2 ¼ inches) so not much depth at all really. It is the diameter and velocity of the bolt which are the important determinants of killing power, not the length of the bolt. The important things with captive bolts and firearms is maintenance and calibre and to be prepared to immediately repeat the shot if necessary. It will be a rare farmer indeed who will bleed or pith, and do it correctly. We tend to go on about bleeding and pithing when a repeat shot will almost always do if the animal is not dead. I would delete reference to the frontal shot for sheep.

Regarding confirming death. My suggestion is to recommend confirming death by observation of four things only to keep it simple, easy and memorable: 1. no eye movement, 2. no blink reflex, 3. fixed dilated pupils, and 4. no breathing for at least 5 minutes (3 minutes is too short, some will recover their breathing after a long delay. After 5 mins of no breathing they will surely be dead; and drop the reference to rhythmic – breathing is breathing). Personally, I also check for absence of tongue and jaw tone but this is probably overkill. Absence of heart beat and pulse are too difficult to see, hear or feel reliably in the field, even by veterinarians. Checking for presence of brain death by absence of brain reflexes is easier, simpler and more reliable. Breathing is the all-important sign to check for – whatever you decide to include, ensure breathing is there.

Regarding blunt trauma to the head, I don't think the centre of the forehead is a good target. The back of the head is likely to be a better target because that is where the brainstem lies. I suggest: *“a single sharp blow should be delivered to the back of the head, directed between the base of the ears and of sufficient force to fracture the skull”*

Regarding bleeding out. In the note, simply say: “severing the spinal cord as part of the neck cut is unnecessary and painful and should not be performed”.

Hope this helps. Feel free to contact me if you have any questions.

Regards

Tristan

Tristan Jubb BVSc MVS PhD