



# Methods of stunning meat animals



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# Introduction:

1. Slaughtering animals for food purpose was done from many centuries.
2. With the advent of new techniques and modernization of world eating habits of human changes from consumption of raw food to cooked.
3. For meat processing industries, meat quality is dependent on various factors; out of which slaughtering is the one of the important process.



Slaughtering involves different techniques for different kind of meat animals some of which are as discussed below:

<b>Pork</b>	<b>Beef</b>	<b>Lamb</b>
Stunning	Stunning	Stunning
Shackling	Sticking	Sticking
Bleeding	Bleeding	Bleeding



**Various methods of animal slaughtering are:**

- 1. Mechanical (gunshot)**
- 2. Mechanical (captive bolt)**
- 3. Chemical (using Carbon Dioxide)**
- 4. Electrical (stunning or slaughtering with electric current)**



## **Mechanical (gunshot)**

- The firearms shall be employed in the delivery of a bullet or projectile into the animal in accordance with this section so as to produce immediate unconsciousness in the animal by a single shot before it is shackled, hoisted, thrown, cast, or cut.
- The driving of the animals to the shooting areas shall be done with a minimum of excitement and discomfort to the animals.
- Immediately after the firearm is discharged and the projectile is delivered, the animal shall be in a state of complete unconsciousness and remain in this condition throughout shackling, sticking and bleeding.



## **Facilities and procedure required for mechanical slaughtering:**

- On discharge, acceptable firearms dispatch free projectiles or bullets of varying sizes and diameters through the skull and into the brain.
- The shooting operation is an exacting procedure and requires a well-trained and experienced operator.
- Special requirements. Choice of firearms and ammunition with respect to caliber and choice of powder charge required to produce immediate unconsciousness of the animal may vary depending on age and sex of the animal



## **Mechanical (captive bolt)**

This method is approved for sheep, swine, goats, calves, cattle, horses, mules, and other equines. A captive bolt stunner is applied to the livestock so as to produce quick unconsciousness in the animals before they are bled.

The captive bolt stunners shall be applied to the livestock in accordance with this section so as to produce immediate unconsciousness in the animals before they are shackled, hoisted, thrown, cast, or cut.





## **Special requirements and prohibitions.**

- Choice of instrument and force required to produce immediate unconsciousness varies, depending on kind, breed, size, age, and sex of the animal.
- Charges suitable for smaller kinds of livestock such as swine or for young animals are not acceptably interchanged for use on larger kinds or older livestock, respectively.



## **Chemical (using Carbon Dioxide)**

- This method is approved for sheep, calves and swine. The animals asphyxiated by use of carbon dioxide gas before being bled.
- The carbon dioxide gas shall be administered in a chamber in accordance with this section so as to produce surgical anesthesia in the animals before they are shackled, hoisted, thrown, cast, or cut.
- The animals shall be exposed to the carbon dioxide gas in a way that will accomplish the anesthesia quickly and calmly, with a minimum of excitement and discomfort to the animals.



# References

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## **Electrical (stunning or slaughtering with electric current)**

This method is approved for swine, sheep, calves, cattle, and goats. The current applied is sufficient to ensure surgical anesthesia throughout the "bleeding" of the animal.

The quality and location of the electrical shock shall be such as to produce immediate insensibility to pain in the exposed animal. The stunned animal shall remain in a state of surgical anesthesia through shackling, sticking, and bleeding



## **When stunned animals the most important signs to look for in a properly stunned animal are:**

- A floppy head. The head should flop like a wet rag when a hind leg kicks due to reflexes.
  - Tongue hangs straight out and is limp. There are some animals that are stunned properly and the tongue may be trapped in the mouth.
  - In cattle and pigs, the back and head hang straight down. There is no arched back righting reflex.
- Ignore limb movement for all methods of stunning. Look at the head.