

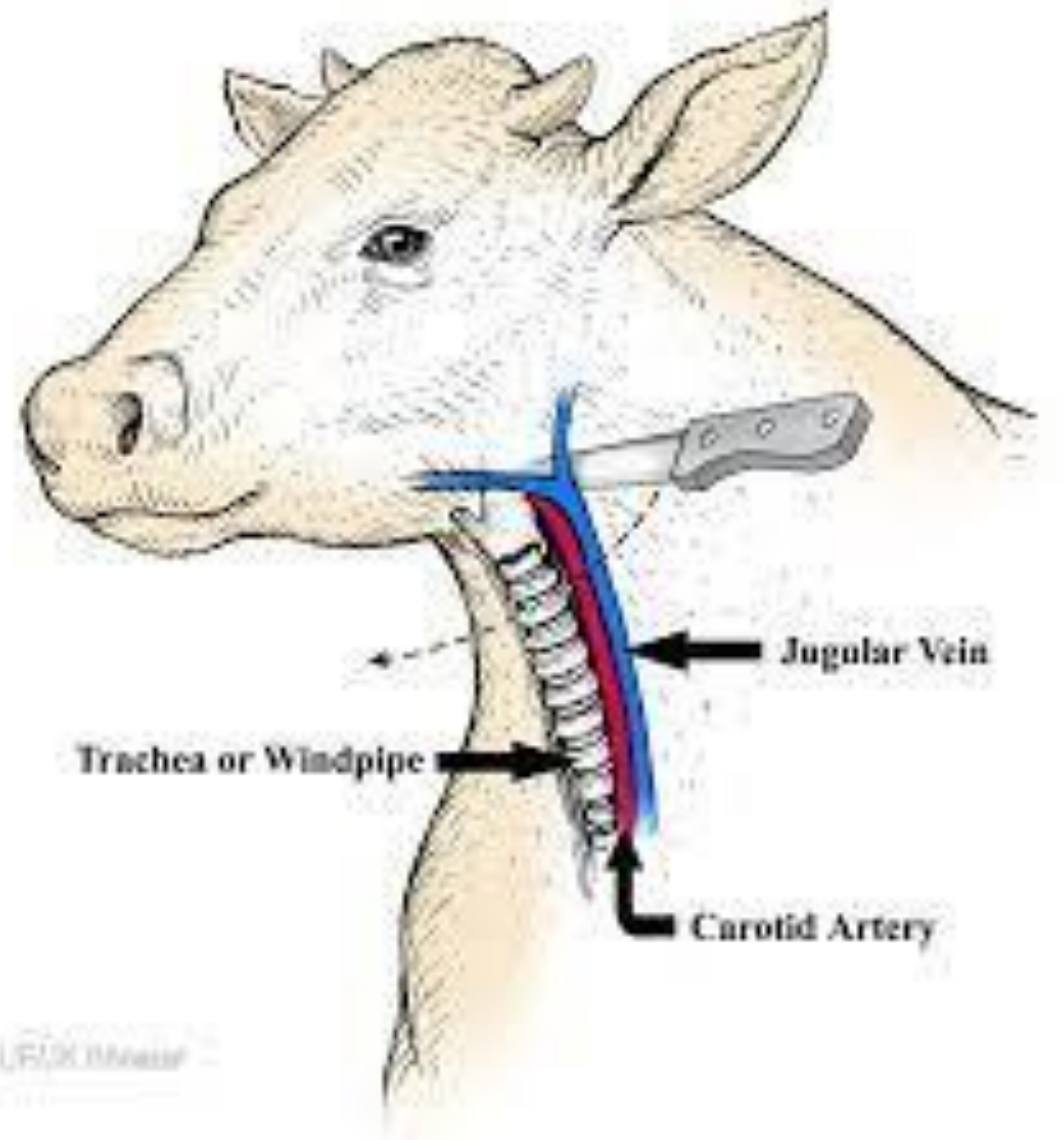
Determination of the bleeding degree

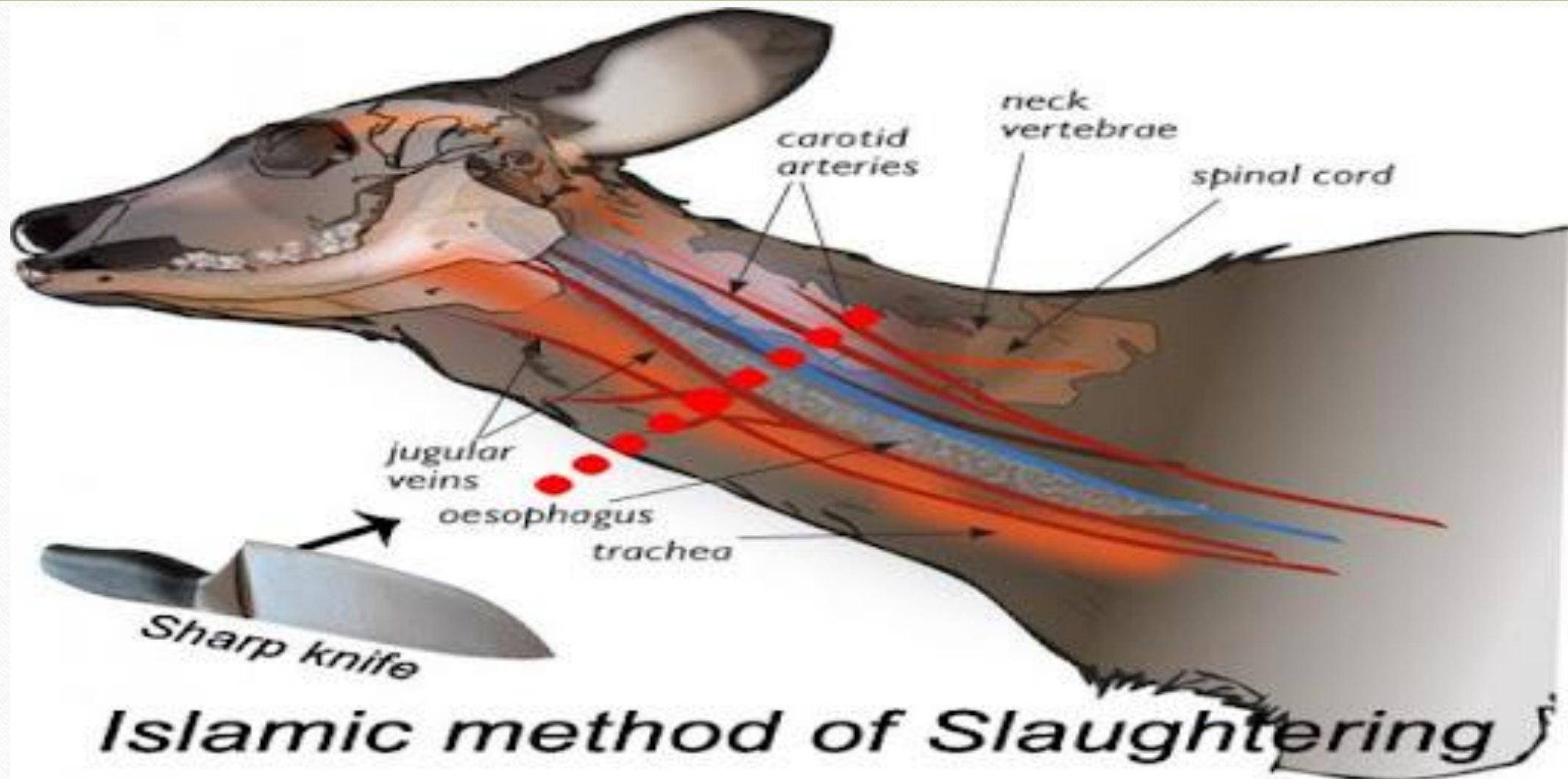
By

Dr.Zainab abdul hussein

Exsanguination (bleeding), An incision which severs the major arteries of the neck or anterior thoracic cavity causes a rapid loss of blood, resulting in a lack of oxygen to the brain. Irreversible cellular changes occur and the animal dies. Bleeding can be done with the animal in a vertical or horizontal position. . . A vertical or hanging position is achieved by shackling below the hock of one hind leg and hoisting the animal (head down) to a convenient height. Alternatively, the animal can be placed horizontally on a concrete slab or a sturdy plastic pallet for bleeding.







Methods of Animals Slaughter

A-Human Method

B- Conventional Techniques (**STUNNING**)

***The objective of stunning is to immediately induce a deep unconsciousness without causing any pain.

1-(CO₂ and other gases)

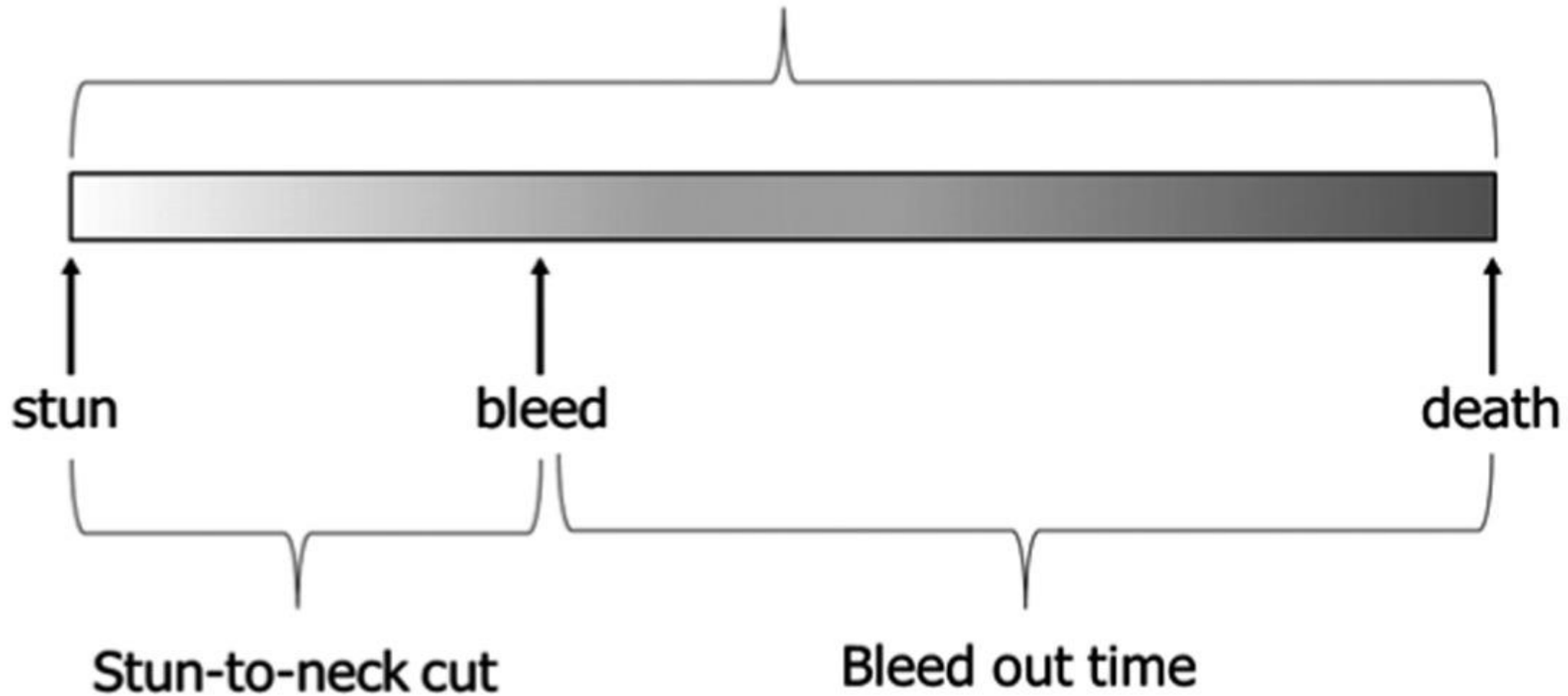
2-Electrical stunning

3-Captive bolt

4-percussion stunning.

5-pithing

Duration of unconsciousness



Determination of blood loss

The animals were weighed before the treatment. During exsanguination, blood was collected in a plastic container and weighed. The amount of blood loss was measured using the following formula:

Blood loss (%) = $BW / LW \times 100$ where:

BW (kg) = weight of blood once the animal is dead.

LW (kg) = live body weight pre-slaughter.

Animals	Time of bleeding	Volume of blood depend age,weight
Cow	5-8m	8-12 L
Sheep	3-5	1,5-3 L
Calve	4-6	3-5 L
Pig	4-5	2,5-5 L

Factors effect on bleeding time

- 1-The method of slaughter.
- 2- Quality of the cut as well as species difference.
- 3-Time of brain function loss.
- 4-Time between effective stun and effective stick .
- 5-The health of the animals.
- 6-Rest of the animal before the slaughter
- 7-The age and weight of the animals

Method of bleeding degree

1-Malachite green test

2-Pseudo-peroxidase test

3-Reders test

4-Haemoglobin extraction test

5-Comprssorium

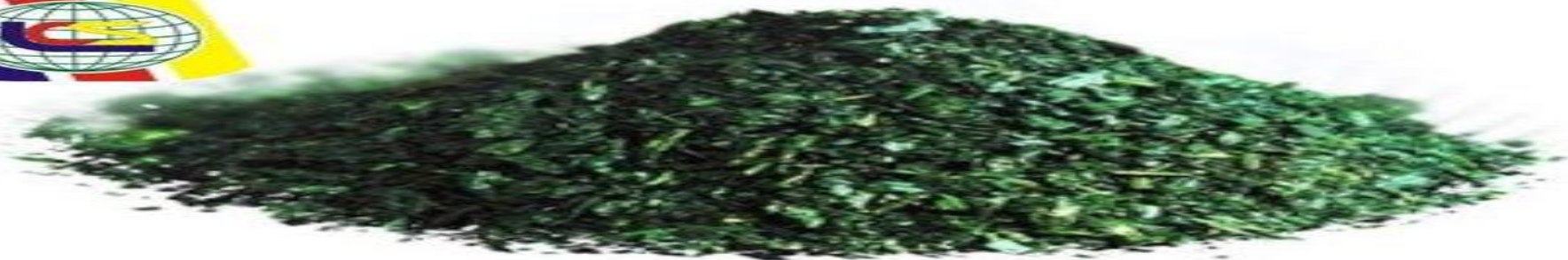
6-Blotting paper test



Malachite green test

Put a piece of meat in the amount of 6 g in 14 cm of distilled water and leave for 15 minutes and take 0.7 of the clear solution through a pipette and put it in a sedimentation tube, then add one drop of **malachite green** solution and shake the solution, then add one drop of hydrogen peroxide solution at a concentration of 3%, then shake until foam is formed left for 20 minutes, then the color is recorded and compared to the table

Normal of solution	Color of solution	Conclusion
Clear	Blue	Good bleeding
Cloudy	Green	Acceptable but incomplete bleeding
Cloudy	Olive	Unacceptable bleeding



Malachite Green

2-Pseudo-peroxidase test

Put a small piece of meat in a concave ceramic bowl and cover with a sufficient amount of guaiacum solution, then add two drops of hydrogen peroxide solution. If a **bluish-green** color appears, the bleeding is good. If the color is **purple** or **dark blue**, the bleeding is unacceptable.

3-Reders test

The solution is prepared by adding 0.1 cm of Loeffers methylene blue with 0.05 cm of a 40 cm solution of distilled water, adding 5 cm of the test solution to 3 g of meat cut into small pieces, mixing well and then leaving for 5 minutes. We note that the color does not change or becomes **light green** in meat with good bleeding. Or it becomes **greenish-brown** in meat with poor bleeding

4-Haemoglobin extraction test

10 cm of distilled water is added to 5 g of minced meat in a test tube, then shake well and left for 10 minutes. The color of the solution will be **pink** in meat with good bleeding. It will be **dark red** in meat with bad bleeding

5-Comprssorium

It is a simple device that consists of two strips of glass or transparent plastic, and a small piece of meat is placed between them on a filter paper. When simple pressure, the meat juice comes out and absorbs into the filter paper. Accordingly, the degree of bleeding is estimated according to the amount of juice descending, and it is in the form of a circle around the piece of meat, which does not exceed the edge is very much considered good bleeding, but if the edge is large, it exceeds the border more than 1 cm, the bleeding is considered incomplete

6-Blotting paper test

The same as the previous test, cuts are made in the muscles of the meat, then a filter paper is placed in the pieces for two minutes, then the color of the paper is noticed, and after the juice that the paper has drunk from the edge of the connection, where the color is dark and the distance is far from the edge of the meat, the bleeding is incomplete

