



Euthanesie

(from Greek, "good death")

Eu = "well" or
"good"

Thanatos= "death"

the painless killing of a patient suffering from an incurable and painful disease or in an irreversible coma.

"put down" or "put to sleep"

“Acceptable method” - As defined by the American Veterinary Medical Association, an acceptable method of euthanasia renders an animal unconscious and insensitive to pain and distress as quickly as possible, followed by cessation of all respiratory and circulatory functions and brain activity.

Why do we euthanize?

Mercy or Murder?

The main purpose is
the diagnosis of the
cause of disease and
death!

1-In particular, a herd problem is applied to euthanasia.

One or more animals that are in the initial phase are selected from those who represent the exact symptoms of the disease.

2. In scientific research;

Euthanasia

is performed to determine pathological findings of diseases in experimental animals and the pathogenesis and to take samples for other laboratory examinations.

3. If there is a danger of transmission of the disease or it is an outbreak, euthanasia should be done.

Major diseases requiring euthanasia in cattle

Anaplasmosis

Anthrax

Bovine Cysticercosis

Bovine Spongiform Encephalopathy

Blue Tongue

Brucellosis

Foot-and-Mouth Disease

Pseudorabies

Rabies!!!

Rinderpest

Tuberculosis

Vesicular Stomatitis

[_http://www.carc-crac.ca/english/codes_of_practice/vealcde.htm](http://www.carc-crac.ca/english/codes_of_practice/vealcde.htm)

4. To understand that the disease will not respond to treatment and end with death

5. If treatment expenses exceed the animal's value, euthanasia can be performed..

Factors Involved in The Choice of Euthanasia Methods

- Species
- Age
- Size
- Temperament
- Health status
- Number of individuals
- Availability of materials and apparatus
- Reason for euthanasia
- Fate of the carcass
- Personal preferences
- Technical proficiency
- Compliance to the regulatory authorities (approval may be needed for research projects)

How should it be?

The method should not cause fear and pain in the animal.

It should not hurt the owner's feelings and be humanist and ethics.

Most importantly, it must not impair the pathological changes in the carcass.

TYPES of EUTANASIA

1-Mechanical Euthanasia Methods

- Mechanical methods of euthanasia have distinct welfare advantages, since when the methods are employed correctly animals are rendered instantly unconscious and hence unable to experience pain, fear or distress.
- Mechanical euthanasia methods are based on impact of the skull with a solid object to disrupt brain function through
 - (1) laceration or crushing of brain tissue,
 - (2) shock waves producing axonal injury, and
 - (3) temporary cavitation.

Gunshot

- In most circumstances on the farm or ranch, gunshot is the only practical method of euthanasia.
- **Advantages:** When properly positioned a bullet, birdshot from a shotshell or a slug will cause massive brain destruction and immediate unconsciousness. Gunshot is inexpensive and does not require close contact with the animal.
- **Disadvantages:** Gunshot may be dangerous. When using a rifle or handgun, ricochet of the bullet is possible and therefore, the operator and bystanders must use extreme care in positioning of themselves and others when the procedure is performed. Another disadvantage is, that in cases involving fractious animals, it may be difficult to get close enough to accurately hit the vital target area.
- (<https://vetmed.iastate.edu/vdpam/about/production-animal-medicine/dairy/dairy-extension/humane-euthanasia/humane-euthanasia/gunshot-or-penetrating-captive-bolt>)

Penetrating Captive Bolt

Penetrating captive bolt followed by immediate exsanguination (bleeding out) is the preferred method for euthanasia of cattle in abattoirs (slaughter facilities). The mode of action of a penetrating captive bolt gun is concussion and trauma to the brain.

This requires that it be held firmly against the surface of the head over the intended site.

Penetrating Captive Bolt

Advantages: Although not without risk, penetrating captive bolt is generally safer for the operator and bystanders. Beyond the initial investment of a penetrating captive bolt, continued use is inexpensive.

Disadvantages: Death may not occur unless followed by exsanguination, pithing or the intravenous injection of a saturated solution of approximately 120 ml of KCl. The operator must be close to the animal and have it adequately restrained in order to get proper placement of the penetrating captive bolt. The penetrating captive bolt should not be fired when the animal is moving its head.

2- By Electricity

It leads to sudden death. 110 or 220 volt electric current is used.

Flat-tipped electrode clamps,

Large animals → lips and anus ;

Cat and dog → the nape and sacrum regions.

After cutting the hairs; skin is wetted with salt water and then placed on the electrodes.

If it is not done appropriately, it will cause pain in the animal.

3- with Chemical agents

- ❖ Drug injections
- ❖ Gas or vapor inhalation
- ❖ Some chemical methods are only conditionally acceptable and should not be used as sole method for euthanasia

Mostly, intravenous injections are preferred such as Barbiturate etc.

Inhalation of anesthesia gas – acceptable with conditions for **rodents and other small animals (< 7 kg)**. Typically used as part of a two-step process with a secondary physical method of euthanasia such as decapitation or cervical dislocation.

Inhalation of CO₂ - acceptable with conditions, including the special considerations.

Immersion agents – e.g. MS 222/Tricaine. Acceptable for **aquatic species**, usually in connection with a secondary physical method.

Cervical Dislocation – acceptable for **small birds, mice and immature rats**. Requires training and should be performed under anesthesia unless specifically approved by the IACUC.

Decapitation – acceptable for **rodents and small rabbits**. Requires training; anesthesia recommended unless approved by the IACUC. Guillotines must be sharpened and adjusted frequently to ensure proper performance.

Injectable barbiturate agents – e.g. sodium pentobarbital, Euthasol®, Eutha 6®, Fatal Plus® - acceptable for **most species**.

Exsanguination/Cardiac Perfusion – acceptable with conditions; animals must be anesthetized.