



Swine Euthanasia

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What is Euthanasia?

Euthanasia is a humane way of ending a life to prevent pain and suffering. These situations include, but are not limited to, illness and injuries (AASV-NPB, 2016).

Why is Humane and Timely Euthanasia Important to Animal Welfare?

Euthanasia is important because it ends an animal's life in a way that minimizes pain and distress and prevents unnecessary suffering (AVMA, 2020).

One-Step VS Two-Step Euthanasia

There are two main euthanasia methodologies, one and two steps. One step, results in the pig becoming insensible and will result in death. A two-step methodology temporarily renders the pig insensible, but requires a second step to achieve death (AASV-NPB, 2016). If one step euthanasia does not result in death as intended the second step can be used to ensure the pig is humanely euthanized.

The second step methodology typically includes exsanguination or pithing. Exsanguination is whereby an animal bleeds out through severing a major blood vessel in the neck or chest. The vessel must be completely severed and be cut large enough so as not to block blood flow. Pithing involves destroying the brain and spinal cord. This is typically achieved through the use of a pithing rod (Figure 1). The pithing rod is placed through a hole in the skull that has been created by using a firearm or penetrating captive bolt. The pithing tool is pushed back and forth to damage the brain and spinal cord so that death occurs.

Confirming Insensibility

Insensibility is defined as being unconscious or stunned. Insensibility is confirmed ~30-seconds after the shot has been delivered for one-step and must be confirmed before moving to the second step during the two-step process. Signs of insensibility include no natural blinking (eyes may vibrate), floppy head, straight and limp tongue, uncoordinated kicking, no rhythmic breathing, and no pain response (Grandin, 2017). If a caretaker is unsure that a pig has not been rendered insensible or if the pig displays coronated signs of life then the pig must be euthanized again either using the same or a different humane and approved methodology.

Death Confirmation

Death must be confirmed before disposal and should be checked for within 3 minutes of performing euthanasia. Death can be confirmed by checking for rigor mortis and vital signs including; breathing, heartbeat, movement, responding to pain (pricking with a needle), vocalizing, and eye blinking. If the pig exhibits any of these vital signs, immediately move to a second-step of euthanasia. It is imperative that the caretaker stay with the pig the entire time.



Figure 1. A pithing rod is pushed back and forth to damage the brain and spinal cord.

AVMA Acceptable Euthanasia Methods

Euthanasia Method	Acceptable For	Administering	Training Needed	Aesthetics	Pig Welfare	Cost	Human Safety Risk
Manual Blunt Force Trauma	Pigs up to 12 lbs (5.44 kg)	Swift force applied to head with heavy object	Moderate	Blood discharge, may be emotionally unacceptable	Good, if pig is 12 lbs or less and rapid force is applied	None	Low
Non-Penetrating Captive Bolt	Pigs 70 lbs (31.75 kg) or less	Delivers blow to head without penetrating skull	Low	Some blood discharge	Good, if used in pigs 70 lbs or less, correct placement necessary	Moderate, initial cost of bolt gun	Moderate to high
Penetrating Captive Bolt	Pigs 12 lbs (5.44 kg) or more	Delivers blow to head and penetrates skull	Moderate	Blood discharge	Good, correct placement necessary	Moderate, initial cost of bolt gun	Moderate to high
Gunshot	Nursery pigs and older	Gunshot delivered to head	Moderate to high	Blood discharge	Good, correct placement necessary	Moderate, cost of gun and ammo	Moderate to high
Carbon Dioxide (CO2)	Not practical for pigs over 70 lbs (31.75 kg)	Pig placed in chamber, then filled with CO2	Moderate to low	Vocalization or movement may occur	Good, causes respiratory arrest	Moderate, cost of equipment and CO2	Low, use in well ventilated area
Veterinarian Administered Anesthetic Overdose	Can be used for all ages, but not always practical	Veterinarian administers an overdose of anesthetic	High, veterinarian use only	Movement	Good, causes respiratory and cardiac arrest	High, FDA regulations apply	Low
Electrocution (head to heart)	Pigs 3 days old and up	One electrode on head, one on heart, applies an electrical current that stuns and kills pig	Moderate	Muscle contractions	Good, correct placement necessary	Moderate, cost of equipment	Low, if procedure is followed
Electrocution (head only)	Pigs 3 days old and up with a second step	Electrodes apply an electrical current to head, stuns pig for second step	Moderate	Muscle contractions	Good, correct placement necessary	Moderate, cost of equipment	Low, if procedure is followed

This table represents acceptable methods to euthanize swine. (Iowa Pork, 2008), (Carroll, 2023), (National Pork Board, 2015).

REVIEWER: Dr. Anna Johnson

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