
On-Farm Euthanasia of Swine

Options for the Producer

Unfortunately, it is inevitable that animals will become ill or injured in such a way that euthanasia will be necessary. It is usually impractical or impossible for a veterinarian to regularly perform euthanasia on farms; euthanasia then becomes the responsibility of the producer. The producer should be aware of the available humane on-farm euthanasia methods and how to perform them.

This brochure is designed to assist producers in making decisions about euthanasia while considering pig welfare, economics, safety and public health. Swine producers and their employees should read this brochure, discuss the different options with their veterinarian and fill out the action plan on page eight. The action plan should be reviewed annually with your veterinarian and your employees.

When illness or injury occur on-farm, the action taken on the part of the producer usually falls into 4 broad categories:

1. **Treatment** - If an appropriate treatment is available and practical.
2. **Slaughter** - If the animal is suitable for transport and human consumption. In Ontario, a **Veterinary Certificate for Direct Transport to Slaughter** must be obtained from a veterinarian if a non-ambulatory animal is to be transported.
3. **Sell or Transfer** - This option may be appropriate in case of injured or disadvantaged pigs that may perform adequately in a different production setting.
4. **Euthanasia** - As a last resort, producers must decide to euthanise animals for humane, economic and public health reasons.

Acknowledgements

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For more information contact your provincial or national pork producer organization:

<i>Alberta</i>	<i>(780) 474-8288</i>	<i>www.albertapork.com</i>
<i>Manitoba</i>	<i>(204) 237-7447</i>	<i>www.manitobapork.com</i>
<i>Saskatchewan</i>	<i>(306) 244-7752</i>	<i>saskpork@sk.sympatico.ca</i>
<i>Ontario</i>	<i>1-877-ONT- PORK</i>	<i>www.ontariopork.on.ca</i>
<i>New Brunswick</i>	<i>(506) 458-8051</i>	<i>nbhog@nbnet.nb.ca</i>
<i>Nova Scotia</i>	<i>1-800-565-7675</i>	<i>www.pork.ns.ca</i>
<i>Prince Edward Island</i>	<i>(902) 892-4201</i>	<i>www.peipork.pe.ca</i>
<i>Canadian Pork Council</i>	<i>(613) 236-9239</i>	<i>www.cpc-ccp.com</i>

Considerations for Euthanasia:

- Human Safety Risks:** Producers and their employees must be trained in the proper euthanasia methods to avoid injury.
- Pig Welfare:** The method chosen should minimize any pain or distress to the animal.
Always check for complete euthanasia.
- Practicality:** The euthanasia method chosen should be practical, easy to learn and repeatable.
- Suitability:** Some methods are only suitable for certain sizes of pigs. (See Table 1.)
The euthanasia method should not be objectionable to the person administering the procedure.

Table 1	Euthanasia Methods for Swine: Based on Size				
	Farrowing Pig Less than 3 weeks (5.5 kg)	Nursery Pig Less than 10 weeks (32 kg)	Grower Pig Less than 68 kg	Finisher Pig Greater than 68 kg	Mature Sow or Boar
Gunshot	no	yes		yes	yes
Captive Bolt	no	yes		yes	yes
Anesthetic Overdose {administered by vets only}	yes	yes		yes	yes
Blunt Trauma	yes	no		no	no

* Carbon dioxide (CO₂) and electrocution are also considered to be acceptable methods of euthanasia. However, it is recommended that producers seek professional advice on the use of either method to ensure human and animal safety.

Table 2		Euthanasia Methods for Swine: Important Considerations				
	Human Safety Risk	Pig Welfare	Skill Required	Cost	Effect	Restrictions
Gunshot	Moderate to high; training needed; security of firearms	Good, correct placement needed	Moderate	Moderate; initial cost of firearm	Discharge of blood from wound	Skill and training required; not for small pigs; firearm regulations
Penetrating Captive Bolt	Moderate to high; training needed	Good, correct placement essential	Moderate	Moderate; initial cost of captive bolt gun	Discharge of blood from wound; should be followed by severing a major artery in adult animals	Some skill and training required; not for small pigs
Blunt Trauma to Head	Very low	Good if performed in small pigs with rapid force strong enough for instantaneous death	Low, proper training required	None	May be emotionally unacceptable / or visually	Only applicable to small pigs
Anesthetic Overdose	Low, if assistance for holding is available	Good, anesthesia followed by respiratory and cardiac arrest	High, proper training for intravenous injection essential	Can only be performed by a licensed veterinarian	Terminal gasping is possible	Anesthetics only available to veterinarians; animals cannot be rendered for pet food

The term “euthanasia” is derived from the Greek terms “eu” for “good” and “thanatos” for “death” - the two words combine to mean “a good death.” Euthanasia should be painless, must minimize fear and anxiety, must be reliable, reproducible, irreversible, simple, safe and rapid.

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Details of Table 2:

1. Gunshot and penetrating captive bolt:

These methods stun or kill (depending on the size of the animal) by concussive force and penetration into the brain. Use in adult animals may only stun, therefore it is recommended that the carotid (neck) or brachial (armpit) artery be severed once the pig is rendered unconscious. Both methods are practical when used by an experienced person.

Firearm - Extra care must be taken to ensure human safety when using firearms. The user should be trained in firearm safety and understand the potential for ricochet. A .22 caliber rifle is most commonly used on all classes of animals up to market hogs and young replacement breeding stock. Large boars and sows should probably be bled to ensure effective euthanasia. Shotguns are sometimes used to reduce the potential for ricochet. Animals should be secured by an assistant, using a rope or a snare over the upper jaw of the pig. The assistant should always stand behind the shooter. The gunshot method requires that the firearm be held about 2 to 10 inches from the skull and directed approximately 20° up from the skull toward the brain. If using gunshot, the animal should be restrained outside of the building on soil where danger from ricochet is reduced. Be aware of how this may look to passers by who may not understand why you are shooting an animal.

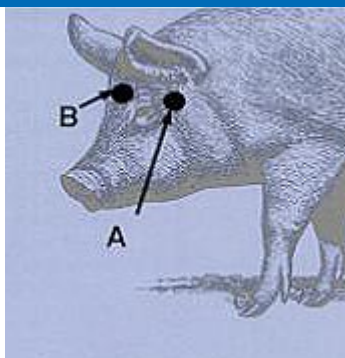
When using a firearm, it is the ammunition that matters, not the firearm itself. Less powerful ammunition might be suitable at shorter ranges. Ammunition size will depend on whether the animal is market size or is a larger (thicker-skulled) sow or boar.

Captive Bolt - Correct positioning for this method is critical. The shot should be directed at the midline of the forehead, one finger-width above eye level. The penetrating captive bolt should be placed **very firmly** against the skull and directed upward approximately 20° from the skull towards the brain. The trigger is pulled as soon as the correct position and angle are achieved and the animal is not moving. A charge large enough (green cartridge) to cause the bolt to penetrate the skull of a sow or boar should be used.

Captive Bolt / Gunshot

Figure 1:

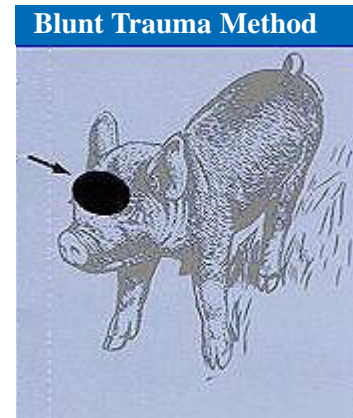
“A” indicates recommended position for temporal method, Suitable for firearm only.
 “B” indicates recommended position for frontal method, at the appropriate angle. Suitable for firearm or captive-bolt pistol.



Lack of maintenance and cleaning is one of the main reasons for poor performance of captive bolt pistols. The pistol should be dismantled and cleaned after each use and stored in its secure housing.

2. Blunt Trauma:

This is a humane and economical method of euthanasia, but it may be objectionable to the person administering it. A sharp, firm blow with a heavy blunt instrument on the top of the head over the brain is an efficient way of humanely killing piglets. It is essential that the blow be administered swiftly, with determination and firmly enough to ensure quick, humane euthanasia on the first attempt. If there is any doubt whether the pig is dead, the blow should be repeated. Contact your veterinarian for proper technique instruction.



3. Anesthetic Overdose:

Barbiturates and pentobarbital combinations are used to depress the central nervous system, causing deep anesthesia progressing to respiratory and cardiac arrest. This method is considered to be very humane but it does require intravenous injection into the animal. **Federal drug regulations and provincial veterinarian legislation require anesthetic agents to be administered only by a veterinarian.**

Carcasses from pigs euthanized using anesthetic overdose must be disposed of according to provincial legislation.

Confirmation of Death

Confirmation of death is essential. Immediately following euthanasia, standing animals should collapse; all animals may experience a period of muscle contraction (usually no longer than 20 seconds). This will be followed by a period of relaxation and some poorly coordinated kicking or paddling movements. The pupils of the eyes should be totally fixed and dilated. The animal must be monitored to confirm death. Death may be confirmed by the absence of either breathing, heartbeat or a corneal reflex. The check corneal reflex (blinking response) touch the animal's cornea (surface of the eye); there should be no response to the touch if the animal is dead. The presence of any eye movement or blinking at this time is evidence of sustained or recovering brain activity and the operator should repeat the same or an alternative euthanasia procedure.

Euthanasia Action Plan

Work with your veterinarian to develop a euthanasia action plan appropriate for each stage of production. The plan should be kept in an obvious location in the barn. Review your plan with any new employees and annually with all staff and your veterinarian.

Below is an example action plan for a swine herd.

Farm Name: XYZ Farm

Date: Day/Month/Year

Drafted By: Janet Smith & Dr. Joe

Phase of Production	Euthanasia Method	Alternative Method
Piglets	Blunt trauma	
Nursery (<70 lb or 32 kg)	Penetrating captive bolt	Gunshot
Grow/finish (up to 300 lb or 136 kg)	Penetrating captive bolt	Gunshot
Mature animals (sows, boars)	Gunshot	Anesthetic overdose (by the vet)

Other Important Considerations

Deciding when and how to euthanise an animal is a difficult task that requires serious consideration. Individual judgement and attitude are important factors. When you have to euthanise an animal, think about how it might look or the impact it may have on those that may be able to see what you are doing but do not understand why it must be done. Again, the need for a simple, instant and reliable euthanasia method is important. Deadstock disposal should meet all legal requirements.

Consult your veterinarian or a swine practitioner for specific instructions on proper techniques and methods that would work best on your farm.

Euthanasia Action Plan

Work with your veterinarian to develop a euthanasia action plan appropriate for each stage of production on your farm. The plan should be kept in an obvious location in the barn. Review the plan with any new employees and annually with all staff and your veterinarian.

Farm Name: _____

Date: _____

Drafted By: _____

Phase of Production	Euthanasia Method	Alternative Method
Piglets		
Nursery (<70lb or 32 kg)		
Grow/finish (up to 300 lb or 136 kg)		
Mature animals (sows, boars)		

Important phone numbers:

1. Veterinarian: _____

Phone: _____

After Hours/Emergency: _____

2. Transporter: _____

Phone: _____

3. Non-Ambulatory Transporter: _____

Phone: _____

4. Deadstock Removal: _____

Phone: _____