Developing on-farm euthanasia plans

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Introduction

Development of a suitable on-farm euthanasia plan should be part of the regular veterinary-client discussions that occur during ongoing herd or flock assessments. Close monitoring of behavior by those skilled in animal husbandry can lead to early identification and segregation of sick or unfit animals. Clinical endpoints and decision trees should be developed and discussed with clients to ensure that animals that do not improve after suitable therapy and monitoring are rapidly and humanely euthanized using appropriate procedures. Personnel who perform on-farm euthanasia procedures should be trained in the techniques.

Euthanasia, derived from the Greek terms "eu" and "thanatos," means a "good death," and in the context of veterinary medicine, the term refers to killing animals in as painless and stress-free a manner as possible. It is not a step taken lightly by those in this profession but a responsibility that veterinarians undertake to end animal suffering and distress. In food animal practice, veterinarians are typically not on a farm on a daily or even weekly basis, and euthanasia is a task that we often must delegate to our clients and their employees. For this reason, on-farm euthanasia plans should be developed and regularly discussed with clients as part of the overall herd or flock health management program. In addition to optimizing herd or flock productivity, a properly designed and implemented euthanasia program demonstrates compassion for the animals and will help to address public expectations for enhancing food animal welfare.

Early recognition of sick or unfit animals

Recognition of unfit or sick animals must start with an excellent knowledge of normal behavior for a particular species. This is often developed subconsciously through years of animal observation during routine husbandry practices, but it should also be taught to employees who may lack these skills. Many operations already implement practices to optimize animal growth and well-being based on animal behavior and size; for example, regrouping smaller pigs in a facility after weaning to reduce competition and optimize growth.

The goal of those conducting daily health checks in any animal production operation should be to rapidly identify animals that are thriving and differentiate them from animals that are not. Typically, unless individually housed, animals that are manifesting signs of disease or distress should be separated from other members of the cage, group, or enclosure to minimize opportunities for further injury or disease transmission. A decision should be made at this point, based on the severity of the animal's condition and knowledge of any previous treatments to immediately euthanize, treat, observe further, transport for slaughter, or remove to another location for diagnostic purposes or for more intensive care. Injured or sick animals of adequate size that are fit for transport with no food safety issues may be transported for slaughter, if practical. This decision must be made early, before the animal becomes unfit for transport or for human consumption. Fitness for transport guidelines are available (Table 1). Clients must be advised that if medications have been administered, the withdrawal time must be confirmed and assessed to be appropriate prior to transportation.

Use of a sick pen

Sick or injured animals that are not immediately euthanized or transported for slaughter are often segregated into a sick pen. Consideration should be given to the nature and location of the sick pen as well as the timing for observing and treating these animals. All livestock and poultry are social species and may be further distressed if they are individually housed without visual or auditory contact with others of their species. To address this, typically, the sick pen will be located within the main animal holding facility but spatially separated to reduce the risk of disease transmission. When infectious disease is suspected, these animals should be observed and handled after healthy animals have been cared for and appropriate hygiene measures should be in place following handling of these animals. The enclosures for sick, injured, or quarantined animals must also be cleaned well between each use to minimize the risk of disease transmission. Finally, sick animals must be observed on a regular basis to determine if there is any change in their condition that may require further intervention.

Developing endpoint criteria for euthanasia decisions

Deciding when to euthanize an animal is a difficult decision for veterinarians and equally so for those caring for animals

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Table 1. Examples of resources for evaluating fitness for transport

Title	Organization	Web site
Livestock Transport Requirements in Canada — Your Responsibility.	Canadian Food Inspection Agency	http://www.inspection.gc.ca/english/anima/trans/transpoe.shtml
Should this animal be loaded? — Guidelines for transporting cattle, sheep and goats.	Ontario Farm Animal Council	http://www.ofac.org/pdf/National%20Cattle,%20Sheep,%20Goat%20Decision%20Tree%2009.pdf
Should this pig be loaded? — Guidelines for transporting pigs.	Ontario Farm Animal Council	http://www.ofac.org/pdf/2009%20Should%20this%20pig%20be%20loaded%20national.pdf

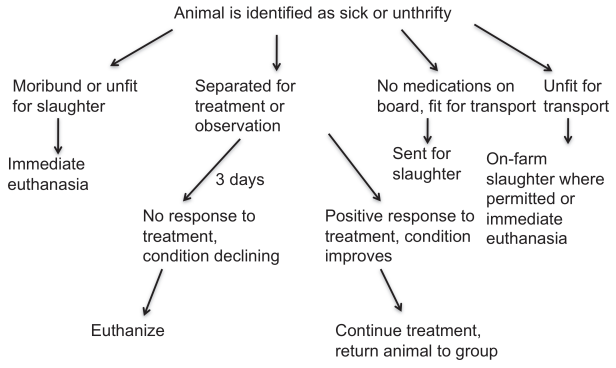

Figure 1. Example of an algorithm used for developing an on-farm euthanasia protocol.

Table 2. Examples of criteria for euthanizing weanling or growing pigs

Weak, unable to stand
Unable to eat or drink
Moderate to severe lameness
Fractured leg
Severely damaged digits
Infected tail, ear, or flank bites
Severe rectal prolapse (protruding or damaged)
Postnatal development of scrotal, inguinal, or umbilical hernia
Repaired hernia with abscessation, moderate swelling, or continued drainage
Severe body weight loss (20% or greater)
Severe diarrhea with dehydration (no response to treatment in 2 or more days)
Respiratory disease with dyspnea (no response to treatment in 2 or more days)

on a day-to-day basis. While euthanasia is not a pleasant task, allowing a sick or injured animal to linger unnecessarily is a poor decision, both from a welfare standpoint as well as from an economic one (1). Some have argued that a "natural death" is morally more acceptable than euthanasia (2); however, a long and protracted "natural death" is often not a humane death, particularly for agricultural species, for which few analgesics are available. Euthanasia policies are as much about embracing an approach to humane care of animals as they are about training personnel and ensuring use of appropriate techniques. Animals with untreatable or nonresponsive conditions, that are not fit for transport, or that are likely to be condemned should be euthanized promptly. Accepting and adopting a practice of timely euthanasia demonstrates true compassion for these animals. Developing clear agreed upon criteria for when to euthanize animals can greatly assist those charged with making these difficult decisions. An example of a decision algorithm for weaner pigs is shown in Figure 1.

Endpoint criteria have been available for animal species used in research for many years and the same principles apply to developing criteria for animals in agricultural settings (3). The criteria are grounded on a firm understanding of species-typical behaviors and they should be applicable to animals in different stages of growth and development (see example of endpoint selection criteria in Table 2). Developing clear criteria will also help to ensure consistent decision-making among personnel on the farm.

Reluctance to euthanize an animal that will otherwise continue to suffer is grounds for reporting to the SPCA or other provincial authority as appropriate.

Methods for on-farm euthanasia

Euthanasia must be carried out using a method that immediately renders an animal insensible to pain or further distress (4). Numerous resources are available that list acceptable practices for euthanizing various agricultural species (Table 3) and the veterinarian should discuss acceptable options with their clients. Any methods recommended should take into consideration operator safety, animal well-being, technical requirements, procedural costs, and aesthetics to those delivering or viewing the technique, and any method limitations, for example, those based on animal age or weight. Individuals performing euthanasia should be trained and should be observed to ensure an appropriate level of skill to achieve as painless and stress-free a death as possible, as well as comfort with a particular method. It may be convenient to demonstrate and train individuals on techniques using a carcass, before the employee attempts a procedure on a conscious animal. Before moving or leaving the animal, clients and their employees should be trained to confirm death, for example by evaluating the corneal reflex.

Table 3. Resources describing appropriate methods for agricultural animal euthanasia

Animal	Title and organization	Web site
General	AVMA Guidelines on Euthanasia — American Veterinary Medical Association	http://www.avma.org/issues/animal_welfare/euthanasia.pdf
Poultry	Guide to on-farm stunning and euthanasia of specialty poultry and barnyard fowl. Ministère de l'Agriculture, des Pêcheries et de l'Alimentation. 2008.	http://www.mapaq.gouv.qc.ca/NR/rdonlyres/A9B89243-FD40-46EF-A2E9-EE2539F73D38/0/euthanasieang.pdf
Cattle	On-Farm Euthanasia of Cattle and Calves. Ontario Ministry of Agriculture and Rural Affairs. 2009.	http://www.omafra.gov.on.ca/english/livestock/animalcare/facts/info_action_plan_cc.htm
	Practical Euthanasia of Cattle. American Association of Bovine Practitioners. 2009.	http://www.organicagcentre.ca/Docs/AnimalWelfare/Certified%20Humane/On-Farm%20Euthanasia/Practical%20Euthanasia%20of%20Cattle.pdf
	Recommended code of practice for the care and handling of dairy cattle, chapter 6 (2009) Dairy Farmers of Canada and National Farm Animal Care Council	http://www.nfacc.ca/Documents/Default.aspx
Sheep and goats	On-Farm Euthanasia of Sheep and Goats. Ontario Ministry of Agriculture and Rural Affairs. 2008.	http://www.omafra.gov.on.ca/english/livestock/animalcare/facts/info_action_plan_shg.htm
Swine	Euthanasia in Pigs. Farm Animal Council of Saskatchewan.	http://www.facs.sk.ca/welfare_pork_porkfacs_euthanasia.htm
	On-Farm Euthanasia of Swine. American Association of Swine Practitioners. 2008.	http://www.aasv.org/aasv/documents/SwineEuthanasia.pdf

The stress level of employees who have to perform a given euthanasia procedure has been shown to diminish as they become familiar with a particular technique (5). Training may include a discussion on the normal dying process, such as the possibility of involuntary muscle contractions or fasciculations. The euthanasia technique used may also need to be modified, based on the individual who is performing the procedure. For example, cervical dislocation in mature tom turkeys may be difficult for individuals with smaller hands or less physical strength. Finally, multiple individuals on a farm may need to be trained to perform euthanasia techniques to ensure that there is always someone available to humanely dispatch animals that are found to be suffering.

The euthanasia plan should be readily accessible to all trained personnel. Carcass disposal must be in accordance with all federal, provincial, and local regulations.

Reviewing the on-farm euthanasia plan

Once an on-farm euthanasia plan has been developed, it should be reviewed regularly by the veterinarian as part of the overall herd or flock health assessment program. Necropsy reports and lab results should be reviewed to determine the underlying reasons for euthanasia. Whenever possible, preventive steps should be taken to minimize the development of conditions that result in animal euthanasia, such as paying increased attention to footings for mature dairy cattle, avoiding mixing calves from different sources, and reducing overcrowding of animals in pens.

In conclusion, well-managed on-farm euthanasia plans are a key to enhancing overall animal well-being and productivity. Having an acceptable plan in place that has been approved by a veterinarian and ensuring that personnel are appropriately trained in euthanasia procedures demonstrate compassion for animals and instill public confidence in food animal production practices.

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