



Animal Welfare Institute

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Mr. Brian Baldrige, Director of Ohio Department of Agriculture
Dr. Dennis Summers, State Veterinarian
Ohio Livestock Care Standards Board
Ohio Department of Agriculture Division of Animal Health
8995 E. Main St. Reynoldsburg, OH 43068

Submitted via: AGReComments@agri.ohio.gov

Re: Ohio Livestock Care Standards (Amended) OAC 901: 12-1-01, 12-1-03, 12-1-05, 12-6-02, 12-7-02, 12-8-02, 12-13-02

Dear Mr. Baldrige, Dr. Summers, and Other Members of the Ohio Livestock Care Standards Board,

Thank you for the opportunity to comment on the proposed changes to [OAC 901: 12-1-01, 12-1-03, 12-1-05, 12-6-02, 12-7-02, 12-8-02, 12-13-02](#).

In 2021, together with the late Dr. Bernard Rollin, we submitted a letter on behalf of the Animal Welfare Institute regarding the Ohio Livestock Care Standards (OLCS) rules,¹ urging that they be updated to reflect the current best management practices for the care and well-being of livestock and generally accepted veterinary medical practices, as required by ORC § 904.03.² We would like to express our sincere appreciation to the OLCS Board for considering and responding to our letter. The Board solicited input from both the Ohio State University Department of Animal Sciences and the Ohio Veterinary Medical Association and, based on their support for updating rules related to pain management, formed a subcommittee to propose rule changes.

We strongly support the changes in the rules that require pain management for all disbudding and dehorning procedures performed on dairy cattle (OAC 901:12-6-02 (A)(1)), beef cattle (OAC 901:12-7-02 (A) (1)), and goats (901:12-13-02 (A) (1)). **We support the language as written, encompassing all forms of disbudding and dehorning, performed at any age and by any method.** Research has documented significant and often prolonged pain in calves and cattle undergoing disbudding or dehorning by all available methods, including application of caustic paste.³

¹ Reyes-Illg, G., Reynolds, J., Kipperman, B., & Rollin, B.E. (2021, August 12). Letter to Ms. Dorothy Pelanda, Dennis Summers, and Ohio Livestock Care Standards Board.

<https://awionline.org/sites/default/files/uploads/documents/Letter-OLCS-Board-Aug-2021.pdf>

² Ohio Rev. Code. §904.03. (2010). <https://codes.ohio.gov/ohio-revised-code/section-904.03>

³ Drwencke, A. M., Adcock, S. J. J., & Tucker, C. B. (2023). Wound healing and pain sensitivity following caustic paste disbudding in dairy calves. *Journal of dairy science*, 106(9), 6375–6387. <https://doi.org/10.3168/jds.2023-23238>; Reedman, C. N., Duffield, T. F., DeVries, T. J., Lissemore, K. D., Karrow, N. A., Li, Z., & Winder, C. B. (2020).

With regard to ruminant species, we note that these animals frequently undergo other painful procedures, including castration (cattle, sheep, and goats), tail docking (sheep), and branding (cattle). Unfortunately, the weak language in sections related to castration does not require pain management.⁴ Similarly, tail docking of sheep is still permitted without pain mitigation and with no restriction on how much of the tail is amputated. Research is unequivocal that tail docking is painful in sheep,⁵ and short dock length increases the risk of rectal prolapse.⁶ Branding, a practice documented by research studies to cause second- and third-degree burns that remain painful for 70 days,⁷ is mentioned only in Rule 4741-1-13 Livestock management practices, which allows any person to perform the procedure and does not require any pain mitigation.

We encourage the Board to consider future revisions to the relevant sections to (1) encourage a shift away from avoidable painful procedures, (2) require replacement with less painful alternatives (e.g., ear tags, electronic identification, or collars, rather than hot-iron or freeze branding), and (3) require that all ruminants be provided pain relief for any procedure that causes more than minimal, momentary pain.

Regarding OAC 901:12-8-02 (section on Swine), we have some concerns about the proposed revisions. Despite the fact that, within the first week of life, piglets undergo numerous painful procedures, including castration, tail docking, teeth clipping, and ear notching, there is no restriction on these procedures and no requirement for pain mitigation when they are performed. We encourage the Board to update this section in the future to require the use of pain management for all painful piglet procedures. We also recommend a restriction on the routine use of management procedures, such as tail docking and teeth clipping, that can result in chronic pain and are typically performed to address behaviors resulting from inadequate management (tail docking to prevent tail biting and teeth clipping to decrease injuries caused by needle teeth).⁸

Randomized control trial assessing the efficacy of pain control strategies for caustic paste disbudding in dairy calves younger than 9 days of age. *Journal of dairy science*, 103(8), 7339–7350. <https://doi.org/10.3168/jds.2019-18118>; Stock, M. L., Baldrige, S. L., Griffin, D., & Coetzee, J. F. (2013). Bovine dehorning: assessing pain and providing analgesic management. *The Veterinary clinics of North America. Food animal practice*, 29(1), 103–133. <https://doi.org/10.1016/j.cvfa.2012.11.001>

⁴ OAC 901:12-6-02 (A)(2) for dairy cattle, OAC 901:12-7-02 (A)(2) for beef cattle, OAC 901:12-12-02 (A) for sheep, and OAC 901:12-13-02 (A)(2) for goats

⁵ Small, A., Fisher, A. D., Lee, C., & Colditz, I. (2021). Analgesia for Sheep in Commercial Production: Where to Next?. *Animals : an open access journal from MDPI*, 11(4), 1127. <https://doi.org/10.3390/ani11041127>;

⁶ Thomas, D. L., Waldron, D. F., Lowe, G. D., Morrical, D. G., Meyer, H. H., High, R. A., Berger, Y. M., Clevenger, D. D., Fogle, G. E., Gottfredson, R. G., Loerch, S. C., McClure, K. E., Willingham, T. D., Zartman, D. L., & Zelinsky, R. D. (2003). Length of docked tail and the incidence of rectal prolapse in lambs. *Journal of animal science*, 81(11), 2725–2732. <https://doi.org/10.2527/2003.81112725x>

⁷ Steagall, P. V., Bustamante, H., Johnson, C. B., & Turner, P. V. (2021). Pain Management in Farm Animals: Focus on Cattle, Sheep and Pigs. *Animals*, 11(6), 1483. doi:10.3390/ani11061483; Tucker, C. B., Mintline, E. M., Banuelos, J., Walker, K. A., Hoar, B., Drake, D., & Weary, D. M. (2014). Effect of a cooling gel on pain sensitivity and healing of hot-iron cattle brands. *Journal of animal science*, 92(12), 5666–5673. <https://doi.org/10.2527/jas.2014-7860>

⁸ Chou, J. Y., Marchant, J. N., Nalon, E., Huynh, T. T. T., van de Weerd, H. A., Boyle, L. A., & Ison, S. H. (2022). Investigating risk factors behind piglet facial and sow teat lesions through a literature review and a survey on teeth reduction. *Frontiers in veterinary science*, 9, 909401. <https://doi.org/10.3389/fvets.2022.909401>; EFSA Panel on Animal Health and Welfare (AHAW), Nielsen, S. S., Alvarez, J., Bicout, D. J., Calistri, P., Canali, E., Drewe, J. A., Garin-Bastuji, B., Gonzales Rojas, J. L., Schmidt, G., Herskin, M., Michel, V., Miranda Chueca, M. Á., Mosbach-Schulz, O., Padalino, B., Roberts, H. C., Stahl, K., Velarde, A., Viltrop, A., Winckler, C., ... Spoolder, H. (2022). Welfare of pigs on

In addition, we encourage revisiting 901:12-8-02 (A), which requires pain management for tusk trimming in pigs. While we support the use of pain management, as well as sedation, to improve animal welfare associated with tusk trimming, we recommend additional revisions to this section to decrease the risk of chronic pain. The rule currently stipulates that the tusks be cut “level with the gums.” Unfortunately, this requirement likely ensures significant pain and risk of infection for many of the animals involved. This is because the pulp chamber, which houses the nerves and blood vessels of the tooth, often extends past the gumline in hogs. Exposing the pulp chamber by cutting into it is painful, as the nerves inside the tooth are exposed; it also enables bacteria to enter and infect the tooth root, leading to tusk abscesses and osteomyelitis of the mandible (infection of the lower jawbone).

In a study of 102 tusks taken from 51 swine mandibles obtained at a slaughterhouse, more than half of them had had the pulp chamber exposed. Of these, 80% had moderate to severe inflammation of the associated gum.⁹ While, on average, the pulp chamber extends to the level of the gumline, there is variation and the pulp in some of the examined tusks extended up to 1.6 cm above the gum line. In this study, 40% of pigs had nerves extended into the part of the tooth above the gumline. For this reason, the standard should be revised to recommend that the tusks be cut in a manner that does not expose the pulp chamber, rather than stating the tusks should be level with the gumline. Cutting the tusks at least at least 2 centimeters above the gumline would ensure that the pulp chamber and nerves are not damaged. For the procedure to be humane, the animal should be sedated. Sawing, with a hacksaw or orthopedic/fetotomy wire, is more humane than clipping with hoof-trimmers or bolt cutters, as it is more precise and less likely to result in fracturing of the tooth or exposure of the pulp.¹⁰

Recommended language:

- (A) Tusk trimming is an acceptable procedure and, if performed, must be performed in a humane manner **with the use of pain management and sedation, taking care to avoid entering the pulp chamber of the tooth by cutting the tusks at least 2 centimeters from the gumline**, without damaging the gums.

In addition to pain management, the current proposed changes also address euthanasia. As mentioned in our recent letter,¹¹ it is unfortunate that the entirety of chapter 901:12-1 on Euthanasia was not reviewed at once. The relevant section is attached here as an Appendix. As the letter outlines, this chapter fails to mention several methods of euthanasia and depopulation that are recognized as humane by the American Veterinary Medical Association (AVMA) and/or international organizations with animal

farm. *EFSA journal. European Food Safety Authority*, 20(8), e07421. <https://doi.org/10.2903/j.efsa.2022.7421>; Wallgren, T., Westin, R., & Gunnarsson, S. (2016). A survey of straw use and tail biting in Swedish pig farms rearing undocked pigs. *Acta veterinaria Scandinavica*, 58(1), 84. <https://doi.org/10.1186/s13028-016-0266-8>; Niemi, J. K., Edwards, S. A., Papanastasiou, D. K., Piette, D., Stygar, A. H., Wallenbeck, A., & Valros, A. (2021). Cost-Effectiveness Analysis of Seven Measures to Reduce Tail Biting Lesions in Fattening Pigs. *Frontiers in veterinary science*, 8, 682330. <https://doi.org/10.3389/fvets.2021.682330>

⁹ Bovey, K., Lawlis, P., DeLay, J., & Widowski, T. (2009). Innervation and condition of mature boar tusks at slaughter. *Canadian Journal of Animal Science*, 89, 1. 176. <https://doi.org/10.4141/CJAS09300>

¹⁰ Johnson, A.K., Colpoys, J.D., Edwards-Callaway, L.N. et al (2019). Behavior and Welfare. In J.J. Zimmerman et al (Eds.), *Diseases of Swine*.(11th ed., pp.17-41). John Wiley & Sons, Inc. p. 25

¹¹ Reyes-Illg, G., Kipperman, B., & Reynolds, J. (2023, October 31). Letter to Ms. Dorothy Pelanda, Dennis Summers, and Ohio Livestock Care Standards Board. <https://awionline.org/sites/default/files/uploads/documents/AWI-Comments-OLCSB-Euthanasia-Handling-Regs.pdf>

welfare expertise, while permitting use of some killing methods which are either discouraged or considered unacceptable for specific species. For example, nitrogen gassing and high expansion nitrogen-gas filled foam are not described or discussed, despite being among the most humane methods of euthanasia and/or depopulation for multiple species. Manually applied blunt force trauma is permitted for piglets, despite the AVMA discouraging this practice, as well as for sheep and goats weighing less than 12 pounds, despite the AVMA Guidelines on the Euthanasia of Animals stating that manually applied blunt trauma to the head is a method that is “unacceptable for euthanasia of cattle and small ruminants,” including neonates.¹²

We recommend convening a subcommittee to propose comprehensive changes to the Chapter 901:12-1 Euthanasia to ensure that it aligns with the AVMA’s Guidelines for the Euthanasia of Animals¹³ and Chapter 7.6 of the World Organisation for Animal Health (WOAH, formerly known by its French acronym OIE) code, *Killing of Animals for Disease Control Purposes*.¹⁴

Thank you for the opportunity to submit comments on the proposed changes to Ohio’s livestock care standards. We hope this information will be helpful in updating the rules to comply with the statutory requirement that they be based on the current best management practices for the care and well-being of livestock and generally accepted veterinary medical practices, which have evolved considerably since the rules were originally written. If you would like to discuss this matter further, or request any of the scientific literature cited in this letter, please do not hesitate to contact me at gwendy@awionline.org.

Sincerely,

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¹² AVMA. (2020). AVMA Guidelines for the Euthanasia of Animals: 2020 Edition.

<https://www.avma.org/sites/default/files/2020-02/Guidelines-on-Euthanasia-2020.pdf>

¹³ AVMA. (2020). AVMA Guidelines for the Euthanasia of Animals: 2020 Edition.

<https://www.avma.org/sites/default/files/2020-02/Guidelines-on-Euthanasia-2020.pdf>

¹⁴ WOAH. (2022). Killing of Animals for Disease Control Purposes.

https://www.woah.org/fileadmin/Home/eng/Health_standards/tahc/current/chapitre_aw_killing.pdf

Appendix 1: Content from Recent Comments Regarding Chapter 901:12-1 Euthanasia (amended)

901:12-1 Euthanasia

It is unfortunate that only parts of this Chapter are being reviewed at this time. The chapter's stated purpose is to cover euthanasia, which is described in the American Veterinary Medical Association (AVMA) Guidelines for the Euthanasia of Animals: 2020 Edition as "ending the life of an individual animal in a way that minimizes or eliminates pain and distress," thus providing "a good death."ⁱ However, as discussed below, the chapter describes some killing methods associated with significant levels of pain and distress."ⁱⁱ In the case of airway-occluding water-based foam, this is classified by the AVMA not as a euthanasia method but as a "depopulation" method, in acknowledgment of its failure to provide a good death. The chapter also fails to mention some methods of mass killing that better protect animal welfare and might legitimately be classified as methods of humane euthanasia. AWI maintains a publicly accessible, continually updated reference on sources of equipment for less inhumane methods of depopulation: <https://awionline.org/sites/default/files/uploads/documents/More-Humane-Farmed-Animal-Depopulation-Methods.pdf>

Given the current wording of Rule 901:12-1-01 (H) Mass Euthanasia, it is evident that the initial OLCS Board, as directed by Ohio voters, intended that, even when large numbers of animals must be destroyed, animal pain and suffering is minimized. Rule 901:12-1-01 (H) also addresses authorization of alternate methods under "unusual conditions which require euthanasia of populations, such as wide spread disease eradication." The ongoing outbreak of Highly Pathogenic Avian Influenza (HPAI) appears to be precisely this sort of situation. However, most Ohioans would be shocked and horrified by the manner in which the current language has been interpreted: in September 2022, hundreds of thousands – perhaps millions – of HPAI-exposed laying hens in Defiance County, Ohio, were permitted to be killed via ventilation shutdown (VSD) plus heat, meaning that they died over the course of several hours from the intentional induction of heatstroke.^{iii,iv}

In assessing the animal welfare implications of VSD plus heat, the governmental Animal Welfare Committee of the United Kingdom recently described its pathophysiology and animal welfare implications in the following terms:

Hyperthermia and heat stress occur when the body cannot get rid of excess heat for any reason. In the case of VSD, the increases in ambient temperature and humidity cause a "thermal load" that overwhelms a bird's ability to cool itself down (hence supplemental heat can hasten death by hyperthermia). When the ambient temperature exceeds the thermal comfort zone, the birds will start to experience distress and suffering. As heat stress progresses, continuous panting alters the acidbase balance in the blood (respiratory alkalosis) and triggers a physiological stress Increased circulation to the skin and ... respiratory tract surface for thermoregulation results in under perfusion of other tissues/organs (e.g. kidney, liver, intestine) which leads to tissue damage and dysfunction. Panting causes dehydration and falling effective blood volume, which, coupled with circulatory changes, further compromises tissue perfusion. Acute heat stress also causes muscle damage which induces weakness and fatigue and releases myoglobin in to the circulation causing renal failure. Collectively, these extreme physiological challenges cause multiple organ failure, compromising cardiac, respiratory

and cerebral function. Ultimately, death is likely to be caused by heart failure or respiratory failure, secondary to central nervous system dysfunction. This complex process may be assumed to represent a profoundly negative experience for the bird, and potential welfare harms are likely to include anxiety, fear, pain, malaise, and breathlessness.^v

The World Organisation for Animal Health (WOAH, formerly known by its French acronym OIE) does not recognize heatstroke-based methods of killing as appropriate for disease control.^{vi} In response to the use of VSD plus heat in the US, WOAH has encouraged the US delegate to implement methods that meet the following requirement from the WOAH code: “When animals are killed for disease control purposes, methods used should result in immediate death or immediate loss of consciousness lasting until death; when loss of consciousness is not immediate, induction of unconsciousness should be non-aversive or the least aversive possible and should not cause avoidable anxiety, pain, distress or suffering in animals.”^{vii}

If this chapter is to cover both euthanasia and depopulation, it requires revisions, including language to ensure that even in animal disasters and disease emergencies, the use of less inhumane depopulation methods (or mass euthanasia methods) is feasible. This requires better prioritization of animal welfare throughout all phases of the animal disaster management cycle, including planning and preparedness, as recommended by the ethicist on the AVMA Panel on Depopulation.^{viii}

Recommended Language:

901:12-1-01 (H) Depopulation

For unusual conditions which require depopulation, such as wide spread disease eradication and exigent circumstances, the director may authorize alternate methods pursuant to section 941.11 of the Revised Code. The alternate methods must minimize animal pain and suffering to the extent reasonably possible while considering the threat to human health and safety. **Methods that cause prolonged suffering, such as those that rely on inducing heatstroke, are not acceptable. Planning and preparedness for animal disasters and health emergencies must ensure the feasibility of using methods that meet the definition of euthanasia (901:12-1-01 (A)) and/or are approved by the World Organisation for Animal Health.**

ⁱ AVMA (2020). AVMA Guidelines for the Euthanasia of Animals: 2020 Edition.

<https://www.avma.org/sites/default/files/2020-02/Guidelines-on-Euthanasia-2020.pdf>

ⁱⁱ Rule 901:12-1-01 (H) Mass Euthanasia. <https://codes.ohio.gov/ohio-administrative-code/rule-901:12-1-01>

ⁱⁱⁱ APHIS (2023). 2022-2023 Confirmations of Highly Pathogenic Avian Influenza in Commercial and Backyard Flocks. <https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/animal-disease-information/avian/avian-influenza/hpai-2022/2022-hpai-commercial-backyard-flocks>

^{iv} Animal Welfare Institute. (2023). Bird Depopulations Feb. 2022–Mar. 2023 (Received in response to FOIA requests), page 12. <https://awionline.org/sites/default/files/uploads/documents/Bird-Depopulations-Feb-2022-Mar-2023.pdf>

^v Animal Welfare Committee. (2023, June). Advice on emergency culling for the depopulation of poultry affected by high pathogenic avian influenza (HPAI) – consideration of ventilation shutdown (VSD).

<https://www.gov.scot/binaries/content/documents/govscot/publications/research-and-analysis/2023/09/animal-welfare-committee-advice-on-emergency-culling-for-the-depopulation-of-poultry-affected-by-high-pathogenic-avian-influenza-hpai-consideration-of-ventilation-shutdown-vsd/documents/animal-welfare-committee-advice-for-the-emergency-culling-of-poultry/animal-welfare-committee-advice-for-the-emergency-culling-of-poultry/govscot%3Adocument/Animal%2BWelfare%2BCommittee%2Badvice%2Bfor%2Bthe%2Bemergency%2Bculling%2Bof%2Bpoultry.pdf>

^{vi} WOA. (2022). Chapter 8.6. Killing of Animals for Disease Control Purposes.

https://www.woah.org/fileadmin/Home/eng/Health_standards/tahc/current/chapitre_aw_killing.pdf

^{vii} Eloit, M. (2022, July 22). Letter to Ben Williamson (Compassion in World Farming) from Monique Eloit, Director General of World Organisation for Animal Health.

^{viii} Anthony, R., & De Paula Vieira, A. (2022). One Health Animal Disaster Management: An Ethics of Care Approach. *Journal of applied animal welfare science: JAAWS*, 25(2), 180–194.

<https://doi.org/10.1080/10888705.2022.2040360>