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August 29, 2022

GAAMPs Task Force Committee
Environmental Stewardship Division
Michigan Department of Agriculture and Rural Development

Via email: MDARD-RTF@Michigan.gov

Re: 2023 Draft Generally Accepted Agricultural Management Practices for the Care of Farm Animals

Dear GAAMPs Task Force Committee Chairperson,

On behalf of the staff and the 4,223 Michigan-based supporters of the Animal Welfare Institute (AWI), we wish to submit recommendations for improving the Generally Accepted Agricultural Management Practices for the Care of Farm Animals.

I. Background

Since its founding in 1951, AWI has been dedicated to reducing animal suffering and promoting the welfare of all animals. As part of our mission, AWI promotes humane farming systems and works to advance legislative and regulatory efforts to improve conditions for the billions of animals raised and slaughtered each year for food in the United States.

The primary concerns of the animal agriculture industry have historically been productivity and food safety, often at the expense of animal welfare. National groups such as the American Veterinary Medical Association (AVMA) and international bodies, namely the World Organisation for Animal Health (WOAH)—the intergovernmental organization that coordinates, supports, and promotes animal disease control worldwide—recognize the link between animal welfare and animal health. The science is equally clear that farm animal health—and, by extension, welfare—have a significant effect on both productivity and food safety.[1]

The animal care GAAMPs also acknowledge this relationship. The introduction states: "Proper animal management is essential to the well-being of animals and the financial success of livestock operations. A sound animal husbandry program provides a system of care that permits the animals to grow, mature, reproduce and maintain health." However, to achieve this goal, the task force committee must take into consideration recent research and welfare standards adopted by international bodies to ensure the GAAMPs truly promote the well-being of animals.

[1] See Animal Welfare Institute, *The Critical Relationship Between Farm Animal Health and Welfare* (2018) (available at https://awionline.org/sites/default/files/uploads/documents/FA-AWI-Animal-Health-Welfare-Report-04022018.pdf)

Accordingly, we make our recommendations based on research published in peer-reviewed scientific and veterinary journals, position statements of relevant veterinary medical associations, and international standards promulgated by WOAH.

II. AWI's Recommendations

Recommended changes to the *Care of Farm Animals chapter text* are indicated below as either ~~strikethrough~~ (deleted) or red and underlined (added) text. The rationale for changes follows the recommendations.

a. Recommendations Applicable to All Species

Depopulation

⇒ *AVMA definition of the term depopulation refers to the rapid destruction of a population of animals in response to urgent circumstances with as much consideration given to the welfare of the animals as practicable. Farmers should plan and prepare to ensure they are able to carry out any needed depopulation with a method classified as "preferred" in the AVMA Guidelines on Depopulation. They should consult with their veterinarian to determine ~~the~~ options and guidelines for depopulation in accordance with ~~practices outlined by the American Vet Medical Association (AVMA)~~ guidelines ~~on Depopulation (American Veterinary Medical Association, 2019 Edition)~~ and state law*. (pgs. 11, 22, 29, 39, 49, 57, 63, 69, 75, 82, 92)

AWI recommends that the GAAMPS reflect the reality that a producer's preparedness for emergencies is instrumental in ensuring that necessary depopulations are carried out quickly and in the most humane manner possible.

Transport

The GAAMPS "transport" sections for all relevant species should incorporate by reference Chapter 7.3: Transport of Animals by Land of WOAH's *Terrestrial Animal Health Code*.[2] The GAAMPs should additionally make clear that the transport of nonambulatory animals is unacceptable unless it is to receive veterinary care.

Transport is a time when animals are particularly vulnerable to severe deteriorations in welfare, particularly when they face journeys longer than their physiologic condition permits. Poor welfare outcomes as a result of transport also have documented effects on meat quality, food safety, and the spread of disease.[3] To promote the health and welfare of animals during transport, GAAMPs should be consistent with WOAH standards.

b. Beef Cattle

Management Practices

[2] World Organization for Animal Health, *Ch. 7.3 Transport of Animals by Land* (available at https://www.woah.org/fileadmin/Home/eng/Health_standards/tahc/2018/en_chapitre_aw_land_transpt.htm)
[3] Greger, M., (2007) The Long Haul: Risks Associated with Livestock Transport. *Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science*, 4(5): 301-311 https://doi.org/10.1089/bsp.2007.0028

⇒ *Cattle should have ~~frequent~~ twice daily or free access to a source of clean water. When continuous access to water is not possible, individual animals should have access to water for a minimum of 30 minutes daily. Warmer weather conditions, greater amounts of feed consumed, and higher levels of animal production may increase this suggested minimum access time. When temperatures reach 80°F or higher, cattle need two to three gallons of water per 100 pounds of body weight per day.* (pg. 7)

Recommendations for the Environment

⇒ *In extreme heat, cattle ~~will be more comfortable with provision of~~ must be provided with shade (Edwards-Callaway, 2021) and free access to water. Air temperature, humidity ventilation/wind speed, and movement should be considered to ensure animal comfort and dietary alterations to reduce heat stress.* (pg. 9)

Thousands of cattle are lost every year due to inadequate management of heat stress. Given that extreme weather events like heat waves are expected to increase as climate change progresses,[4] it is more important than ever that cattle are provided with shade and free access to adequate amounts of water to prevent these entirely avoidable deaths. The University of Nebraska Great Plains Veterinary Education Center makes specific recommendations for the provision of water at temperatures over 80°F.[5] Detailed references for the proper construction and placement of shade structures are available from several sources.[6]

Health Care and Medical Procedures

⇒ *Methods of prophylaxis, diagnosis, therapy, vaccination, and disease control should follow currently accepted practices. Assistance from a veterinarian in establishment of a health care program, including provision of pain relief for procedures like castration, and for injuries, is recommended. Organic production programs should work with a veterinarian to ensure adequate protection and treatment for sick animals.* (pg. 10)

⇒ *In most cases, a valid VCPR is mandatory for acquiring and using pharmaceutical products in food producing animals i.e. veterinary feed directive and medically important antimicrobial drugs and extra-label use of pain-relieving drugs for physical alterations and other painful conditions.* (pg. 10)

We recommend that the above language be added to encourage producers to consider the use of pain relief for castration and disbudding/dehorning, which is known to be a significantly painful procedure. In fact, the American Association of Bovine Practitioners encourages providing pain management during all castration and dehorning/disbudding procedures, regardless of the animal's age.[7][8] It also important to inform producers that pain-relieving drugs can be prescribed

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[4] U.S. Environmental Protection Agency, *Climate Change Indicators: Heat Waves* (available at https://www.epa.gov/climate-indicators/climate-change-indicators-heat-waves)

[5] Great Plains Veterinary Education Center, University of Nebraska Feedlot, *Heat Stress Checklist* (available at http://gpvec.unl.edu/heatdrought/flheatsr.pdf)

[6] Grandin, T. (2016) Evaluation of the welfare of cattle housed in outdoor feedlot pens. *Veterinary and Animal Science*, 1:23-28. https://doi.org/10.1016/j.vas.2016.11.001; *See also* Great Plains Veterinary Education Center, University of Nebraska Feedlot, *Heat Stress Checklist* (available at http://gpvec.unl.edu/heatdrought/flheatsr.pdf)

[7] American Association of Bovine Practitioners, *Castration Guidelines* (2019) (available at https://www.aabp.org/Resources/AABP_Guidelines/Castration_Guidelines-2019.pdf)

[8] American Association of Bovine Practitioners, *Dehorning Guidelines* (2019) (available at https://www.aabp.org/Resources/AABP_Guidelines/Dehorning-2019.pdf)

by a veterinarian with a valid VCPR relationship, and that guidance is available regarding the use of pain relief in cattle.[9,10,11]

c. Dairy Cattle

Management Practices

⇒ *Calves should be born in a clean, dry environment and receive an adequate amount (12-15% of body weight) of high-quality colostrum ~~soon~~ within 8 hours after birth.* (pg. 17)

Several studies have shown that colostrum is most effective at providing immunity to calves if administered within 8 hours of birth.[12] Because proper colostrum administration has a significant effect on mortality and morbidity of calves, it is important that the GAAMPs include this best practice.

⇒ ~~*To ensure their health, calves are normally removed from their mothers immediately or as soon as the calf's hair coat is dry to reduce risk of exposure to infectious pathogens (Raising Dairy Replacements, 2003).*~~ (pg. 17)

⇒ ~~*Newborn calves remain healthier when housed individually in a clean, properly ventilated environment (Raising Dairy Replacements, 2003, Calf and Heifer Housing, McFarland, D. 2012, The Welfare of Veal Calves, 1994).*~~ (pg. 17)

Facilities and Equipment

⇒ ~~*Calf housing systems are varied, but it is recommended that calves be housed individually with cold housing preferred.*~~ (pg. 20)

AWI recommends that the above three sentences be removed from the GAAMPs, as they are based on out-of-date science. Although calf-cow separation may be desirable to a producer, it is not necessary for the health of calf or the cow.[13, 14, 15, 16] Research has also shown the benefits of social

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[9] American Association of Bovine Practitioners, *Approaching Pain in Cattle* (2019) (available at https://aabp.org/committees/resources/Pain_Brochure_8-15.pdf)

[10] Coetzee J. F., (2013) Assessment and management of pain associated with castration in cattle. *The Veterinary clinics of North America. Food Animal Practice*, 29(1):75–101. https://doi.org/10.1016/j.cvfa.2012.11.002

[11] U.S. Food and Drug Administration, *The Ins and Outs of Extra-Label Drug Use in Animals: A Resource for Veterinarians* (2020) (available at https://www.fda.gov/animal-veterinary/resources-you/ins-and-outs-extra-label-drug-use-animals-resource-veterinarians#animals)

[12] Robbers, L., Jorritsma, R., Nielen, M., Koets, A. (2021) A Scoping Review of On-Farm Colostrum Management Practices for Optimal Transfer of Immunity in Dairy Calves. *Frontiers in Veterinary Science: Sec. Animal Nutrition and Metabolism* 8:668639 https://doi.org/10.3389/fvets.2021.668639

[13] Beaver, A., Meagher, R. K., von Keyserlingk, M., & Weary, D. M. (2019) Invited review: A systematic review of the effects of early separation on dairy cow and calf health. *J. of Dairy Science*, 102(7):5784–5810. https://doi.org/10.3168/jds.2018-15603

[14] Meagher, R. K., Beaver, A., Weary, D. M., & von Keyserlingk, M. (2019). Invited review: A systematic review of the effects of prolonged cow-calf contact on behavior, welfare, and productivity. *J. of Dairy Science*, 102(7):5765–5783 https://doi.org/10.3168/jds.2018-16021

[15] Lorenz, I. (2021) Calf health from birth to weaning - an update. *Irish Veterinary J.* 74(5) https://doi.org/10.1186/s13620-021-00185-3

[16] Wagnera, K., Barth, K., Hillmann, E., Palme R., Futschik, A. Waiblinger, S. (2013) Mother rearing of dairy calves: Reactions to isolation and to confrontation with an unfamiliar conspecific in a new environment. *Applied Animal Behavioral Science* 147(2):43-54.

housing for calves. The biological benefits include increased intake of solid feed and body weight gain, especially during the pre-weaning phase.[17, 18, 19] Further benefits include calves exhibiting less fearfulness and greater ability to adjust and cope with novel situations.[20] Contrary to the current GAAMPs' assertion, research by the USDA that evaluated the health, behavior, and productivity of calves transitioned to group housing at different ages found "no adverse effects on health or performance and some benefits on social behavior for early (d[ay] 3) grouping of calves."[21] Concerns about cross suckling and disease transfer that usually justify individual calf housing can be mitigated by changing management practices related to colostrum administration, space allocation, nutritional management, staff training, and provision of slow-flow teat buckets or other means of suckling.[22, 23]

National and international bodies similarly recognize the benefits of group housing for calves. WOAH permits individual calf housing only for "very young calves," and recommends that "replacement stock should then be reared in groups … of similar age and physical size."[24] Additionally, the Dairy Cattle Welfare Council recommends social housing in pairs or groups from 1-4 days of age.[25]

Health Care and Medical Procedures

⇒ *Suggested husbandry procedures such as castration, dehorning, removal of extra teats, etc. should be carried out by skilled personnel. These procedures are best done when calves are ~~small~~, under 8 weeks with the provision of pain relief. Dehorning should not be routine. But, if necessary, should only be done by a veterinarian with provision of pain management. All procedures should follow the veterinarian's recommendations or accepted management practices. ~~These techniques can be done with little discomfort to calves, heifers, or cows (Seykora, 3rd Edition).~~* (pg. 20-21)

AWI recommends that the last sentence be removed, as it is patently incorrect and contrary to accepted science and industry guidance. There is no question that disbudding and dehorning

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[17] De Paula Vieira A., et al. (2010) Effects of pair versus single housing on performance and behavior of dairy calves before and after weaning from milk. *J. Dairy Sci*. 93:3079-3085.
[18] Bernal- Rigoli et al. (2012) Effects of housing and feeding systems on performance of neonatal Holstein bull calves. *J. Animal Sci*. 90:2818-2825.
[19] Babu et al. (2009) Hemato-biochemical changes, disease incidence and live weight gain in individual versus group reared calves fed on different levels of milk and skim milk. *J. Animal Sci*. 80:149-156.
[20] Costa, J.H.C. et al. (2016) Invited review: Effects of group housing of dairy calves on behavior, cognition, performance, and health. *J. Dairy Sci*. 99:2453-2467.
[21] Abdelfattah, E. M., Karousa, M. M., Lay, D. C., Jr, Marchant-Forde, J. N., & Eicher, S. D. (2018). Short communication: Effect of age at group housing on behavior, cortisol, health, and leukocyte differential counts of neonatal bull dairy calves. *J. Dairy Sci.*, 101(1):596–602. https://doi.org/10.3168/jds.2017-12632
[22] S. Godden & W. Knauer (2021) Management considerations to prevent respiratory disease in group-housed preweaned dairy calves. *American Associate of Bovine Practitioners 54th Annual Conference Proceedings* (available at https://bovine-ojs-tamu.tdl.org/bovine/index.php/AABP/article/view/8338).
[23] Salter, R. S. et al (2021) Milk- and starter-feeding strategies to reduce cross sucking in pair-housed calves in outdoor hutches. *J. Dairy Sci.* 104:6096–6112.
[24] World Organisation for Animal Health, *Ch. 7.11 Animal Welfare and Dairy Cattle Production Systems* (available at https://www.woah.org/fileadmin/Home/eng/Health_standards/tahc/2018/en_chapitre_aw_dairy_cattle.htm)
[25] Dairy Cattle Welfare Council, *Social Housing of Dairy Calves* (2021) (available at https://www.dcwcouncil.org/node/4017).

cause acute and long-lasting pain regardless of the calf's age.[26, 27] In fact, the Calf Care & Quality Assurance *Animal Care Reference Manual* published by a coalition of industry groups, including the Beef Quality Assurance (BQA), Veal Quality Assurance (VQA), and National Dairy Farmers Assuring Responsible Management (FARM) states "There is clear scientific evidence that disbudding and dehorning are painful practices, regardless of the method used. Administration of local anesthesia and systemic pain relief have been shown to minimize pain associated with disbudding and dehorning and improve animal welfare during the procedure. Even when caustic paste is used at a young age, it is still painful and pain management should be provided."[28] The FARM program, which covers 99% of milk supply in the U.S. also requires its producers to provide pain relief for disbudding and dehorning.[29]

Castration is also a procedure that cannot be done "with little discomfort" absent pain-relieving drugs, even in young animals.[30] Accepted science and industry guidance like the *Animal Care Reference Manual* recognize that "Similar to dehorning, castration is a painful event, and the use of pain relief will improve animal welfare." As noted above, the American Association of Bovine Practitioners encourages providing pain management during all castration procedures, regardless of the animal's age.[31]

d. Veal

Management Practices

⇒ *In conjunction with providing essential nutrition, access to water, and a clean, comfortable environment, timely and appropriate response to treating sickness or disease is important. For optimum health and immune defense, calves should be provided with colostrum within 8 hours of birth.* (pg. 25)

See rationale for timing of colostrum administration above.

⇒ ~~*Initially, each calf can be housed in separate pens or individual hutches. This method may help to minimize the risk of disease, avoid competition for milk and feed, allow intake to be individually monitored, and prevent cross-sucking. As a best practice, t*~~*The industry standard is to move calves to group pens of two or more by ten weeks of age but with proper management, calves can be housed in groups as young as 3 days of age. Disease transmission is complex and other farm management practices besides, ~~in addition to~~ grouping, ~~influence the incidence of these diseases~~, such as method of milk-*

[26] Kleinhenz, M. et al. (2021) Invited Review: On-farm pain management of food production animals. *Applied Animal Sci*. 37:77-87.
[27] Adcock, S., & Tucker, C. B. (2018) The effect of disbudding age on healing and pain sensitivity in dairy calves. *J Dairy Sci.* 101:10361–10373.
[28] Calf Care & Quality Assurance, *Animal Care Reference Manual: Version 1*, 93 (2021) (available at https://www.calfcareqa.org/Media/CalfCare/Docs/ccqa-manual_digital.pdf)
[29] National Dairy Farmers Assuring Responsible Management, *FARM Program: Animal Care* (available at https://nationaldairyfarm.com/dairy-farm-standards/animal-care/)
[30] Bergamasco, L., Edwards-Callaway, L. N., Bello, N. M., Mijares, S., Cull, C. A., Mosher, R. A., & Coetzee, J. F. (2021) Unmitigated Surgical Castration in Calves of Different Ages: Electroencephalographic and Neurohormonal Findings. *Animals*, *11*(6):1791. https://doi.org/10.3390/ani11061791
[31] American Association of Bovine Practitioners, *Castration Guidelines* (2019) (available at https://www.aabp.org/Resources/AABP_Guidelines/Castration_Guidelines-2019.pdf)

feeding, hygiene, ventilation, colostrum practices, diet and health monitoring, influence the incidence of these diseases. (pg. 26)

See rationale for group housing of dairy calves above.

⇒ ~~*Best management practices include:*~~ *Amendment to the Animal Industry Act 466 of 1988 mandates that adequate space ~~is~~ must be provided for calves to easily stand, stretch, lie down, turn around and groom naturally. Best management practices include: Calves have visual contact with other calves. Calves are in group pens of two or more calves, and no calf is individually penned after 10 weeks of age, unless it is for health purposes such as sickness, injury or disease. Calves should never be tethered. (Veal Quality Assurance 2018) Veal Quality Assurance* (pg. 26)

We recommend the above changes for clarification. The ability to stand, stretch, lie down, or turn around is not a best practice, it is a legal requirement. M.C.L. §287.746

e. Swine

Management Practices

⇒ *After birth, any of the following procedures may be performed on piglets by a skilled individual as a part of routine husbandry or to help reduce the risk of disease and infections: disinfection of navel, ~~clipping or grinding of needle teeth tips~~, supplementing iron by injection or orally, ~~docking of tail~~, identifying permanently, and castrating males. Management practices should be employed to reduce the need for tail docking and the clipping or grinding of needle teeth tips. Pain management for surgical procedures is recommended and veterinary guidance is needed to ensure compliance with regulations surrounding the extra-label use of pain medications.* (pg. 34)

Scientific research has unequivocally concluded that tail docking, teeth clipping, and castration cause significant acute pain to piglets.[32, 33] Tail docking and teeth clipping are painful surgeries that are performed to decrease injurious behaviors like tail-biting and facial/teat wounding, respectively. But the procedures themselves are very likely to cause chronic pain, potentially lasting until the time of slaughter, in many pigs. WOAH and the international FareWellDock research project, in which the USDA is a partner, recognize that tail-biting is often caused by management factors, such as lack of environmental enrichment, overcrowding, and nutritional deficiencies.[34] As such, WOAH requires environmental enrichment for pigs to minimize this behavior. Numerous national and international veterinary organizations recommend against routine teeth clipping and/or tail docking and urge producers to adjust management practices to

[32] Sutherland, M. A. (2015) Welfare implications of invasive piglet husbandry procedures, methods of alleviation and alternatives: a review. *New Zealand Veterinary J.*, 63(1): 52–57. https://doi.org/10.1080/00480169.2014.961990
[33] Kleinhenz, M., Viscardi, A., & Coetzee, J. (2021) Invited Review: On-farm pain management of food production animals. *Applied Animal Science*. 37: 77-87. https://doi.org/10.15232/aas.2020-02106
[34] FareWellDock. *Tail docking & biting* (available at http://farewelldock.eu/info/factsheets/tail-docking-biting/); World Organisation for Animal Health, *Ch. 7.13 Animal Welfare and Pig Production Systems* (available at https://www.oie.int/en/what-we-do/standards/codes-and-manuals/terrestrial-code-online-access/?id=169&L=1&htmfile=chapitre_aw_pigs.htm)

help achieve this goal.[35, 36, 37] However, when these procedures are performed, the AVMA recommends the provision of pain mitigation measures. The GAAMPs should encourage the use of pain mitigation available to producers with a valid VCPR.

f. Sheep and Goats

Health Care and Medical Procedures

⇒ *Husbandry procedures, such as disbudding and castrating of goats and the castrating and tail docking of sheep, should be carried out by skilled personnel, while the animals are still small, preferably during the first ~~two~~ weeks~~s~~ of life. Sheep dehorning is not recommended and should only be performed by a veterinarian where the health and welfare of the animal is impacted, e.g. horns growing into head. If lambs are to be tail docked the dock should be performed no shorter than the distal end of the caudal fold where the fold meets the tail to prevent rectal prolapse (Thomas, et al. 2003). Pain relief, as prescribed by a veterinarian, should be provided for painful procedures, including disbudding, castration, and tail docking.* (pg. 62)

AWI recommends first that the GAAMPs discourage the dehorning of sheep, in keeping with the guidance of the American Association of Small Ruminant Practitioners (AASRP).[38] Additionally, as with pigs and cattle, we recommend that pain management for painful husbandry procedures be encouraged for goats and sheep. The AASRP recommends multimodal pain management for *all* dehorning, disbudding, castration, and tail docking procedures.[39]

g. Laying Chickens

Management Practices

⇒ *Beak Trimming and Dubbing: Due to the ~~temperament~~ tendency of chickens toward feather picking, ~~fighting~~ and cannibalism under certain conditions, the beaks of domestic birds can be trimmed to remove their sharp tips. Trimming should be done by properly trained workers and should be done at prescribed times, usually prior to 10 days of age. Because beak trimming can cause acute and chronic pain, efforts should be made to control feather picking and cannibalism by providing birds enriched environments, appropriate diets, objects suitable for pecking, adequate substrate, suitable forage, and good management. More detailed guidelines on beak trimming are available in the United Egg Producers Animal Husbandry Guidelines (2016).* (pg. 66)

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[35] American Association of Swine Veterinarians, *AASV Position Statement: Tail Docking and Teeth Clipping of Swine* (2021) (available at https://www.aasv.org/aasv/position-taildock-teethclip.php)
[36] American Veterinary Medical Association, *Tail docking and teeth clipping of swine* (available at https://www.avma.org/resources-tools/avma-policies/tail-docking-and-teeth-clipping-swine)
[37] Federation of Veterinarians of Europe, *FVE & EAPHM position on preventing tail docking and tail biting* (2019) (available at https://www.fve.org/cms/wp-content/uploads/062_Final-EAPHM-FVE-position-on-pig-tail-docking.pdf)
[38] American Association of Small Ruminant Practitioners, *Goat Kid Disbudding* (2020) (available at http://www.aasrp.org/about/guidelines/debudding2020.pdf)
[39] American Association of Small Ruminant Practitioners, *Sheep Tail Docking* (2020) (available at http://www.aasrp.org/about/guidelines/taildockGuidelines.pdf; American Association of Small Ruminant Practitioners, *Castration of Sheep and Goats* (2020) (available at http://www.aasrp.org/about/guidelines/taildockGuidelines.pdf)

The incidence of feather picking—which if severe, can lead to cannibalism—is directly related to stocking density, feed provision, light intensity, temperature, and litter condition.[40] Given that these are all factors within a producer's control, AWI recommends that the GAAMPs include a suggestion for proper management practices known to reduce the incidence of pecking[41] over beak trimming.

⇒ ***Ventilation and Lighting:*** *Ventilation in the layer house should provide a healthy level of moisture, gases and temperature maintained without drafts or dead air pockets. The concentration of ammonia should not routinely exceed 20ppm.*

Ammonia concentrations greater than 20ppm for any extended period of time is associated with increased respiratory disease, inflammation of the trachea and eyes, and has been shown to affect productivity.[42, 43, 44]

⇒ ~~Public Act No. 117 of October 12, 2009 will require that by April 1, 2020 all egg laying hens be housed so that they are able to fully extend their limbs and turn around freely. Hens may be housed in a variety of housing arrangements such as aviary, single tier systems or colony systems that are large enough to do so with a minimum of 1 square foot per hen.~~ *M.C.L. 287.746 requires cage free housing as defined in that statute by December 31, 2024.* (pg. 67-68)

As currently written, the above space requirements are incorrect. The current law, MCL §287.746, requires cage free housing (which necessarily excludes "colony systems") that may not provide "less than the amount of usable floor space per hen as provided in the housing guidelines for cage-free production contained in 'Animal Husbandry Guidelines for U.S. Egg-Laying Flocks', 2017 edition, published by United Egg Producers."

UEP guidelines require a minimum of 1.0 square feet per hen in multi-tiered aviary systems, and 1.5 square feet per hen in systems that do not provide hens with access to vertical space.[45]

h. Broilers, Turkeys and Gamebirds

Management Practices

⇒ *Due to the tendency of turkeys to inflict bodily damage upon each other with their toenails in confinement situations, one or more toenails (generally the inside and middle toes on both feet)* ~~*may be removed*~~ *have historically been removed. However, recent research indicates*

[40] Kaukonen, E. & Valros, A. (2019) Feather Pecking and Cannibalism in Non-Beak-Trimmed Laying Hen Flocks—Farmers' Perspectives, *Animals (Basel)* 9(2):43. https://doi.org/10.3390/ani9020043
[41] Glatz, P. & Underwood, G. (2020) Current methods and techniques of beak trimming laying hens, welfare issues and alternative approaches. *Animal Production Science* 61(19):968-989. https://doi.org/10.1071/AN19673
[42] Li, D. et al. (2020) Effects of Cold Stress and Ammonia Concentration on Productive Performance and Egg Quality Traits of Laying Hens, *Animals (Basel)* 10(12): 2252 https://doi.org/10.3390/ani10122252
[43] Wathes, C.M., (1998) Aerial emissions from poultry production. *World's Poultry Science J.* 54(3):241-251 https://doi.org/10.1079/WPS19980016
[44] Kilic, I. & Yaslioglu, E., (2014) Ammonia and Carbon Dioxide Concentrations in a Layer House. *Asian-Australasian J. of Animal Sciences* 27(8):1211-1218 https://doi.org/10.5713/ajas.2014.14099
[45] United Egg Producers, *Animal Husbandry Guidelines for U.S. Egg-Laying Flocks*, 20 (2017) (available at https://uepcertified.com/wp-content/uploads/2021/08/CF-UEP-Guidelines_17-3.pdf)

that selection for changes in body size and conformation in recent decades may have altered the utility of toe trimming. Toe trimming has been found to have negative impacts on performance and welfare and no effect on carcass quality. If performed, toe trimming (or declawing) should be done by properly trained workers ~~and is generally done~~ at the hatchery. (pg. 72)

The GAAMPs should reflect the recent research that disputes the necessity of toe trimming and highlights the negative impact on turkey welfare.[46, 47]

Recommendations for the Environment

⇒ *Ventilation and lighting: Ventilation in the grower house shall be such that a healthy, acceptable level of moisture, gases, dust, and temperature is maintained without drafts or dead air pockets (UEP, 2016). The concentration of ammonia should not routinely exceed 20ppm. The ventilation system should be adjusted daily, or more often, as the environmental conditions dictate.* (pg. 73)

See rationale for maximum ammonia concentration above, as well as additional references.[48, 49]

AWI thanks MDARD for the opportunity to comment on the draft GAAMPs. We hope that you will give our recommendations serious consideration. If you require additional information or clarification, please contact us by phone at (202) 446-2153, or by email at adrienne@awionline.org.

Sincerely,

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[46] Fournier, J., Schwean-Lardner, K., Knezacek, T. D., Gomis, S., & Classen, H. L. (2014) The effect of toe trimming on production characteristics of heavy turkey toms. *Poultry Science*, 93(9):2370–2374. https://doi.org/10.3382/ps.2014-04044

[47] Fournier, J., Schwean-Lardner, K., Knezacek, T. D., Gomis, S., & Classen, H. L. (2015) The effect of toe trimming on behavior, mobility, toe length and other indicators of welfare in tom turkeys. *Poultry Science*, 94(7): 1446–1453. https://doi.org/10.3382/ps/pev112

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