

Animal Care: Healthier Animals & Increased Production

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Animal Health and Welfare Programs: Driven by Science and Evidence

Driven by Science? *WHY?*

- Animal care plays a pivotal and critical role in every way that humans interact with animals
 - Food production, companionship, utility purposes, education, or research purposes
 - Research Animals¹
 - Creation of a legal framework in many geographical areas
 - Creation of professional organizations continuously develop recommendations for laboratory animal science
 - Creation / Review / Oversight of animal care and use programs
 - Essential: identify, define, control, and improve all care aspects
 - Promote: reproducibility, validity, and translatability of animal-based research outcomes

Driven by Science? *WHY?*

- Like research animals, similar approaches must be applied to animal care regimes in livestock production



- Scientific findings are abundant and evolving
 - Meant to be an active part of our social lives and lives of our animals
 - Cannot be sequestered to the lab or academic community

Driven by Science? *WHY?*

Approach: Science / data-driven strategies

Intersection of Science ↔ Practice

- Science grounds us when animal welfare perceptions differ from one region to another, between one culture and another^{1,2}
- Science discovers and validates the value that can provide benefits to both the producer and animals
- Science is a critical part of the responsibility of humans raising domesticated animals
 - Ethical and moral obligations
- Science can help us better understand “real world” factors affecting complex welfare problems³

¹ Escobar, L.S., W.H. Jara, Q.N.H. Nizam, and B. Plavsic. 2018. The perspective of the World Organization for Animal Health, In: Advances in agricultural animal welfare. Ed: J. Mench. Woodhead publishing, Duxford, UK. Pp. 169-172.

² OIE. 2020. World Organization for Animal Health, The OIE global animal welfare strategy. Available at: <https://www.oie.int/en/animal-welfare/oie-standards-and-international-trade/>.

³ Mench, J. 2018. Science in the real world – Benefits for researchers and farmers, In: Advances in agricultural animal welfare. Ed: J. Mench. Woodhead publishing, Duxford, UK. Pp. 111-128.

Driven by Science? *HOW?*

- How do we translate science and evidence into practice at the farm level to benefit both humans and animals?
 - Setting standards or guidelines
 - Global, regional, local levels
 - Example:
 - OIE (World Organization for Animal Health)

Driven by Science? *HOW?*

- OIE (World Organization for Animal Health)^{1,2}
 - Founded 1924: Responsible for setting intergovernmental animal health standards, includes animal welfare standards
 - Strong global network of scientific expertise and regularly brings together subject-matter experts
 - OIE’s work in developing international standards “must have a **solid scientific basis**, must involve wide **engagement of all stakeholders**, must ensure a **holistic view of the systems** within which animals are kept and used by humans, and must aim to have a **tangible impact on animal welfare**”.

¹ Escobar, L.S., W.H. Jara, Q.N.H. Nizam, and B. Plavsic. 2018. The perspective of the World Organization for Animal Health, In: Advances in agricultural animal welfare. Ed: J. Mench. Woodhead publishing, Duxford, UK. Pp. 169-172.

² OIE. 2020. World Organization for Animal Health, The OIE global animal welfare strategy. Available at: <https://www.oie.int/en/animal-welfare/oie-standards-and-international-trade/>.



INTERNATIONAL STANDARDS ON ANIMAL WELFARE

ADOPTED STANDARDS FOR TERRESTRIAL ANIMALS

TRANSPORT

- By sea
- By land
- By air

USE OF ANIMALS IN RESEARCH AND EDUCATION

PRODUCTION SYSTEMS

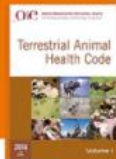
- Beef cattle
- Broiler chickens
- Dairy cattle
- Pigs

WORKING EQUIDS

SLAUGHTER/KILLING

- For human consumption
- For disease control purposes
- Reptiles killed for their meat and skins

STRAY DOG POPULATION CONTROL



INTRODUCTION TO RECOMMENDATIONS

WORK IN PROGRESS

PRODUCTION SYSTEMS

Laying hens

ADOPTED STANDARDS FOR FARMED FISH

KILLING

- For human consumption
- For disease control purposes

TRANSPORT

- By sea
- By land
- By air



INTRODUCTION TO RECOMMENDATIONS

GUIDELINES



DISASTER MANAGEMENT AND RISK REDUCTION

In relation to animal health and welfare and veterinary public health

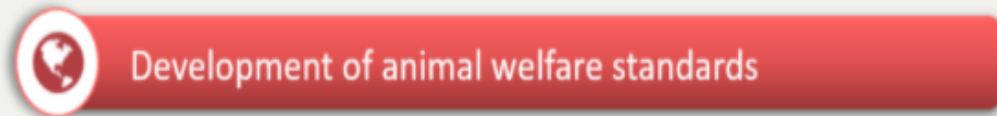
The OIE Global Animal Welfare Strategy

Perceptions of animal welfare differ from one region to another and between one culture and another, as do and the ways animals contribute to human society. It is for this reason that the OIE's work in developing international standards must have a solid scientific basis, must involve wide engagement of all stakeholders, must ensure a holistic view of the systems within which animals are kept and used by humans, and must aim to have a tangible impact on animal welfare.

In May 2017, all OIE Member Countries adopted the first Global Animal Welfare Strategy, which had been presented at the [4th Global Conference on Animal Welfare](#), which took place in Guadalajara (Mexico) in December 2016.

The strategy includes the following four pillars :

Click on the different images to read more about the Global animal welfare strategy and access to the four pillars.



Driven by Science? *HOW?*

- How do we translate science and evidence into practice at the farm level to benefit both humans and animals?
 - Example: Outreach and training / educational tools
 - Goal: Implementation of science into practice



NMPF. 2020. National Milk Producers Federation. Farmers Assuring Responsible Management (FARM) Program, Animal Care. Available at: <https://nationaldairyfarm.com/dairy-farm-standards/animal-care/>

NPB. 2019. National Pork Board. Pork Quality Assurance (PQA) Plus. Available at: <https://lms.pork.org/Tools/View/pqa-plus/program-materials>

UEP. 2017. United egg producers, Animal husbandry guidelines. Available at: https://uepcertified.com/wp-content/uploads/2019/09/CF-UEP-Guidelines_17-3.pdf

NAMI. 2019. North American Meat Institute, Recommended animal handling guidelines and audit guide. Available at: animalhandling.org

Driven by Science? *HOW?*

- How do we translate science and evidence into practice at the farm level to benefit both humans and animals?
 - Example: Benchmarking, oversight, and verification
 - Databases or survey participation
 - Evaluation / self-assessment tools
 - Audits to verify compliance

Value of Effective, Science and Data-Based Animal Care Regimes

Value to Producers

- Animal Welfare Science^{1,2}
 - Field has emerged into a multidisciplinary and interdisciplinary science, encompassing sciences as:
 - Behavior
 - Physiology
 - Pathology
 - Health
 - Immunology
 - Endocrinology
 - Neurobiology
 - Genetics / Genomics
 - Scientific work ranges from theoretical → applied

Value to Producers¹

- Alongside the growth of animal welfare science, see:
 - ↑ regulation in some countries and regions
 - ↑ animal welfare certification and labeling programs
 - ↑ retailer specifications for animal products with animal welfare requirements
- As regulations, standards and expectations evolve, the backbone has generally been scientific research
 - For farmers: Applying animal welfare research results can increasingly be seen to be “good business”
 - Good animal care is good business

Value to Producers

Healthy animals/positive welfare → More productive

- Best management practices:
 - Different light intensities → behavior, health, stress and growth in broilers¹
- Complexities of human-animal interactions:
 - Caretaker attitudes/behavior → fear/productivity in cows, chickens, and pigs²
- Good care → **Sustainable** production³
 - OIE: Global losses from animal disease > 20%⁴
- Collectively meets demands of modern consumers, and for farmers, it translates into direct economic benefits.

¹ Patel, S.J., A.S. Patel, M.D. Patel, and J.H. Patel. 2016. Significance of Light in Poultry Production: A Review. *Adv. Life Sci.* 5(4):1154-1160.

² Coleman, G.J., and P.H., Hemsworth. 2014. Training to improve stockperson beliefs and behaviour towards livestock enhances welfare and productivity. *Rev. sci. tech. Off. int. Epiz.* 33(1):131-137.

³ Scholtens, M.C.Th., I.J.M. de Boer, B. Gremmenc, and C. Lohors. 2013. Livestock Farming with Care: towards sustainable production of animal-source food. *NJAS Wageningen Journal of Life Sciences* 66:3-5.

⁴ OIE. 2015. https://www.oie.int/fileadmin/Home/eng/Media_Center/docs/pdf/Key_Documents/ANIMAL-HEALTH-EN-FINAL.pdf

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Value to Producers

Livestock diseases → Economic consequences

- Farm's economic viability:
 - ↑ mortality, ↓ productivity, ↓ fertility, ↑ abortion/stillbirth, ↓ quality of meat/milk/eggs, ↑ Vet/Treatment costs^{1,2}
 - Loss in trade, ↓ market value, food insecurity¹
- Disease outbreaks:
 - Animal depopulation, trade halts, disease eradication efforts, human health implications, agricultural economy stability³
- **Achieving excellent health status should be an aspiration of every livestock farming business**

¹ Barratt, A.S., K.M., Rich, J.I., Eze, T. Porphyre, G.J., Gunn, and A.W., Stott. 2019. Framework for Estimating Indirect Costs in Animal Health Using Time Series Analysis. *Front. Vet. Sci.* 6:1-18.

² Cervantes, H.M. 2015. Antibiotic-free poultry production: Is it sustainable? *Journal of Applied Poultry Research* 24:91-97.

³ USDA NIFA. 2020. United States Department of Agriculture, National Institute of Food and Agriculture. Animal health. Available at: USDA <https://nifa.usda.gov/topic/animal-health>.

Value to Producers¹

- Evolving animal handling and stunning practices
 - Using scientifically-based handling and stunning practices, coupled with strategic monitoring, the meat packing industry has seen significant improvements
- Example: North American Meat Institute (NAMI)
 - 1991: Dr. Grandin authored handling guidelines
 - 1996: Dr. Grandin conducted audit of plants
 - 1997: Dr. Grandin developed audit tool for plants
 - Audit program embraced by restaurants and retailers
 - Plants began routine self audits
 - Monitor objective criteria over time → improvements
 - Formation of welfare committee and yearly conference

Why “Continuous Improvement” Should be a Shared Goal for All

Shared Goals

- We often hear the phrase “Continuous Improvement” relative to animal care and welfare. Why?
 - Improvements in animal care are **continuous processes**, not fixed end points
 - Good animal care requires **new approaches** throughout each animal’s life in
 - Effective disease prevention
 - Veterinary treatment
 - Appropriate management
 - Humane handling
 - Nutrition
 - Protection

Shared Goals

- Achieving improved animal care regimes and better lives for animals will require
 - Capacity building for animal caretakers
 - Collaboration among stakeholders
- This is why continuous improvement must be a shared goal for **all**

Conclusions

Concluding Thoughts

- To be sustainably viable, responsible and ethical in how livestock are cared for:
 - Must embrace science and data-driven evidence to make informed decisions and set/refine animal care standards
 - Science and data-driven approaches should also be used to help implement those regimes and monitor their effectiveness/progress
 - Animal agriculture must be able to transparently share what they do and why with both scientific and ethical justifications
 - Balanced approach to connect with social value and expectations

“Good Animal Care is Good Business”

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