



Ecological destruction of anthropogenic origin as a factor of biological depletion

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Abstract

The article presents the results of a medical and philosophical analysis of contemporary issues in veterinary ecology. The study examines human interaction with domestic and farm animals through the prism of preventive and therapeutic activities. The scientific novelty of the work lies in introducing the concept of “ecological destruction of anthropogenic origin” into scientific discourse and substantiating it as an independent category for the analysis of pathological conditions in animals. The analysis indicates that a considerable range of veterinary pathologies at the morphofunctional and genetic levels may be associated with civilization-related and other anthropogenic factors. The study shows that artificially induced productivity traits may conflict with the natural biological limits of adaptation. In particular, examples of systemic depletion of biological resources in highly productive livestock and poultry are considered, including hypocalcemia in dairy cows and osteoporosis in laying hens. It is emphasized that the intensification of production and the pursuit of maximum productivity may act as additional stressors, contributing to the premature depletion of biological resources. Special attention is paid to destructive changes associated with the breeding of companion animals, in which selection based primarily on aesthetic criteria may lead to physiological abnormalities. Brachycephaly in dogs is considered as an example of a selectively fixed morphological trait associated with shortening of the respiratory tract and difficulties in natural parturition due to a mismatch between fetal size and the anatomical characteristics of the birth canal. Genetically determined chondrodystrophy in dachshunds is highlighted as an example of a selection-related musculoskeletal disorder. The need for a differentiated approach to the understanding of animal health is substantiated by considering the health of productive animals as a functional state that ensures long-term maintenance of productivity while preserving adequate physiological adaptation. The main categories of anthropogenic ecological destruction are identified as selection-related, technological, nutritional, and environmental. The use of genetic resources from wild forms, particularly argali and zebu, to improve the biological stability and adaptability of domesticated breeds is also analyzed. The practical significance of the study lies in providing a conceptual basis for improving veterinary diagnostic and preventive approaches through systematic consideration of anthropogenic and technological factors that may contribute to the biological depletion of animals. The findings also provide a methodological basis for optimizing breeding strategies aimed at achieving a more balanced relationship between productivity and animal health.

Keywords: veterinary ecology; ecological destruction of anthropogenic origin; biological depletion; animal productivity; breeding pathologies.

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1. Introduction

Ecology is a relatively young science within the biological disciplines. The term itself was introduced into scientific circulation by the German evolutionary biologist and philosopher Ernst Haeckel in 1866. At the same time, despite the undoubted achievements of ecological science over the past century, a final, generally accepted definition of its essence and conceptual foundations has yet to be formulated. Active discussions continue in specialized scientific publications and monographs about how ecology should be

interpreted and which areas of knowledge should be included within its scientific competence.

One of the key reasons for such disagreements is the intensive involvement of various biological, natural, and even human sciences in environmental issues, which has broadened their scope and led to differing interpretations of their goals and objectives. These discussions become particularly acute within the framework of interdisciplinary research and in the context of applied scientific activity. At the same time, in the mass consciousness, which often dominates in the scientific environment of a non-specialized profile, ecol-

ogy is often reduced to a simplified understanding of science, identified mainly with environmental protection.

The authors do not claim to form a fundamentally new vision of ecology as a science. The further evolution of its conceptual and categorical apparatus and its clear structuring will likely occur gradually, in the process of the institutionalization of individual areas and the strengthening of their applied significance. Such a trend has already been observed in recent decades, in particular in cases where environmental organizations begin to identify themselves as sectoral environmental institutes.

The purpose of this study is to provide a medical and philosophical understanding of veterinary ecology, in particular, an analysis of the nature of human interaction with domestic and farm animals in the context of preventive and therapeutic activities. Within this framework, veterinary ecology is an interdisciplinary field that integrates biological, medical, and philosophical perspectives to achieve a comprehensive understanding of the impacts of anthropogenic factors on animal health (Fraser, 2008) and to develop effective strategies for their preservation and restoration.

The scientific novelty of the study lies in the introduction of the concept of “ecological destruction of anthropogenic origin” into the veterinary and ecological discourse, substantiating it as an independent category of analysis of pathological conditions of animals, as well as in the formation of an approach to a differentiated understanding of health in productive and domestic animals (Fraser, 2008).

2. Materials and methods

The study was conducted as an interdisciplinary theoretical and analytical investigation integrating approaches from veterinary medicine, veterinary ecology, animal physiology and breeding. The methodological basis of the study consisted of a critical analysis and conceptual synthesis of published scientific data concerning the effects of anthropogenic factors on the health, adaptive capacity, productivity, and biological stability of domestic and farm animals.

Scientific publications addressing the consequences of intensive selection, high productivity, technological housing conditions, feeding practices, environmental stressors, and breed-associated morphological and functional abnormalities were analyzed. Particular attention was paid to studies describing metabolic disorders in highly productive livestock, skeletal disorders in poultry, breed-associated pathologies in companion animals, and changes in disease resistance associated with genetic selection and hybridization.

The analyzed information was systematized according to the principal mechanisms and sources of anthropogenic influence on animals. Based on this approach, the identified factors were classified into selection-related, technological, nutritional, and environmental categories. Comparative analysis was used to assess the relationship between economically or aesthetically desirable traits and their potential adverse effects on physiological adaptation, health, and long-term biological stability.

A systems-based approach was applied to interpret the interaction between genotype, phenotype, production traits, husbandry conditions, and environmental factors. Methods of analysis, synthesis, comparison, generalization, and conceptual modelling were used to identify common patterns of anthropogenic influence and to formulate the concept of

“ecological destruction of anthropogenic origin” as a distinct category for describing morphological, physiological, genetic, and behavioral alterations in animals caused directly or indirectly by human activities.

Published examples involving cattle, pigs, poultry, dogs, cats, sheep, zebu-derived cattle populations, and other domestic and farm animals were used to illustrate the proposed conceptual framework. Particular attention was paid to productivity-associated disorders, selection-related anatomical and physiological abnormalities, feeding and housing conditions, environmental stressors, and the use of wild genetic resources to improve adaptability and biological resistance. The interpretation focused on the balance between economically or aesthetically desirable traits and the preservation of natural adaptive mechanisms, animal health, and biological homeostasis.

3. Results and discussion

The prerequisite for conducting our research was the obvious realization that a significant number of veterinary pathologies, which manifest themselves both at the morpho-functional level (in particular, in productivity indicators) and at the genetic level (within breeds and population groups), can be considered as a consequence of the influence of civilization factors on animals exploited by humans (Mucignat et al., 2026). At the same time, there is no doubt about the feedback loop – the influence of the biological state of animals on human health and well-being, and in a broader context, on the functioning of available biogeocenoses in general. Thus, we have reason to state that a significant range of diseases is registered in animals, etiologically directly or indirectly related to economic and other human activities (Von Ancken & de Paula Coelho, 2022). At the same time, a detailed, step-by-step study of pathogenesis, as well as typology of the causes and factors that determine the development of biological destructions, is a necessary prerequisite for identifying the patterns of formation of pathological processes (Muñoz-Prieto et al., 2021). This, in turn, provides a basis for targeted influence on biological systems and their management in a specific direction. The relevance of the use of such manipulative approaches in veterinary medicine, as well as in clinical practice in general, is beyond doubt, since they constitute an integral component of the formation of a doctor's clinical thinking. The latter aims to expand the specialist's opportunities to influence processes in the animal body that are identified as pathological, undesirable, and requiring timely and justified correction (Wang et al., 2026).

This is primarily about identifying pathological conditions and establishing their root causes, since anthropogenic impacts on animals are multidimensional, ambiguous, and often accompanied by the development of destructive changes (Steinbrecher et al., 2026). At the same time, biological processes in the animal body, which from a human perspective are perceived as positive or beneficial, can actually constitute a significant deviation from the physiological norm when considered outside the context of productive or aesthetic characteristics.

In particular, the pig's ability to rapidly increase live weight to meet indicators, which is considered a desirable feature from an economic point of view, conflicts with the physiological capabilities of the individual organs and sys-

tems of the same organism (Ippolito et al., 2025). Such imbalances indicate that artificially stimulated productivity parameters are not always consistent with the natural biological limits of adaptation (Santos Ricalde & Lean, 2002).

It is unlikely that, in fattening animals whose diet contains concentrated feeds with growth stimulants, preservatives, attractants, or antibiotics, biochemical processes and reproductive functions will remain at the same level as in breeding livestock, where the requirements for feed quality and feeding technology are much higher. Similarly, selection work in cattle breeding aimed at increasing milk productivity is associated with an increased risk of mammary gland pathologies and related diseases. In particular, it is well known that hypocalcemia is statistically more often recorded in high-yielding, genetically valuable cows (Mulligan et al., 2006; Oltenacu & Broom, 2010).

Similar patterns are observed in poultry, particularly in highly productive crossbreeds of laying hens, where intensive egg production is accompanied by osteoporosis, reduced bone strength, and increased fracture frequency (Zhang et al., 2026). This once again confirms that artificially stimulated productivity can be accompanied by systemic depletion of the body's biological resources (Souza et al., 2026).

In this context, the concept of “productivity” loses its unambiguously positive meaning. Increased productivity, which humans traditionally view as an undeniable benefit, can actually act as an additional stressor on the animal's body, leading to premature depletion of its biological resources. Such processes are accompanied by a complex of anatomical and physiological changes that should be interpreted as manifestations of environmental destruction caused by anthropogenic influences (Rauw et al., 1998).

A separate scientific analysis is required to consider such phenomena in the context of breed formation processes, since, in this case, destructive changes no longer acquire an individual character but a systemic one, transforming into taxonomically determined and hereditarily fixed features of significant groups of organisms. This trend is especially pronounced during the breeding of new breeds of unproductive animals, where the determining criteria for selection are not biological expediency, but the correspondence of appearance and behavioral characteristics to human requirements and preferences (Danchuk et al., 2020).

A good example is a breed of dogs whose morphological features complicate natural physiological processes. In particular, the combination of narrow birth canals (as a breed characteristic) with a disproportionately large, almost spherical head of the fetus creates significant obstacles to the normal course of labor. The situation is further complicated by breed-specific behavioral phlegm, which reduces the severity of instincts associated with childbirth. Such breeds are also characterized by a higher incidence of ophthalmological, orthopedic, and allergic conditions, leading to frequent consultations with veterinary specialists (Horňáková et al., 2023). In connection with the above, there is an objective need to clearly distinguish between the general concept of “health” as a universal biological state and the specific concept of “health of productive and domestic animals,” which should be considered as a special state of the organism, ensuring the possibility of its maximum long-term and effective exploitation. The same category should include species and breeds of animals that, as a result of breeding

activities, have acquired features and properties that meet human productive, aesthetic, or other civilizational needs, but that are not optimal from the standpoint of the species' biology. Since such changes in the animal body result from anthropogenic influences and are part of the etiological structure of many pathological conditions, it is advisable to interpret them as ecological destruction of anthropogenic origin. In this study, ecological destruction of anthropogenic origin is proposed to be understood as a set of morphological, physiological, genetic, and behavioral changes in the animal body caused by the direct or indirect influence of human economic, breeding, and technological activities, which lead to a violation of natural mechanisms of adaptation and biological balance (Somé et al., 2026).

The history of veterinary medicine and biotechnology includes examples of overcoming problems in domestic animal breeding by drawing on the genetic resources of wild forms. Thus, in the practice of sheep breeding, the crossing of females of fine-fleeced breeds of sheep (in particular, Novokavkaz Merinos, Prekos, and Rambouillet) with wild argali rams was used. As a result, the Kazakh argali Merino breed was created, which, while retaining high economically valuable indicators of early maturity and wool quality, acquired the ability to be kept year-round in high-mountain pastures. This was a fundamentally new adaptive property absent from the original cultural parental forms.

However, the lack of sufficient studies on this breed's susceptibility to diseases characteristic of high-mountain ecosystems (considering climatic factors, specific feeding conditions, and detention conditions) prevents us from fully assessing its adaptive potential. However, the logic of adaptation processes that enable the exploitation of animals under harsher conditions suggests an increase in the threshold of their biological resistance to adverse environmental factors.

A similar illustration can be found in the English bulldog, a breed developed in the second half of the 19th century, which exhibits a complex set of pronounced anatomical and physiological changes. These changes not only differ significantly from those of their representatives in the original ancestral breeds but also limit the possibility of their continued existence without constant human intervention. In particular, the exterior characteristic of this breed is formed due to pronounced brachycephaly, which is accompanied by shortening of the respiratory tract. As a result, even minor changes in the quality of inhaled air – increased dustiness, fluctuations in temperature or humidity – can cause inflammatory processes in the upper respiratory tract, provoke laryngeal edema and pose a threat to the animal's life (Garçia et al., 2026).

In addition, females of this breed often have limited ability to give birth naturally, which is associated with a mismatch between fetal size and the anatomical features of the birth canal. As a result, a significant proportion of births require surgical intervention, which once again underscores the depth of anthropogenic interference in natural biological mechanisms. Thus, the examples given convincingly indicate that selection-induced changes aimed at satisfying human needs are often accompanied by the formation of persistent morphofunctional deviations, which should be considered as specific manifestations of environmental destruction.

Similar phenomena are observed in other ornamental breeds, particularly in dachshunds, which are characterized by genetically determined chondrodystrophy, increasing the risk of intervertebral hernias. In this case, the selectively fixed morphological feature is directly related to the development of musculoskeletal pathology (Sullivan et al., 2025).

To increase resistance to several infectious and non-infectious diseases, so-called zebu-like breeds of cattle were developed, in particular Santa Gertrudis, Afrikander, Short-horn, Brangus, and others. Hybridization of zebu with local African and Asian breeds, as well as with highly productive European breeds, proved to be an effective breeding strategy. In particular, a southern beef breed of cattle was created in Askania-Nova (Miyunga et al., 2026).

The resulting hybrid forms were characterized by significantly greater adaptability to detention conditions; in particular, they were less sensitive to the feed base and technological conditions than imported parent breeds. They demonstrated increased survival of young animals, particularly calves, and improved quality indicators for dairy products. Thus, the use of zebu genetic resources contributed to the formation of populations more resistant to adverse environmental factors.

At the same time, the trend toward the so-called “controlled return” to the species' original genetic basis remains more of an exception than an established practice. Modern civilizational demands, the intensification of production, and market mechanisms stimulate selection processes aimed at the formation of breeds and intrabreed types with the highest possible productivity indicators, often at the cost of deteriorating animal health. Despite the debatability of this issue, the need for systematic veterinary control and correction of morphofunctional changes in the animal body is undeniable and relevant (Yang et al., 2026).

Practical experience confirms the above provisions. In particular, on farms in the Dnipropetrovsk region, a tendency towards increased cases of anal atresia in piglets has been repeatedly observed on farms where high-degree and high-frequency inbreeding was used. In addition, massive manifestations of ketosis in bulls were recorded during fattening using by-products of the food industry, in particular beet pulp (Zebeli et al., 2015). Recently, at scientific and practical conferences devoted to the problems of pig breeding, the issue of the increased susceptibility of high-bred Danish pigs, which are leaders in terms of multiparity and early maturity, to diseases, in particular hemophilia, has been increasingly raised.

Thus, the examples given once again emphasize that the selection-induced increase in productivity and the intensification of animal husbandry are accompanied by the emergence of a complex of pathological conditions with a clearly expressed anthropogenic origin that require systematic scientific understanding and practical veterinary support (Vargas-González et al., 2025).

Therefore, the problem of purposeful formation by man of a new type of animals – with increased productivity or new economically useful properties – cannot be considered outside the category of health. Presumably, pathological conditions (or their absence) characteristic of cultural breeds should be interpreted as the reverse side of humanity's selection achievements. In this regard, it is reasonable to assume that a differentiated approach to the prevention and treatment of pathologies associated with the species characteris-

tics of domestic and agricultural animals should also extend to individual breeds, as well as to groups of animals that differ in technological maintenance and areas of productivity.

Therefore, any systematic, scientifically balanced approach to studying the destructive anthropogenic impact on the bodies of domesticated animals must be based on careful consideration of all morphofunctional changes arising from domestication or from animals' involvement in production activities. At the same time, breeding farm animals and keeping domestic species create conditions for their existence that are often atypical of the natural environment, thereby necessitating a revision of the very concept of “health” in this context. In particular, representatives of northern dog breeds (Laika) or hairless breeds of cats and dogs in the climatic conditions of the Dnipropetrovsk region find themselves in an environment that does not align with their evolutionarily developed adaptive mechanisms, leading to changes in their physiological state. Keeping animals in an environment that is “conditionally comfortable” for humans can contribute to the development of pathological conditions associated with hypo- or hyperthermia, hypoxia, increased carbon dioxide content in inhaled air, exposure to electromagnetic radiation, noise pollution, changes in light conditions, and other exogenous factors.

The conditions of intensive industrial animal husbandry, in particular the restriction of motor activity in pig and poultry farming, can also be considered as a factor in the formation of ecological destruction. A decrease in physical activity leads to metabolic disorders, obesity, and pathologies of the extremities and cardiovascular system, indicating that these conditions are inconsistent with the body's natural adaptive mechanisms.

In other words, within the framework of civilizational anthropocentrism, animals exploited by humans are primarily considered a means to achieving individual or social good. Under such conditions, preserving animal health in a veterinary specialist's activities does not always serve as an unconditional, self-sufficient goal, unlike the practice of anthropiatric medicine, which focuses on humans. At this stage of the study, we deliberately refrain from analyzing this issue in moral and ethical terms, while recognizing their undeniable significance.

The main task is to develop a pragmatic approach to understanding the category of health and its variability in animals used by humans, enabling us to clearly outline the boundaries and nature of veterinary interventions in relation to specific production and environmental conditions. In this context, it seems appropriate to distinguish between the concepts of “health” and “permissible or desirable physiological states” in animals involved in economic activity. After all, in human society, there are many types of professional activity in which the premature depletion of the body's functional resources is permissible and socially acceptable (Shrestha et al., 2026).

The examples given allow us to identify the main groups of ecological destruction of anthropogenic origin, in particular selection-related, technological, feed, and environmental, which operate through various mechanisms that disrupt the biological balance of the organism.

The practical significance of the results lies in the potential to improve modern approaches to veterinary diagnostics by systematically accounting for anthropogenic and techno-

logical factors that influence the development of pathological conditions in domestic and farm animals. The obtained provisions open the way for the development of preventive strategies to minimize the negative impact of these factors on biological systems. In addition, they provide a methodological basis for optimizing breeding policy, balancing productivity and animal health. Implementing the proposed approaches will increase the efficiency of veterinary control and foster more sustainable models of animal husbandry in the face of modern environmental challenges.

4. Conclusions

The study of anthropogenic environmental destruction affecting animals exploited by humans should be based on a preliminary definition of distinct health categories. This involves the distinction, on the one hand, between biological health as the natural state of the organism, and, on the other hand, health as a functional state that ensures the most efficient production of products of proper quality or the implementation of specified economic or aesthetic characteristics. In this case, it is necessary to take into account the specifics of the species and breed, the intended use (productive or decorative), and the peculiarities of animal breeding and keeping technologies.

The nosological structure and pathogenetic mechanisms of diseases resulting from the nature of animal exploitation require a separate, in-depth study. Such analysis should be carried out both in the context of selection processes and breed formation, and taking into account the degree of animal involvement in specific technological production cycles. In this regard, there is a need to clearly define the boundaries and content of veterinary activities: in which cases the consequences of anthropogenic destruction are completely eliminable, and in which they are an integral part of animal exploitation but require constant veterinary control and correction.

An important direction for further research is to establish the nature and extent of the impact of livestock products from animals raised under environmentally destructive conditions on human health. In addition, the potential threat to humans posed by animals living freely in urban environments needs to be assessed, taking into account potential epizootic and environmental risks.

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Conflict of interest

The authors declare no conflict of interest.

References

- Danchuk, O. V., Broshkov, M. M., Karpovskiy, V. I., Bobrytska, O. M., Tsvilikhovskiy, M. I., Postoienko, V. O., Ushkalov, V. O., & Zhukorskiy, O. M. (2020). Types of higher nervous activity in pigs: Behavioral characteristics and consequences of technological stress. *Neurophysiology*, 52(5), 365–372. [\[Crossref\]](#) [\[Google Scholar\]](#)
- Fraser, D. (2008). Understanding animal welfare. *Acta Veterinaria Scandinavica*, 50(Suppl. 1), S1. [\[Crossref\]](#) [\[Google Scholar\]](#)
- García, M. G., Talbot, A., & Melis, S. (2026). Intra-anaesthetic asystole in a bulldog during positioning for brachycephalic obstructive airway syndrome surgery. *Veterinary Anaesthesia and Analgesia*, 53(2), 101193. [\[Crossref\]](#) [\[Google Scholar\]](#)
- Hornáková, L., Pettersen, G. R., Hornák, S., Vargová, N., & Valenčáková, A. (2023). Radiological pelvimetry in relation to dystocia in bulldogs. *Folia Veterinaria*, 67(3), 42–49. [\[Crossref\]](#) [\[Google Scholar\]](#)
- Ippolito, D., Colombino, E., Zoppi, S., Cucco, I., Perotti, M., Caruso, C., ... & Capucchio, M. T. (2025). Anatomic-pathological investigations in pigs of the Piedmont region (Northern Italy) for infectious diseases surveillance in an antimicrobial resistance perspective. *Veterinary Microbiology*, 305, 110470. [\[Crossref\]](#) [\[Google Scholar\]](#)
- Miyunga, A., Karani, B. E., Njeru, R., Nangekhe, G., Cook, E. A. J., de Bronsvort, B. M. C., Wragg, D. W., Prendergast, J., & Toye, P. G. (2026). Genotyping of an intensively monitored cohort of Bos indicus cattle in western Kenya for the FAF1B allele associated with resistance to East Coast Fever (Theileria parva infection) using real-time PCR. *Veterinary Parasitology: Regional Studies and Reports*, 69, 101439. [\[Crossref\]](#) [\[Google Scholar\]](#)
- Mucignat, G., Stefanutti, D., Pauletto, M., Pietropoli, E., Lopparelli, R. M., Pegolo, S., Schiavone, A., & Da Dalt, L. (2026). Transcriptome changes in neutered overweight dogs undergoing a weight loss program with or without spirulina (Arthrospira platensis) supplementation. *BMC Veterinary Research*, 22, 135. [\[Crossref\]](#) [\[Google Scholar\]](#)
- Mulligan, F. J., O'Grady, L., Rice, D. A., & Doherty, M. L. (2006). A herd health approach to dairy cow nutrition and production diseases of the transition cow. *Animal Reproduction Science*, 96(3-4), 240–249. [\[Crossref\]](#) [\[Google Scholar\]](#)
- Muñoz-Prieto, A., Rubić, I., Horvatić, A., Rafaj, R. B., Cerón, J. J., Tvarijonavičiute, A., & Mrljak, V. (2021). Evaluation of Changes in Metabolites of Saliva in Canine Obesity Using a Targeted Metabolomic Approach. *Animals*, 11(9), 2501. [\[Crossref\]](#) [\[Google Scholar\]](#)
- Oltenacu, P. A., & Broom, D. M. (2010). The impact of genetic selection for increased milk yield on the welfare of dairy cows. *Animal welfare*, 19(S1), 39–49. [\[Crossref\]](#) [\[Google Scholar\]](#)
- Rauw, W. M., Kanis, E., Noordhuizen-Stassen, E. N., & Grommers, F. J. (1998). Undesirable side effects of selection for high production efficiency in farm animals: A review. *Livestock Production Science*, 56(1), 15–33. [\[Crossref\]](#) [\[Google Scholar\]](#)
- Santos Ricalde, R. H., & Lean, I. J. (2002). Effect of feed intake during pregnancy on productive performance and grazing behaviour of primiparous sows kept in an outdoor system under tropical conditions. *Livestock Production Science*, 77(1), 13–21. [\[Crossref\]](#) [\[Google Scholar\]](#)
- Shrestha, P., Xie, J., Delir Haghighi, P., Byrne, M. L., Griffiths, S., & McNaney, R. (2026). Thigh gaps and filtered snaps: a qualitative study exploring opportunities to mitigate social media harm through content moderation for people with eating disorders. *Journal of Eating Disorders*, 14, 61. [\[Crossref\]](#) [\[Google Scholar\]](#)

- Somé, G. F., Séré, M., Chantal, I., Somda, M. B., Dayo, G. K., Bengaly, Z., Belem, A. M. G., Sallé, G., Berthier, D., & Thévenon, S. (2026). Major differences in the dynamics of haematological and biochemical variables between trypanotolerant and susceptible cattle during *Trypanosoma congolense* infection. *BMC Veterinary Research*, 22, 72.
[Crossref] [Google Scholar]
- Souza, D. C., Silva, I. C. C., Rabello, C. B. V., Souza, L. F. A., & Silva, W. A. (2026). Prolonged production cycles in commercial laying hens and their bone consequences. *Tropical Animal Health and Production*, 58, 83.
[Crossref] [Google Scholar]
- Steinbrecher, F., Price, E. C., Wascher, C. A., Clark, F. E., & Dunn, J. C. (2026). Disentangling Anthropogenic Stimuli: Visual and Acoustic Components Differentially Impact Captive Pied Tamarin Behaviour. *Applied Animal Behaviour Science*, 298, 106926.
[Crossref] [Google Scholar]
- Sullivan, S., Redden, D., Hardeng, F., Sundqvist, M., & Kutzler, M. (2025). Relationship between radiographic assessment of disc calcification and FGF4L2 genotype in Dachshunds. *Journal of Veterinary Internal Medicine*, 39(2), 17281.
[Crossref] [Google Scholar]
- Vargas-González, A., Barajas, M., & Pérez-Sánchez, T. (2025). Bacterial Isolates Associated with Mortality Events in Brown Trout (*Salmo trutta*) Restocking Farms in Spain: A Descriptive Field Study. *Animals*, 15(17), 2532.
[Crossref] [Google Scholar]
- Von Ancken, A., & de Paula Coelho, C. (2022). Veterinary biotopology – An overview and new possibilities. *International Journal of High Dilution Research*, 21(2), 30–30.
[Crossref] [Google Scholar]
- Wang, X., Li, M., Du, Y., Yang, H., Ran, J., & Zhang, H. (2026). Building a new ecosystem for digital-intelligent teaching of veterinary infectious diseases in southwest Chinese universities: theoretical framework and practical pathways. *Frontiers in veterinary science*, 13, 1746110.
[Crossref] [Google Scholar]
- Yang, X., Tai, Y., Wu, X., Han, D., Cai, G., Xu, Z., ... & Deng, X. (2026). Distinct Gut Microbiota Signatures in White Leghorn and Silky Fowl Are Associated with Divergent Laying Performance. *Poultry Science*, 105(5), 106605.
[Crossref] [Google Scholar]
- Zebeli, Q., Ghareeb, K., Humer, E., Metzler-Zebeli, B. U., & Besenfelder, U. (2015). Nutrition, rumen health and inflammation in the transition period and their role on overall health and fertility in dairy cows. *Research in Veterinary Science*, 103, 126–136.
[Crossref] [Google Scholar]
- Zhang, J., Zhang, J., Zhang, H., Guo, L., Zhang, H., Liu, H., Li, J., Bao, J., & Zhang, R. (2026). Keel bone fractures are associated with anxiety like behavioural responses in laying hens housed individually in furnished cages. *Applied Animal Behaviour Science*, 296, 106903.
[Crossref] [Google Scholar]