

## ***Scientific, Ethical, and Economic Aspects of Farm Animal Welfare***

Large-scale, intensive systems of agricultural animal production predominate animal agriculture in the United States.

- The United States has historically had minimal agricultural animal welfare legislation beyond the 28 Hour Law and the Humane Methods of Slaughter Act, which, respectively, mandate humane conditions for transportation of livestock entering the food chain and rendering them insensible prior to killing.
- There is an urgent need to evaluate the implications of alternative housing and production practices on the welfare of agricultural animals.
- It is imperative to understand which systems and practices may optimize economic efficiencies in conjunction with ensuring positive animal welfare outcomes and public support of animal agriculture.

Animal welfare is multifaceted and involves consideration not only of animals' biological and psychological capacity to adjust to their living conditions, but also of human factors such as customs, norms, and values.

- Animal welfare science is now a well-developed field of inquiry, and there is abundant multidisciplinary literature on various aspects of behavior, health, physiology, nutrition, neurobiology, and genetics relevant to animal welfare.
- The ability to apply scientific findings about farm animal welfare may be constrained when there are conflicting values and norms related to animal use and treatment among the various stakeholders.



The economics of animal welfare remains a relatively nascent area of academic research.

- Additional research on the economics of animal welfare is needed to understand the extent to which rising prices resulting from the higher costs of new animal production systems will curb consumer purchases of livestock products.
- The precise reason for the divergence in shopping and voting outcomes is not well understood.
- Improved understanding of consumer heterogeneity may help recognize distributional effects of policies as well as niche marketing opportunities.

In the United States, there are few laws that directly address on-farm practices related to animal care and welfare.

- Production management practices and housing systems for farm animals have been a frequent target of legislative initiatives.
- It can be argued that the lack of a unified transparent process for establishing standards of care for commercial animal agriculture has precipitated the irregular patchwork of state-by-state regulations and competitive voluntary regulatory programs under which the industry currently operates.

Despite being a relatively new field, there is now a significant body of animal welfare research.

- Continuous confinement housing that results in ongoing behavioral restriction of animals has become one of the more controversial aspects of livestock production in the United States.
- Painful practices are routinely performed on farm animals for a variety of reasons, including to prevent them from injuring one another or human caretakers and for production and food quality purposes such as preventing boar taint in pork or increasing marbling of beef.

In the past 60 years, intensive selection for increased meat, egg, milk, and wool production has resulted in large increases in productivity and efficiency, which will likely lead to an increased number of side effects, including animal welfare issues.

- Selection for increased robustness can include selection for traits associated with fitness, including survival rates, leg structural soundness, and longevity.
- A second alternative is selection to change the behavior of animals to be better adapted to the production system.
- Group selection or individual selection for performance (e.g., egg production or growth) in family groups automatically includes an animal's social effects on the performance of others in the groups, including survival.

Adequately addressing the challenges posed by increasing public concern about animal welfare requires new knowledge and approaches, greater inclusiveness, and improved communication between scientists, policymakers, and the public.

- Increase capacity for scientific research on animal welfare in the United States.
- Increase focus on transdisciplinary aspects of animal welfare research.
- Develop coordinated mechanisms for policy setting.
- Effective communication about animal welfare is necessary to advance public understanding and improve application of the related science.

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