



The Role of Veterinary Medicine in Global Food Security

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Letter to Editor

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Dear Editor

Global food security is closely connected to animal health, food safety, and sustainable food production. Livestock, poultry, and other food-producing animals provide important sources of nutrition and income for millions of people worldwide. However, infectious diseases, antimicrobial resistance, climate change, and emerging pathogens can negatively affect animal productivity and the availability of safe food. Veterinary medicine therefore has an important role in supporting global food security.

Healthy animals are essential for maintaining efficient food-production systems. Diseases can reduce growth, reproduction, milk production, egg production, and meat production, while serious outbreaks may cause considerable economic losses. Veterinary professionals contribute to disease prevention through vaccination, early diagnosis, appropriate treatment, health monitoring, and effective biosecurity practices. These measures can help maintain animal productivity and reduce preventable losses.

Veterinary professionals also contribute significantly to **food safety**. Several pathogens can be transmitted from animals to humans through contaminated meat, milk, eggs, and other animal products. Veterinary surveillance and inspection can help identify and control these hazards throughout the food-production chain. Responsible monitoring of veterinary medicines and drug residues is also important for

ensuring that animal-derived foods are safe for consumers.

Antimicrobial resistance (AMR) is another important challenge to animal health and food security. Inappropriate antimicrobial use can contribute to the development and spread of resistant microorganisms. Veterinarians can promote responsible antimicrobial use through accurate diagnosis, appropriate drug selection, correct dosage, and suitable treatment duration. Vaccination, improved hygiene, nutrition, and biosecurity can further reduce the need for antimicrobial treatment.

Climate change presents additional challenges for livestock health and food production. Changes in temperature, rainfall, ecosystems, and vector distribution may influence the occurrence and spread of animal diseases. Strong veterinary surveillance can help identify changing disease patterns and support timely intervention.

Addressing these challenges requires collaboration among veterinarians, farmers, physicians, microbiologists, food-safety professionals, environmental scientists, and policymakers. A **One Health approach** can strengthen communication and coordination between animal, human, and environmental health sectors. Integrating veterinary medicine into food-security strategies can help protect animal health, improve food safety, reduce production losses, and support sustainable food systems.