MAJOR LIVESTOCK DISEASES IN ALBANIA: CURRENT STATUS, CHALLENGES AND ONE HEALTH PERSPECTIVES

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Abstract
Livestock is an important sector for Albania's food security, rural livelihoods, and agricultural economy. Still, infectious diseases, along with nutritional, environmental, and management challenges, threaten animal health, productivity, and the sector's sustainability. Livestock disease control in Albania must address persistent zoonoses alongside rapidly changing regional threats. Brucellosis, bovine tuberculosis, and anthrax remain major concerns, while recent introductions of sheep and goat pox, African swine fever, and peste des petits ruminants show the need for sustained preparedness. Production diseases, particularly mastitis, connect animal welfare and milk quality with antimicrobial stewardship. This manuscript review synthesizes recently published studies and available official reports. It identifies surveillance denominators, traceability, laboratory quality, and coordinated response as central priorities. A practical One Health program should link animal and human investigations, food safety and environmental management, and be supported by veterinary education, farmer participation, and measurable outcomes.
Keywords: Albania; livestock diseases; zoonoses; surveillance; One Health.

INTRODUCTION

Albania's livestock sector supports food production, rural livelihoods, and agricultural value chains, supplying milk, meat, and eggs while generating income and employment through farming, processing, transport, and marketing. According to INSTAT, the national livestock population in 2025 comprised approximately 275,000 cattle, 1.166 million sheep, 570,000 goats, 75,000 pigs and 6.953 million poultry (INSTAT, 2026). The substantial ruminant population highlights the importance of dairy and meat production, while sheep and goat farming enables grazing resources in mountainous areas to contribute to rural economies. Protecting livestock health is therefore essential for maintaining productivity, animal welfare and a reliable supply of animal-source foods. These population figures provide a national reference for planning veterinary services, estimating resource requirements and identifying priorities for disease prevention. However, they cannot replace the surveillance denominators needed to interpret disease occurrence, including the numbers of holdings and animals examined, their geographical distribution and the reasons for testing. Reliable assessment also requires information on diagnostic methods, vaccination status, and the population represented by each investigation. Changes in reported case numbers may reflect changes in testing intensity, reporting or geographical coverage, as well as changes in disease transmission. The consequences of livestock diseases extend beyond clinically affected animals. Reproductive losses, reduced milk yield and growth, mortality, treatment costs and premature culling undermine farm profitability, while outbreaks can disrupt animal movements, trade and food supply chains. Zoonotic infections additionally threaten farmers, veterinarians, slaughterhouse workers and consumers, linking livestock health directly to public health. Disease-control priorities must therefore consider both zoonotic risk and threats to food security, alongside animal welfare and the responsible use of antimicrobials. Within this One Health perspective, the evidence presented below distinguishes historical surveys, recent detections through control programs, and officially reported outbreaks, recognizing their different purposes and limitations rather than treating them as interchangeable estimates of current national prevalence. By analyzing major livestock diseases and existing surveillance challenges in Albania, this narrative review underscores One Health priorities essential for supporting public health, food security, and rural agricultural development. Selection criteria prioritized peer-reviewed articles and official reports from international and national veterinary authorities that address disease prevalence, surveillance systems, and control measures. Consequently, while providing a comprehensive assessment, certain studies may have been omitted due to the narrative nature of this review.

PERSISTENT ZOONOSES

Anthrax, brucellosis, and bovine tuberculosis remain important zoonotic diseases in Albania, affecting animal health, livestock productivity, and public health. Dedicated national control programs are ongoing and provide a foundation for reducing their burden. Sustained progress requires effective surveillance, timely diagnosis, consistent implementation of disease-specific control measures and active farmer participation. Stronger coordination between veterinary and public-health services within a One Health framework is essential to reduce transmission and protect communities. A national retrospective study covering 2021–2025 reported 149 affected animals on 97 farms and continuing endemic activity, particularly in southern areas (Koleci *et al.*, 2026). Environmental persistence and recurring exposure make anthrax a clear One Health priority. The study identified shortcomings in enforcement, disinfection, restrictions on contaminated grazing areas, and designated carcass disposal arrangements. Control should combine risk-based livestock vaccination with rapid notification, safe carcass management, and joint assessment of human exposure. Lower reported within-farm case numbers alone will not establish elimination of environmental risk. A 2026 review of program data from 2021–2025 reported 189 seropositive brucellosis cases and bovine tuberculosis detections involving 89 animals on 52 farms (Koleci *et al.*, 2026). These are surveillance detections, not national prevalence estimates. Earlier research in a defined beef-cattle population found 55% herd seropositivity and isolated *Brucella abortus*; the result should not be extrapolated to all Albanian cattle today (Fero *et al.*, 2020). The combined evidence supports sustained, risk-based control rather than claims of eradication. Priorities include traceable vaccination records, appropriate interpretation of post-vaccination serology, investigation of reproductive disease, movement control, and timely management of infected herds. Tuberculosis surveillance should connect herd testing, slaughterhouse findings, and confirmatory laboratory investigations. Occupational exposure and milk safety warrant coordinated veterinary and public health follow-up (Koleci *et al., 2026; Fero et al.*, 2020).

PRODUCTION DISEASE

Production diseases, including gastrointestinal and respiratory disorders in farm animals and bovine mastitis, reduce livestock productivity, compromise animal welfare and increase treatment costs. Gastrointestinal diseases can cause diarrhea, poor nutrient absorption and reduced growth, particularly in young animals, while respiratory infections contribute to mortality, impaired performance and prolonged recovery. Bovine mastitis reduces milk yield and quality and increases losses through discarded milk and premature culling. Prevention requires adequate nutrition, colostrum management, housing, ventilation, hygiene and biosecurity, supported by timely diagnosis and herd-health monitoring. These conditions also provide an important focus for antimicrobial stewardship, as effective prevention and evidence-based treatment can reduce unnecessary antibiotic use and help address antimicrobial resistance. A study of 178 Holstein cows on nine Albanian dairy farms linked subclinical mastitis with changes in milk composition and conductivity (Maçi *et al.,* 2025). Its results demonstrate a production-health problem within the sampled farms, rather than a national prevalence estimate. Herd programs should combine milking hygiene, udder-health monitoring, and diagnosis before treatment. Such programs provide a practical setting to evaluate antimicrobial use, treatment outcomes, and withdrawal-period compliance.

EPIDEMIOLOGY AND SURVEILLANCE OF TRANSBOUNDARY ANIMAL DISEASES IN ALBANIA

Geographical exposure renders Albania’s livestock sector particularly susceptible to transboundary animal diseases. Over the past decade, the country has experienced multiple epizootic waves; this manuscript briefly reviews the most significant outbreaks.

African Swine Fever (ASF). Following Albania's index outbreak in domestic swine in 2024, no further outbreaks were notified in 2025 (EFSA, 2025). However, non-reporting does not confirm disease freedom. Mitigation requires passive mortality surveillance, heightened farm biosecurity, movement traceability, and integrated wildlife monitoring. ASF presents no zoonotic risk but remains a severe economic threat to swine production.

Peste des Petits Ruminants (PPR). The index outbreak of PPR was confirmed in the Shkodër region in June 2025, ultimately affecting 446 animals out of 2,218 susceptible small ruminants across confirmed foci (149 mortalities, 2,069 depopulated) (MARD, 2026). Regional reporting indicates successful containment via contingency plan implementation, quarantine controls, active surveillance, and stamping-out protocols (WOAH, 2026). These figures reflect holding-level impact rather than national population prevalence.

Lumpy Skin Disease (LSD) and Other Viral Pathogens. Following the 2016 Balkan LSD epidemic, regional mass vaccination eliminated clinical cases by 2018 (EFSA, 2019); nonetheless, continuous preparedness is necessary to maintain disease-free status. Sheep and goat pox remain endemic threats in the region, while avian influenza mandates cross-sectoral poultry-wildlife surveillance and occupational exposure risk assessments (WOAH).

Avian Influenza (AI). Avian influenza, caused by type A influenza viruses, primarily infects avian species but possesses zoonotic potential. Albania's positioning along major migratory bird flyways heightens the risk of viral introduction and dissemination via wild-bird vectors, direct contact, or contaminated fomites. Highly pathogenic avian influenza (HPAI) strains induce severe epizootics marked by elevated poultry mortality and trade disruption. Recurrent outbreaks in commercial holdings necessitate integrated wild-bird and poultry surveillance, rapid diagnostic confirmation, strict biosecurity measures, controlled movements, and One Health occupational protection protocols.

Bluetongue Virus (BTV). Bluetongue is an arboviral disease of domestic and wild ruminants transmitted primarily by *Culicoides* biting midges. Severe disease—characterized by pyrexia, facial edema, oral mucosal lesions, and lameness—predominantly affects sheep, whereas cattle and goats frequently act as subclinical reservoirs. Epizootics cause significant mortality, reduced productivity, and trade restrictions, as exemplified by the BTV-4 Mediterranean outbreak (Koleci et al., 2017). Mitigation requires integrated management: active and passive surveillance, vector monitoring, movement controls, and serotype-specific vaccination. Although non-zoonotic, its dynamics highlight the critical link between climate, vector ecology, and animal health.

CHALLENGES FOR SUSTAINABLE CONTROL

The European Commission's Albania 2025 Report identifies incomplete veterinary-sector reform, insufficient central and local staffing, and weaknesses in passive and active surveillance. It also calls for stronger animal registration and traceability, laboratory validation and accreditation, official controls, and animal-by-product management. Chapter 12 provides the principal accession framework, while Chapter 28 addresses public health and records no progress on antimicrobial resistance during the reporting period (EC, 2025). These findings identify service capacities that require investment; legislative adoption alone does not demonstrate effective implementation. Surveillance quality is a central challenge. A decline in detected cases may reflect reduced testing as well as improved control. Annual reports should therefore include animals and holdings tested, sampling purpose, diagnostic algorithms, vaccination status and geographic coverage. Comparison across years should account for changes in ascertainment. Farmer participation also requires credible communication and practical support. Compensation arrangements, access to veterinary advice and timely feedback should be designed to encourage notification, especially when control measures impose immediate economic losses.

ONE HEALTH PRIORITIES

A national One Health program should establish routine links between veterinary services, the Food Safety and Veterinary Institute, the Institute of Public Health, clinical laboratories, food-control authorities, environmental services and universities. Shared investigation procedures should connect animal events with possible human exposures, supported by compatible case definitions and secure data exchange. The Quadripartite One Health Joint Plan of Action, extended through 2029, provides an international framework for this collaboration (WHO, 2026). Operational priorities should be disease-specific. For brucellosis and tuberculosis, herd investigation should be linked to occupational exposure assessment and milk-safety controls. For anthrax, outbreak mapping should incorporate contaminated sites and responsibilities for carcass management. For transboundary diseases, regional alerts, joint exercises and clearly assigned response roles should be maintained between outbreaks. These are proposed implementation priorities, not claims that such integrated systems already operate nationally. AMR surveillance should connect prescribing and antimicrobial-use records with susceptibility testing of relevant animal and food-chain bacteria. Mastitis provides a feasible starting point: farms can measure disease occurrence, sample before treatment when appropriate, review prescribing, and evaluate prevention interventions. Resistance proportions should be reported with sampling methods and denominators; selected clinical isolates cannot represent national prevalence. Environmental assessment of waste and effluent should complement animal and food sampling. The Faculty of Veterinary Medicine can support these priorities through supervised field investigations, laboratory training and joint research. Undergraduate cases should connect diagnosis with biosecurity and responsible prescribing. MSc projects can analyze surveillance quality or antimicrobial use; PhD projects can evaluate interventions. Results should update teaching materials and clinical guidance. Assess program performance through notification delays, laboratory turnaround, vaccination coverage, traceability completeness, and documented follow-up of exposed people.

CONCLUSION

In summary, Albania's progress in animal disease control provides a foundation for strengthening veterinary services through a One Health approach.

- Veterinary services have managed transboundary outbreaks and reduced zoonotic and endemic disease burdens.
- Sustained progress requires stronger surveillance, diagnostics, traceability, biosecurity and rapid response.
- Farmer engagement and regional cooperation are essential for prevention and preparedness.
- Integrating education, research and disease control protects livestock productivity, food safety and public health while supporting alignment with European standards.

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