ACADEMIC INN INTERNATIONAL

ISSN NO : 2523-1189

Journal of AGRICULTURAL AND RURAL RESEARCH

open access

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To cite the article: *Md. Fahim Murshed[1], Jashim Uddin[1], Md. Emtiaj Alam[1], Rashida Khaton[1], Mst. Ishrat Zerin Moni[1], Afia Khatun[1], Mohammad Mahbubur Rahman[1], and Aurangazeb Kabir[1*] (2026), ANALYSIS OF DISEASE-RELATED MORTALITY TRENDS IN BROILER AND LAYER POULTRY FARMS IN PABA UPAZILA, RAJSHAHI, Journal of Agricultural and Rural Research, 9(1): 40-49.*

Link to this article:
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Article QR

Journal QR

JOURNAL OF AGRICULTURAL AND RURAL RESEARCH VOL. 9, ISSUE 1, PP. 40-49.
http://aiipub.com/journal-of-agricultural-and-rural-research-jarr/

ANALYSIS OF DISEASE-RELATED MORTALITY TRENDS IN BROILER AND LAYER POULTRY FARMS IN PABA UPAZILA, RAJSHAHI

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ARTICLE INFO
Article Type: Research
Received: 25 February 2026.
Accepted: 30 June 2026.
Published: 20 July 2026.

Keywords:
Poultry, Mortality, Broiler, Layer, Newcastle Disease, Gumboro, Paba, Rajshahi.

ABSTRACT
Poultry farming is an important source of animal protein, employment and farm income in Bangladesh, but disease and management-related mortality continue to reduce farm productivity. The present study was conducted to assess and compare mortality patterns in commercial layer and broiler farms in Paba Upazila, Rajshahi. Data were collected from ten commercial farms, comprising five layer and five broiler farms, during July to September 2025. Information on flock size, mortality, clinical signs, post-mortem findings, vaccination, housing and environmental conditions was obtained through farmer interviews, farm records and field observations. The total number of birds included was 17,800, out of which 12,300 were layers and 5,500 were broilers. Mortality recorded was 17.32% and 13.64% in layers and broilers respectively. The difference was statistically significant ($z = 6.16$, $p < 0.001$) and risk ratio was 1.27 (95% CI: 1.18-1.37). Newcastle disease was the leading recorded cause of death in layers (29.6%), followed by Gumboro (19.2%) and heat stress (15.0%). In broilers, litchi-heart disease accounted for the largest proportion of deaths (26.7%), followed by Gumboro (22.7%), lack of ventilation (18.7%) and high stocking density (14.7%). For causes present in both production systems, Newcastle disease mortality was markedly higher in layers than broilers (5.12% vs. 0.91%; RR = 5.63, 95% CI: 4.23–7.50; $p < 0.001$), whereas Gumboro mortality did not differ significantly (3.33% vs. 3.09%; $p = 0.400$). The findings indicate that mortality patterns differed between production systems and that disease prevention should be combined with better environmental and management practices. Strengthening vaccination, biosecurity, ventilation and heat-stress control may help reduce avoidable losses in poultry farms in the study area.