DOI: 10.22055/ivj.2025.527037.2804

Investigation of Risk Factors Affecting Mortality, Weight Loss During Transportation, and Slaughterhouse Condemnation in Broiler Chickens: A Case Study in an Industrial Slaughterhouse in Shiraz County

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Received: 02.06.2025 Accepted: 22.10.2025

Abstract

This cross-sectional study aimed to identify the risk factors associated with in-transit mortality, live weight loss during transportation, and slaughterhouse ccarcass ondemnations in broiler chickens processed at an industrial slaughterhouse in Shiraz, Iran. Data were collected over a one-year period from 103 flocks (123,345 birds). The results showed that poultry rearing during the cold season was significantly associated with a higher prevalence of footpad dermatitis (62.3%) compared with the warm season (45.3%); whereas slaughterhouse condemnations due to severe emaciation were more frequent in the warm season (0.11% vs 0.08%). Heavier broilers at slaughter exhibited greater weight loss during transport, a higher incidence of shoulder dislocation, and higher condemnation rates due to ascites. Longer duration from loading to slaughter (time spent in crates) was positively correlated with higher weight loss and physical injuries including shoulder dislocation, bruising, and skin lesions. In contrast, crate stocking density and crop fill status showed limited effects on weight loss, in-transit mortality, or physical damage to the birds. These findings highlight the importance of season-specific management practices, producing broiler chickens with lower slaughter weight, optimizing transport stocking density, and minimizing pre-slaughter holding time to reduce losses and improve animal welfare. The results provide practical guidance for the poultry industry to mitigate economic losses and enhance final product quality.

Key words: Broiler chickens, Transportation mortality, Slaughterhouse condemnation, Risk factors, Live weight loss

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