



Study of Feedstuff Weight Loss During Storage

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Abstract

The efficient storage of animal feed is a critical factor in ensuring the quality and economic viability of animal nutrition. In Iran, corn, barley, and soybean meal are the three most widely used feeds in animal nutrition, making their proper storage essential for maintaining their nutritional value and minimizing financial losses. However, during storage in warehouses, weight loss occurs due to factors such as the type of storage method (e.g., silo, niches, or open warehouses) and the duration of storage. This article is important as it addresses the significant issue of feedstuff weight loss during storage, which directly impacts both the cost and quality of animal nutrition. Estimating weight loss during storage is crucial for feedstuff owners to better understand and mitigate potential losses. This study aims to estimate the weight loss of corn, barley, and soybean meal based on the type of storage, duration of storage, and the climatic conditions of the storage region. Data on weight loss were provided by the State Livestock Affairs Logistics, covering the period from 2015 to 2023. Statistical analysis revealed that the type of storage and storage duration significantly impacted the weight loss of corn and barley ($P < 0.01$). Among different storage types, silo storage resulted in the highest weight loss, while open storage resulted in the least loss. For soybean meal, both climate and storage duration had a significant effect on weight loss ($P < 0.01$). In terms of storage duration, weight loss was greatest when the storage period exceeded 12 months for all three feed types. Additionally, the highest weight loss of soybean meal occurred in hot and dry climates, followed by hot and humid climates, while the lowest loss was observed in rainy regions. To optimize storage and minimize economic losses, it is recommended that farmers and warehouse managers select suitable storage facilities that align with local climatic conditions, ensuring appropriate storage durations. These findings have practical implications for improving warehouse management practices and reducing the costs associated with feedstuff weight loss.

Keywords: Feedstuffs, Weight loss, Storage