



Reduction Strategies for Food Loss and Waste in South African Supply Chains: A Systematic Literature Review

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Abstract

Food loss and waste remain significant issues in South African agricultural supply chains, contributing to food insecurity and environmental degradation. A comprehensive search strategy was employed using databases such as PubMed and Scopus. The quality of included studies was assessed using the Downs and Black checklist. The analysis revealed a median reduction rate of 25% in food loss across different stages, with strategies focusing on improved storage technologies and supply chain transparency being most effective. While substantial progress has been made, more targeted interventions are needed to achieve further reductions. Investment in research and development should focus on localized solutions, particularly for perishable commodities like fruits and vegetables. The empirical specification follows $Y = \beta_{0+\beta}^{-1} p X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *African agriculture, supply chain management, food security, waste minimization, sustainability practices, circular economy principles, integrated approach*

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