



Sustainable Pest and Disease Management Strategies in Maize Production in Tanzania: A Protocol Study

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Abstract

Maize is a crucial staple crop in Tanzania, contributing to food security and economic development. However, pests and diseases significantly reduce yields and quality, necessitating sustainable management strategies. The study will employ a mixed-methods approach involving surveys, interviews, and field observations. Data analysis will include statistical modelling of yield responses to SPDM interventions. A preliminary survey identified key pests (e.g., maize stalk borers) affecting up to 40% of maize fields in the region, while diseases such as Fusarium wilt pose significant threats. The protocol will contribute a systematic framework for sustainable pest and disease management, offering insights into effective interventions tailored to local conditions. Implement SPDM strategies should be prioritised through farmer training programmes and public-private partnerships. Policy makers are encouraged to support research and extension services focused on maize production sustainability. The empirical specification follows $Y = \beta_{0+\beta} p X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: African, Geographic, Epidemiology, Integrated Pest Management, Sustainable Development, Crop Protection, Agroecology

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