



Sustainable Pest and Disease Management Practices in Maize Production Across Tanzania From 2003 to 2003

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Abstract

Sustainable pest and disease management in maize production is crucial for maintaining yields and reducing chemical inputs in Tanzanian agriculture. A longitudinal study design was employed with farmer surveys conducted annually over three years. Data were collected through structured interviews and analysed using a mixed-effects logistic regression model. Farmers adopting IPDM reported an average 15% increase in maize yields compared to non-IPDM farmers, though variability existed across different regions. The study underscores the importance of farmer education and supportive policy for widespread adoption of sustainable pest management practices. Investment in training programmes and extension services is recommended to facilitate the transition from conventional to sustainable farming practices. The empirical specification follows $Y = \beta_{0+\beta} p X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Tanzania, Maize Production, Pest Management, Disease Management, Sustainable Agriculture, Longitudinal Study, Agricultural Practices*

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