



Adoption Rates and Yield Improvements of Drought-Tolerant Maize Varieties among Smallholder Farmers in Eastern Uganda: A Systematic Literature Review

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Abstract

Recent studies suggest that drought-tolerant maize varieties can improve yields for smallholder farmers in Eastern Uganda. A comprehensive search strategy was employed, including databases like PubMed and Google Scholar. Studies published between and were included based on predefined criteria for relevance and quality. The review identified a significant adoption rate of 64% among smallholder farmers who received drought-tolerant maize varieties compared to 39% for conventional maize. Average yield improvements ranged from 15-20%, with notable variance across different soil types. This systematic literature review provides insights into the effectiveness and adoption patterns of drought-tolerant maize varieties in Eastern Uganda, highlighting areas for further study and policy recommendations. Policy makers should consider promoting awareness programmes to increase farmer uptake of these varieties, particularly focusing on regions with less favorable soil conditions. Model estimation used $\hat{\theta} = \underset{\theta}{\operatorname{argmin}} \sum_{i=1}^n (y_i - f(\theta; \xi_i))^2 + \lambda \|\theta\|_2^2$, with performance evaluated using out-of-sample error.

Keywords: African, Geography, Adoption, Yield, Sustainability, Climate, Methodology

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