African Small Animal Veterinary Practice

Assessing Hybrid Rice Seed Adoption Rates and Yields in Coastal Senegal Villages with Climate Resilient Varieties: An Agronomic Evaluation

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Abstract

In coastal Senegal villages, climate change poses significant challenges to rice cultivation, necessitating the adoption of more resilient varieties. A mixed-method approach was employed, including surveys for seed adoption rates and yield data collection using statistical models to estimate mean yield differences. Hybrid rice varieties showed a 20% higher yield (mean difference of 150 kg/ha) in villages with climate-resilient traits compared to non-adoption areas, with confidence intervals indicating robust stability of results across different conditions. The climate-resilient hybrid rice varieties significantly improved yields and adoption rates in coastal Senegal, warranting their broader implementation for sustainable agriculture. Communities should be encouraged to adopt these seeds through farmer training programmes and financial incentives to enhance food security and resilience against future climatic changes. The empirical specification follows $Y = \vec{\beta_{0+\beta}} \, p \, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Coastal, Senegalese, climate-resilient, hybridization, agronomy, adaptation, yield assessment*

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