



Tropentag, October 7-9, 2008, Hohenheim

“Competition for Resources in a Changing World:
New Drive for Rural Development”

Farmers' Perception, Profitability and Factors Influencing the Adoption of Improved Maize Varieties in the Guinea Savannahs of Nigeria

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Abstract

The study links farmers' perception, profitability and a Tobit analysis to examine the adoption related to a new technology, improved maize varieties (IMV) developed by International Institute for Tropical Agriculture (IITA), Institute of Agricultural Research (IAR) and National Agricultural Research and Extension Service (NARES) and recently released in the savannah zones of Nigeria. The paper analyses farmers' perception, profitability of IMV and factors influencing the adoption of IMV in the savannahs of Borno State, Nigeria. A multistage sampling design was used to select 232 maize farmers, subsequently interviewed by means of structured questionnaire. Descriptive statistics, budgetary technique and a Tobit model were used as analytical tools. Farmers' perception shows that early maturity and high grain yields of IMV were the positive perceptions that influenced 66.4% adoption among the respondent farmers. The gross margin results indicated that IMV was highly profitable with a mean gross margin of N65,289 (€384) per hectare as against local maize variety with a mean gross margin of N34,691 (€204) per hectare. The Tobit model result shows that statistically significant ($\rho = 0.05$) factors that influence the adoption of IMV, with the expected signs include: farm size, extension contact, access to credit, fertiliser, farming experience and household size. Policy that enhances farmers' access to credit will facilitate adoption through increased access to seeds of IMV and purchase of complementary fertiliser input will enhance the intensity and the rate of adoption. Also, policy, which provides adequately trained and equipped extension workers for disseminating technology information, has the potential to increase the intensity and rate of adoption of the improved maize technology.

Keywords: Farmers' perception, gross margin, improved varieties, key words: adoption, maize, Nigeria, profitability, Tobit model