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Food Crops Production and Processing Technologies and the Perceived Impacts on Food Security in Nigeria

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Abstract

Low level of adoption of modern agricultural technologies in Nigeria has been observed as a factor responsible for the declining food productivity and food security. The main objective of this study is to analyse the level of awareness and adoption of production, processing and storage technologies of crops (cassava, maize, rice and tomato), and its impact on farm households' food and environmental security in Nigeria. Data were collected from a cross-sectional survey of 1,663 farm households across the six agro-ecological zones in Nigeria in 2012. The data were analysed using descriptive statistics, rankings and analysis of variance (ANOVA). The results of the findings show that most farmers are aware of the grain processing and tomatoes technologies but have never tried them when compared to cassava production and processing technologies that they have adopted. The adoption level differs significantly across the selected states. Interestingly, all the available cassava production technologies are perceived by the sampled farmers as having positive impact on cassava products quality, their health, the environment and cassava's yield. Cabinet dryer used for cassava processing however has a negative impact on cassava product quality while parboiling machine for grains was reported to have a negative impact on grains product quality, farmers' health and the environment. Grinding machine (the only adopted tomato processing technology) negatively affect the environment. We therefore conclude that the modern agricultural technologies have mixed impact on both food and environmental security. The perceived negative impact of some adopted technologies on products quality, farmers' health, environment or yield can be adjusted during the designing stage.

Keywords: Adoption, food security, modern agricultural technology, sustainable food production