**COMPARATIVE ANALYSIS OF THE EFFICIENCY OF WATER MELON (*CITRULLUS LANATUS*) AND SWEET MELON (*CUCUMIS MELON*) PRODUCTION AMONG FARMERS IN GOMBE AND BAUCHI STATES, NIGERIA**

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**ABSTRACT**

The study compared the efficiency of water melon and sweet melon production among farmers in Gombe and Bauchi States, Nigeria. Specifically, the study describe some selected socio-economic characteristics of the respondents, determine their profitability, examined the specific factors that influence their productivity, estimate their allocative, technical and economic efficiencies and assess the constraints associated with the farmers productivity in the study area. Multistage sampling techniques were used to select the 300 sampled respondents of water melon and sweet melon farmers. Data were collected through the use of structured questionnaire; though only 250 were dully filled and used in the analysis. Both descriptive and inferential statistics were used in the analysis. The results revealedthat among the water melon farmers interviewed; only 2% were women and 98% were men compared to 0% women and 100% men for sweet melon farmers. Majority of the respondents (93.6 %) were married, young and active with a mean age of 44 years for water melon farmers compared to 39 years for sweet melon farmers. Household size of the respondents showed a large mean family size of 15 and 10 for both the groups with 90.8 % been full-time farmers. The result also revealed that 70.3% of water melon farmers and 34% of the sweet melon farmers had one form of western education or the other with a mean of 7 and 4 years spent at school having a mean farming experience of 6 and 2 years respectively; and they are mostly small holder farmers with a mean of <2.5 hectares which is mainly acquired through inheritance. Gross margin analysis revealed the total revenue of N158,296 and gross margin of N103,635 for water melon compared to total revenue of N142,892 and the gross margin of N100,113 per hectare sweet melon respectively. This implies that water melon farmers seemed to earn more average profits (N103,635) compared to sweet melon farmers who were making (N100,113) on the average. The combined implication of this analysis is that both the two enterprises were very profitable with a positive gross margin and benefit cost ratio values of 2.89 and 3.34 for water melon and sweet melon farmers respectively. Furthermore, the maximum likelihood estimate (MLE) of the parameters for stochastic production function revealed that farm size, fertilizer, labour and seeds significantly affect the output of water melon and sweet melon output with the inefficiency model showing experience, family size, age and extension contact to increased technical efficiencies of the farmers with a mean technical efficiency (TE) of 0.72% for water melon farmers compared to 0.83% for sweet melon farmers, respectively. Moreover, the result of the z- test analysis revealed that there exist significant difference in the output and returns of water melon and sweet melon farmers (P< 0.01) largely due to variation in the weight of output of water melon been almost three- times than that of sweet melon. Major constraints faced by the respondents include: high cost and shortage of labour, low melon prices, inadequate credit facilities and storage facilities problems. The study concluded that there still exists room for improving respondent’s technical and allocative efficiencies. This can be achieved through better cultural practices by farmers as well as government and public private partnership investment in research and extension services, provision of loans and basic farm inputs could jointly contribute to an improvement in efficiency of production.

**KEY WORDS**: Comparison, Efficiency, Sweet melon, Water melon, Production and Stochastic

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