

## **Abstract**

The adoption of improved sorghum technologies by smallholder farmers is still low in Tanzania. Many farmers fail to acquire quality inputs due to different underlying reasons. This article analyzes factors underlining the adoption of improved technologies among sorghum farmers in Tanzania and evaluates profitability of grain production. A total of 212 individual farmers were interviewed through structured questionnaires from nine districts. Data were analyzed using descriptive statistics, probit regression model and gross margin analysis. Results show that 39.2%, 26.5%, 16.9%, 8.4% and 7.2% of sorghum farmers adopted seeds of improved varieties, insecticides, inorganic fertilizers, threshing machine and optimum seed rate, respectively. Probit estimates indicated that age, sex, number of years in school, group membership, farm size, availability of free seeds, seed accessibility, grain market accessibility and grain market price were the significant factors influencing adoption of these technologies. Adopters obtained higher profitability (822,288 Tshs/ha) than non-adopters (374,363 Tshs/ha) of improved varieties. Further policy actions are needed to improve determinants of adoption, breeding technologies and accessibility of agricultural inputs to ensure benefits to farmers and the sorghum sub-sector. Keywords: profitability, smallholder farmers, seeds of improved varieties, technologies, Tanzania