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Analysis of the productivity determinants of spine gourd (*Momordica dioica roxb*) farming in southern dry zone of Sri Lanka

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Abstract

Spine-gourd is a naturally grown vegetable crop which locally introduced as *Thumbakarivila*. Due to its medicinal and nutritional values, deliciousness, limited production and seasonality, this vegetable crop fetches good demand and high price in the market. Despite its' demand, organized cultivation of spine-gourd was lack due to its short harvesting period, low yield, tuber dormancy and lack of standard propagation techniques. After introducing hybrid spine-gourd by the Department of Agriculture, production of this crop has noticeably increased during the current decade. This study aimed to estimate total farm productivity and factors determined the spine gourd productivity. Sixty-nine (69) spine gourd farmers in *Monaragala* and *Hambantota* districts were randomly selected to be in the sample by employing multi-stage sampling procedure. Primary data were collected through a structured questionnaire. Major productivity determinants used in the analysis were Gross Margin analysis (GM), Total Factor productivity (TFP) and Partial Factor Productivity (PFP) analysis. Ordinary Least Square (OLS) regression methods were employed to identify major factors that influencing the productivity. Results indicated that gross margin (profit) was Rs. 1,410,219 with total cost of Rs. 1,377,657 per hectare. Mean TFP was 4.7 with minimum of 0.4 and maximum of 12.8. Linear function (OLS) shows that predictors of education, cultivated extent, total labour, amount of fertilizer and income through spine gourd farming had significant association with TFP. According to PFP analysis, the highest factor productivity was incurred by extent cultivated. Amount of fertilizer and labour days used also decisive factors for productivity enhancement. Study concluded that spine-gourd is still a profitable business for dry zone farmers albeit diseases and lack of planting materials were found as major issues. Study recommended expanding cultivation further through facilitating farmers with healthy planting materials or providing technology for own planting material production. Controlling virus and bacterial incidences will leads for advantageous to the consumer for buying spine gourd at reasonable price without harming producer's average profit margin.

Keywords: Gross margin, OLS regression, Productivity determinants, Spine gourd, Total factor productivity

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