

RESOURCE USE EFFICIENCY IN CARROT FARMING IN NUWARAELIYA DISTRICT

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Carrot is a popular vegetable and its consumption is increasing. Nevertheless its price in the local market is high due to high cost of production. Efficient usage of resources is the fundamental strategy that would lead to increase productivity and decrease the cost of production. Therefore this study was carried out to investigate the resource use efficiency in carrot farming in Nuwara Eliya district. Data were collected from a sample of 100 farmers randomly selected from all four divisional secretaries in Nuwara Eliya district. Technical efficiency was analyzed using frontier production function approach while the allocative efficiency estimates were obtained using the marginal product approach. Benefit cost ratio of the carrot farming was computed to assess the profitability of the enterprise. Regression analysis showed that 88.4 % of the variation of carrot production was explained by land, seed, fertilizer, agrochemicals and labour. Except agrochemicals, all other variables are statistically significant ($p < 0.05$). Land, fertilizer, and labour have a positive relationship with production showing that increase in these variables results in increasing carrot production whereas seed is negatively related with production. Elasticity of production was 1.12 which suggests that farmers are in the first stage of production. The results of the frontier production function analysis revealed that the mean technical efficiency of the carrot farmers was 85.3 % and efficiency level varies from 57.4 to 92.5 %. Further it was found that most efficient farmers are from Nuwara Eliya divisional secretariat area. Allocative efficiency analysis revealed that land and labour were under-utilized while seed, fertilizer and agrochemicals were over-utilized by the farmers. The benefit cost ratio was Rs 1 to Rs 2.03 which implies that for one rupee invested Rs.2.03 was obtained showing that the enterprise was profitable in the area. The study recommends that farmer education on correct quantity of inputs use is required to reduce the production cost of carrot.

Keywords: Carrot, Cost-benefit analysis, Frontier production function, Nuwara Eliya district, Resource use efficiency