ESTIMATION OF MECHANIZATION INDEX AND ANALYSIS OF AGRICULTURAL PRODUCTIVITY IN BANDARAWELA

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ABSTRACT

This study was designed to determine the mechanization index of different up county vegetable crops and to evaluate the power per unit area of vegetable cultivation in Bandarawela DS division and to determine the productivity of machinery, labour and degree of mechanization of Bandarawela. The present study was conducted using a sample of 100 farmers in five major vegetable cultivation GN divisions of Bandarawela DS division. Stratified random sampling technique was used to draw the sample. A pre-tested structured questionnaire, personal interviews and discussion with key informants were the methods used to collect the primary data. Secondary data were obtained from relevant articles, government centers and key organizations. Tool of data analysis included descriptive statistics, frequencies and regression analysis using statistical software of SPSS 19.0.

Aspects of socioeconomic characteristics of vegetable cultivators, production and cultivation details, mechanization of vegetable cultivation, labour hours and machinery hours, labour and machinery use were obtained through the administration of questionnaires. The highest index of mechanization was determined as 2.29% for cabbage cultivation and lowest MI was obtained as 0.5% for tomato cultivation. The mechanization index of beans, carrots and potato were 1.44%, 2.1% and 1.97% respectively. These mechanization index values represent a relatively undesirable state of mechanization for vegetable cultivation in this region. Lowest degree of mechanization of 120.85 kWh/ha was obtained in potato cultivation whereas highest degree of mechanization of 146.86 kWh/ha was obtained in beans cultivation followed

by which 135.82kWh/ha for carrot, 135.97 kWh/ha for tomato, 139.37 kWh/ha for cabbage cultivation. The highest power per unit area was 1.12 hp/ha in cabbage cultivation and the lowest value was 0.72 hp/ha in potato cultivation followed by which 0.97 hp/ha for beans, 1.02 hp/ha for carrot and 1.09 hp/ha for tomato cultivation. The lowest power per unit area indicates greater extent of land area is utilized for cultivation the available power input. Highest value for productivity of machine was 0.03 ha/kWh in potato cultivation and highest value for labour productivity was 0.0006 ha/kWh in cabbage and potato cultivation practices. Hence, the highest total productivity was obtained for potato cultivation.

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