

Economics of Ergonomics: A Case of Cinnamon Industry in Sri Lanka

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The goal of ergonomics is to fit the task to the individual, not the individual to the task. The Ceylon cinnamon is native to Sri Lanka. Traditional processing with weak quality maintenance and poor intention on processor health and safety were common evils hindering the progress of the cinnamon industry. The present approach attempts to investigate the economics of ergonomic practices in the Ceylon cinnamon industry, to identify and measure the ergonomic hazards of cinnamon processing, to evaluate cinnamon processor's performance in 3 different scenarios; traditional, semi-mechanized, GMP+ mechanized system, to identify the attitudes of cinnamon processors on mechanization, to measure the economic returns of ergonomic practices in cinnamon processing and to determine the appropriate ergonomic solution and its cost. Two hundred and forty processors from four main cinnamon cultivating districts, Galle, Matara, Kaluthara and Rathnapura, under each processing method, were the sample. Key analytical tools were Welch's test of ANOVA and Cramer's V Chi-square test. Body and GPS located maps were also developed. Results revealed that modernized processing systems showed a low level of prolonged health problems and low health costs. Both mechanized and semi-mechanized systems were positively significant in terms of productivity and efficiency (85 sticks per labor per day and 60% efficiency). Majority of processors showed positive attitudes towards the mechanization. Higher benefit/cost ratio (1.8), lower payback period (one and half years), higher IRR (90%) and higher ROI (79.9%) values were the positive signs of mechanized processing. The study pointed out that both mechanized and semi-mechanized system had a significant impact on higher performance level. Healthy, safe and comfortable working environment which encourages the processors to retain, attractive to both male and female youth, renders higher economic returns for the Ceylon cinnamon value chain. Best ergonomic practices produce safe and quality cinnamon which caters for the demands of the international market.

Keywords: Ceylon cinnamon, ergonomics, economics, Sri Lanka