Redesign of Salak Harvesting Tool with Anthropometric Approach Based on Body Pain Complaints Using Nordic Body Map Questionnaire on Salak Farm in Pulesari Tourist Village

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ABSTRACT

Background: Agricultural activities are one of the utilization of natural resources (SDA) to produce foodstuffs, industrial and energy materials. The research was conducted at Salak Farm in Pulesari Tourism Village. When harvesting salak fruit, farmers still cut bunches of salak using machetes, sickles or in the traditional way and will result in a big risk. In traditional harvesting, there are often complaints by workers that the position of the body is too bent causing frequent complaints of pain in some parts of the body.

Method: In this study used anthropometric approach based on body dimensions and Nordic Body Map (NBM) questionnaires to determine Musculoskeletal Disorders based on Deductive and Inductive studies.

Result: As a result of the NBM questionnaire, workers experienced quite sick and painful complaints. Based on the questionnaire NBM obtained several parts of the body that hurt including Lower neck, bottom neck, Right shoulder, Back, Right upper arm, Waist, Right lower arm, Right hand, Left knee, Left foot, Right foot. Body dimension and percentile data to redesign of salak harvesting tool used by TSB (P5=1,584 cm), DGMin (P50=107.2667 cm), LTM (P95=8.87185 cm).

Conclusion: From these results, researchers can design a tool that is able to assist in the harvesting process so they do not experience complaints of pain in several parts of the body, work accidents, and increase the production of salak fruit. The tool features have are a handle, a clamp to clamp the salak tie, a net to accommodate the salak and a spring to pull the jaw clamp. Recommended tools are used ergonomically, saving time and minimizing fruit dropping thereby increasing production.

Keywords: Nordic body map, anthropometry, salak harvester.
Image 1. Redesign of Salak Fruit Harvesting Tool using Anthropometric Approach