

Perancangan Troli Ergonomis sebagai Alat Bantu Angkut Karung dengan Quality Function Deployment pada Penggilingan Padi Sri Rezeki di Banyumas

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Abstract	<p>Manual Material Handling (MMH) is an activity that is carried out every day because of the flexibility of the movements performed. However, MMH activity has the potential for accidents and can result in muscle overstrain. Therefore, the availability of tools is important in MMH. MMH is still carried out at Sri Rezeki, Kramat Village, Banyumas Region, during the rice mill's drying process and the loading, transporting, and unloading operations. This study aims to measure the risk of workers and redesign the handling equipment in moving materials. Measurements were made using the Rapid Entire Body Assessment (REBA) before and after the design and the design using Quality Function Deployment (QFD). Based on the observations, the loading activity has a score of 9, the transportation activity has a score of 8, the unloading activity has a score of 11, and the interpretation of the three activities is classified as high and very high-risk levels. The results are a proposed tool design for the grain sack in a trolley that considers anthropometry and ergonomics principles. Ergonomic trolley design was concluded with a trolley height measuring 185, handle position height of 106 cm, length of 100 cm, width of 65, the diameter of a hand-gripped trolley of 3.3 cm, and pulleys. The results of the design evaluation showed a decrease in the REBA value to a score of 3 (low). In addition, there was an increase in labor productivity to 40%, with production increasing the amount of grain every 8 hours to 5 tons. Further research is needed to evaluate the tool's material for maintenance and commercialization.</p> <p>Manual Material Handling (MMH) merupakan aktivitas yang setiap hari dilakukan karena fleksibilitas gerakan yang dilakukan. Namun aktivitas MMH mempunyai potensi kecelakaan dan dapat mengakibatkan overstrain pada otot. Oleh karena itu, ketersediaan alat bantu menjadi hal yang penting pada aktivitas MMH. MMH masih dilakukan pada saat proses penjemuran di penggilingan padi Sri Rezeki, Desa Kramat Kab. Banyumas, yakni proses loading, pengangkutan, dan unloading karung. Penelitian ini bertujuan untuk mengukur risiko pekerja dan merancang ulang alat handling dalam pemindahan material. Pengukuran dilakukan menggunakan Rapid Entire Body Assesment (REBA) sebelum dan sesudah perancangan, serta perancangan dengan Quality Function Deployment (QFD). Berdasarkan observasi diperoleh aktivitas loading bernilai skor 9, aktivitas pengangkutan bernilai skor 8, aktivitas unloading bernilai skor 11, dan interpretasi ketiga kegiatan tergolong level risiko tinggi dan sangat tinggi. Hasil usulan perancangan alat bantu angkut berupa troli yang mempertimbangkan antropometri dan prinsip ergonomi. Perancangan troli ergonomi diperoleh dengan ukuran tinggi troli 185, tinggi handle 106 cm, panjang 100 cm, lebar 65, diameter genggam tangan troli 3,3 cm, dan penggunaan katrol. Hasil evaluasi rancangan diperoleh penurunan nilai REBA menjadi skor 3 (rendah). Selain itu, adanya peningkatan produktivitas tenaga kerja menjadi 40% dengan produksi meningkatnya jumlah gabah setiap 8 jam menjadi 5 ton. Perlu penelitian lebih lanjut pada evaluasi material dari alat bantu untuk pertimbangan perawatan dan komersialisasi.</p>
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