

## ABSTRACT

*PT. Perkebunan Nusantara (PTPN) is engaged in plantation and the production of orthodox tea that operates 24 hours per days caused working fatigue due to overtime and contributes 50% to accident or injury at work. The focus of this research is on the milling process which is the process with the highest number of accidents among the five other processes such as oxidation, sortation process, drying, withered and packaging where in the milling process the operator must insert his hand into the grinding machine to prevent leaf stacks in the milling machine. It affects work accidents such as the hand that hits the side of the RV hole or the the operator's hand going into the cylinder grinder.*

*In the design of tools in the milling machine we use User Centered Design approach that usually used in the design of furniture that focuses on the cognitive ability of users in the form of memory characteristics of the habit and also the surrounding environment. Those information will be utilized as supporting data in the design of alternative concepts. Initial data used in this research is the information of need statements that directly to the operator, after that the data being processed using house of quality (HOQ) to get the target specification. Then the results of the HOQ will be the benchmark of design options with morphological charts and being selected using concept screening and scoring. The entire design process will directly involve the user and be evaluated to determine the suitability of the user's wishes.*

*The result of this research is the concept desain of the tools which contain handle and spring on the top part og the tools and using capo style for locking mechanism that include spons for reduce the vibration from the RV machine.*

*Keywords: User Centered Design, Work Tools, Work Safety, Product Design, Orthodox Tea.*