# ABSTRACT

Indonesia is the seventh largest tea producer in the world. Of all the tea producing commodities in Indonesia, West Java Province is the largest tea producing commodity which contributes more than half of tea production in Indonesia. One of the tea plantations in West Java Province is PT Perkebunan Nusantara (PTPN) VIII in Ciater, Subang, West Java, Indonesia. In the picking process, farmers already use tea leaf picking machines, but the farmer's body posture when using the machine is not ergonomic which can pose a risk to Musculoskeletal Disorders (MSDs). With that in mind, this final project research was carried out to design a tool for the tea leaf picking machine at PT Perkebunan Nusantara VIII which can reduce the risk of MSDs.

The method used in designing this tool is User Centered Design (UCD) where this method can design a product that is user-oriented in the design process. In accordance with the design objective of this tool, namely reducing the risk of MSDs, the farmer's body posture will be assessed through a Rapid Upper Limb Assessment (RULA) calculation which is able to evaluate body posture against the ergonomic risks associated with MSDs.

Based on the RULA calculation results, it was found that farmer 1 had a RULA score of 7, farmer 2 had a RULA score of 6, and farmer 3 had a RULA score of 3. This was supported by the distribution of the Nordic Musculoskeletal Questionnaire (NMQ) which stated that 9 farmers were affected. moderate risk level and 3 farmers exposed to high risk level.

With that, assistive devices are designed based on interpretation of ergonomic aspects and dimensions adjusted to anthropometric data. After simulating the design results with Jack 8.2 software, a score of 3 was obtained for farmers 1 and 2 who had low risk and needed changes if necessary. Based on this, it can be stated that the tea leaf picking machine tool can reduce the risk of Musculoskeletal Disorders (MSDs).

Keyword — ***Tea, Musculoskeletal Disorders, Ergonomic, User Centered Design***