

ABSTRACT

Muhammad Sultan Nasrullah. 2023. *Ergonomic Enclosure Design: Sterile Workspace Innovation (CASE STUDY: MUSHROOM BREEDING TISSUE CULTURE MSMEs, under the guidance of Hardy Adiluhung and Yanuar Herlambang.*

LAF (Laminar Air Flow) or clean bench is an instrument that is almost always present in biology, pharmacy, chemistry, agriculture and health laboratories. In general, this tool can provide a sterile workspace that is free from contaminants or other viruses. In the 1970s, the use of laminar air flow became more widespread in various industries, including molecular biology laboratories and microbiology research. This technology has become the standard in maintaining the cleanliness of critical rooms. Ergonomics in the context of using laminar air flow (LAF) involves designing and organizing workspaces and equipment to suit the needs and comfort of the operator. A simple Entkas that has a work function that is almost similar to LAF but the level of contamination is still quite high. The purpose of the research is to design Enlaf for UMKM tissue culture and mushroom cultivation that is more ergonomic and understands and meets the various needs and preferences of UMKM tissue culture and mushroom cultivation actors. The mixed methods research method can be applied in the design of Enlaf (Entkas Rasa LAF) by combining Qualitative and Quantitative aspects, namely: Identification of User Needs, Prototype Design Development, Prototype Design Evaluation, Material and Performance Testing, Data Analysis and Integration and the SCAMPER method. . Tissue Culture and Mushroom Nursery business actors as respondents for data collection and validation using the Nordic Body Map (NBM) of the design innovation results that have been created by 7 MSMEs. The results of the study showed that the validation results of the use of enlaf by users showed a risk level score low of 2,4 which indicated that no improvements had been found, this showed that enlaf is a product innovation from LAF and entkas which is ergonomically good and increases work safety and comfort. The costs required to make enlaf a product innovation from LAF and entkas are much cheaper and more efficient than LAF which is already on the market

Keywords: Sterile workspace design, enlaf, ergonomics, innovation, work safety.