DESIGN OF GLOVE FOR MEAT PROCESSING TASKS

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ABSTRACT

Gloves are the most common of protective equipments in manual tasks. But using a glove with bad design or unsuitable, it would result in musculoskeletal disorders in hands. The gloves that workers used in meat processing tasks would provide a great of protection, but other functions of the gloves without views of ergonomics would be worse. The parameters of gloves in order to redesign with views of ergonomics are the materials and size of gloves, and the stability of grasp. The present study would proceed through information about occupational injuries, and evaluated with ergonomics. In accordance with the results of the questionnaires about occupational injuries and the satisfactions of gloves used in meat processing tasks, decide the directions of ergonomical glove ’s design. Both workspaces and laboratory would be delivered after finished. The satisfactions and performance for new gloves would be evaluated in workspace, and the maximal voluntary contraction (MVC) and the ranges of loss in various conditions of gloves would be evaluated in lab. The results of the workspaces showed that the injuries concentrated in thumbs, forefingers, middle fingers and wrists of hands, the more serious injuries were punctures, and the function for new gloves that workers cared would be protection from punctures. The main structure of new gloves was spectra1000 fibers, which plaster non-slipper rubbers on fingers and palm, and add a fastened belt on wrist to reduce gloves fall off. The fit sizes would adopt male ’s 95 percent and female ’s 95 percent. The workers considered that there would be better among dexterity of hand, softness, comfort, and stability of grasp for new gloves. But there would be no significant change for the performance between new gloves and previous glove conditions. The exertion of new gloves would be evaluated in lab, we could get the performance of grip force through programs; the results showed that MVC for new gloves would be better than other glove conditions.

Keywords : MVC ; gloves ; ergonomics ; performance ; dexterity

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