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GLOVES

ORNCHULEE CHANTRA : THE COMPARATIVE STUDY ON THE
ORDINARY AND THE NEW-DESIGNED COLD-PROTECTIVE GLOVES
AMONG FROZEN FOOD WORKERS. THESIS ADVISORS : SARA ARPHORN,
Dr. biol hum., WITAYA YOOSOOK, Dr.Eng.,VAJIRA SINGHAKAJEN, M.A.,
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The comparison of clothing insulation between two kinds of cold-protective gloves was performed in this study and the physiological responses such as finger skin temperature, mean skin temperature, estimated core temperature, heart rate, blood pressure, psychophysical rating bollots and subject's feeling of frozen food workers, were determined. The environmental conditions in the cold storage : air temperature , air velocity , and approximate relative humidity, were 0-5 °C, 0.5 m/s and 45 %, respectively. The ordinary cold-protective gloves were two pairs of polyester gloves and the new-designed cold-protective gloves consisted of three layers : the inner layer, the middle layer, and the outer layer which were 50% cotton, polypropylene fiber and natural rubber, respectively. All subjects had to wear the cold-protective suit, socks, and shoes in the same pattern.

The subjects, who participated in this study were five healthy males who loaded the containers of frozen food products. They had to work for 1 hour and take a rest for 1 hour. Mean skin temperature, finger skin temperature, estimated core temperature and heart rate were measured every minute during the experimental period. Blood pressure was monitored by spot measurement as prework period and postwork period. The questionnaires were also used for the feelings of fatigue and psychophysical rating bollots before and after work period.

Results of the study illustrated that worker's finger skin temperature, mean skin temperature, estimated core temperature and heart rate were significantly different between wearing ordinary and new-designed cold-protective gloves during four work periods ($p < 0.05$). There were no significant differences in blood pressure between those wearing the ordinary cold-protective gloves and new-designed cold-protective gloves in all work periods ($p > 0.05$). The feelings of fatigue and psychophysical rating bollots were not significantly different for both types of cold-protective gloves for any work periods ($p > 0.05$). The results of this study showed that the effectiveness of wearing the new-designed cold-protective gloves was higher than using ordinary cold-protective gloves .