

SPECIAL COLLECTION
LIBRARY USE ONLY



LIBRARY
NATIONAL UNIVERSITY OF SCIENCE
AND TECHNOLOGY
P.O. BOX 346 BULAWAYO
ZIMBABWE

DATE	ACCESSION	CLASS No
20/03/10	SC 09/139	

FACULTY OF INDUSTRIAL TECHNOLOGY

DEPARTMENT OF TEXTILE TECHNOLOGY

A COMFORT ANALYSIS OF RAINCOATS MANUFACTURED AT JAMES NORTH
ZIMBABWE

PROJECT PRESENTED BY

KANUKAI SUSAN MUKUZE N005 1156P

SUPERVISOR: DR AB NYONI

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS OF BACHELOR OF
TEXTILE TECHNOLOGY (HONORS) DEGREE

SUBMITTED: 03 September 2009



NUST Library

KS Mukuze N005 1156P

Abstract

An investigation on the comfort properties of nylon coated raincoats that are manufactured in Zimbabwe for use in the agriculture, commercial fishing and construction industries was carried out using two kinds of clothing systems. Clothing system A consisted of 100% knitted cotton underwear and knitted cotton vest whilst clothing system B consisted of 100% knitted cotton underwear and knitted cotton vest plus the raincoat. The wear trial subjects were four young male students who dressed in clothing system A and walked on a treadmill. Thermal and moisture sensation were continuously measured. After 24 hours, the same subjects walked on the treadmill but now in clothing system B. There were significant differences in the subjects' skin temperature in the two clothing systems. The results show that the moisture management property of the raincoat affected temperature. Due to the inability of the raincoat to allow heat and moisture vapor produced by the body to disseminate into the environment, condensation occurred and resultantly, one 'drowned' in their own sweat. Contact between this sweat and the skin made the subjects feel clammy and uncomfortable. Since evaporation could not take place to cool down the body temperature, the subjects' skin temperatures rose significantly from an average of 36.7°C to 37.2°C. The increase in temperature resulted in the body regulating heat loss to the environment by increasing the cutaneous blood flow. Blood pressure values for system A were all in the normal and tolerable range whilst blood pressure readings as high as 132/98 were obtained for clothing system B.