

**Impact of Occupational Heat on the Comfort of Factory Workers: A Case Study of
Kambaa, Ikumbi and Mungania Tea Factories**

Nderitu David Muchemi

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ABSTRACT

The study was conducted to establish the impact of workplace heat on workers' comfort in tea factories and was a case study of small scale tea producers in Kenya. The objectives of the study were to assess Wet Bulb Globe Temperature Index (WBGTI) at the work environment which is the most widely used index to measure indoor temperatures. Personal factors that influenced the behavior of employees within the indoor environment were also established. These factors were employees' clothing and physical demand of work that influence their behavior at work. This was achieved by determining four variables that influenced the degree of indoor temperature. The variables were air temperature, radiant temperature, relative humidity and air flow. The two thermal factors measured were used to obtain Wet Bulb Globe Temperature Index which indicated the level of indoor thermal comfort. The WBGT value was then compared to the reference value provided in the international standard. Questionnaires were administered to selected target population in the factories in order to compare and support the study variables with the outcome of the actual measurements. The result for the three factories under study indicated that the WBGTI in three departments exceeded the permissible heat exposure threshold level as provided by the American Conference of Governmental Industrial Hygienist (ACGIH) and Occupational Safety and Health Administration (OSHA) standards for the hot indoor environments. The research concluded that employees working in the boiler, drying, packing/sorting sections in the tea factories were exposed to heat discomfort.