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Noise Risk Assessment among Workers in Beverage Manufacturing at Batu Cave

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Structured Abstract

Background: Occupational noise exposure is recognized globally as a significant occupational risk factor and primary environmental pollutant causing serious hazards to workers' health. Noise-induced hearing loss (NIHL) is a frequent occupational disease and public health problem. It is often irreversible, causing permanent damage to the inner sound cells. Long-term exposure to loud noise is also associated with physical and psychological health hazards, including stress, cardiovascular issues such as headaches, hypertension, fatigue, and insomnia. Most of the industry are exposed to the high level of noise especially in Malaysia. This study aimed to assess noise risk levels among workers at Hon Brothers Beverage Manufacturing (M).

Methods: A cross-sectional study was conducted among workers at Hon Brothers Beverage Manufacturing (M). Noise level of machinery was assessed using Sound Level Meter around workplace. Noise Map then developed to identify the area with different noise zone from 82dB(A) below (white zone), from 82dB(A) to 85dB(A) (yellow zone), exceeding 85dB(A) until 115dB(A) (red zone), and exceeding 115dB(A) (purple zone). Then, workers' personal noise exposure during work hours were measured using personal dosimeter to measure the level of exposure to the excessive noise. Data was analyzed to determine noise levels of the workers in the workplace.

Results: Majority of the machinery produced noise level exceeding 85dB(A) with mean above 85db(A) while the highest number recorded was 91dB(A) from fume hood in cooking area. For noise mapping, red zones were classified in the cooking area, weighting area, and roasting area which produced noise level exceeding 85dB(A). Based on personal monitoring on noise exposure, majority of the workers were exposed to noise level exceeding 85dB(A) in 8 hours with highest mean personal was 92.5db(A) with dose of 558.7%.

Conclusion: Majority of machinery in the workplace produced noise that exceeds the Permissible limit of 85dB(A). Cooking area, Weighting area, and Roasting area classified in red zone that exceed the Permissible limit of dB(A) that required implementation of control measure to reduce the noise level. Majority of workers' dose exceeding 50% Permissible limit that required the implementation on control measure to reduce the exposure to excessive noise.

Keywords: Beverage Manufacturing, NIHL, Occupational Noise Exposure, Noise Risk Assessment

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