

Assessment of noise level in sundry processing and manufacturing industries in Ilorin metropolis, Nigeria

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Article

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Abstract

In this work, noise level in five selected processing and manufacturing industries in Ilorin are evaluated and compared. Emphasis is given to noise emitted by individual industrial machinery from the selected industries. Event L_{Aeq} and L_N cycles were studied to identify the noisy machines and to generate baseline data. Findings show that hammer mill machine from mineral-bearing rock-crushing mills produced the highest average noise [98.4 dB(A)], an electric generator 1 [95.6 dB(A)] from the soft drink bottling industry, an electric generator [97.7 dB(A)] from the beer brewing and bottling industry, a vacuum pump [93.1 dB(A)] from the tobacco making industry, and an electric generator 2 [94.1 dB(A)] from the mattress-making industry. The highest and lowest average noise exposure levels are recorded in mineral-bearing rock-crushing mills [93.16 dB(A)] and the mattress making industry [84.69 dB(A)], respectively. The study shows that, at 95% confidence level, there is significant difference ($P < 0.05$) in noise levels in the industries surveyed. The percentages of machines that emit noise above Federal Environmental Protection Agency and Occupational Safety and Health Administration recommendations [90 dB(A)] are from the soft drink bottling industry (83.3%), the beer brewing and bottling industry (42.9%), the tobacco making industry (71.4%), the mattress making industry (11.1%), and minerals crushing mills (87.5%). In the past 20 years, the noise levels in the soft drink bottling industry were reduced by 0.58 dB(A), and those of the beer brewing and bottling industry were reduced by 9.66 dB(A). However, that of the mattress making industry increased by 2.69 dB(A). On average, the noise level in these industries has been reduced by 2.52 dB(A). The

results of this study show that the noise control measures put in place have significant impacts on the noise exposure level in the industries surveyed.

Keywords

Noise Noise level Industrial noise Industrial machineries NIHL

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