

Occupational Noise Exposure Among Grass Cutter Workers in UiTM Shah Alam

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Structured Abstract

Background: Occupational noise exposure is a major health concern among workers in high-noise environments, including those involved in outdoor grass cutting activities. Grass cutter workers, often operating without hearing protection, are exposed to machinery that can generate dangerously high noise levels. This study aimed to assess the personal and environmental noise exposure of grass cutter workers in UiTM Shah Alam (Zone 2), evaluate their compliance with regulatory limits under Occupational Safety (Noise Exposure) Regulation 2019, and explore their awareness and preventive practices.

Methods: The study involved both area and personal noise monitoring using calibrated instruments: Larson Davis 831C Sound Level Meter (SLM) for environmental measurements and Spartan 730 noise dosimeter for individual exposure. Data were collected from five workers using identical backpack-type GIANT TL-43 grass cutting machines. Questionnaire surveys were also distributed to gather information on workers' awareness, symptoms, and use of hearing protection. All data were analysed descriptively using Microsoft Excel and compared with limits set by Occupational Safety (Noise Exposure) Regulation 2019.

Results: Findings revealed that all workers exceeded the permissible noise dose (100%) when projected to an 8-hour workday, with two workers recording doses above 700%. Time-Weighted Average (TWA) values ranged from 89.2 dBA to 93.5 dBA, surpassing the 90 dBA limit. Lpeak levels recorded exceeded 130 dBA for all workers, far above the Maximum Exposure Limit (115 dBA). Questionnaire analysis showed 40% of workers reported tinnitus symptoms, while none used hearing protection or had received noise hazard training.

Conclusion: All measured and projected noise exposure levels exceeded Occupational Safety (Noise Exposure) Regulation 2019 of 85 dB(A), placing workers at significant risk of Noise-Induced Hearing Loss (NIHL). The absence of hearing protection use and low awareness highlight the urgent need for implementing hearing conservation programs, equipment upgrades, and structured safety training.

Keywords: Occupational noise exposure, grass cutter, personal dosimetry, hearing conservation

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