Mine Health and Safety Council
Research project name Project CoE 210101

Project Title:	***Effects of cannabis on occupational health and safety in the SAMI and benchmark for maximum allowable blood level of cannabis at the workplace***

Author(s):	Mbenenge K., Mhura D., Nemuramba K., Van Tonder N., Mhura M. & Wilson K.	**Agency:**	Mundele Business Consultancy

Report Date:	20 March 2025	**Related Projects:**	None
Category:	Mine Health	**Applied Research**	Knowledge Transfer

Summary

Background of the Study
In 2018, the Constitutional Court of South Africa decriminalised the use, possession and cultivation of cannabis in private spaces. However, no guidance was provided on how cannabis should be managed in the workplace. Since cannabis is a drug with psychoactive properties which can negatively impact workplace productivity, health and safety, guidance was required on how it should be managed at work.

Objective of the Study
The objective of this study was to develop a guidance document for testing and assessing the allowable limits of cannabis use while at work in the SAMI.

Methodology
A pragmatic research design was utilized in which a mixed methods approach was applied to collect, analyze and interpret the data for the study. For the literature, a scoping review, systematic review and meta-analysis of Odds Ratios based on the PRISMA principles were utilized. Data synthesis and analysis were conducted using the STATA v18.5 software. An exploratory approach was used to solicit inputs from the industry stakeholders through a questionnaire which gathered both quantitative and qualitative data. The results were analyzed using triangulation, descriptive statistics, and comparative statistics.

The workshop with industry stakeholders was highly interactive with in-depth discussions in a hybrid model that had options for physical or virtual participation. The data from all these activities were then synthesized resulting in a guidance document for testing and assessing the allowable limits of cannabis use while at work in the SAMI. The validity, reliability, ethical considerations, limitations, delimitations and the significance of the study were considered.

Results of the study
The results from the literature review showed that the traditional methods of assessing and testing drug use were inadequate for cannabis due to its long half-life. The results from the industry stakeholders' survey showed that the existing drug testing and assessment procedures currently used to detect the presence of drugs on employees in the SAMI may not be effective enough for cannabis as had been argued in recent arbitration cases. The general impression was that cannabis decriminalisation had negative implications for health and safety in the SAMI.

The results from the benchmarking exercise showed that Delta9-tetrahydrocannabinol (THC) levels of less than 1 ng/ml in the body system are insignificant and impairment is mild. However, impairment worsens steadily with additional dosage of cannabis such that considerable impairment is evident at THC levels of 2 ng/ml and above.

Based on the outcomes of workshop engagements with the industry stakeholder, a guidance document was developed for managing cannabis, including revising the existing alcohol and substance abuse policy to include the allowable cut-off limits of cannabis for different work categories.

Conclusions:
This project attracted key stakeholder buy-in throughout its duration due to the subsequent value that would potentially be realised in the SAMI if the recommendations are adopted.

Recommendation:
The guidance document from this study should be disseminated to the Minerals Council South Africa and the DMPR who should facilitate the implementation of the proposed revisions to the Alcohol and Substance Abuse Policy, Cannabis Assessment and Testing Procedures and the Mandatory Code of Practice to Perform Work at a Mine.