

BRIGHTLABS

BE RIGHT!

Specialist in Cannabis Analysis

Expert in Microbiological Burden

Introduction

As a recognized analytical and microbiological laboratory, Brightlabs offers extensive microbiological analyses to ensure the safety and quality of cannabis products. Microbiological contaminants, such as bacteria, yeasts, and molds, can pose serious health risks. The Total Aerobic Microbial Count (TAMC) and Total Yeast and Mold Count (TYMC) analyses provide a comprehensive overview of the number of bacteria, molds, and yeasts. A crucial factor in these analyses is the correct incubation time, ensuring accurate and reliable results

Importance of Microbiological Analysis

Conducting microbiological tests on cannabis is crucial to comply with regulations and to prevent health risks for consumers. There are three main consequences of insufficient microbial control:



Batch Rejection: If cannabis batches do not meet microbiological standards, they may be rejected. This results in significant financial losses for producers, as contaminated products must be destroyed. Research shows that microbial contamination is one of the leading causes of rejection in the cannabis industry (McPartland et al., 2017).



Health Risks: Contaminated products can cause serious health problems, such as infections from molds like *Aspergillus*. Vulnerable groups, such as patients with chronic illnesses or weakened immune systems, are at particular risk (Verweij et al., 2020). Inhalation of mycotoxins can also cause toxic effects, including liver and kidney damage (Pitt & Hocking, 2009).



Regulatory Issues: Producers who fail to meet microbiological limits risk penalties or loss of licenses. Compliance with strict microbiological standards is essential to ensure the integrity of production and sales (Thompson et al., 2021).





Figure 1: TYMC measurement at Brightlabs, day 1 to 5, dilution 10^{-4}

Incubation Times: A Critical Factor!

The incubation times for both TAMC and TYMC are supported worldwide by major regulatory agencies, including the United States Pharmacopeia (USP) and the European Pharmacopoeia (Ph. Eur.), which state that a minimum incubation of 5 days for TYMC and 3 days for TAMC is needed for reliable results (European Pharmacopoeia, 2024; United States Pharmacopeia, 2024). Deviating from these parameters, such as incubation time, risks underreporting, as shown in figure 1.

For TAMC, an incubation temperature of 30-35°C for 3-5 days is required to promote the full growth of aerobic bacteria. As for TYMC, samples are incubated at 20-25°C for 5-7 days. Shorter incubation times may disrupt the detection of slow-growing bacteria and slow-growing molds, leading to false-negative results (United States Pharmacopeia, 2023). It is also crucial to maintain the correct temperature, as temperatures that are too high can promote the growth of thermophilic bacteria, which are not representative of typical contaminants (World Health Organization, 2019).

Dilution Series

In order to measure quantally a dilution series needs to be made, as shown in figure 2, were petri

dishes are shown after day 5 of TAMC incubation conducted by Brightlabs. Using a dilution series ranging from 10^{-1} to 10^{-5} . These dilutions are necessary to ensure an accurate count by preventing overgrowth (which would make the results uncountable)

Conclusion

Brightlabs provides reliable microbiological analyses that meet the highest scientific and regulatory standards. Our accurate TAMC and TYMC analyses, supported by scientific research, minimize the risk of contamination and ensure that your cannabis products are safe and compliant.

Contact us for more information about our extensive microbiological analysis capabilities.



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Figure 2: TAMC measurement at Brightlabs on day 5 ranging from 10^{-1} to 10^{-5} .