



Method Summary

Enumeration of Total Coliforms & Escherichia Coli in Soils, and Sludges using the IDEXX Colilert System.

Scope and Range

This method is used for enumeration of Total coliforms and *E. coli* in cake, limed, crude and liquid sludges by IDEXX Colilert method. The caked sludge analysis is UKAS accredited. *Coliforms* cause yellow colouration after minimum of 18 hour incubation at 37°C if β -galactosidase is present. *Escherichia coli* cause yellow colouration after minimum of 18 hour incubation at 37°C if β -galactosidase is present and cause blue-white fluorescence under UV light if β -glucuronidase is present.

The detection limit is >1 MPN per g

Principle

Preparation and resuscitation

10g of sample material is placed into a sterile stomacher bag and 90 ml of sterile deionised water is added, then the initial 1:10 suspension is stomached.

Analysis

From the initial suspension several dilution are made by transferring 10ml into a sterile bottle and diluting it with sterile deionised water up to the 100ml mark. The colliert-18 powder is added to the 100ml prepared sample and the sample thoroughly mixed until the medium is completely dissolved. After few minutes the sample is poured into Quanti-tray, which is sealed.

Reading the Results

After 18 -22 hours of incubation at 37°C±1°C, the Quanti- trays are counted for the number of yellow wells and wells that can fluorescent under UV lamp. The number of yellow wells and number of fluorescence wells are converted into MPN result-Most Probable Number taken from "51-well Quanti-tray MPN Table". The appropriate dilution factor is added to the final result.

Expression of the Results

If no coliforms and/or *E. coli* were detected, the result is given:

<1 MPN per g

If the organisms are found, the result should be:

n MPN per g

Where n is the number taken from MPN reference table, the dilution factor must be added to the final result.

Interferences

The samples are highly turbid due to their nature and the high colour may interfere with the analysis, therefore taking the counts from the initial suspension (1:10 dilution) might not be advisable and further dilutions are required.

The sludge matrices due to their natural coloration can give the false positive reactions for the enumeration of Total coliforms.