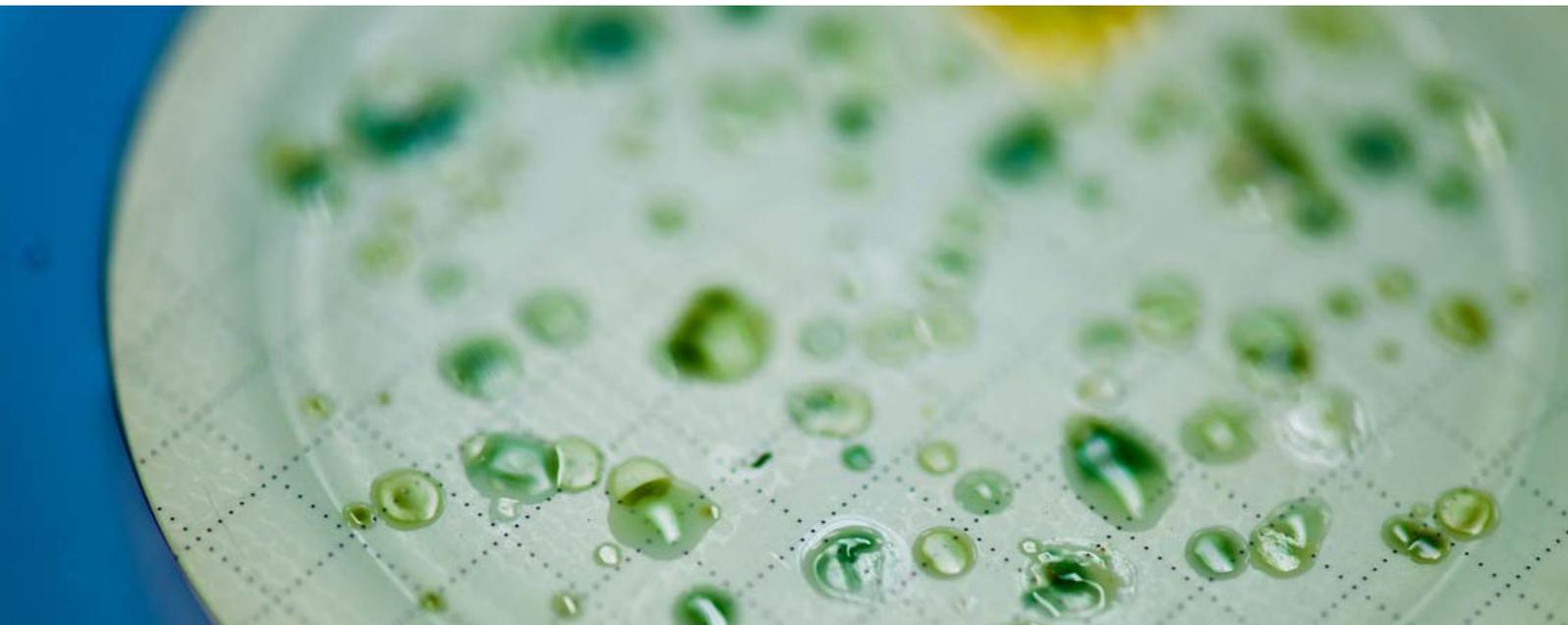


COLIFORMS AND E. COLI USING CHROMOGENIC TECHNOLOGY



The Australian Water Quality Centre (AWQC) is dedicated to ensuring and responding to the public health requirements relating to the provision of water and wastewater services for communities in Australia and across the world.

— Specialist water services

Ensuring public health

Overview

Total coliforms (TC) and *Escherichia coli* (E. coli) are routinely monitored in water supplies as indicators of faecal contamination, for monitoring the efficiency of water treatment and disinfection processes, respectively and as indicators of the presence of other pathogenic bacteria.

AWQC provides a range of NATA accredited analyses to isolate and enumerate these organisms. In 2012 we introduced a new (NATA accredited) chromogenic agar test (MI Agar) for use with potable water. This test is recognised by SA Health as an alternative to Colilert®18 for evaluating levels of *E.coli* and coliforms whilst maintaining the same short turnaround times - results available within 18-24 hrs.

It uses similar Defined Substrate Technology as Colilert® to deliver equally reliable results but with savings to the customer. E.coli detected by MI agar analyses can proceed to Microbial Source Tracking if required (see Microbial Source Tracking Fact Sheet).

Importance of Analysis

Most waterborne pathogens are introduced into drinking water supplies via contamination with human or animal faeces. These pathogens cause a range of conditions ranging from mild to severe gastroenteritis, diarrhoea, dysentery, hepatitis and cholera. E.coli, a known pathogen in its own right, and coliforms are used as indicators of the presence of these pathogenic bacteria.

MI agar is a quantitative test for the enumeration of E.coli and coliforms delivering timely information that allows for informed decisions on the planning and remedial actions for the safe and effective management of potable water systems. Importantly it delivers cost savings over the traditional Colilert®18 analysis.

Method

Primary isolation is performed using the membrane filtration technique. The membrane filter is placed onto MI agar and incubated at $35 \pm 0.5^\circ\text{C}$ for 18 - 24hrs.

Typical morphologies are counted and recorded for the simultaneous detection and enumeration of both Total Coliforms (TC) and E.coli in potable water samples in 24 hours or less on the basis of their specific enzyme activities.

Two enzyme substrates, the fluorogen 4-Methylumbelliferyl- β -D-galactopyranoside (MUGal) and a chromogen Indoxyl- β -D-glucuronide (IBDG), are included in the medium to detect the enzymes

β -galactosidase and β -glucuronidase, respectively, produced by TC and E.coli, respectively.

Components:

- Total Coliforms
- *E. coli*

Limit of Reporting:

- Lower detection limit - 1 cfu / 100ml
- Upper detection limit – 100 cfu / 100ml

Sampling Requirements:

- Sterile 600 mL PET bottle, Thiosulphate dosed
- Air gap essential
- Transport and store at 4°C
- Process within 6 hrs of collection, up to max 24hrs

Call us on 1300 653 366
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