



MC-Media Pad EC – AOAC 070901 and MicroVal 2017LR71

AOAC 070901 and MicroVal 2017LR71 differ in the amount of sample to be analysed. AOAC 070901 is a validation study that applies only to 50 g raw meats and other foods. MicroVal 2017LR71 is a validation study that applies to sample diluted 1:10.

SCOPE

Enumeration of *E. coli* and coliform in raw meats and other foods.

PRINCIPLES

MC-Media Pad EC is a ready-to-use dry medium method for *E. coli*/coliform counts. The sample when added onto the test pad diffuses to the whole pad through capillary action. The media pads are coated with growth medium, selective agents and chromogenic enzyme substrates (X-Gal and Salmon-glucuronic acid). X-Gal is hydrolysed by beta-galactosidase from coliforms to produce blue colonies and Salmon-glucuronic acid is hydrolysed by beta-glucuronidase from *E. coli* produce red/purple colonies.

The enumeration is broken down into stages as follows:

- **Inoculation**
Samples are diluted in 1:10 with Phosphate Buffered Saline or an appropriate diluent recommended by the manufacturer (MicroVal 2017LR71) or a 50 g sample is diluted in 450 mL of Butterfield's phosphate buffer (AOAC 070901). After homogenising one mL is plated onto the centre of the pad. Carcass sponges should be hydrated with 25 mL of diluent. Serial dilutions must be prepared using appropriate diluent.
- **Incubation**
MC-Media EC pads are incubated at $35 \pm 1^\circ\text{C}$ for 24 ± 2 h. The countable number on MC-Media *E. coli*/coliform pads is less than 300 colonies.
- **Interpretation**
All blue-green/blue colonies are counted as non-*E. coli* coliforms and red-purple/navy colonies are counted as *E. coli*. Total coliforms are the sum of non-*E. coli* coliform and *E. coli* colonies. For large numbers of colonies, count one to three squares and calculate the average per square. The average of the count is then multiplied by 20 to get the total number of colonies on the pad. When the entire growth area is stained or when the number of colonies exceeds 300 per pad, repeat the test with higher dilutions

For swab samples, counts should be expressed as CFU/cm².

For meat and meat products, counts should be expressed as CFU/g.

Note: calculations for different species and sample types can be found in Appendix 2 of the *Microbiological Manual for Sampling and Testing of Export Meat and Meat Products*.

CHECKLIST

Inoculation	Is the diluent used recommended by the manufacturer?	_____
	What weight of sample and volume of broth are used?	_____
	Are appropriate dilutions used to ensure a count less than 300 CFU/plate?	_____
	Is a positive control run with each batch of samples analysed?	_____
	Is the cover film of the media pad opened diagonally?	_____
Incubation	What are the incubation conditions and period?	_____
	What is the shelf life of opened MC-Media pads?	_____
	How are open packs re-sealed and stored?	_____
Interpretation	What colonies are identified and counted as <i>E. coli</i> and coliforms?	_____
	How are total coliforms reported?	_____
	How are counts outside the countable number reported?	_____
	Are the manufacturer’s instructions available and are they reproduced in the lab manual?	_____

QC CHECKLIST

Are MC-Media pads obtained from an ISO/IEC 17025 accredited supplier and is a QC report/certificate supplied with the batch?	_____
Are relevant QC parameters (e.g. sterility, quantitative recovery, etc.) checked and initialled before use?	_____