

EFFECTIVE DATE	NP Analytical Laboratories	METHOD CODES
REVISED: 03/07/2025	LABORATORY TEST METHOD SUMMARY	TCM3, ECM3, FCM3
REPLACES: 03/20/2022	ENUMERATION OF TOTAL COLIFORMS, FECAL COLIFORMS, and <i>ESCHERICHIA COLI</i> via MPN	PAGE 1 OF 1
KEY WORDS: coliforms, fecal coliforms, <i>E. coli</i> , MPN		

1. **SCOPE AND PURPOSE:**

This method employs procedures for the quantitation and confirmation of coliforms (TCM3), fecal coliforms (FCM3), and *Escherichia coli* (ECM3) in samples of food, feeds, ingredients, water, and environmental samples using a Most Probable Number (MPN) procedure.

2. **PRINCIPLE:**

2.1. Aliquots of a diluted sample are placed in the MPN tube format. After incubation and appropriate confirmation work, the number of confirmed tubes are used to calculate a MPN/test unit result for the target organism(s).

2.2. Lowest confidence levels

2.2.1. When a 1:10 dilution is tested, the lowest confidence level is <3 MPN per unit tested.

2.2.2. When 100 mL of a water sample is tested, <1.1 MPN per 100 mL is the lowest confidence levels.

2.3. Possible assay interferences:

2.3.1. High sugar content foods may increase growth potential for gas producing non-coliform *Enterobacteriaceae*.

2.3.2. Interpretation of gas production can be hindered by extremely turbid growth. Gas production should be interpreted as the displacement of medium in the Durham tube/fermentation vial or effervescence when tubes are gently agitated.

3. **PRECISION:**

Assay precision for the most probable number analyses is based on a 95% confidence interval (see FDA-BAM MPN chart). Assay precision may also vary with test matrix and physiological state of the microorganisms in the test samples. Terms used to describe method precision are defined in NPSOP3040, *Verification of Microbiological Tests*.

4. **REFERENCE:**

Bacteriological Analytical Manual Online, USFDA, September 2002, Chapter 4 (October 2020 revision)