

Antimicrobial Activity of Turmeric (*Curcuma longa*) Against *Salmonella Spp* and *E. coli Spp*

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The active components of natural herbs and spices contribute to the self-defense against mechanisms infectious organisms and also getting the attention as alternatives for synthetic chemicals due to their inherent antimicrobial nature, which is primarily used in food preparation. Turmeric is a tropical herb, which use to obtain aromatic powder from its mature rhizomes used for various purposes. The research was conducted to evaluate the Turmeric Methanolic Extraction (TME) and Turmeric Powder (TP) against *Salmonella* spp and *E. coli* spp. Dilution series of TME and TP were prepared according to 0.4%, 0.8%, 1.2%, and 1.6% and well diffusion method was conducted. Distilled water served as the negative control while Augmentin[®] (0.625ppm) served as the positive control. Antimicrobial activity was measured using the diameter of bacterial inhibition zone (DBIZ). TME inhibition for *E. coli* spp were shown significant difference ($P < 0.05$) between treatments while 1.2% dilution series (DBIZ of 9.69±1.54 mm) was closely related to positive control (DBIZ of 9.98±1.57 mm). However, TME inhibition for *Salmonella* spp did not show significant difference ($P > 0.05$) between treatments. Inhibition of TP for *E. coli* spp showed significant difference ($P < 0.05$) between treatments and the best treatment was 0.8% (DBIZ of 1.84±0.10 mm). Moreover, TP inhibition for *Salmonella* spp showed significant difference ($P < 0.05$) between treatments and the best treatment was 1.2% (DBIZ of 2.31±0.08 mm). In conclusion, 1.2% concentration in both TME and TP samples can be selected as the suitable treatment for antimicrobial property by considering the cost effectiveness.

Keywords: Turmeric, *Salmonella Spp*, *E. coli Spp*, Antimicrobial Activity