

## Antibacterial Activity of Different Fractions of Two Underutilized Fruit Crops in Sri Lanka: *Tamarindus indica* (Siyabala) and *Cynometra cauliflora* (Nam-Nam)

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### Abstract

Due to adverse effects exerted by currently applying synthetic food preservatives, there is a timely need of discovery of natural food preservatives. The present study was aimed to discover the antimicrobial potential of fruit extract of *Tamarindus indica* (Siyabala) and *Cynometra cauliflora* (Nam-Nam) grown in north central province of Sri Lanka against common food spoilage bacteria. The ethanol extracts of unripe fruit carp which was prepared by maceration, was dissolved in distilled water after evaporating all ethanol for partition with hexane and ethyl acetate. The antibacterial activity of crude extract and the fractions was assessed by agar disc diffusion method. Four concentrations of each sample were screened against *Escherichia coli*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Klebsiella pneumonia* and *Acinetobacter baumannii*. Among all fractions, the water fraction showed the highest yields for both fruit extracts (*C. cauliflora*: 51%, *T. indica*: 60.71%). The ethanol crude extract (500 mg/ml) of *C. cauliflora* (500 mg/ml) inhibited the growth of *E. coli* (7.66 mm), *S. aureus* (11 mm) and *P. aeruginosa* (11.33 mm), while the water fraction (500 mg/ml) inhibited all five strains (*E. coli*: 8 mm, *S. aureus*: 10.33 mm, *P. aeruginosa*: 12.66 mm, *K. pneumoniae*: 6.33 and *A. baumannii*: 13.33 mm). The 500 mg/ml concentration of ethanol crude extract (*E. coli*: 10 mm, *S. aureus*: 13 mm, *P. aeruginosa*: 15 mm, *K. pneumoniae*: 14 mm and *A. baumannii*: 14 mm) and the water fraction (*E. coli*: 10.66 mm, *S. aureus*: 15 mm, *P. aeruginosa*: 7 mm, *K. pneumoniae*: 10 mm and *A. baumannii* : 11 mm) of *T. indica* inhibited all bacterial strains. The hexane fraction of *T. indica* only inhibited the growth of *S. aureus* (10 mm). Ethyl acetate fraction of both fruit extracts did not exhibit antibacterial effect against tested strains. The results of present study prove the possibility of application of the tested fruit extracts to develop natural food preservatives.

**Keywords:** Antimicrobial, *Tamarindus indica*, *Cynometra cauliflora*, Food preservatives