Antibacterial activity of *Syzygium cumini* leaf extracts against *Escherichia coli* spp.

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ABSTRACT

Syzygium cumini (Jamun or Naaval in Tamil), is one of the important medicinal plant belonging to the family Myrtaceae. Different parts of *S. cumini* are used for various purposes. The leaves of *S. cumini* contain bioactives, which could be utilized against some pathogens. In this study, antibacterial activity of *S. cumini* leaf extracts were assessed against *Escherichia coli* spp.Agar diffusion method was used to evaluate the antibacterial activity of leaf extract by measuring inhibition zone after 24 h of incubation. . Methanolic and ethanolic extracts of leaf powder (5, 4, 2 and 1 mg/mL) were administered to assess the inhibition zone of *E.coli* spp. The experiment was conducted in a completely randomized design as an *in-vitro* study. All treatments showed significant inhibition compared to control. For both methanolic and ethanolic extracts, inhibition was highest in the plate administered with 5 mg/mL (1.53 cm and 1.90 cm, respectively) and the lowest inhibition was obtained for 1 mg/mL (1.23 cm and 1.20 cm, respectively) however in the control plate inhibition zone was not observed. There was strong positive correlation (r^2= 0.99) between concentration of extract and inhibition zone. Among the extracts, significantly higher antibacterial activity was exhibited by ethanolic extract compared to methanolic extract (p < 0.05). These findings are useful to prepare the extracts of *S. cumini* leaf for the treatment of various diseases caused by drug resistant species of *E. coli* spp. Since the plant drugs are considered to be less toxic and free from side effects than the synthetic drugs, the outcome of this study could be utilized in useful ventures.

Keywords:

Antibacterial activity, *E. coli* spp. inhibition zone, leaf extract, *Syzygium cumini*,