

Crude ethanolic extract of mangosteen rind was prepared with 95% ethanol. The extract was tested for its antibacterial activity against *Streptococcus pyogenes* and *Staphylococcus aureus*, which are the main cause of pharyngitis, using agar dilution method.

The results indicated that the extract had potent inhibitory activity against these bacteria with inhibition titer of 51,200 - 102,400 and 25,600 - 51,200 for *S. pyogenes* and *S. aureus*, respectively. Antibacterial activity was remained after storage at 2 - 8°C and room temperature for 270 days. The bacterial killing time was determined at the extract concentration of one - fourth of the inhibition titer. The amount of *S. aureus* ATCC 29213 was decreased by the extract more than gentamycin at 10 minutes and killed with in 30 minutes by both the extract and gentamycin.

In preparation of throat spray, the cosolvent of water ethanol and sorbitol was used to increase the solubility of the extract. The amount of ethanol was varied inorder to obtain clear solution with the minimum ethanol concentration. The solubilizing agents were also used to increase the solubility of the extract but found to inhibit antibacterial activity of the preparations. The throat sprays were then prepared with 0.25, 0.5 and 1.0% of mangosteen extract without solubilizing agent. Small amount of volatile oil and

ascorbic acid were incorporated into the preparation as flavoring agent and antioxidant, respectively. The products obtained are clear yellow solution, sweet, good flavor and has cool feeling upon spraying into the throat.

Antibacterial activity of the preparations was examined before and after storage at 2 - 8°C, 30°C, 45°C and room temperature (25-32°C) for 4 months in order to estimate the stability of the preparations. It was found that all preparations showed good antibacterial activity during the period of studied. Some preparations became slightly darkening and turbidity with colloidal particle. The degree of darkening and turbidity depend on the concentration of the extract and storage temperature.

Antibacterial activity of the product was also compared with the marketed product and found to have the same activity as the product containing 0.25% of extract.

It is concluded that the mangosteen extract can be prepared as throat spray with stable antibacterial activity for pharyngitis. However, clinical study as well as toxicity should be conducted further.