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**ANTIBACTERIAL ACTIVITY OF THE WATER DECOCTIONS
OF THE CONSTITUENT PLANTS OF THE AYURVEDIC DRUG
PANCHAWALKALA AND THE MEDICINAL PLANT *ABUTILON*
*INDICUM***

A PROJECT REPORT PRESENTED BY

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to the Board of Study in Plant Sciences of the
POSTGRADUATE INSTITUTE OF SCIENCE

*in partial fulfilment of the requirement
for the award of the degree of*

MASTER OF SCIENCE IN PLANT SCIENCES

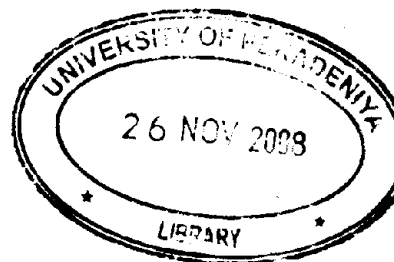
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UNIVERSITY OF PERADENIYA

SRI LANKA

2008

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ABSTRACT

In the Ayurveda system of medicine, medicinal plants are used as external preparations such as soaks, cool wet dressings, lotions, or powders in the treatment of skin infections. The decoctions of the barks of *Ficus benghalensis* L (Nuga), *Ficus religiosa* (Sacred Bo), *Ficus racemosa* (Attikka), *Thespesia populnea* (Gansuriya) and the leaves of *Abutilon indicum* (Beth Anoda) have been used as external applications for thousands of years. These plants were used to cure or reduce inflammatory reactions of abscesses and wounds. The purpose of the present study was to evaluate the antibacterial activity of the above medicinal plant decoctions. Five decoctions of the above plants were prepared according to the Ayurveda pharmacopoeia and tested against three human pathogenic bacteria, *Escherichia coli* NCTC (National Collection of Type Culture) 10418, *Staphylococcus aureus* NCTC 6571 and *Pseudomonas aeruginosa* NCTC 10662, *S. aureus* being the major causative organism of boils (furuncles) and carbuncles. The decoctions of *F. benghalensis*, *F. religiosa*, *F. racemosa*, and the *T. populnea* gave large zones of inhibition against *S. aureus* NCTC 6571 in the well diffusion bioassay method. The reproducibility and the reliability of the tests were established by using fresh and 24-hour refrigerated samples of decoction. There was a statistically significant difference in antimicrobial activity between the fresh and refrigerated decoction samples of *F. benghalensis* and *F. religiosa*. The 24-hour refrigerated specimens showed greater activity than the fresh samples. Antibacterial activity of both samples was reproducible and reliable. In conclusion, the decoctions of barks of *F. benghalensis*, *F. religiosa*, *F. racemosa* and *T. populnea* had antibacterial activity against *S. aureus*. However, the leaves of *A. indicum* did not show any antibacterial activity. These results corroborate with the beneficial effects of medicinal plant decoctions in the treatment of skin infections.