# ANTIBACTERIAL ACTIVITY OF SOME TRADITIONAL HERBAL DRUGS AND THEIR PLANT SPECIES USED IN THE TREATMENT OF SKIN DISEASE, WOUND HEALING AND DIARRHOEA

**G.K. Jayasinghe**

Postgraduate Institute of Science, University of Peradeniya, Peradeniya, Sri Lanka

Herbs have been used in therapeutics in most cultures. These medicinal herbs were used as a source of medicine. The majority of the world plants contain medicinal effects. Although the demand for herbal products are growing exponentially throughout the world, plant based natural therapeutic chemicals are still unidentified. WHO has confirmed that various herbal plants have become the best source of a wide range of therapeutic chemicals for medical use. If a plant has an adverse effect, mixing it in combination with other plant constituents in the traditional medicine system of herbal medicines can minimize this effect. Increased spread of infectious disease has been reported from many countries. In addition, a number of antimicrobial resistant bacterial species have emerged and are spreading in hospitals as well as the community. Herb derived chemicals could be useful to manage these resistant bacterial species. Observations on traditional medicines, which use plants, may direct research to discover novel effective compounds.

Four herbal medicines from the Sri Lankan traditional medicine system that are used for the treatment of dysentery, boils, wounds and bacterial skin infections were selected for study. Aqueous and methanolic crude extracts of the four selected herbal medicines and their eight constituent plants were separately tested for their in vitro antibacterial activity. The herbs are *Abutilon indicum, Curcuma longa, Cyperus rotundus, Pongamia pinnata, Zingiber officinale, Cardiospermum halicacabum, Vernonia zeylanica* and *Lawsonia inermis.* The tested bacterial strains were *Escherichia coli, Pseudomonas aeruginosa, Salmonella spp., Shigella spp.,* Methicillin Sensitive *Staphylococcus aureus* (MSSA) *and* Methicillin Resistant *Staphylococcus aureus* (MRSA). The antibacterial activity of the plant crude extracts were evaluated. The minimum inhibitory concentration required to inhibit the organisms was determined for extracts which exhibited antibacterial activity.

Water extracts of Pupula koladee alepaya and *Lawsonia inermis* inhibited *Shigella spp.,* and MSSA. Methanolic extract of *Pongamia glabra* demonstrated significant antibacterial activity against *Escherichia coli.* Methanol extract of Anoda kola alepaya, *Abutilon indicum, Vernonia zeylanica* and *Lawsonia inermis* showed activity against MSSA at 1000 μg/ml (1000ppm). Among the extracts, water extracts of *Vernonia zeylanica* and *Lawsonia inermis* showed marked antibacterial activity against *Shigella,* and MSSA.