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**IN VITRO ANTI MICROBIAL ACTIVITY OF SIDDHA DRUG KOROSANAI
MAATHIRAI**

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ABSTRACT

Siddha system of medicine is one of the traditional Indian medicines. Siddha system includes herbs, minerals, metallic salts and animal products. *Korosanai Maathrai* is a herbo-mineral siddha medicine mentioned in our siddha literature indicated for rhinitis, epilepsy, sleeplessness, constipation, functional dyspepsia, indigestion, fever of unknown origin, uncomfortable desire to empty the bowel. In this study *Korosanai Maathrai* was investigated for analysis of microbial load and antimicrobial potential against enteric pathogens like *salmonella species*, *E.coli*, *Staphylococcus aureus*, *bacillus cereus*, *proteus vulgaris* using cup plate method. The study result concluded that the analysis of microbial load and anti-microbial activity of *Korosanai Maathirai*.

KEYWORDS

Siddha, *Korosanai Maathrai*, Antimicrobial and Herbo-mineral.

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INTRODUCTION

Bacterial infection is one of the most serious global health issues in 21st century. World health organization has determined anti-microbial resistance as public health problem around the world causing increase of morbidity and mortality. In siddha system of medicines suitable and safe drugs are available for long period compared to modern medical system. *Korosanai Maathrai* is a pediatric medicine prescribed for rhinitis, epilepsy, sleeplessness, constipation, functional dyspepsia, indigestion, fever of unknown origin, uncomfortable desire to empty the bowel mentioned in siddha literatures like *Siddamaruthivasudar*,

Pararasasegaram part 2, Balavakadam, Agathiyar vaidya rathna surukkam etc. It consists of *Quercus infectoria* (Masikkai), *Piper longum* (Thippali), *Capra aegagrus* / *Bezoar* (Korosanai), *Saussureacostus Sathikoddam*, *Nigella sativa* (Karumseerakam), *Parietaria judaica* (Akkarakaram).

The present Investigation was undertaken to test the analysis of microbial load and anti-microbial activity of ethanolic extract of *Korosanai Maathrai* against some gram positive and gram negative bacteria.

MATERIAL AND METHODS

The siddha drug was procured from IMCOPS (drug shop), Chennai 106 and used in this present study. Analysis of microbial load, Anti-microbial activity was carried by cup plat method. Test was conducted in Regional Research Institute of Unani Medicine (RRIUM)

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Preparation of extract

The powder was extracted in soxhlet extraction apparatus with distilled ethanol for 18 hrs and the solvent was removed under vacuum on rotary evaporator to yield a crude extract. This extract was tested for antimicrobial activity on various microorganisms like *Staphylococcus aureus*, *Escherichia coli*, *Bacillus cereus*, *Proteus vulgaris*.

Cup plate method

The procedure employed in microbial assay were cylinder plate method or cup plate method. In the cup plate method, the anti -microbial substance diffuses from the cup through a solidified agar layer in a petridish or a plate to an extant so that the growth of added micro-org is inhibited entirely in a circular area or zone around the cavity containing the solution of a known quantity of anti-microbial substance. The anti-microbial activity is expressed as the zone of inhibition in millimeters, which is measured with a zone reader.

RESULTS AND DISCUSSION

Analysis of Microbial Load

The procedures recommended for analysis of Microbial Load as per WHO, 2007.

Antimicrobial Activity

The procedures performed using cup plate method as recommended in Indian pharmacopoeia (Anonymous, 1996).

Results of antimicrobial screening ethanolic extract of *Korosanai Maathrai* powder were measured in terms of zone diameter (Table No.2) and photographs were shown below. From the study it is revealed that the ethanolic extract shows maximum antimicrobial activity on the above mentioned gram positive and gram negative bacterias. The effect of this extract was found to decrease in the following order against different test organisms.

Table No.1: Analysis of Microbial Load

S.No	Parameters	Results	Permissible Limit for Internal use
1	Total Bacterial Count (TBC)	Absent	10 ⁵ cfu/g
2	Total Fungal Count (TFC)	Absent	10 ³ cfu/g
3	Entero bacteriaceae	Absent	10 ³ cfu/g
4	<i>Escherichia coli</i>	Absent	10 cfu/g
5	Salmonella Spp	Absent	Absent
6	<i>Staphylococcus aureus</i>	Absent	Absent

Antimicrobial Activity PHOTOS

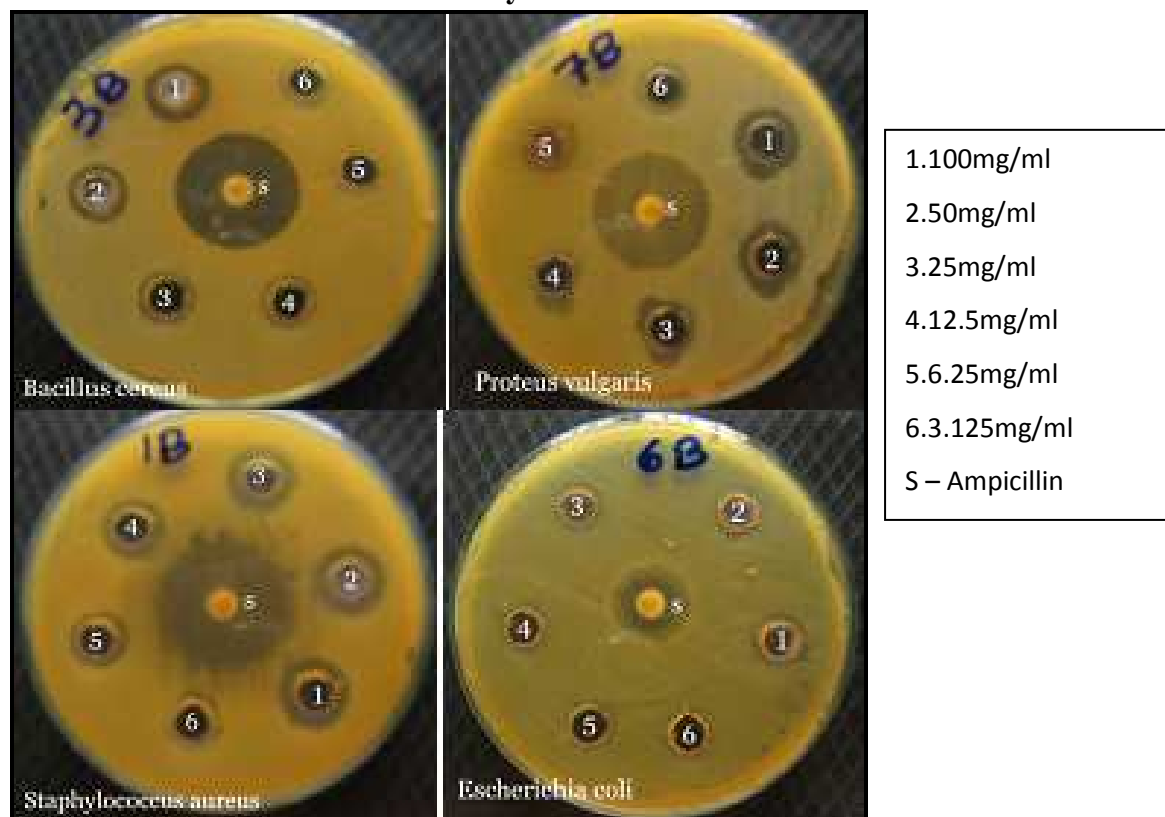


Table No.2: Zone diameter in mm

S.No	Organisms	Zone diameter in mm							MIC mg/ml
		1	2	3	4	5	6	Std	
1	<i>Staphylococcus aureus</i>	25	24	22	17	14	12	+	3.125
2	<i>Salmonella typhimurium</i>	-	-	-	-	-	-	-	-
3	<i>Bacillus cereus</i>	20	18	13	12	9	-	+	6.25
4	<i>Klebsiella pneumonia</i>	-	-	-	-	-	-	-	-
5	<i>Pseudomonas aeruginosa</i>	-	-	-	-	-	-	-	-
6	<i>Escherichia coli</i>	13	9	-	-	-	-	+	50
7	<i>Proteus vulgaris</i>	22	21	15	12	9	-	+	6.25
Conc: 1: 100mg/ml; 2: 50mg/ml; 3: 25mg/ml; 4: 12.5mg/ml; 5: 6.25mg/ml; 6: 3.125mg/ml									

CONCLUSION

The findings of the study showed the microbial load and has excellent anti-microbial activity of ethanolic extracts of *Korosanai Maathrai*. This results of *in vitro* study demonstrated that siddha medicine can be effective as modern medicine to kill the pathogenic microorganisms.

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CONFLICT OF INTEREST

We declare that we have no conflict of interest.

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