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ANTIMICROBIALACTIVITYOFSOMECOMMONLY USED HERBS

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ABSTRACT:

In the present study some herbal extracts have been tested for their antibacterial activity using seven different strains of Gram positive and Gram negative bacteria to measure the zone of inhibition. Extracts were found devoid of activity against all the microorganisms.

INTRODUCTION

Marigold, Chicory, Castor and Lemon grass are very popular traditional medicines and have long been used for a number and variety of diseases.

Marigold *(Calendula Officinalis)* has been mentioned for ague, and tearing headache. It is useful for open wounds, pa*rt*s that will not heal, ulcers and for haemostatic effect after tooth ex*tr*action. *C. Officinalis* ex*tr*act also used in toothpaste along with other different constituents. Ex*tr*act *fr*om C. *Officinalis* along with other plant ex*tr*act is use for the treatment of periodontal disease, injuries of oral mucosa and swelling. Lactones in *C. Officinalis* showed highest antifungal and antibacterial activities. It has also been used in nausea, vomiting, sinking sensation and epigastric distention (M. Grieve, 1994).

Chico*ry (Cichorium* in*ty*bus) was an impo*rt*ant medicinal herb and vegetable and salad plant in ancient Egyptian, Greek and Roman times. The constituents included the bitter compounds lac*tu*cin and intybin, inulin, tannins, sugars and vitamins which give stomachic, tonic, hypoglyaemic, mild di*ur*etic and luxative prope*rt*ies. It is also used for liver disorders, gallstones and kidney stones and for inflammation of the urinary tract (S. Bunny, 1994).

Castor *(Ricinus communis)* is native to India and tropical Africa but it has been cultivated in warm regions for its oily seeds since ancient times. In ancient Egypt and orient, the seed oil was used as cosmetic for beautifying the hair and complexation, for treating wounds and for burning in lamps. In medicinal practice castor oil is used as laxative, also has an anthelmintic action. Ex*tern*ally the oil is used to soothe eye irritations and some times for skin complaints (S. Bunny, 1994).

Lemon Grass (*Andropogon* jwarancusa) is also repo*rt*ed in literature for number of ailments. It has been used as carminative, stimulant, emmenagogue, diuretic and antiseptic (K. Usman Ghani, 1997).

EXPERIMENTAL

Material and Method

Plant Materials:

Chicory, Castor and Lemon grass were purchased from the local herbal market of Karachi. Leaves of Marigold were collected from different area of University of Karachi.

Organisms Used:

Gram-Positive

Bacillus Subtilis
Corynebacterium diphtheriae
Streptococcus pyogenes
Staphylococcus aureus

Gram-negative

Salomnella typhi Para A
Escherichia coli
Pseudomonas aeruginosa

Antimicrobial Assay:

The ethanolic extracts of Castor, Chicory, Marigold and Lemon grass were evaluated for the quantitative antimicrobial activity by disk diffusion method (N.C.C.L. 1990). Different Gram negative and Gram-positive organisms were seeded over previously sterilized nutrient agar. The zones of inhibition were measured around dried discs of Whatman containing 5-8ul of extract. Blank discs containing vehicle were used control. The Plates Were incubated at 37^{o}C for 24 hours.

RESULT AND DISCUSSION

Table 1 sows the antimicrobial activity of the herbal extracts.

Microbial infections are a major worldwide health problem. Many therapeutically effective antibiotics are now available and more are being added to this list. Though most antimicrobial agents are relatively safe, however all have adverse effects (e.g., allergic reactions or effect on the normal bacterial flora) that may be troublesome or even may be life threatening. A number of plants have long been and will continue to be investigated for their antimicrobial agents than the antimicrobials presently in use.

In the preliminary antimicrobial screening, the ethanolic extracts of chicory, Marigold, Castor Lemon grass were evaluated for activity against four gram positive (*Bacillus subtilis, Crynebacterium diphtheriae, Streptococcus pyogenes, Staphylococcus aureus*) and three Gram negative (*Salmonella typhi para A. Escherichia coli, Pseudomonas aeruginosa*) bacterial cultures.

The extracts did not show any activity against all the mentioned bacterial cultures. The numbers of organisms used in this experiment are not enough to prove the antimicrobial potential of these extracts. Moreover, the extracts showing no zones of inhibition in quantitative test by disc

diffusion method may exhibit the activity in qualitative test by presenting minimum inhibitory concentration (MIC). The fact may be explained by the more limited diffusion of less polar active compounds in solid medium (J.L. Rios., 1988).

It is possible that therapy for microbial disease can found by further evaluation of this extract against several other microbial cultures and by investigating the extract qualitatively.

Table 1
Antimicrobial activity of some commonly used herb

Microorganisms	Inhibition Zone (mm)			
	Marigold	**Lemon grass**	**Chicory**	**Castor**
Gram-Positive				
Bacillus subtilis	0	0	0	0
Corynebacterium diphtheriae	0	0	0	0
Streptococcus pyogenes	0	0	0	0
Staphylococcus aureus	0	0	0	0
Gram-negative				
Salmonella typhi Para A	0	0	0	0
Escherichia coli	0	0	0	0
Pseudomonas aeruginosa	0	0	0	0

Activity Key: 0 = no activity

REFERENCES

J.L.Rios., M.C. Recio., and A. Vilar., *J. Ethnopharmacology*, 23, 127,(1988.

K. Usman Ghani, A. Saeed, M. T. Alam, "Indusyonic Medicine; Traditional Medicine of Herbal, Animal and Mineral Origin in Pakistan", University of Karachi, (1997).

M. Grieve F.R.H.S, "A Modern herbal" Tiger books international, London, 517, 518, (1994).

National Committee for Clinical Lab. Standards, Performance Standard for Antimicrobial Disc Susceptibility test, Approved standard M-7, 2nd ed. National committee for clinical lab. Standard, Villanova. P.A. (1990).

S. Bunny, "The illustrated Encyclopedia of herbs, their medicinal and culinary uses" Burnes and Noble books, New York, 91, 110, 246, (1994).