

MEDICINAL PLANTS (MENTHA PIPERITA, ZINGIBER OFFICINALE, EUGENIA CAROPHYLLATA, LAVANDULA ANGUSTIFOLIA, GINKGO BILOBA) USED AGAINST BACTERIAL DISEASES

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ABSTRACT

Medicinal plants have many potential in the treatment of various diseases. In the current scenario, we move back to the nature for curing the various diseases by using its resources, as there are no side effects of these resources. The objective of the study was to determine the antibacterial potential of the crude extracts of some of the commonly used medicinal plants viz., *Mentha piperita*, *Zingiber officinale*, *Eugenia carophyllata*, *Lavandula angustifolia* and *Ginkgo biloba*. For this qualitative study, we have gone through the literature and gathered the information regarding the antibacterial potential of medicinal plants. In this preliminary investigation, we found that most of the researchers used the crude extracts of the leaves and other parts of the above plants against strains of bacterial species such as *Staphylococcus aureus*, *K. Pneumoniae*, *P. aeruginosa*, *E. coli* etc. These findings suggest the further studies required for the exploration of medicinal plants resources.

Keywords: Medicinal plants, crude extracts, bacterial diseases.

Introduction

Medicinal plants are important for the study of their traditional uses through the verification of pharmacological effects and can be natural composite source that act as new anti-infectious agents. The microbial infectious are the major cause of morbidity and mortality of developed and developing country, although a number of antimicrobial agents are available for the treatment and management of infectious diseases. Traditionally, crude plant extracts are used as herbal medicinal for the treatment of human infectious diseases (1-3). The present study investigated the activity of five medicinal plants including *Mentha piperita*, *Zingiber Officinale*, *Eugenia carophyllata*, *Lavandula angustifolia*, and *Ginkgo biloba* have been screened for antimicrobial activity in this paper (4) and effort have been done to identify their active constituents (5).

Application of Medicinal Plants in Bacterial Diseases

Medicinal plants are an important therapeutic aid for various ailments from ancient times, different parts of medicinal plant have been used to cure specific ailments. Following medicinal plant used against bacterial diseases.

1. Peppermint

Peppermint is very beneficial and important plant. It is widely used in food, cosmetic and

medicines (1). It is chemo preventive and anti-mutagenic (2). It has been proven helpful in relief of the common cold. It also decrease symptoms of irritable bowel syndrome and decrease digestive symptoms such as dyspepsia and nausea. It is also used topically as an analgesic and to treat headache (3). It is mosquito repellent (4) and has anti-nematodal (5), antibacterial properties (6-7). Peppermint oil has become most considered agent for relief from itching, muscle pain, and headache. All chemical compounds isolated from menthol are widely used for respiratory congestion, headache and skeletal muscle pain.

2. Ginger

Medically ginger is used as a stimulant and carminative and is used frequently for dyspepsia and colic (8). Ginger promotes the release of bile from the gall bladder (9, 10). Ginger may also decrease joint pain from arthritis, may have blood thinning and cholesterol lowering properties and may be useful for the treatment of heart diseases and lungs diseases. Ginger has been reported to be effective for the treatment of rheumatism, cold, heat, cramps and diabetes. Allergic reactions to ginger include heartburn, bloating, gas, belching and nausea (powdered form). Un-chewed fresh ginger may result in intestinal blockage and individuals who have had ulcers, inflammatory bowel disease or block intestine may react badly to large quantities of fresh

ginger. Ginger adversely affect individual with gallstones and may affect blood pressure, clotting and heart rhythms.

3. Clove

Application of clove oil in the mouth or on the gum can sometimes cause damage to the gums, tooth pulp, skin and mucus membrane. Application of clove oil or cream to the skin can sometimes cause burning and irritation of skin. Early research in people with Pre-diabetes shows that taking an extract from clove flowers buds seems to lower blood sugar levels before and after meal. Early Research shows putting a solution containing clove oil gel on the skin can help with severe itching. Clove oil and eugenol, one of the chemical it contains, have long been applied to teeth and gums for toothache. Extracts from clove flower buds right before drinking alcohol improves hangovers symptoms in some people. On apply of clove oil to palms help reduce excessive sweating of the palms. Clove oil is used as mosquito repellent.

4. Lavender

Lavender medicinal herb is used topically to treat fungal infections, wounds, eczema, various ulcers, sunburn skin and acne. Lavender is currently being investigated for its antibacterial Properties. It contains volatile oils known to have significant antiseptic value. Evidence suggests that lavender is an effective natural treatment for pathogenic such as strains responsible for diphtheria and typhoid. When lavender oils is used topically as a chest rub, it is traditional treatment for relief of symptoms associated with common colds, chronic coughs, asthma, persistent bronchitis, pneumonia, flu, persistent tonsillitis . Lavender calming effects on the nervous system has also made it a valuable herb remedy for the treatment insomnia.

5. Ginkgo

Ginkgo biloba -one of oldest herbs use in today, ginkgo has a broad range of indication. For asthma suffers ginkgo works to inhibited PAF (platelet activating factor), a powerful inducer of platelet aggregator and anaphylactic reactions. Natural herbs that stimulate anti - PAF activity are known to assist in the treatment of Asthma, allergic reactions,

thrombosis and shock, tract from the leaves of G. biloba , used in the treatment of cerebral insufficiency, was developed in 1960(11). Ginkgo leaves have attracted much attention as agents for improving cerebral circulation and they possess antitumor, Anti-parasitic (12). The role of the extracts in the treatment of diseases involving free radicals and oxidative damage has also been suggested (13).

Result and Discussion

The results of the study reveal that an aqueous and polar solvent was active against the strains of the bacteria that are common cause of infections. In present work, the first medicinal plant is Mentha piperita. In Mentha piperita many scientist observed maximum activity of 100 (uM) concentrations against pseudomonas aeruginosa, Streptococcus aureus, Bacillus subtilis and P. Aureus. The reference research paper indicate that increased lipo-philic compound are extracted using the petroleum ether, Chloroform and menthol increased the suspended higher compounds in the solvent as stated by Thomas et. al. (1998). The second plant is ginger the maximum zone of inhibition was showed against Bacillus sp . Followed by E. Coli and P. Aeruginosa and the maximum zone of inhibition was recorded against Klebsiella sp and Enterobacter sp. The third medicinal plant is clove. Many scientists observed antibacterial activities of clove, water extract against S. Aureus and E. coli. These reports indicate that both in vivo and in vitro result confirmed the efficacy of clove extract as natural antimicrobial. The forth plant is lavender, many researchers clear that lavender flavor (oil) also possessed bacteria clear that lavender flavor (oil) also possessed bacteria killing potency, this activities will be generalized in the plant flavor. The last plant is ginkgo. The antibacterial activities of G. biloba, methanol, ethanol, chloroform and hexane extracts against microorganisms were examined in the research paper study and their potency was quantitatively assessed by ZOI, MIC and MBC values.

Conclusion

From the above study, it is concluded that various antibacterial activities were present in

Mentha piperita, *Zingiber officinale*, *Ginkgo biloba*. The present work was similar to (Deans and Baratta) shows that the compound from *Mentha piperita* possess potent antimicrobial activity and suggestions that the *Mentha piperita* leaf extracts should contains the effective constituent responsible for eliminating the bacterial pathogen. To conclude that, there is wide body of scientific evidence to show that ginger has great potential in the treatment of many microbial diseases. The antibacterial activities of commonly used

species have been summarized several spices such as clove, oregano have exhibited significant antimicrobial activities against food spoilage bacteria like *B. Subtilis* and *p. Fluorescence*. Antibacterial potency of lavender originated Flavor (volatile) was tested against *E. Coli*, *P. aeruginosa* and *C. albicans* by using agar plate method. This study provides a strong scientific basis for the ethno-medical use of *G. biloba* against bacterial diseases of plants.

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