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A Review on Antimicrobial Potential of Indian *Ocimum sanctum* (Tulsi)

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Abstract: ***Tulsi, a subcontinental plant has been cultivated in india for the religious and medicinal purposes. It is an erect, many branched subhurb of 30-60cm tall with hairy stem placed in lameacea family.there are aproximatly 54 compounds has been already identified in tulsi leaves, flower and spikes which are proposed to be responsible for this type of activity. E. Coli and other pathogens causing skin,oral and soft tissue infections, essential oil of tulsi could be a valuable typical antimicrobial agent for management of skin and oral infections caused by these organism. Many research and Review articles has been already published on this topic and they proposed to antimicrobial function of tulsi. The major objective of my study was to evaluate the antimicrobial activity of tulsi.oil extract, chloroform extract, and alcohol extract of tulsi has a powerful impact against different microbial pathogens like-Salmonella enteritica, Vibrio parahaemolyticus, E. Coli and Listeria monocytogenes. In general extract obtained by all method showed antimicrobial activity against all tested microorganisms. In conclusion extract of ocimum found to be containing chemical compounds useful in food preservation, development of drugs against food born and infectious microorganism.***

Keywords: MIC (Minimum inhibitory concentration), Essential oil components, Bactericidal, Anti fungal,mode of action.

1. Introduction

About Tulsi

Tulsi is an aeromatic plant in the family lamiaceae which is native to the indian subcontinent and widespread as acultivated plant. It is considerd "The Queen of the herbs" for its restorative and spiritual properties. Tulsi is cultivated for religious and medicinal purposes and for its essential oils. Tulsi is an rect, many branched, subshrub, 30-60 cm tall with hairy stems. A group of researchers from central university of punjab, bhatinda, have found that this plant originates from north central india. Tulsi is a sacred plant for hindus and is worshipped as the avatar of laxhmi. Tulsi has been used for thousands of year in ayurveda for its diverse healing property,it is mentioned in charaka samhita, an ancient ayurvedic text. Tulsi extract are used in ayurvedic remedies for a variety of ailments.Traditionaly, tulsi is taken in many forms; as herbal tea, dried powder,fresh leaf of mixed with ghee.for centuries,the dried leaves have been mixed with stored grains to repell insect. In shri lanka this plant is used as a mosquito repellent.

Chemical Composition of Essential Oil

Essential oil of tulsi have antibacterial, anti fungal and anti viral properties. The major chemical compounds that were found in essential oil are-eugenol (61.76%), isopropyl palpitate (11.36%), alpha-lubene (3.85%), 2-3-dihydroxy propyl elaidate (5.10%), 1-methyl 3-benzene(1.73%), 2-methoxy 4-(1-propyl) phenol(2.65%), vanillin(1.27%), 1,4-diethyl benzene(1.03%),hexa decanoic acid methyl easter(2.51%), and [2-methyl 4-(1-propyl phenoxy) silane](2.01%) essential oil of tuls

2. Mode of Action on Pathogens

Eugenol is the most prominent phytoconstituent present in the tulsi plant which may be responsible for antimicrobial activity.many research proposed the mechanism of bactericidal action of eugenol, alpha terpinol and gama terpine which are the major component of tulsi essential oil against test microorganism. The study was done to observe changes in membrane composition by assaying for the leakage of protein and lipid using bradford and van handel's method respectively. The oils components were capable of including cell lysid by the leakage of protein and lipid contents.previous studies showes that eugenol at 2X MIC was highly effective toward protein content leakage after 120 min. of exposure. Alpha terpinol ang gama terpinene showed simillar effect at 2X MIC under the same condition. The result of reference literature revealed that both cell wall and membrane of the treated gram possitive and gram negative were significantly damaged.

3. Conclusion

Tulsi has been recognized for tousands of years to be are of india's greatest healing herbs. Tulsi in sanskrit means"are that is incomparable" are that does not tolerate or permit similarity. The knowledge of holy basil need to spread for the benifits of all humanity. In conclusion it is to be found that tulsi extract has different antibacterial effect on different type of microorganism. They shows different mode of action on varity of microorganism. The literature will serve as the guidelines for the reseachers in future work relared to the anti microbial potential of tulsi.

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