Analysis of lemon grass for its antifungal value

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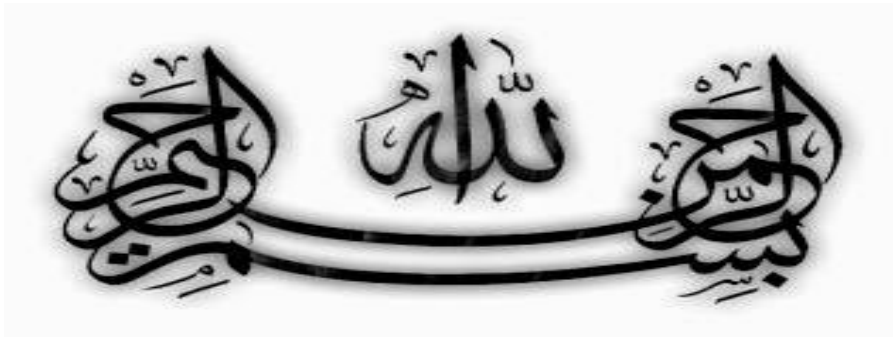

“And He it is who causes gardens to grow (both), trellised and untrellised, and palm trees and crops of different (kinds of) food and olives and pomegranates, similar and dissimilar. Eat of (each of) its fruit when it yields, and give its due (zakah) on the day of its harvest. And be not excessive. Indeed, He does not like those who commit excess”.

(Surah Al – Anaam)


LORD MUHAMMAD (PEACE BE UPON HIM) SAID,
"God, His angels and all those in Heavens and on Earth, even ants in their hills and fish in the water, call down blessings on those who instruct others in beneficial knowledge"

DECLARATION

I, **Sidra Azeem** D/O **Mohammad Azeem** ID: **15005140003,** Session **2015-2017** hereby declare that the matter printed in the thesis titled **"Analysis of Lemon Grass for its antifungal value"** is my own work and has not been printed, published and submitted as research work, thesis or publication in any form in any University, Research institution etc. in Pakistan or Abroad.

Dated: _____ _____

(Sidra Azeem)

RESEARCH COMPLETION CERTIFICATE

Certified that the research work contained in this thesis titled, **"Analysis of Lemon Grass for its antifungal value"** has been carried out and completed by **Sidra Azeem, ID: 15005140003.** The quantum and the quality of the work contained in this thesis is adequate for the award of Degree of MS/M.Phil.

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DEDICATION

"I dedicate my thesis work to my beloved Parents to my most respectable Teachers and to every person who taught me even a single word. I respect them from the core of my heart and am indebted to these people, as I would never have been able to complete my research work without their motivation and mentoring."

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ABSTRACT

Medicinal plants are still a major part of traditional and herbal medicine in the developing countries. The use of medicinal plants is common among those people who have less or no access to prescribe medicine. *Cymbopogon citratus* (*C. citratus*) is commonly known as "citronella grass" or "lemongrass" that belongs to family Gramineae (Poaceae). It is a perennial tropical grass with long, thin leaves. Lemon grass is found as a folk remedy for fever, pneumonia, antispasmodic, antipyretic, bactericidal, fungicidal, antioxidant, analgesic, anti inflammatory actions and astringent properties. Antioxidants isolated from *C. citratus* are responsible for reducing LDL (low-density lipoprotein) oxidation, scavenging activity of free radicals and high potential on human skin. The fundamental aim of this study was to extricate different *C. citratus* components for fungal inhibition. Phytochemical tests were performed to confirm the presence of alkaloids, flavonoids, tannins, coumarine and saponins. The extracts showed significant antifungal and antioxidant activities. The antifungal activity of *C. citratus* extract against *Candida albicans* and *Sacchromysis cerevisiae* was explicated by using the agar diffusion method. Nystatin was used as standard to measure the antifungal activity of *C. citratus* extracts. In this study, the results clarify that all *C. citratus* extracts exhibited clear zone of inhibition against tested fungus but methanol extract of *C. citratus* was superficially effective against *Sacchromysis cerevisiae* and showed 24mm zone of inhibition after 72h.Wherase, methanol extract of lemon grass against *C. albicans* showed 19mm zone of inhibition after 72h. Antioxidant activity of *C. citratus* samples were also reported by TPC method. Methanol extract of *C. citratus* corroborated highest antioxidant activity followed by hexane and water extracts. Maximum absorption for methanol was GAE 1190.6 mg/L and water was GAE 530.9 mg/L whereas n-hexane showed less absorption. Results declare that leaves of *C. citratus* can be a part of herbal medicines that can be used against fungal diseases.

INTRODUCTION

Nature persistently arises as a golden evidence to exemplify the exceptional fact of symbiosis. All herbal products from animals, minerals and plants have been proved the basis of cure of humaninfections. Especially, Plants are dominant source of herbal medicines. Today, investigatesthat in developing countries about (80 %) of nation basedon traditional medicine for their health care. Contemporary, herbal products demand is increasing day by day. In ancient literature approximately 500 plants are mentionedhowever, around 800 plants have beenutilized in primitive systems of medicine. India is a major store house of herbal plants that are intensified in primitive medical treatments.