

THE EFFECT OF CITRUS AURANTIFOLIA EXTRACT AGAINST FUNGI

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***Abstract:** Citrus aurantifolia leaves extract exhibited higher zones of inhibitions diameter compared to carica papaya and control (5% ethanol) on three pathogenic fungi which shows an increase on zones of inhibition on aspergillums as the concentration of the extract increase from to 5mm to 2mm. the zones of inhibition on the fungi to be the least of the various zones of inhibition recorded in their study. Thought the efficacy of treatment with citrus aurantifolia is dependent on the quantity of the diferent chemical substance present in their leaf extracts*

***Keywords:** Arthritis, Asthma, Diabetis. Leaves.*

INTRODUCTION

Lime (*Citrus aurantifolia*) is believed to have originated in northern India and adjoining parts of Myanmar, or in northern Malaysia. The lime is now cultivated throughout the tropics and in warm subtropical areas. The weight of flavorings in the superintendence of natural sicknesses cannot be over-emphasized. It's clear that the workshop sphere harbours a weariless source of active members spendy in the superintendence of numerous sicknesses. Utmost workshops have medicinal values and the active members are ordinarily wrung from all workshop structures; the leaves, stems, barks, roots, corms, rhizomes, woodland, flowers, fruits, or seeds, notwithstanding, the immersion of these members vary from structure to structure. The zone known to contain the uppermost immersion of chemical members are preferred for restorative purposes (Kafaru, 1994).

Some of the active principles solely or in combination inhibit greatly the life processes of microbes, especially the complaint-causing bones. They do this by binding their protein flecks, acting as chelating agents (choosy girth polyvalent making ions so that the concluding loses its birth conditioning), altering their biochemical systems, forestalling misapplication of available interests to the microorganisms, others catalyze inflammation of microbial cells (Garrod et al.,

1995). The bitter taste, the pungent and repulsive smell in some manufactories; have been inaugurate to have the cleansing capableness over the metabolic conditioning of a wide range of microorganisms (Mitscher *et al.*, 1992; Sofowora, 1982; Baladrin *et al.*, 1985).

The lime is at home in the lowland tropics, although it grows up to 1000 m altitude or more. The tree is sensitive to cold and defined by temperatures above -2°C, but it is quite drought-resistant. High incidence of bacterial canker is a limiting factor in the wet tropics; under dry conditions irrigation is necessary to obtain good quality fruits. Limes can grow on poor soils and tolerate heavier soils than oranges, provided that good drainage prevents waterlogging.

The rich flavour and acid taste make lime a favourite for hot and spicy dishes, either fresh or in the form of pickles and sauces. It's refreshing qualities come to the fore in lime juice, lime tea and in use on other fruits such as pawpaw. The leaves and fruits have many medicinal uses, some of which are linked with the belief that limes driveway evil spirits.

The health benefits of *Citrus aurantifolia* plant are highly associated with the large number of bioactive constituents it contained such as phenols, flavonoids, carotenoid, vitamins and minerals. Limes contain unique flavonoid compounds that have antioxidant and anti-cancer properties. The flavonoids help to inhibit cell division in many cancers cell lines in addition to its antimicrobial efficacy. The plant also demonstrated bioactive activities for cold, fever, sinusitis, sore throats, asthma and bronchitis. Antibacterial assessment of *Citrus aurantifolia* aqueous ethanol, acetone, chloroform, ethanol and petroleum ether leaves extract conducted by Pathan R *et al.* against various pathogen showed significant activity against *Staphylococcus aureus*, *Pseudomonas* spp, *Klebsiella pneumonia* along with antifungal activity against *Mucor* spp., *Aspergillus fumigates* and *Aspergillus Niger* (Kandpal *et al.*) isolated actinomycetes from *C. aurantifolia* and tested its antibacterial efficacy against different pathogen. In this study, five actinomycetes isolated from the plant exhibited antibacterial activity against various pathogens including *S. aureus*, *E. coli*, *K. Pneumonia* and *S. typhi*.

METHODOLOGY

The sample of citrus was bought from Monday market Maiduguri, Borno state. The samples Include leaves, stem bark and juice. The isolates of fungi were collected from the Ramat polytechnic Maiduguri, department of science laboratory technology, micro biology laboratory.

Saborounds Dentros Agar, powder (65) gram was weighed and transferred in to conical flask containing one liter of distilled water. The mixture was shaken to

dissolve and later sterilized by the use of autoclave at (121) for 15 minutes. It was allowed to cool to about 45c, dispense in to Petri dish and allowed it to solidify. The method used for the sensitivity testing was adapted as described by CLSI (2006) but with little modification (Drop i.e., 25m of the exacts were used). A subculture of (3) difference fungi isolates (Aspergillus, Mucus and Penicillium) were made onto freshly prepared SDA. About 2 5ml of each sample was added after the inoculation of each fungi isolates. The plates were then incubated at room temperature and observed for growth around 3 days. The presence or absence of fungi growth is a direct indication that the isolates were either susceptible or resistant.

RESULT AND DISCUSSION

Table: The effects of leaves extract of citrus aurantifolia on the selected fungi isolates

Sample	Aspergillus Spn	Mucor	Penicillium in SP
A powder	5mm	5mm	2mm
B Diluted	R	2mm	R
C Ethano ic	R	2mm	2mm

Keys: R=Resistance

Mm=conc. Of inhibition in millimeter

DISCUSSION

Citrus aurantifolia leaves extract exhibited higher zones of inhibitions diameter compared to Carica papaya and control (5% ethanol) on three pathogenic fungi, there was an increase on zones of inhibition on aspergillums as the concentration of the extract increases from to 5mm to 2mm. Also, higher increase inhibition diameter was recorded on candida and penicillium as the leaf extract concentration increases from 2mm to R.

Anigboro *et al* (2011) reported that extracts of citrus aurantifolia leaves showed a better antibacterial activity than antifungal activity. They found the zones of inhibition on the fungi to be the least of the various zones of inhibition recorded in

their study. Thought the efficacy of treatment with citrus aurantifolia is dependent on the quantity of the different chemical substances present in their leaf extracts.

SUMMARY

The Citrus aurantifolia leaves extract exhibited or yielded a positive effect on the selected fungi like Aspergillum, candida and penicillium as its diameter increase as the concentration of the extracts increase.

CONCLUSION

The use of medicinal plants, which have fewer side effects and economically cheaper, have been taken in to consideration recently. Citrus aurantifolia leaves are not only known for their nutritional benefits but also considered to possess medicinal properties. The main aim of the study was to determine the antifungal activities of citrus aurantifolia leaves on some pathogenic fungi (Aspergillus, Mucor and penicillium) isolated from female genital tract. Leaves of citrus aurantifolia were collected from Monday market Maiduguri in Borno state, there difference concentrations (5mm 2mm R) of leaves Ethanol extract were prepared and introduce in to bored holes of organisms' culture on Saborounds Dentrose Agar (SDA).

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