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ANTIMYCOTIC EFFECT OF HIBISCUS SABDARIFFA

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SUMMARY

In this investigation, the antifungal effect of alcoholic extract of Hibiscus sabdariffa against some species of yeasts, moulds and dermatophytes were studied in vitro.

The present study revealed that *Hibiscus sabdariffa* showed antifungal activity against *Candida albicans, Aspergillus fumigatus* and *Trichophyton mentagrophytes.*

INTRODUCTION

Plants and their extracts are still being one of the principal sources of grugs used for treatment of human and animal diseases. The importance of plant extracts as antimicrobial and antifungal agents were elucidated by several investigators (Osborn, 1943; El-leithy, 1953; Sharaf, 1962; Sharaf, 1974; Atef et al., 1976; Salah and Rafik, 1977; Fujita et al., 1978 and Mohamed, 1979).

Candida albicans and other species of candida are frequently present on normal mucous membranes of mouth, vagina and intestinal tract. It may produce lesions in the mouth, genito-urinary tract, skin, nails, bronchi, or lungs in patients whose normal defense mechanisms may have been altered by underlying diseases, over used of antibiotics of immunosuppressive agents (Utz, 1967).

Aspergillus fumigatus is the species most frequently associated with pathological processes. This may include pulmonary aspergillosis of a superficial and invasive type which is being observed mostly in debilated patients receiving antibiotics, steroid therapy and immunosuppressive or antimetabolic drugs. Asthma and rhinitis due to allergy to antigens of Aspergillus spores were recorded (El-Hefni, 1980).

Antimycotic effec of *Hibiscus sabdariffa* was not fully well investigated. Therefore, the present work was carried out to study the antifungal activity of *Hibiscus sabdariffa* on *Candida albicans, Aspergillus fumigatus* and *Trichophyton mentagrophytes.*

MATERIAL AND METHODS

Alcoholic extract of *Hibiscus subdariffa* were used in various concentrations (5, 10, 15, 20, 30, 40, 60 up to 80%).

The fungi were selected to represent yeast, moulds and dermatophytes cultured onto Sabouraud's dextrose agar medium then incubated at 30°C for 2-3 days for *Candida albicans,* 2-5 days for *Aspergillus fumigatus* and 5-10 days for *Trichophyton mentagrophytes.* When maximal fungal growth was obtained, the stock culture were examined to assure the identity and purity of the particular fungal strain.

The effect of *Hibiscus sabdariffa* on fungal growth was performed as done by Robell and Lemb (1953), where the *Hibiscus sbdariffa* extract was dissolved in sterile distilled water for obtaining different concentrations and mixed with 90ml. Sabouraud's dextrose agar medium (at 45°C), poured into sterile plates, solidified by colling. Four plates were used for each concentration. moreeover, two plates containing the *Hibiscus sabdariffa* alcoholic extract, were prepared and allowed to run in parallel with each concentration of Hibiscus sabdariffa as controls.

RESULTS AND DISCUSSION

The antifungal activity of different concentrations of *Hibiscus sabdariffa* against representative species of *Candida albicans, Aspergillus fumigatus* and *Trichophyton mentagrophytes* were screended and recorded in the following table.

It was observed that they were highly effective of *Candida albicans.* These reaults were similar with that obtained by Salah and Rafik (1977). It was noticed that alcoholic extract of the plant was more potent on these fungi in high concentrations (60-80%). The minimum inhibitory concentration of *hibiscus subdariffa* alcoholic extract on *Candida albicans, Aspergillus fumigatus* and *Trichophyton mentagrophytes* were 20, 30 and 60% respectivle.

The effect of alcoholic extract of Hibiscus sabdariffa on the fungal growth

Concentration	*Candida albicans*	*Aspergillus fumigatus*	*Trichophyton mentagrophytes*
Control	+++	+++	+++
5	+++	+++	+++
10	+++	++	+++
15	++	+	+++
20	-	+	++
30	-	-	+
40	-	-	+
60	-	-	-
80	-	-	-

\- = Complete inhibition (no growth)
\+ = Slight growth.
++ = Moderate growth
+++ = Strong growth

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