ANTIMICROBIAL EVALUATION

Antimicrobial activity of the *Carissa carandas* extracts

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ABSTRACTS

The antimicrobial properties of the hexane, chloroform and methanolic extracts from *Carissa carandas* were investigated using agar diffusion method. The microorganisms used in this study are four types of bacteria, a type of yeast and three types of dermatophytes fungal. However, all the extracts exhibited negative results.

INTRODUCTION

Carissa carandas is a perennial shrub. It is native to India and was cultivated in the Asian region. It produces abundant berries through out the year especially from March to July in the monsoon tropical climate. The young fruit of this plant is used traditionally to heal fever, diarrhoea and headache. Moreover, the root juice of this plant has been used to treat various microbial diseases such as diarrhoea, dysentery and skin diseases (Taylor, 1996). The Malays conserve the fruits as pickle by boiling them in vinegar or salt, making cordial and jams (Burkill, 1966). The objective of the present investigation is to determine the antimicrobial properties various extracts of *Carissa carandas* since no antimicrobial study was previously been published on this spesies.

MATERIALS AND METHODS

Plant material

Various organs i.e fruit, stem and leaf of *Carissa carandas* were collected and identified. The voucher specimens were deposited at the Herbarium, School of Biological Sciences, University Sains Malaysia.

Extract preparation

The hexane, chloroform and methanol extracts were obtained by extracting the various parts of the plants in the soxhlet apparatus.

Micro-organisms

The bacteria used in this study included *Escherichia coli*, *Staphylococcus aureus*, *Pseudomonas aeroginosa* and *Shigella dysentri*. All these bacteria were stored on nutrient agar slants. The fungal used were *Microsporum canis, Trichophyton mentagrophytes* and *Trichophyton rubrum*. Meanwhile, *Candida albicans* was the only representative of yeast used in this study

Culture media

The nutrient agar used for storage and antimicrobial susceptibility tests was obtained from Oxoid Ltd. England.

RESULTS AND DISCUSSIONS

The results are shown in Table 1. All the ten extracts of *Carissa carandas* failed to inhibit any microbial. The negative results suggested that *Carissa carandas* is a plant without antimicrobial properties. The results do not support the traditional used of this plant in healing the microbial diseases.

Table 1 Antimicrobial properties of the *Carissa carandas* extracts

Extracts	Mean± standard deviation of the 3 replicates of zone of inhibition diameter (mm)							
	S. dysentri	*S. aureus*	*P. aeroginosa*	*E. coli*	*M. canis*	*T. mentagrophytes*	*T. rubrum*	*C. albicans*
Stem (hexane)	-	-	-	-	-	-	-	-
Stem (chloroform)	-	-	-	-	-	-	-	-
Stem (methanol)	-	-	-	-	-	-	-	-
Leaves (hexane)	-	-	-	-	-	-	-	-
Leaves (chloroform)	-	-	-	-	-	-	-	-
Leaves (methanol)	-	-	-	-	-	-	-	-
Fruit (hexane)	-	-	-	-	-	-	-	-
Fruit (chloroform)	-	-	-	-	-	-	-	-
Fruit (methanol)	-	-	-	-	-	-	-	-
Fresh fruit (methanol)	-	-	-	-	-	-	-	-