Preface

The general description of the diverse benefits of *Moringa oleifera* tree is pretty ancient. Data relating to the beneficial constituents has been reported from around the world. Scientific researches have proven that this tree is in fact a powerful house of nutritional value. Thus, the plant can be considered as one of the best foods that can be found.

Besides, every part of the tree had been used effectively in folk remedies against a broad spectrum of ailments afflicting humankind, recent researches proved that basic idea, reports suggest the existence of antibiotic, anti inflammatory and anti tumor compounds which makes it an exceptional natural cure.

The benefit of Moringa tree is not restricted on health and promoting physiological well being; however, virtually every part of it is edible. It is used in industry, construction and in fighting against desertification.

Furthermore, suspensions of the ground seeds of the Moringa tree are used as primary coagulants. The use of natural materials of plant origin to clarify turbid surface water is not a new idea. Conversely, of all the plant materials that have been investigated over the years, the seeds from M. oleifera have been shown to be one of the most effective plants as a primary coagulant for water treatment.

The traditional use of the tree for domestic household water treatment has been limited to certain rural areas along the River Nile in Sudan. The people of these areas called it “Shagarat al rawag”.

Nada, July 2006

Abstract

Given that the use of *Moringa* tree in Sudan is restricted on water treatment from visible impurities, though river water might be considered as a potential risk of infection.

Therefore, in this study, the aim was to detect and evaluate the antibacterial and antifungal activities that the *Moringa* tree parts, especially the seed kernels, might have.

The suitable clinical samples were collected, pathogens isolated, identified and purified for subsequent testing.

Based on global reports that suggest the existence of antimicrobial activity against a spectrum of microorganisms, a series of *in vitro* sensitivity tests were carried on 60 clinical isolates and 6 control strains (bacteria and fungi).

Results proved the hypothesis. An obvious antibacterial activity was found particularly in seed kernels. Among the control and clinical isolates; Gram positive bacteria were inhibited greater than Gram negative bacteria. *Staphylococcus aureus* showed the widest zones of inhibition comparatively with Norfloxacin antibiotic disc. On the other hand, antifungal activity was relatively weak in comparison with Nystatin and Clotrimazole antimycotic discs. Inhibition zones were created almost only by methanol and aqueous extracts of seeds. *Candida albicans* showed the widest zones of inhibition among the fungi tested.

In short, results obtained were successful and the extracts proved an observable antimicrobial activity.

الخلاصة

بما أن الإستعمال الوحيد لشجرة الرواق في السودان محصور علي تنقية مياه النيل من الرواسب المرئيه
العكر), و بما أن مياه النيل يمكن أن تكون مصدر لنقل عدوي)
الميكروبات الممرضه. لذلك, كان الهدف في هذه الدراسه هو تحديد و تقييم ما إذا كانت هناك خصائص مضاده للبكتيريا و الفطريات في بعض
.أجزاء شجرة الرواق, خاصة في لب البذور
العينات الإكلينيكيه المناسبه جمعت , الكائنات الممرضه عزلت, عرفت
.و صنفت للإستعمال في الإختبارات اللاحقه
تم إجراء سلسله من إختبارات الحساسيه المعمليه علي 60
معزولات سريريه و 6 سلالات قياسيه (بكتريا و فطر) بناءا علي
بعض التقارير العالميه التي تقترح وجود نشاطات مضاده للجراثيم
.ضد مجموعه من الأحياء الدقبقه الممرضه
النتائج أثبتت الفرضيه. تم إيجاد نشاطات مضاده للميكروبات بصوره
.واضحه, خاصه في لب البذور
كما تم كبح البكتيريا موجبة الجرام بصوره أكبر من البكتيريا سالبة
.الجرام
مقارنة بقرص النورفلوكساسين المضاد للجراثيم, المكوره العنقوديه الذهبيه
.أظهرت أكبر منطقة كبح
و في الجهه المقابله , النشاطات المضاده للفطريات كانت أضعف
مقارنة بقرصي النستاتين و الكلوتريمازول المضاد للفطريات. مناطق

الكبح حدثت في الأغلب بواسطة الخلاصات الميثانوليه و المائيه للب البذور.

خميرة المبيضه البيضاء أظهرت أكبر مناطق كبح في ما بين الفطريات المختبره.

بإختصار, النتائج المتحصله كانت ناجحه, و الخلاصات أثبتت وجود نشاطات واضحه مضاده للجراثيم.

Dedication

To my father, the most considerate person ever,

To all who hold us in their hearts,

Thank you is less than enough.

Nada, July 2006

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Nada, July 2006

Table of Contents

List of Tables

Chapter One:

Chapter Three:

Chapter Four:

List of Figures

-

Chapter One:

Chapter Two:

Chapter Four:

List of Charts

Chapter Four:

List of Maps

Chapter One:

“The distribution of *Moringa* species in the Horn of Africa”.