شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد أعدت دون أية تغيرات

يجب أن

تحفظ هذه الأفلام بعيدا عن الغبار

في درجة حرارة من ١٥-٢٥ مئوية ورطوبة نسبية من ٢٠-٤٠%

To be Kept away from Dust in Dry Cool place of 15-25- c and relative humidity 20-40%

بعض الوثائق الاصلية تالفة

بالرسالة صفحات لم ترد بالاصل

MICROBIOLOGICAL STUDIES ON SOME MEDICAL PLANTS

A Thesis Submitted to

Dept. of Nutrition & Food Science
Home Economic Faculty of Minufiya University

For Degree of Master

In Nutrition & Food Science

By

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1. INTRODUCTION AND AIM OF WORK

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1.1. Introduction:

Spices and condiments are consumed in large quantities in Egypt and many countries in the world since very ancient times.

Spices were used as embalming materials in ancient Egypt, as sweet scents in religious ceremonies and to mask the putrid flavour of meat in hot climates laking refrigeration.

A few spices have an antimicrobial effect at the concentrations used in food and thus serve as preservatives.

In Egypt, most of the aromatic plants are cultivated to produce some of their extracts, i.e., volatile oils, concretes, absolutes, etc.

Many volatile oils are now being processed or extracted for industrial uses. Their wide use in perfumes and cosmetics and for the scenting of soap and similar products. These oils are also used for masking objectionable odors inherent or acquired during industrial processing such as detergents and insecticides. Also, different medical preparations containing aromatic plants extracts are now produced at mass production scale.

Spices are interest to microbiologists for four principal reasons:

1. They contain large numbers of microorganisms that occasionally may cause spoilage or disease when introduced into food.
2. They exhibit antimicrobial activity and occasionally aid preservation and
3. They stimulate microbial metabolism **(I.C.M.S.F., 1980).**

1.2. Aim of work:

This study was conducted to evaluate the microbial contamination as well as antibiotic potency for different aqueocy extract of selected Medical plants.

These plants were obtained from different areas in Cairo and Giza.

Thus the overall objects of the present work were to:

1. Evaluate microbiological contamination of plants through determination of:
   - Aerobic colony count.
   - Molds and yeasts count.
   - Most probable number for coliform organisms.
   - Presence of *E. coli* as an indicator for faecal contamination.
2. Assess the antibiotic potency for aqueous extract of selected plants (Anise, Comomela, Caraway, Cinnamon, Fennel, Hibiscus, Liquorice, Pepparrmint, Sweet Basil and Thyme) on *Stap aureus, Bacillus cereus, Bacillus subtilis, Proteus mirobiles, Salmonalla typhimuium* and *E. coli.*

2. REVIEW OF LITERATURE

2. REVIEW OF LITERATURE

2.1. Definitions:

Herbs are the soft-stemmed plant materials used in seasoning food. All other aromatic plant producing products used for a similar purpose are called spices, although this broad definition admits of several exceptions.

Spices are usually only parts of plants and may be either roots, rhizomes, barks, seeds, fruits, flower buds, or others. Unlike the herbs, the spices are very aromatic and may contain large percentages of essential oils as well as other powerful nonvolatile flavouring components. They are normally derived from the semi tropical or tropical regions of the world, are harvested, and usually sun-dried to form the spice of commerce.

Condiments are seasonings which are added to food after it has been served. In this category the most popular and widely used are salt, mustard, pepper, and ginger.

Those definitions previously mentioned are according to **Heath** ***et al.*** **(1978).**

2.2. Microbiological contamination:

2.2.1. Aerobic plate count:

Heath (1964) said that the source of such pathogens can be soil, fecal material from birds and other animals and non potable water used for soaking some spices.

A wide variety of nonsporing bacteria may also be present **(Elmossalimi and Youssif, 1965).**

Goto *et al.* (1971) found that most of the aerobic plate count colonies are *Bacillus* spp. example, *B. subtilis*, *B. megaterium*, *B. pumilus*, *B. firmis* and *B. brevis*.

Some spices may contain spores from mesophilic aerobes, mesophilic anaerobes and flat sour thermophiles. Some spices sometimes contain bacteria that can cause food-born infections **(ICMSF, 1980).**

Khairy *et al.* (1992) found that total bacterial count in anise was 1.43×10^2, in caraway 3.40×10^2 and in fennel 78.50×10^2 / gm.

Mimica *et al.* (1993) reported that Chamomile (chamomilla recutita) is widely used as a herbal tea and the therapeutic value depends mainly on the essential oil content. Commercial chamomile tea was sampled at monthly intervals for 18 months. The main oil constituent was bisabolil oxide A which varied between 33.46 and 48.48%. The total bacteria count ranged from 4.0×10^4 to 4.6×10^6 /g DM and yeasts from 3.0×10^3 to 5.8×10^5 / g DM.

2.2.2. Coliform organisms:

Kadis *et al.* (1971) reported that coliform are often found in spices, but *E. coli* is infrequent.