

TABLE OF CONTENTS

ENGLISH TITLES

AGRICULTURE SCIENCES

**Effect of Gamma radiation on growth of two *Vigna radiata* (L.) Wilezek cv.
Local and Indian**

Mona Ali Nasser, Mohammed Abdullah Hussein and Othman Saad Al-
Hawshabi

BIOLOGY

**Phytochemical screening and in vitro antibacterial activity of *Cissus
subaphylla* and *Euphorbia spiralis* endemic in Socotra Island**

Nadia Hassan Al-Asbahi and Rawiya Hassan Alasbahi

**The in vitro antibacterial activity of a multih herbal combination used
traditionally in Aden for topical treatment of Furuncles**

Nadia Hassan Abdulla Al-Asbahi and Rawiya Hassan Alasbahi

CHEMISTRY

Biodegradation of Fluoranthene by Alkaliphilic and Neutrophilic bacteria

Shaif M. Saleh, Ahmed T. Ahmed and K. Gawai

ENVIRONMENT

**Evaluation of environmental hazards resulted from natural radioactivity in
rocks from catchment area in Delta Tuban in Yemen**

Emran Eisa Saleh, Ahmed Ali Al Nagashee, Hesham Ibrahim El Kassas, Soad
Abed Elmenem El Fiki and Hanan Ahmed Diab

MATHEMATICS

On some generating functions involving Jacobi , Laguerre and Bateman polynomials of one variable

Ahmed Ali Atash and Salem Salah Barahma

Different types of decomposition for certain tensors in K^h -BR- F_n and K^h -BR-affinely connected space

Khaled M. Alhamadi, Fahmi Yaseen Qasem and Meqdad Ahmed Ali

Some properties of the generalized Gamma and Beta functions

Fadhle B.F. Mohsen and Maisoon A. Kulib

A general class of generating functions of biorthogonal polynomials

Gamal Ali Qashash

Integral transforms and Laguerre-Gould Hopper polynomials

Ahmed Ali Al-Gonah and Hussein Abdulhafed Saleh

q-Hypergeometric representations of the multiple Hurwitz Zeta function

Fadhle B.F. Mohsen and Fadhl S. Alsarahi

MEDICINE

Histopathological patterns of inflammation in benign and malignant prostatic diseases. Inflammation as risk factors for prostate cancer among Yemeni patients

Muna Anwer Kutb and Hussun Saeed Jezan

Non-obstructive acute Coronary Syndrome and Khat chewing

Mohammed Bin Mohammed Alsaadi, Khadeja Shafiq Aman and Ahmed Saeed Almansoob

The prevalence of bruxism among students in Faculty of Dentistry - Aden University

Nadra A. Ishaq, Saleh Yehya, Hanan M.Al Asad and Towfiq Saleh

Prevalence of teeth loss related to periodontitis among type 2 diabetic patients and non diabetic patients in Faculty of Dentistry - Aden University

Nadra A. Ishaq, Towfiq Saleh Ali, Amani Jamal, Johara S. Banafa, Sara Tariq, Hend Mohammed, Faisal H. Almusabi, Marwah M. and Heba Almalik

Preliminary study of chewing betel leaf and its adverse effects in Aden

Gamila Mohammed Abdo

Study of prevalence risk factors, clinical pattern and outcome of acute cerebrovascular stroke patients admitted to AL-gamhouria teaching hospital

Osam Saeed Gabali and Balqis Al-Sayeed Abdulla Ebrahim

ARABIC TITLES

AGRICULTURE SCIENCES

Effect of some water extracts of organic fertilizers against the fungus *Rhizoctonia solani* in vitro

Mohamed Ali Sunaidi

BIOLOGY

Medicinal herbs used in the treatment of digestive system diseases at coastal area of Hadramout- Yemen

Salim M. Binsalman, Mohammed Saeed Bin Gadeem, Mohammed A. Hussein and Ahmed Subeet Ba –Musa

ENGINEERING

Sustainable building and construction in Yemen

Mohammed Ahmed Thabit

ENGLISH TITLES

AGRICULTURE SCIENCES

Effect of Gamma radiation on growth of *Vignaradiata*(L.) Wilezek cv. Local and Indian

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Abstract

Seeds of Mungbean *Vignaradiata* (L.) Wilezek cv. Local and Indian were treated with different doses of gamma rays viz.; 5.5R, 11.1R, 16.6R, 22.2R, 27.7R & 33.2R. Observations were recorded on the effect of gamma rays on an important characters viz.; seedling length, root length, number of secondary branches, length of main branches, length of secondary branches, number of pods, length of pods and weight of dry 100 seeds. The significant effect on the growth of two cultivars, with best dosages of (33.2, 27.7 and 22.2 k/rad) respectively.

Keywords: Gamma rays, Mungbean, *Vignaradiata*, cultivar.

BIOLOGY

Phytochemical screening and in vitro antibacterial activity of *Cissussubaphylla* and *Euphorbia spiralis* endemic in Socotra Island

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Abstract

Cissussubaphylla and *Euphorbia spiralis*, endemic in Socotra Island, were screened for their chemical constituents and antibacterial activity. The phytochemical screening of the chloroform and the 70% ethanol extracts of both plant stems indicated the presence of sterols, triterpenoids, cardiac glycosides, anthraquinones, flavonoids, tannins and carbohydrates as

chemical constituents. Testing the antibacterial activity of chloroform and the 70% ethanol extracts (5 and 10mg) of both plants against *Staphylococcus aureus* (305-864-669), *Staphylococcus epidermidis* (505-864-689), *Pseudomonas aeruginosa* (909-825-1793) and *Escherichia coli* (909-825-1793), using agar well diffusion assay, demonstrated that all tested extracts displayed a significant antibacterial activity with activity index (AI) above 0.5 against test microorganisms, except the chloroform extract of *C. subaphylla*, which was found inactive against *S. aureus*. The 70% ethanol extract (10mg) of *E. spiralis* showed the highest antibacterial activity (AI=0.80-0.94) against *E. coli*.

Key words: *Cissus subaphylla*, *Euphorbia spiralis*, Phytochemical screening, Antibacterial activity, Socotra Island.

Thein vitro antibacterial activity of a multiherbal combination used traditionally in Aden for topical treatment of furuncles

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Abstract

Different amounts of the aqueous and methanolic extracts of *Lepidium sativum* seeds and *Flemingia grahamiana* glandular hairs of the pods as well as of their combination (multiherbal combination), that is used traditionally in Aden for topical treatment of furuncles, were tested for their antibacterial activity, by using a modified agar diffusion assay against *Staphylococcus aureus* (ATCC 29737), which is the most common bacteria causing furuncles. The aqueous extracts of *Lepidium sativum* seeds were found to possess antibacterial activity, while those of *Flemingia grahamiana* and multiherbal combination were found inactive. The ineffectiveness of the aqueous multiherbal combination may be due to a possible antagonistic interaction between its two components. The methanolic extracts only of *Flemingia grahamiana* and the multiherbal combination demonstrated moderately antibacterial activity. This result indicated that methanol is better than water in extracting the antibacterial active principles from *Flemingia grahamiana* that are responsible for the moderate antibacterial activity of the multiherbal combination against *S. aureus*.

Key word: Antibacterial activity, *Lepidium sativum*, *Flemingia grahamiana*, Multiherbal combination, seeds, glandular hairs.

CHEMISTRY

Biodegradation of Fluoranthene by Alkaliphilic and Neutrophilic bacteria

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Abstract

Two bacterial strains, alkaliphilic bacteria *Bacillus badius* D1 were isolated from alkaline Crater Lake, (Lonar), Buldana, M.S, India, and neutrophilic bacterial strain *Lysinbacillusphaericus* DL8 from dye disposal area of textile industry, Ichalkaranji, India. Fluoranthene, a model four-rings polycyclic aromatic hydrocarbon was utilized as carbon and energy source by these bacteria. The degradation products of fluoranthene were isolated at every 12 hrs..of incubation period. The generated metabolites were identified by using (GC-MS, FTIR and ¹HNMR). Many metabolites of fluoranthene degradation were detected in the culture such as (9-fluorenone-1-carboxylic acid, 9-hydroxy-1-fluorene-carboxylic acid, 2-carboxybenzaldehyde, benzoic acid and phthalic acid). It has been observed that these two bacterial strains have degraded fluoranthene by two different ways. Incubation of fluoranthene with these bacterial strains also resulted in the induction of biotransformation enzymes like mono oxygenases, e.g. Aminopyrine N-demethylase, acetanilide hydroxylase and the content of cytochrome P-450. The influence of some experimental parameters like concentration of fluoranthene, pH, and temperature on the degradation of fluoranthene was also studied.

Key words: Alkaliphilic, *Bacillus badius*, *Lysinbacillusphaericus*, Fluoranthene, Biodegradation

ENVIRONMENT

Evaluation of environmental hazards resulted from natural radioactivity in rocks from catchment area in Delta Tuban in Yemen

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Abstract

The knowledge of environmental hazards resulted from natural radioactivity and human activities are very important for monitoring environmental contamination. In this study the environmental hazards due to the natural radioactivity in rocks from catchment area of Tuban delta in Yemen were discussed and evaluated. Eight rocks samples were collected from the study area. The results showed that the mean activity concentrations of ^{238}U series (^{226}Ra), ^{232}Th , and ^{40}K were 29.52 ± 1.5 , 32.29 ± 2.3 , and 817.5 ± 30.1 Bq kg^{-1} , respectively. Also, the physical and chemical properties of some rock samples were examined and evaluated. Radiological parameter, such as absorbed dose rate in air, annually effective dose, the radium equivalent activity (Ra_{eq}), gamma index (I_γ), external hazard index (H_{ex}), and internal hazard index (H_{in}) were calculated and evaluated. The results were compared with those of literatures.

Key words: Environmental hazards; Natural radioactivity; Human activities; Tuban delta.

MATHEMATICS

On some generating functions involving Jacobi, Laguerre and Bateman polynomials of one variable

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Abstract

The aim of the present paper is to obtain some double generating functions involving Jacobi, Laguerre and Bateman's polynomials of one variable by using the fractional derivative technique. A number of interesting special cases of our main results are also considered.

Key words: Generating functions, Jacobi polynomials, Laguerre polynomials, Bateman's polynomials, Multivariable extension of the Kampé de Fériet function.

2010MSC: 33C15, 33C20, 33C45, 33C65.

Different types of decomposition for certain tensors in K^h -BR- F_n and K^h -BR-affinely connected space

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Abstract

In this paper we defined K^h -birecurrent space which is characterized by the condition $K_{jkh|m|\ell}^i = a_{\ell m} K_{jkh}^i$, $K_{jkh}^i \neq 0$, also we introduced some decompositions of Cartan's fourth and third curvature tensor and Berwald curvature tensor and its torsion tensor.

The aim of this paper is devoted to the discussion of decomposition for different tensors in K^h -birecurrent space and K^h -birecurrentaffinely connected space and the decomposition of curvature tensor Cartan's fourth and third in K^h -birecurrent space, also the decomposition of curvature tensor of Berwald in K^h -birecurrentaffinely connected space, various results, formulas, theorems and different identities have been obtained.

Key words: Decomposition of curvature tensor, K^h -BR-affinely connected space, decomposition of Cartan's fourth curvature tensor and decomposition of Berwald curvature tensor.

Some properties of the generalized Gamma and Beta functions

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Abstract

In this paper, a new generalization of Gamma and Beta functions have been deduced Also for the generalized Beta function, integral representation, a functional relation and a summation relation was given for the new generalized Gamma function established integral representation involving the product of two functions has been established, also, give a new generalization for the generalized and confluent hypergeometric functions.

Key word: Gamma function, Beta function, Hypergeometric functions, Confluent hypergeometric functions.

A general class of generating functions of biorthogonal polynomials

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Abstract

In this paper we have obtained a new and known general class of bilateral and bilinear generating functions involving modified Konhauserbiorthogonal $Y_n^\alpha(x; k)$, modified Bessel $Y_s^{(n)}(u)$ and Laguerre polynomials $L_n^{(\alpha)}(x)$ by group theoretic method. As in particular cases we have obtained bilinear and unilateral generating functions. Consequently we recover the result of Rainville, Srivastava Manocha and McBride [25, 29, 23] and notice that the result of Das and Chatterjea [13] is the particular case of our result.

Key words :Biorthogonal polynomials, Laguerre polynomials, modified Bessel polynomials, Generating functions & Group theoretic-method.

Integral transforms and Laguerre-Gould Hopper polynomials

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Abstract

In this article, new families of generalized special polynomials by combining the properties of exponential operators with suitable integral transforms have been introduced. Certain properties of these special polynomials are established.

Key words: Laguerre-Gould Hopper polynomials, Special polynomials, Integral representation.

2010 MSC: 33B10, 33C45, 33E30.

q-Hypergeometric representations of the multiple Hurwitz Zeta function

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Abstract

The basic hypergeometric series started essentially by Euler back in (1748) that emphasis on generating functions of partitions. Later, Gauss (1813) and Cauchy (1852) found several transformations and summations formulas related to basic hypergeometric series.

In this paper, the main goal is to introduce some new representations for the q-analogue of the multiple Hurwitz Zeta function are derived.

Keywords: multiple Hurwitz Zeta function, q-Hypergeometric series, q-shifted factorial.

MEDICINE

Histopathological patterns of inflammation in benign and malignant prostatic diseases. Inflammation as risk factors for prostate cancer among Yemeni patients

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Abstract

Prostatic diseases are responsible for significant morbidity and mortality among adult males worldwide. Most frequently encountered diseases affecting prostate are prostatitis, benign prostatic hyperplasia (BPH) and prostatic cancer.

Paraffin blocks of prostatic tissues of 694 biopsies were selected retrospectively, from the private laboratories in Aden governorate – Yemen from January 2010 – March 2015. Hematoxylin and eosin slides for the corresponding paraffin-embedded formalin-fixed blocks were examined to identify and confirm the presence and type of inflammation in benign prostatic lesions, prostatic intraepithelial neoplasia and carcinoma. Data were entered to the SPSS program (version 22), obtaining frequencies, percentages and chi-square tests. The risk of malignancy associated with inflammation was estimated compared to those having non-inflammatory prostatic lesions. The tests were conducted with the 95% confidence interval and p-values of ≤ 0.05 were considered statistically significant.

Inflammation was found commonly in benign prostatic hyperplasia {78.2%}, in prostatic intraepithelial neoplasia {7.7%} and prostate cancer (92.3%), most of which was

chronic($p<0.001$).The risk for malignant transformation was 2.98 times. Moderate, multifocal and stromal chronic inflammatory infiltration was commonly seen in benign prostatic lesions. High grade prostatic cancer was observed in men who had inflammation. Our findings revealed that chronic inflammation is a common finding in benign (particularly benign prostatic hyperplasia) and malignant prostate tissue among Yemeni people. Chronic inflammation, in benign prostate tissue is associated with an increased risk of prostate cancer (>two folds).

Key words: Chronic inflammation, benign prostatic lesions, prostate cancer, Yemen.

Non-obstructive acute Coronary Syndrome and Khat chewing

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Abstract

Nonobstructive coronary artery disease (NCAD) occurs in 10% to 25% of patients undergoing elective coronary angiography, while nonobstructive acute coronary syndrome (NACS) accounts up to 6% of patients with troponin-positive ACS. In Yemen, prior studies have assessed outcomes among myocardial infarction (MI) khat chewers, who had nonobstructive lesions on angiography. However; correlation between NACS and Khat use is yet not discussed. Our study aimed to defining the clinical outcomes of patients, presenting with unstable angina (UA) or non ST segment elevation myocardial infarction (NSTEMI), but had stenosis $\leq 50\%$ on angiography. Our main goal is to show the association between outcomes and khat chewing among patients with NACS. Data for this retrospective study were obtained from the sector of health care and related clinics at the Yemeni Petroleum Company in Aden from January 2005 through September 2010. The study group consisting of 114 ACS patients was divided into two subgroups: patients with stenosis $< 20\%$ and patients with stenosis more than 20 but less than 50%. They were compared with patients in a control group (n=213), who had critical coronary stenosis, sufficient enough to warrant enough ($\geq 70\%$) percutaneous coronary intervention (PCI). Our results showed that patients with NACS were more likely to be female, younger, with fewer risk factors, compared to the control. MI or PCI occurred was in 1.75 % or 3.5% of patients with NACS and in 5.16% or 17.37% (respectively) of patients with critical obstructive ACS. Cardiac death was observed less frequently in patients with NACS, compared to those with critical obstructive disease (1.75 % vs 4.23%). Sub analysis of the study group showed that, the 2nd subgroup patients (stenosis 20%-50%) were older male with an increasing frequency of nondiabetic patients and heavy khat chewing, compared to the 1st subgroup (stenosis $< 20\%$). Follow-up data showed that no deaths in the 1st subgroup and two cardiac deaths (3.7%) in the 2nd (P=0.001). Rehospitalization, PCI or cardiac decompensation were found significant in the 2nd subgroup. We concluded that the prognosis of patients with nonobstructive ACS was

better than that of patients with critical obstructive ACS; although patients with stenosis 20-50% had a worse prognosis than did those with less stenosis or normal coronary arteries.

Key words: Acute coronary syndrome, khat chewing, nonobstructive stenosis, critical stenosis.

The prevalence of bruxism among students in the Faculty of Dentistry - Aden University

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Abstract

The phenomenon of bruxism affects millions of people throughout the world. Tooth grinding is an activity particularly important to the dentist because of breakage of dental restorations, tooth damage, induction of temporal headache and tempromandibular disorders. The aim of this study was to determine the prevalence of bruxism among the college students and associated factors.

The study was carried out in the Department of Prosthodontic, College of Dentistry University of Aden between the periods of 2009-2010. Clinical record of 177 healthy students were include in a study sample, they are divided into four groups according to the education levels (from second to fifth year), 15 of them suffer from bruxism in association to 4 major and 3 minor sign and symptom, analyzed by using statistical tools (SPSS V.15).

The prevalence of bruxism among dental student was 15 cases represented by 8.4% of all cases. The prevalence rate of muscle's pain was in the lateral pterygoid muscle 100%, Medial pterygoid muscle pain, Masseter m. and Trapezium m. pain represented with 40% of cases and the lowest percentages in temporal m. and Sternomastoid m. pain 20%.

According to sign on hard tissues teeth attrition represent the high percentage with 93.3%, followed by malocclusion with 73.3%, then the restorated teeth with 60% and the tooth sensitivity and mobility with 53.3% and 26.7% respectively then the bone exostosis with 6.7%..According to sign on soft tissues the gingival inflammation represent the high percentage of cases with 93.3%, followed by gingival recession with 80% of cases, then the tongue dentition with 73.3% and 46.7% of cases with pocket.

Prevalence rate of cases of TMJ respondent by deviation of mandibule was 93.3%, followed by 80% of cases with pain at TMJ, then 66.7% with clicking, 47% with deflection of mandibule, 40% with opening limitation and 6.7% of cases with loss vertical dimension. Prevalence rate of bruxism associated with anxiety 80%, then patients under psychological treatment 40% and then the patients under antidepressiondruge26.7%.

A large proportion of students with bruxism have potential psychological problems. Female gender, advanced educational levels and hostel residence as well as poor socioeconomic status are predisposing factors for pain severity in masticator muscles.

Key words: prevalence rate of Bruxism, sign and symptom, muscle's pain.

Prevalence of teeth loss related to periodontitis among type 2 diabetic patients and non diabetic patients in Faculty of Dentistry - Aden University

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Abstract

Diabetes affects the health of the teeth and periodontal tissue leading to bone destruction and teeth loss. The idea that is present among dentists is that diabetic patients with periodontitis must lose more teeth than non-diabetic patients, but what we notice in our college clinics telling us the opposite.

The aim of this study isto compare the teeth loss of diabetic and non-diabetic patients considering the age, sex and presence of bad habits (smoking and qat chewing).

Teeth loss and depth of periodontal pocket of 65 adult diabetics and 65 adult non diabetic patients were examined. The presence of habits (smoking and qatchewing) among patients were recorded.

In this study , we classifythe number of the lost teeth into four categories: the first category with the least number of teeth loss, and the fourth with the highest number of teeth loss. The number of diabetic patients in the first and second categories were more than non-diabetic , whereas the number of non-diabetic patients was more in the third and fourth category.

Key words: Teeth loss, Diabetic patients, Periodontal pockets, Bad habits.

Preliminary study of chewing betel leaf and its adverse effects in Aden

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Abstract

The presented study was addressed to identify the factors that lead to increase the spreading of chewing betel leaf and its adverse effects in Aden.

The study was Performed by direct interviews with consumers of betel leaf, the total number of selected people was 389, including all age group starting from 8 years up to more than 50 years old, both sexes in all of the Aden Governorate, in period from March to June 2014.

3.6% was the starting age of chewing betel leaf 8years old, and the commonest age of the chewer was between15-25 years which formed 59.1%, males more common than females 92.5%, while education level was 45.2% secondary school students, 37.5% university students, 78.9% were singles while21,1 % were married. 86.1% used betel with Zarda and Socka which is the main source of health danger, 25 betel leaves are the maximum quantity chewed per day, 20.3% of chewer reflect dependence, and addiction as side effects.

The early age of starting the chewing betel leaf, and its rapid prevalence reflected a serious issue among young students. Chewing betel leaves badly affects the health of chewers as well as the community.

Key words: Betel leaf, health problem, Aden city.

Study of prevalence risk factors, clinical pattern and outcome of acute cerebrovascular stroke patients admitted to AL-gamhouria teaching hospital

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Abstract

The aim of this paper is to study prevalence of brain stroke, major risk factors, clinical pattern, and outcome among Yemeni patients.

A prospective hospital-based study was conducted of 110patients admitted in AL-Gamhouria Teaching Hospital in Aden in the period from January 2016 to the end of August 2016, all cases admitted with stroke were diagnosed by history and clinical examination and were then confirmed by investigations including CT scan as included in the study.

The most common stroke pattern was ischemic (80%), hemorrhagic (20 %), and the most common sex in this study was males (52%), while females (48 %).

The major associated medical conditions were hypertension (41%) cardiac disease (5%) and diabetes mellitus (18 %) smoking history was positive in (11%). The most common neurologic deficits in our study patients were Hemiparesis/hemiplegia (90 %).

Patients died during the same hospitalization were (21%), while (79%) remained alive.

Key words: stroke, major risk factors, Hemiparesis/hemiplegia.

ARABIC TITLES

AGRICULTURE SCIENCES

Effect of some water extracts of organic fertilizers against the fungus *Rhizoctoniasolani* in vitro

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Abstract

This experiment was carried out in the laboratory of the Faculty of Education, Department of biology- Sber- Aden University, during the period December 2015- February 2016 as to know the four types of water extracts of animal waste in the effect of: cow dung, dung donkeys, Chicken manure concentration (10% w / v) in addition to wastewater treated biologically as antifungal against fungus *Rhizoctoniasolani* that causes wilt on the tomato plant disease. It showed that the treated wastewater biologically highly effective against the fungus *R. solai*, and is found a significant difference at 5% with the rest of the other transactions. All other extracts also showed significant differences at 5% with the control . Biologically treated sewage has achieved Bioloajabia percentage of inhibition against the fungus *R. solai* reached 68.78% and was the lowest efficacy of aqueous extracts of donkeys dung adjacent not damping ratio of 17.28%.

Key words: Water extracts of animal manures, fungus, *Rhizoctonia solani*.

BIOLOGY

Medicinal herbs used in the treatment of digestive system diseases at coastal area of Hadramout- Yemen

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Abstract

This study was carried out to know the herbal medicinal plants used for the treatment of digestive diseases. The study explains the strong relationship between human and the environment in this area and how to make these plants benifitable for the treatment of

digestive system diseases. The study constitutes 34 wild plant species belonging to 33 genera and 24 family, that are used for medical purposes. The use of the plant parts differentiated as the diseases requires.

Keywords: Medicinal herbs, plant parts, digestive system diseases.

ENGINEERING

Sustainable building and construction in Yemen

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Abstract

The construction industry plays a key role in the development of the economy of each country. The economic efficiency of the other economic and social sectors depends to a large extent on the efficiency of the construction sector activities, which plays an active role in the creation and development of the material base of the national economy.

Yemen is currently seeking to achieve greater economic growth in order to solve the existing problems in the community, the most important of which is the improving of the life standards of people in Yemen. Therefore, the construction industry may serve as a driving force for other sectors of the economy. Nevertheless, this sector is facing many challenges and difficulties that affect it,

Which is considered the basic interest of the researches.

The most important of these challenges is the ability of this sector to contribute to the embodiment of the objectives of "Yemen's Strategic Vision 2025", as well as the goals of the economical and social plans, and the development of the sector so as to perform distinct positive role in achieving a sustainable development.

This sector also consumes a large part of the natural resources, notably energy, in the production of the sector inputs in various branches of industry on one side; and during the implementation, operational and maintenance phases of the various constructions and facilities, on the other side. The waste resulting from the various activities of this sector contributes to the ongoing environmental contamination of the air, soil and water.

Having addressed all that through monitoring, study and analysis, the researcher concludes finally with a number of research findings, suggesting some recommendations that may contribute significantly to the development of the construction sector as to be sustainable sector.

Key words: Sustainable Building and Construction, Yemen, sustainable development.