

Volume 16

No. 3

December 2012

**TABLE OF CONTENTS**

**ENGLISH TITLES**

**AGRICULTURAL SCIENCES**

**Study on root system growth of Carob (*Ceratonia siliqua* L.) seedling in different containers**

Hassan Ala Aldin, Wael Ali and Amen Saleh

**The effect of growing media and mulch types on the germination and growth of *Gaillardia pulchella***

Shamim Moustafa Mahmood

**Study of the possibility of using residues of seaweeds as substrates in forest nurseries**

Hassan Alaa-Aldin , Ghaleb Chehadeh and Esaaf Aleso

**BIOLOGY**

**Antibacterial activity of crude extracts of some selected medical plants**

A.A.H. Alafoori, N.H.A. Nagi and G.S.A. Algifry

**Salinity and nutrient effects on germination behavior of invasive and noninvasive *Tagetes species***

Arif S. A. Alhammadi and Enas J. A. Alsanabani

**CHEMISTRY**

**Novel synthesis of some fused pyrazolo[3,4-c]pyridazines,  
pyridazino[3',4' :3,4]pyrazolo[5,1-c]-1,2,4-triazines and  
pyrimido[1',2' : 1, 5]pyrazolo[3,4-c]pyridazines**

**Ahmed. S. N. Al-kamali, Mohammed. H. M. Alhousami, Eman. A. Thabet  
and Niyazi. A.S.AL-Areqi**

**ENGINEERING**

**Prescriptive rules for fire resistance of R.C. elements in international  
building codes: A comparative study**

**Zeid Thabet Youssef , Abdulla Bin Dahman and Ali Abdo Saleh**

**Analysis of dynamic moments of torsional drive in machines  
Ahmed Saleh Alhunaishi**

**MATHEMATICS**

**On the zeros and coefficients of a polynomial**

**A. T. H. Al-Saeedi**

**MEDICINE**

**Mandibular prognathism , cleft lip and palate:  
Is there an association?**

**Ahlam Hibatulla Ali1 and Muhgat Ahmed Ali**

**Patients education about wearing and care of the denture and the  
resulting complications of their misuse**

**Nadra A.Ishaq, Rolando Saes and Moh'd Awadh Bensalah**

**Causes of childhood injuries: A retrospective study  
Omar Saleh Hatrash, Abdul Samad Taresh and Othman Mohamed Abdullah  
Shogaa**

**Effect of menopause on blood lipid levels**  
Omer Hazza Mohammed Ali

**An incidence of postoperative nausea and vomiting  
in Algamhorya Teaching Hospital**  
GunaidaAbdulrahman Al-gunaid

**Low birth weight of new born in relation to some maternal factors at  
Alwahda Teaching Hospital, Aden, Yemen**  
Mariam Taher Bin Yahia , Khalida Anwer Yousef , Nagat Abdulwahed Noman and  
Huda Omer Basaleem

**Trends in maternal mortality in Al-Wahda Teaching Hospital, Aden,  
2001-2011**  
Nahla S. Al.kaaky, Huda Basora and Sami D. Bawazeer

## **PHYSICS**

**Computational study of physical and chemical parameters of  
groundwater quality monitoring and outskirts in Ash-Shihr town,  
Hadhramout-Yemen**  
Sami Gumaan Daraigan and Ahmed Sahel Wahdain

**ARABIC TITLES**

**AGRICULTURAL SCIENCES**

**The specific composition of the dominant local variety of sesame, *Sesamum indicum* (L.) and the accompanying weeds investigated in Al-Hauta and Tuban Districts, Lahj Governorate**

Amani Ahmed Qardash, Wadea A. Saeed and Mohammed A.Hussein

**ENVIRONMENT**

**The effect of climatic factors and human activities on Hawf forest**

Mohammed A. Hussein and Wadea A. Saeed

**CHEMISTRY**

**Determination of some chemical and physical components of treacle samples in Al Jaha rea, Tehamah "Hodaida- Yemen"**

Saeedan Ahmed M. haj, Yacoob. A. kassim, Taha Abubaker Fadhl  
and khorgain A. Ahmed Sageer

**ENGINEERING**

**Stone architecture in Yafea**

Ahmed Ibrahim Hanshoor

## ENGLISH TITLES

### AGRICULTURAL SCIENCES

#### **Study on root system growth of Carob (*Ceratonia siliqua* L.) seedling in different containers**

Hassan Ala Aldin, Wael Ali and Amen Saleh

Department of Forestry and Ecology, Faculty of Agriculture, Tishreen University.  
Lattakia , Syria.

#### **Abstract**

The research aims at studying the effect of size and shape of different containers on development of structure and composition of the root system for Carob seedling. The study showed that seedling grown in small plastic traditional containers (T1) has often deformed roots around the walls and in the bottom of the container, while seedling growth in larger containers has improved the morphological characteristics of shoot and root system, and reducing the distortion of roots.

The results of the study also showed that planting Carob seedling in deep cylindrical containers, with proceeding air pruning, has improved the structure and extension of root system, and reduced circling roots. But T5, which have the deepest container, is the best. On the other hand, the planting of Carob seedling, containers contain side-slits without a clear openings, has not given any significant results, compared to other air pruning treatment.

**Key words:** Carob (*Ceratonia siliqua* L.), nursery, container, circling roots, deformation, chemical pruning, air pruning.

**The effect of growing media and mulch types on the germination and growth of *Gaillardia pulchella***

**Shamim Moustafa Mahmood  
Horticulture Department Nasser, s Faculty of Agriculture Sciences, University of Aden**

**Abstract**

Two experiments were conducted during 2009 – 2010, to determine how diverse seed covers (mulch type) and growing media influence the germination, growth and flowering of seeded *Gaillardia pulchella*. The first experiment on raising *Gaillardia* seedlings using five growing media under four covering materials were carried out in a laboratory. Results for both years showed: maximum germination percentage ( 63.5, 59.75%) and early germination (8.26 , 10.67day) were obtained in peat moss and coarse sand media , seed germination under covering in different media under study resulted in decline germination percentage and decreased time to emergence , seedlings length were highest (3.12 and 3.92 cm) in the fine sand and peat moss Media with newspaper and clear polyethylene cover in first and second years respectively which has been reflected on higher seedling vigor index (1.97) in first year, whereas radical length significantly enhanced (4.44 and 4.07cm) in fine sand and peat moss media covered with muslin cloth and newspaper respectively . Among the four growing media (second experiment) the results were indicated that some traits were affected significantly by growing media and best performance was recorded in media containing sand + F.Y.M. (3:1 v/v) for almost all the parameters, of plant height (38.35, 40.57cm), number of main and laterals branches (13.20, 13.30 and 62.60, 61.65), fresh weight (96.24, 134.87gm), dry weight ( 39.12 , 47.45gm), earliest flowering (85.5 , 77.25day) and the maximum number of flowers (61.35, 63.50) per plant. Soil and sand, when used alone as a growing media have shown the least response and have provided unsatisfactory results for most parameters.

**Key words: Growing media, Mulch type , Germination, Growth.**

**Study of the possibility of using residues of seaweeds as substrates  
in forest nurseries**

**Hassan Alaa-Aldin , Ghaleb Chehadeh and Esaaf Aleso  
Faculty of Agriculture, University of Tishreen, Lattakia, Syria.**

**Abstract**

In this research has been a used washed seaweed residue with peat moss, agricultural soil and sands single or in a mixture, in different ratios has been used to study the effect of substrates on seeds germination and seedlings growth of *Ceratonia siliqua* L. from the family *Fabaceae*. The results showed disqualification of unwashed seaweed residues as a growth medium for seeds germination, while the addition of washed seaweeds into mineral dust (sand, soil) improved the germination capacity(%) and growth parameters in *Ceratonia siliqua* seedling, revealing the possibility of using these residues ( rich in organic matter and mineral salts ) thrown on the beach by the waves because of the strong ocean currents as a component of substrate and as a partial alternative for peat moss, available with small investments and inexpensive in economic terms, as a result reduce the high costs resulting from using an imported substrates. At the same time, it provides an economic and effective solution to marine plant waste management and disposal of environmental pollution problem, as well as improving the appearance of beaches and marine parks in aesthetic terms.

**Key words:** substrate, seaweeds, *Ceratonia siliqua* L., peat moss, soil, sand, growth parameters.

## BIOLOGY

### Antibacterial activity of crude extracts of some selected medical plants

A.A.H. Alafoori, N.H.A. Nagi and G.S.A. Algifry

Department of Biology, Faculty of Science and Education, University of Aden

e-mail: ali\_alafoori123@rediffmail.com

#### Abstract

Medicinal plant active compounds produced during secondary vegetal metabolism are usually responsible for the biological properties of some plant species used throughout the globe for various purposes, including treatment of infectious diseases. Ethanol and methanol extracts of *Acacia nilotica*, *Ocimum basilicum*, *Eucalyptus camaldulensis* and *Salvadora persica* leaves, *Azadirachta indica* stem bark and fruit, *Allium cepa* and *Allium sativum* bulbs and *Negilla sativa* seeds were screened in vitro for activity against seven standard bacterial strains, namely *Staphylococcus epidermidis*, *Echerichia coli*, *Pseudomonas aeruginosa*, *Streptococcus faecalis*, *Bacillus coagulans*, *Salmonella typhi* and *Staphylococcus aureus*. The zone sizes of growth inhibition of the selected bacteria were measured in mm diameter, by using agar well diffusion assay method through nutrient agar medium. The obtained results revealed that plant ethanol and methanol extracts showed various activities against the sensitive bacterial pathogens at the tested concentration, with zones of inhibition ranging from 8 to 22 mm. The most susceptible bacterial pathogens to the test of medicinal plant extracts were *P. aeruginosa*, *E. coli*, and *S. epidermidis* respectively. The pronounced marked activity of plant part extracts were exhibited by *A. indica* bark methanol extract followed by *O. basilicum*, *E. camaldulensis*, and *A. indica* bark ethanol extracts.

**Key words:** Medicinal plant extract, antibacterial activity, pathogen, zone inhibition.



**Salinity and nutrient effects on germination behavior of invasive and noninvasive *Tagetes species***

Arif S. A. Alhammadi and Enas J. A. Alsanabani  
Department of Biology, Faculty of Science, Sana'a University, Sana'a, Yemen  
[alhammadi1@yahoo.com](mailto:alhammadi1@yahoo.com)

**Abstract**

Invasive species are a major threat to environment mainly to biodiversity. *Tagetes minuta* (Asteraceae) is an invasive plant in Yemen and has an aggressive and negative impact. The present work aims at to determining the germination behavior of invasive *T. minuta* and noninvasive *Tagetes erecta* under different nutrient and salinity. Results showed a strong inhibition effect of salinity on the germination of both *Tagetes species*. In low salinity treatment (0.5 %), germination of invasive *T.minuta* was significantly lower than control (80% vs. 100%) while no germination sings observed in medium (1%) and high salinity treatments (2%). In medium and high salinity treatments (1 % and 2%), achenes of invasive *T. minuta* germination reached 96.94% and 100% as recovery percentage, indicating an osmotic inhibitory effect. In contrast, the recovery percentages exhibited by non invasive *T. erecta* reached only 47.75% and 15% which is ascribed to toxic effect as well as low achenes viability. The high viability of invasive *T.minuta* achenes, in addition to its salt tolerance, are two attributes related to its invasiveness.

**Key words:** *Tagetes*, Asteraceae, germination, salinity, nutrient, recovery treatment, invasive .

## CHEMISTRY

### Novel synthesis of some fused pyrazolo[3,4-c]pyridazines, pyridazino[3',4':3,4]pyrazolo[5,1-c]-1,2,4-triazines and pyrimido[1',2':1,5]pyrazolo[3,4-c]pyridazines

Ahmed. S. N. Al-kamali, Mohammed. H. M. Alhousami, Eman. A. Thabet  
and Niyazi. A.S.AL-Areqi

Chemistry Department, Faculty of Applied Science, Taiz- University, Republic of Yemen  
ahs.alkamali@yahoo.com

#### Abstract

Cyclization of 4-cyano-5, 6-dimethylpyridazine-3(2H)-thione 1 with hydrazine hydrate afforded the 3-amino-4,5-dimethyl-1*H*-pyrazolo[3,4-c]pyridazine 3. Diazotization of 3 produces diazonium chloride 4, coupled with active methylenes gives the corresponding hydrazono derivatives 5-6, and triazines 7.

Pyridazino[3',4':3,4]pyrazolo[5,1-c]1,2,4-triazine 8 was achieved by refluxing compound 6 in acetic anhydride. Also, the refluxing of 5a with hydrazine and phenylhydrazine gave pyrazolyliidenepyrazolo[3,4-c]pyridazines, 9,10 which were also obtained by coupling 4 with pyrazolones. Cyclocondensation reactions of 3 with acetylacetone, ethyl acetoacetate and arylidenemalononitriles gave novel pyrimido[1',2':1,5]pyrazolo[3,4-c]pyridazines 12-14, respectively.

**Key words:** Pyrazolo[3,4-c]pyridazines, pyridazino[3',4':3,4]pyrazolo[5,1-c]-1,2,4-triazines, pyrimido[1',2':1,5]pyrazolo[3,4-c]pyridazines

## **ENGINEERING**

### **Prescriptive rules for fire resistance of R.C. elements in international building codes: A comparative study**

**Zeid Thabet Youssef, Abdulla Bin Dahman and Ali Abdo Saleh  
Civil Engineering Department, Faculty of Engineering, University of Aden**

#### **Abstract**

**This paper indicates the tremendous number of fire incidents that occurred in Aden annually and the subsequent damages in the property and losses of human life. Due to that, the importance and necessity of using concrete as a best construction material and complying the fire resistance limit state in the design of reinforced concrete structures have been highlighted. Moreover, and as a result of non availability of Yemeni national building codes, in which the designers have to be enforced to implement the required parameters for fire resistance, this paper provide a comprehensive comparison study for the parameters governed the fire resistance limit state in five important international building codes such as BS8110, IS456, ACI, EUR; and Arabic codes, and spotting the light on the merits of each code. These parameters have been presented and discussed thoroughly, hence, recommending the best code that will be suitable to Yemen.**

**Key words: building codes, concrete structures, fire resistance, prescriptive rules.**

**Analysis of dynamic moments of torsional drive in machines**

**Ahmed Saleh Alhunaishi**

**Mechanical Department , Faculty of Engineering , University of Aden**

**Abstract**

The calculation of dynamic behaviour of drives was and even is very often the theme of papers of technical literatures since, with the increasing requirements to the use of metal industry machines, it is necessary to expand the effective calculation methods that might enable the complex dynamic analysis of their torsional driving systems.

The dynamic facts of the drive may be classified as tasks of analysis and tasks of synthesis. When analysis dynamic ratios inside machines, we become interested, first of all, in the control and checking of most important parameters either in the system already produced or in the system proposed. The results of analysis enable us to estimate the stress in individual parts whose inequality may not overpass the values given by conditions of technological process. In the same time, we can estimate also further important data such as, for example, the position in machines where there comes to critical values of followed characteristics, maximum values of deformation of flexible elements ... etc.

Among questions from the fields of synthesis, we are, first of all, interested in the basic data and ways of solution for the choice of mass ratios of stiffness, respecting also the choice of family of loads, proper choice of clearances ... etc., but always, in such a manner, to fulfill the assumption concerning the admissible load, we respect the motion of proposed system. All these questions must be followed to steady motion as in the transient states.

From all the metal industry machines, the most important machines are the press mill machines. In the process of its use, there exists lots of problems of which some have been of solved and the remainder are waited for solution. One of them is the analysis of the drive of press mill, with respect to the characteristics (moments) of the drive (motors) and the working machine.

**Key words:** Torsional drive, Moments of drive, Dynamic behavior of drive,  
Mathematical modal method.

## **MATHEMATICS**

### **On the zeros and coefficients of a polynomial**

**A. T. H. Al-Saeedi**

**Department of Mathematics, Faculty of Education, Zingibar,  
Aden University, Aden, Yemen**

**Email address: [ad\\_tawfik@yahoo.com](mailto:ad_tawfik@yahoo.com)**

#### **Abstract**

**In this paper we have established inequalities of a complex polynomial  
improve upon results concerning the relations between the zeros of the polynomial  
and its coefficients.**

**Key words:** Polynomial, zeros, complex coefficients.

## MEDICINE

### **Mandibular prognathism , cleft lip and palate: Is there an association?**

Ahlam Hibatulla Ali<sup>1</sup> and Muhgat Ahmed Ali <sup>2</sup>

<sup>1</sup>Orthodontics, POP Dept. - Dentistry Faculty – Aden University, Yemen

<sup>2</sup> Oral Surgery, Oral Surgery Dept. - Dentistry Faculty – Aden University,  
Yemen

#### **Abstract**

The entire study is made to verify whether the hereditary true mandibular prognathism occurs in CLP patients as prevalent as in non CLP patients. A total of 124 patients born between 1969 and 1991 were included in this study. These patients had either been treated or followed up in the rehabilitation center in Rostock.

All data were inserted in an MS access data bank that served as a base for the statistical analysis of the data. The data was further analyzed by using the MS Excel and SPSS 12 for Windows. The Chi-Square-test was used to compare two relative values and their prevalence. The P-Value was selected to be  $p < 0, 05$ .

Patients with CLP were found to have more criteria of mandibular prognathism than non- cleft patients. Severe Mandibular Prognathism was not found in patients with isolated palatal cleft. This study has proved that there are no gender differences in the occurrence of hereditary affected growth of Mandibular Prognathism.

Even with a complex rehabilitation's program that includes saving's procedures for the physiological growth, timing and methodologies of surgical closure of clefts and also a successful preoperative orthodontic treatment since birth, it is still legitimate to categorize the unpreventable mandibular prognathism growth tendency as inherited malocclusion.

**Key words:** Mandibular Prognathism, Cleft lip and palate, Surgical closure, Preoperative orthodontic treatment.

**Patients education about wearing and care of the denture and the resulting complications of their misuse**

**Nadra A.Ishaq, Rolando Saes and Moh'd Awadh Bensalah  
Faculty of Dentistry, Aden University Department of Prosthodontics,  
Email:ishaqnadera@yahoo.com**

**Abstract**

Some people, whether young or old, who lost some or all their teeth, they are wearing dentures. Proper denture care is important for both the health of dentures and oral cavity. It is necessary to take care of teeth and denture. All patients need education about wearing and care of denture.

If the denture is taken out of the mouth, it always should be soaked in water. In our study, 100 patients who need prosthodontics treatment were analyzed in the Prosthodontics Clinic in the Faculty of Dentistry, Aden University, from 2009-2010, and were divided into 4 groups according to systemic disease , and oral hygiene between them ( 52% of the patients present without systemic diseases and 48% present with systemic diseases). Patient with bad oral hygiene represent 61.4%, compared with patient with good oral hygiene (38.6%) . For treatment evaluation and time of denture wearing, patients with complete and partial denture represent 70.2% and the time of wearing denture is less than 5years, 19.2% 6 years and, 10.5%. 10 years. Patients who received education about oral health represent 56.2% and those who did not is 43.8%.

**Key words: Denture care, oral hygiene, systemic disease, patient education.**

**Causes of childhood injuries: A retrospective study**

**Omar Saleh Hatrash <sup>1</sup>, Abdul Samad Taresh <sup>2</sup> and Othman Mohamed Abdullah Shogaa <sup>3</sup>**

**<sup>1,3</sup>: Surgery Department, Medicine Faculty, University of Aden**

**<sup>2</sup>: Community Medicine and Public Health Department, Medicine Faculty, Aden University**

**Abstract**

**The objective of the study is to determine the causes of childhood injuries.**

**This is a retrospective review of injured children records admitted to the Emergency Department.**

**The total injured children are 385. The male to female ratio is 2.6:1 and the age of children ranges from 0.5-15 years, with a mean age of  $7.5 \pm 4.1$  years. The number of injured children is relatively higher (51.9%). In general, males had higher injuries; males from rural governorates are predominant with 156 cases, while females from Aden are predominant among all females ( $p < 0.05$ ). The commonest injury causes are falls (51.9%), road traffic accidents (21.8%), and burns (7.8%).**

**The most affected age groups is 5-10 years.**

**Fall ranked the first cause for children aged  $< 5$  years, representing the highest proportion (21.8%) among all age groups. Road traffic accidents has the highest for children 5 to 10 years of age among the three age groups and proportion (8.8%) ranked the second cause of injuries in this age group. The mean duration of hospital stay is 10 days. There are 3 cases (3.2%), caused by fall, of the total study children.**

**We conclude that the majority of the injured children came from rural areas, males are predominant. Falls, road traffic accidents and burn are the major cause of injuries and the predominant age group affected is 5 to 10 years.**

**Key words: Cause, injury, children, Aden.**



**Effect of menopause on blood lipid levels**

**Omer Hazza Mohammed Ali**

**Department of Physiological Sciences ,Faculty of Medicine & Health Sciences ,  
University of Aden**

**Abstract**

**The present study is conducted to determine the effect of natural menopause on the lipid profile of postmenopausal women. The study group consists of thirty postmenopausal women aged between 50-65 years, and the control group includes thirty unmarried premenopausal women ageing 18-39 years. The mean level of total cholesterol (TC) among the postmenopausal women (236.60 mg/dL) is significantly higher than that of the premenopausal women (166.46 mg/dL), ( $p < 0.001$ ). The mean level of low density lipoprotein cholesterol (LDL-c) of the study group is 153.83 mg/dL, while that of the control group is 100.53 mg/dL. The mean level of high density lipoprotein cholesterol (HDL-c) of the study group is 43.26 mg/dL, and that of the control group is 58.47 mg/dL. The differences between the mean values of LDL-c and HDL-c of both groups are statistically significant ( $p < 0.001$ ). The mean level of triglycerides (TG) of the postmenopausal women is 151.87 mg/dL, while that of the premenopausal women is 147.17 mg/dL. However, no significant difference has been detected between the two groups ( $p > 0.05$ ).**

**Key words: menopause, total cholesterol, LDL- cholesterol, HDL- cholesterol, triglycerides.**

**An incidence of postoperative nausea and vomiting  
in Algamhorya Teaching Hospital**

**GunaidaAbdulrahman Al-gunaid  
Anesthesia & ICU, Faculty of Medicine, Aden University  
E-mail: [gunaida62@yahoo.com](mailto:gunaida62@yahoo.com)**

**Abstract**

**Postoperative nausea and vomiting (PONV) is frequent and is a potentially severe complication that increases the length of anesthetic recovery and causes patient dissatisfaction. This observational study evaluates the incidence, and risk factors. Information were obtained from patients' records and questionnaires answered by patients including age, major predictive factors for PONV (female gender, history, absence of smoking, and postoperative use of opioids), development of PONV ,type of surgery and anesthesia, use of nitrous oxide, and clinical status. An incidence of 26.3% of nausea and vomiting with 30.8% of nausea and 19.8% vomiting in the immediate postoperative period was observed. A correlation between major risk factors and the development of PONV was also observed. We conclude that PONV is common symptoms with multifactor causes.**

**Key words: Nausea, Vomiting, Postoperative, Incidence.**

**Low birth weight of new born in relation to some maternal factors at Alwahda Teaching Hospital, Aden, Yemen**

**Mariam Taher Bin Yahia , Khalida Anwer Yousef , Nagat Abdulwahed Noman and Huda Omer Basaleem**

**<sup>1,2,3</sup> Pediatrics Dept., Medicine & Health Sciences Faculty, Aden University, Yemen**

**<sup>4</sup> Community Medicine and Public Health Dept., Medicine & Health Sciences Faculty, Aden University, Yemen**

**Abstract**

The aim of this study is to investigate low birth weight distribution in Al-Wahda Teaching Hospital, Aden - Yemen, and to determine some of the contributing factors such as maternal age, gravidity and other demographic factors. This is a retrospective study was conducted in the labor room of the hospital, during the period January 1<sup>st</sup> to December 31<sup>st</sup>, 2008. Data were available on admissions from the medical records obtained from the Statistics Department, after taking permission from the administrative office in the hospital. Data were analyzed, using SPSS. The total number of newborn babies was 4821; 52.0% males and 48.0% females, with a ratio of 1.1:1. Low birth weight was 12.3%, and Premature constituted 34.3%. A statistically significant relation was detected between newborn weight and four studied maternal attributes. LBW (11.6 %) was encountered among mothers aged 18 – 34 years, compared to younger (26.9%) or older (12.8%) women. Mothers with < 4 gravidity presented higher percentage of low birth weight (13.0%), compared with mothers with more gravidity (10.9%). Another significant relation was observed with four visits or more had lower frequency of low birth weight (9.1%), and among women suffered antepartum hemorrhage (50%), preeclampsia (23.1) and hypertension (21.6%). A significantly higher percentages of low birth weight were reported among dead newborn (56.9%), compared to alive babies (11.7%). But mortality among premature was 91.4%. The study shows that some contributing factors and prenatal maternal diseases may lead to premature labor or low birth weight; this can be prevented by adequate antenatal care.

**Key words: low birth weight, maternal factors, Al-Wahda Teaching Hospital, Aden, Yemen.**

**Trends in maternal mortality in Al-Wahda Teaching Hospital, Aden,  
2001-2011**

**Nahla S. Alkaaky, Huda Basora and Sami D. Bawazeer  
Department of Gynecology & Obstetrics, Faculty of Medicine & Health Sciences,  
University of Aden**

**Abstract**

The aim of the study is to determine the yearly maternal mortality ratio and trends in the causes and some risk factors of 110 audited maternal deaths at Al-Wahda Teaching Hospital in Aden, from 2001 to 2011. A retrospective descriptive review of maternal deaths was conducted at the Department of Obstetrics and Gynecology, Al-Wahda Teaching Hospital. During the study period, 110 maternal deaths with the ratio of 197.0 per 100,000 live births were formed. There is decline in maternal mortality ratio over the review (11 years) from 357.7 to 170 per 100,000 live births in the years 2001 and 2011 respectively; 73.1% were direct causes of maternal death. Toxemia of pregnancy (23.5%), hemorrhage (23.5%) and sepsis (19.1%) were the main leading direct causes of death, while malaria (24.0%) and maternal Anemia (20.0%) were the leading indirect causes of maternal death. One third of maternal deaths (32.2%) occurred after delivery immediately and 62.2% of maternal death occurs after vaginal delivery.

We conclude that the trends of MMR declined during the study period but the maternal mortality ratio is still high. The majority of direct maternal deaths were due to toxemia of pregnancy, hemorrhage and sepsis, while malaria and anemia were the main indirect causes. Most causes of maternal deaths are preventable.

**Key words: Maternal mortality, direct & indirect causes, Toxemia, hemorrhage, Sepsis.**

## **PHYSICS**

### **Computational study of physical and chemical parameters of groundwater quality monitoring and outskirts in Ash-Shihr town, Hadhramout-Yemen**

**Sami Gumaan Daraigan and Ahmed Sahel Wahdain**

**Department of Physics, Faculty of Science Hadhramout University of Science and Technology**

**E-mail: [samdaraigan@yahoo.com](mailto:samdaraigan@yahoo.com), [dwahdeen58@yahoo.com](mailto:dwahdeen58@yahoo.com)**

#### **Abstract**

Groundwater wells are the major source of drinking water in the Republic of Yemen. Water quality depends on several physical and chemical parameters. The current research assesses the quality of nine water wells data for Ash-Shihr and some regions around it (Al-Hami, Al-Maqued, Al-Haiss, Difegah, Tabalah, Garadef, Al Wasst, Shib Alnoor, Hal Banat, Al-Mhayan, Al Dikdak, Al Hawatah, Al Ttai, Al Marafi, Al Hebis and Zaghafa) in Hadhramout- Republic Yemen. This assessment is based on calculating the correlation coefficients between every pair of selected physical and chemical parameters. The regression equations for water quality parameters have been established and noted; they are taking strong correlation coefficients i.e.  $R \geq 0.900$  among them. Correlation studies have been recorded and compared with the observed values to indicate the monitoring of water quality. Water resistivity has also been evaluated at the studied wells. The current results show that all the physicochemical parameters of drinking water are more or less correlated with each other to make a very useful and easy tool for monitoring drinking water. The mean values of the measured water resistivity conform to the stipulated potable water standards for the Yemeni Standard.

**Key words: Water quality parameters, Regression equation, Correlation coefficient, Hadhramout, Yemen.**

**ARABIC TITLES**

**AGRICULTURAL SCIENCES**

**The specific composition of the dominant local variety of sesame, *Sesamum indicum* (L.) and the accompanying weeds investigated in Al-Hauta and Tuban Districts, Lahj Governorate**

**Amani Ahmed Qardash, Wadea A. Saeed and Mohammed A.Hussein  
Biodiversity Dept., Center for Environmental Studies and Research, Aden  
University**

**Abstract**

**Many accompanying weed species have the ability to adapt in the form of the life cycle by different process. The composition phenomenon between crop plant species and weeds is considered one of the negative environmental relation in its biological and taxonomical characters. The plant list includes 42 species of the accompanying weeds to the dominant crop, *S.indicum*. Concerning the results of dominance and abundance, the plant species Germinae generally showed much dominance and abundance, while the other plant species showed less dominance and some week abundance. Annual germinae plant species accompanying *S. indicum* showed higher abundance in a specific number (24 species), while the perennial species showed less abundance (18 species).**

**Key words: Accompanying weeds, Sesamum crop, Biological composition.**

## **ENVIRONMENT**

### **The effect of climatic factors and human activities on Hawf forest**

**Mohammed Abdullah Hussein and Wadea A. Saeed**  
**Dept. of Biodiversity, Central of Environmental studies and Research,**  
**Aden University**

#### **Abstract**

**Climatic factors affect a signification influence in the composition of vegetation at the level of the global. Hawf forest is one of these areas that are affected by those factors directly. In the fall season, Hawf forest is exposed to saturated winds that comes from the southern west (Oceanic) called monsoon wind. During this period, the mountains covered with dense fog and precipitation of drizzle during monsoon, which allows the growth of an unusually dense and enriched vegetation for 3-4 months, then gradually becomes dry and leafless and the precipitation of drizzle is stopped by the end of autumn season. The forest becomes dry, leafless for the rest of the year, with the exception of some trees and shrubs, which still bearing leaves, e.g. Ficus and dodonia.**

**Key words: Forest, autumn, wind, plant communities, shrubs .**

## **CHEMISTRY**

### **Determination of some chemical and physical components of treacle samples in Al Jah area, Tehamah "Hodaida- Yemen"**

**Saeedan Ahmed M. haj, Yacoob. A. kassim, Taha Abubaker Fadhl  
and khorgain A. Ahmed Sageer  
Chemistry Department, Faculty of Education, Aden University**

#### **Abstract**

**Hodaida Governorate is regarded as one of the most important governorates in producing dates in Yemen. Farmers extract Treacle (black honey) out of these kinds as a secondary product. The purpose of this paper is: 1) to specify the physical properties (colour, density and the pH) for the studied kinds of treacle taken from upper and lower parts of AL-Gah, Tehama, Hodaida Governorate, Yemen, and 2) to quantatively determine the chemical component (moisture, ash reducing sugars ,fats, proteins and some mineral elements such as sodium, calcium, magnesium. manganis, iron, cupper, zinc, cobalt and cadmium) in order to evaluate the quality properties of Al-Hodaida Treacle in comparison with the international standards and Treacle standards of some Arab countries published in the scientific literature. The paper also aims at putting the results and recombination to be represent to the responsables.**

**Key words: physical and chemical properties, treacle, Hodaid Governorate, Yemen.**



## **ENGINEERING**

### **Stone architecture in Yafea**

**Ahmed Ibrahim Hanshoor**

**Department of Archaeology, Faculty of Arts, University of Aden, Yemen**

**Email: [Hanshoor1@gmail.com](mailto:Hanshoor1@gmail.com)**

#### **Abstract**

**The architectural heritage is a genuine image of the right development of Yemen civilization, and is closely linked to the environmental, climatic characteristics and topography of the region of origin, as well as the social and cultural nature.**

**Yemeni traditional architecture was characterized by considerable diversity in building styles, including "stone architecture in Yafa' " which is important in maintaining originality and identity extended deep into history with their distinctive maintained thousands years ago and manifested in mutual harmony between nature and architecture, and social relations.**

**But in the modern stage it exposed for the invasion of new building materials that have spread such as the spread like wildfire, which they do not match the prevailing climate in that region.**

**Key words: Stone architecture, natural factors, stone , clay, modern building.**