

ENGLISH TITLES

AGRICULTURAL SCIENCES

Liming effect on biological activity of leached loamy chernozem

Mohamed A. H. Salem.¹, S.K. Zaripova.¹, E.I. Lomako ², F.K. Alimova.¹, A.X. Yapparov.²

¹Kazan State University, Kazan, Russia

²TatNII of Agro chemistry and Soil Science Kazan , Russia

Abstract

An intensive application of mineral fertilizers leads to gradual acidification of agricultural soils. Liming could minimize the negative consequences of this process. Until recently, liming of the chernozems has not been practiced because of possessing of high buffer action of these types of soil. For the effective use of soil and keeping the fertility of soil, it is necessary to know an influence of lime on biological parameters of the soil. In the given work the influence of liming on heavy loamy leached chernozem properties in the third year after application was studied. It was shown that, on a background of mineral fertilizers, there was an authentic increase of total bacteria and actinomycetes share at simultaneous decrease in a share of mycelia fungi that can be connected to neutralization of the soil environment. Also, a stimulation of intensity of soil breath was detected along with nitrogen fixing activity and phosphatase activity. Stimulation of biological activity of the soil at liming was positively correlated with green mass of maize. The best prolonged results were reached at the use of 1-1,5 dozes of lime calculated on hydrolytic acidity which is equivalent to 8.8-13.2T/ha which was added twice.

Key Words: liming of soil; soil respiration; N₂-fixation; enzymes activity.

Effect of different soil media on seed germination , seedlings growth and NPK content in *Caesalpinia pulcherrima* and *Thevetia peruviana*

Shamim Moustafa Mahmood

Horticulture Department Faculty of Agricultural Sciences

University Of Aden Nasser

Abstract

An investigation was carried out during 2003 and 2004 to study the effect of four different soil media containing sand , sand +soil (1:1) , sand + awdust (1:1) and sand + soil + sawdust (1 : 1 : 1) on seed germination , growth and seedlings quality and NPK content in *Caesalpinia pulcherrima* and *Thevetia peruviana* . Both plants achieved high germination percentage within 21 days , C.

pulcherrima achieved high germination percentage (68.25 %) in sand + soil + sawdust, while *T. peruviana* in sand media achieved (66.5%) .Maximum plant height , stem diameter , number of leaves per seedling , leaf area , fresh and dry weight of stem and leaves were observed in sand +soil media followed by sand medium in *C. pulcherrima* and *T. peruviana* . The best rooting and higher concentration of N (1.25 , 1.41 %) , P (0.18 , 0.26 %) and K (0.83 , 1.07 %) was also observed in *C.pulcherrima* and *T.peruviana* seedlings grown in sand +soil medium .Suppression with thin growth , narrow leaves and lowest content of N (0.82, 0.90 %) ,P (0.10, 0. 16 %) K (0.60 , 0.62 %) were obtained in *C. pulcherrima* and *T. peruviana* seedlings respectively grown in sand + sawdust medium .

Key words : *Caesalpinia pulcherrima* , *Thevetia peruviana* , media , seed germination , seedlings growth

BIOLOGY

Changes of ascorbic acid (vitamin C) and total phenol contents in leaves of two varieties of tomato infected by early blight

M.Y. Al-Subai and A.A. Alafoori

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

Aden

Abstract

Accumulation of phenolic compounds in host-parasite reaction is a general phenomenon of disease resistance. Early blight infection resulted in diminish amounts of Ascorbic acid in leaves of all susceptible varieties, whereas resistant varieties contained higher amounts. This research is carried out in order to estimate the content of vitamin C and total phenols available in healthy and infected tomato plant leaves of two imported tomato varieties and in purpose to analysis the obtained data concerning the resistant and susceptibility to disease. It was found that there was a gradual decrease in ascorbic acid and total phenol contents in tomato leaves of two imported varieties due to early blight disease caused by the fungus *Alternaria solani*.

Key words: Ascorbic acid, phenol, early blight.

ENGINEERING

Behavior of Reinforced Concrete Elements Under Fire Attack

Zeid Thabet Youssef

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

Abstract

The purpose of this research paper is to cast light on the actual behavior of the reinforced concrete beam/slab during the fire, indicating that the developed forces are due to the prevention of thermal expansion and the redistribution in the bending moments and shear forces along the length of the indeterminate beam/slab. Moreover, the rate of penetration of heat temperature in the concrete elements, the reduction in the strength of concrete and steel at various degree of temperature and its effect on the moment of resistance of the section have been studied and discussed thoroughly in this research paper.

Key words: Fire attack, Moment of Resistance, Redistributed forces, Reinforced concrete elements.

MATHEMATICS

Obtaining bilinear generating functions by N-Fractional calculus method

Maged G. Bin-Saad and Salem S. Al Qasemi Barahamh

**Department of Mathematics – Aden University , Khormakssar ,
P. O.Box 6014, Aden, Yemen Republic**

Abstract

Generating functions play an important role in the investigation of various useful properties of the hypergeometric series which they generate. This paper aims at presenting several interesting and useful applications of the concept of N-fractional calculus of obtaining bilinear generating functions for a number of sequences of special functions in three variables. To obtain bilinear generating functions, our starting point will be certain fractional representations and some elementary identities.

A number of (known and new) results are shown as special cases of our results.

Key words: Fractional Calculus , Hypergeometric Functions of three variables , Bilinear, Generating Functions .

**Stability of an Inhomogeneous Viscous Layer Under an
Inhomogeneous Magnetic Field with Rigid Boundaries**

Akhtar A. Ghafoor

Department of Basic Science, Faculty of Engineering, University of Aden

Abstract

The present paper attempts to study the onset of the hydromagnetic instability in an inhomogeneous viscous incompressible fluid layer confined between two rigid boundaries in the presence of an inhomogeneous magnetic field acting in the longitudinal direction. It is proved that the inhomogeneity of the fluid layer has a destabilizing effect on the system; and the magnetic field has a stabilizing influence on the system. The instability occurs only when inhomogeneity possesses a positive gradient and the magnetic field does not attain a certain critical value. The otherwise an unstable system can be completely stabilized by a magnetic field of sufficient strength and this field is the same as for the non-viscous fluid layer. Hence, the viscosity does not affect the stability of the system. Numerical investigation of stability has been presented and illustrated graphically.

Key Words: Hydromagnetic Instability, Inhomogeneous Fluid, Inhomogeneous Magnetic Field, Rigid Boundaries

MEDICINE

Local Anesthesia in Chalazion Surgery

Mfadi A. Bataineh, *and Mousa V. Al Madani, **

*** Department of Anesthesia -Royal Medical Services, Jordanian Board in Anesthesia,**

**** Department of Ophthalmology- Royal Medical Services, Jordanian board of ophthalmology.**

P.O.Box 3247- Irbed-21110Jordan

Abstract

The Objectives of this study was to compare the effectiveness of topical lignocaine gel 2%, and lignocaine 2% injection, regarding their pain effect on patients undergoing chalazion surgery.

During the period between February 2002 and February 2004, fifty eight patients of age ranging between 15-32 years attended ophthalmology clinics in Royal Medical Services and were found to have chalazion in either the upper or lower lid. Patients were categorized into two groups of twenty nine patients each. The first group received local anesthesia in the form of 1.5 cc lignocaine gel 2% topically, and the second group received 1.5 cc lignocaine 2% injection. Both groups underwent chalazion incision and drainage. Each patient was asked about the pain encountered during anesthesia administration and during the

procedure, and the pain tolerance was divided into five levels according to patient tolerance.

The results have shown that twenty patients (69.0%) receiving injection had moderate pain through the procedure, while this occurred in nineteen patients (65.5%) receiving gel. Severe pain during the procedure that can be tolerated was found in 13.8% in both groups. There was no patient in any group complaining of severe pain enough to stop the procedure. Severe pain that can be tolerated during anesthesia administration was found in 51.7% in patients receiving injection and in 6.9 % in patient receiving gel, while moderate pain during anesthesia administration was encountered in 37.9%, and 13.8% in the two groups respectively.

It is concluded that Lignocaine gel 2% is relatively painless than lignocaine injection during administration, and both forms have nearly the same pain effect during the procedure of chalazion incision and drainage.

Keywords: Chalazion, lignocaine, local, and anesthesia.

Ankyloglossia: Incidence, Maternal Concerns and Breastfeeding Difficulty.

Maher Khader, Ghassan Salama, Wajdi AL-Zioud, Farouk Rihani, Khalid Amro, Shama Daboubi, and Lubna AL-Omari.

**Royal Medical Services-Jordan Armed Forces.
Irbid, AL-Huson, Postal Code 21510, P.O.Box 434, Jordan.
E-mail:fbrihani@yahoo.com**

Abstract

The Objectives of this study are to determine the incidence of ankyloglossia in breastfeeding infants, evaluate the parental concerns and fears of future speech problems related to ankyloglossia, and to determine incidence of breastfeeding complaints in the breastfeeding dyads identified with ankyloglossia. From December 2003 to October 2004, a total of 983 full term healthy breastfeeding infants (age range from 0 to 11.3 months, mean age 5.6 months) were examined for ankyloglossia in Prince Zaid Bin AL-Hussein Hospital, Tafela and at Princess Haya Hospital, Aqaba in the Southern part of Jordan. Mothers of infants identified with ankyloglossia were asked a series of standard questions to disclose their fears of possible future speech problems in the tongue-tied child (speech sounds errors and/or speech delay), then they were asked questions regarding the presence of complaints related to breastfeeding (poor latch and/or nipple pain). The results showed that Ankyloglossia was diagnosed in 51 infants, for an incidence of 5.2%. The male-to-female ratio was 2.9:1.0. 44 of the mothers expressed their concerns as to the possibility of the tongue-tied infant developing future speech problems, with an incidence of 86.3%. Finally, 5 dyads were identified with breastfeeding complaints with an incidence of 9.8%. It is concluded that Ankyloglossia is a relatively common anomaly with male predominance. It causes great concern on the part of parents because of decreased tongue mobility and the fear of future speech impairment;

appropriate reassurance and follow-up are important in this respect. Ankyloglossia is associated with breastfeeding complaints in a minority of cases.

Key Words: Ankyloglossia, Tongue-Tie, Concerns, Incidence, problems.

The results of electrophoretic screening for hemoglobin analysis in samples of 4217 individuals taken randomly from Aden and Lahej Governorates

**Mahmud M. Mohsen, Gamal Abdul Hamid and Anisa M. Abood
Faculty of Medicine & Health sciences, University of Aden**

Abstract

The objective of this study is to determine the relative frequencies of SC trait in Aden and Lahej Governorates of the Republic of Yemen . The study included 4217 adult and healthy individuals taken at random from Aden (2133) and Lahej (2084) Governorates. The electrophoretic phenotypes of the study subjects were determined by acetate paper electrophoresis at alkaline Buffer (pH 8.6). In the sample of 2133 individuals taken from Aden, 96.9% were identified with Hb AA electrophoretic phenotype, 3.04% with HbAS(SC trait), and 0.047% with HbSS(SC disease). In the case of the sample of 2084 individuals taken from Lahej, 89.87% were identified with HbAA, 10.076% with Hb.AS(SC trait), and 0.048% with Hb.SS.(SC disease). These data confirms the prevalence of a high frequency of the SC trait among the population of Aden and Lahej Governorates. At the same time this study confirms the existence of hemoglobin polymorphism in the Yemeni population. This situation imposes the need for a national program for sickle cell registration, management, and for population screening that covers all the governorates of Yemen.

Keywords: Hemoglobin electrophoresis , hemoglobinopathy, sickle cell disease, screening, polymorphism.

PHYSICS

Structural studies of the Ge-Se-Bi System

**S.K.J. Al Ani,* M.N. Makadsi, S.S. Al-Rawi and N.K. Abass
Department of Physics, College of Science University of Baghdad, Jadiriya,
Baghdad - Iraq.**

Abstract

A study of the effect of bismuth dopant on the structural properties of $\text{Ge}_{33}\text{S}_{67-x}\text{Bi}_x$. ($x=0, 5, 10, 15$ and 20) semiconductor system of X-ray diffraction analysis is presented . The measurement shows that the system consists of

crystals of Bi₂Se₃. At large concentration of Bi ($x > 10\%$) it implies a change in the number of Bi₂Se₃ crystals. No evidence for the Ge-Bi bond was found. X-ray analysis of thin deposited films of the Ge₃₃Se₆₇-XBix systems shows that they are amorphous for all values of x.

Key words : Structural study , Ge – Se -Bi systems , doping , Thin Films , X- ray diffraction , Amorphous structure.

VETERINARY SCIENCES

A study on bacterial dissemination and pathology of experimental intraperitoneal infection of broiler chickens with *Pasteurella multocida*

Salem A. Al-Shabibi*, Khalil H. Al-Joboury ** and Harith M. Al-Hayali**

* Department of animal production college of agriculture ; University of Aden

** Department of pathology and poultry college of veterinary Medicine ;
University of Baghdad

Abstract

Following intraperitoneal inoculation of 11-week-old broiler chicken with 1ml (10⁹ cfu/ml) *Pasteurella multocida*, the organisms were disseminated in different chickens' organs at specific intervals. The microorganisms were persisted in the brain (69.23%) for 19 days postinoculation, in the kidneys and ovary or testis (76.92%) for 23 days, in liver (92.31%), in spleen and lungs (100%) and in heart (84.62%) for 27 days postinoculation in all these organs. Among the histopathological findings associated with *Pasteurella multocida* infection were the followings:- During the first week postinoculation (Acute stage). There was extensive congestion, edema, thrombosis, petichial and ecchymotic haemorrhages in different body organs. Heterophils and fibrin infiltration and acute necrotic areas were also found in different organs such as brain, meninges, intestine, liver, spleen, kidneys, lungs, heart wall and ovary or testis. During the second week postinoculation (subacute stage), all the heterophils and fibrin infiltration's and necrotic areas in different body organs were localized and replaced gradually from the outside by lymphocytes and macrophages to form early pyogranulomas. Also, hyperplasia of peyer's patches and solitary lymphoid nodules in the intestinal wall were predominant. During week 3 and week 4 of postinoculation (chronic stage), all the early pyogranuloma seen in subacute stage were become more localized and chronic, consisting of central areas of necrosis and surrounded by lymphocytes, macrophages, and giant cells and on the outside fibroblasts proliferation. These chronic granulomas were mostly predominant in liver, lungs, kidney and ovary or testis. Also, lesions of chronic necrotic enteritis were seen in certain cases. The above findings reveal that acute septicemic lesions, followed by pyogranulomas and finally chronic granuloma, were persistent lesions associated with *Pasteurella multocida* infection.

Key words: Pasteurellosis, experimental infection, Broiler, Organs, dissemination .

SHORT COMMUNICATION

AGRICULTURAL SCIENCES

A preliminary weed survey on cotton fields at Tuban Delta (Lahej,
Yemen)

Abbas Ahmed Bawazir and Maged Saeed Bamaafa
Nasser's Faculty of Agricultural Sciences-Aden university.

Abstract

During season 1999/2000, prevalent weeds in cotton fields at Tuban were surveyed by defining species of weeds and their density. So for that, 12 sites were selected such as cotton farms along Delta; six of them irrigated with floods and others with wells. The survey was done, three times during growth of crop; 40 days after sowing, at 50% of flowering and after the first picking.

Results indicated that 46 species of weeds were belonged to 19 families; 17 species were perennials and 29 species were annuals. 26 species were spread in sites irrigated with floods, in average 6.69, 7.83 and 8.04 stem/m², compared with 34 species spread in sites irrigated with wells, in average 40.37, 46.59 and 14.05 stem/m², for the three times, respectively.

Key words: Lahej, Tuban Delta, Cotton, Weed survey.

MEDICINE

Massive round cell Liposarcoma of Perinephric tissues

S. A. Akares

Urology Unit-Surgery Department, Faculty of Medicine and Health Sciences-
Aden- Republic of Yemen

Abstract

Liposarcoma are malignant tumors of adipose tissue. They represent 0.05% of all cancers. The myxoid round cell group occurs in middle- aged adults, primarily as an extremity lesion ranges from the pure myxoid (low grade) to pure round cell (high grade) lesion. A 40-year female patient complained from pain in the left abdomen, fever, and abdominal distension. Abdominal ultrasound showed a large hypoechoic lobulated mass suspected of prinephric abscess. Exploratory laparotomy revealed perinephric fatty mass weighed 12 kg., with preservation of left kidney. Histologically fibrolipoma. Unresected residual mass re-operated weighed 1kg, diagnosed as round cell liposarcoma.

Key words: massive, Liposarcoma, Retroperitoneal.

ARBIC TITLE

AGRICULTURAL SCIENCES

**Monitoring date palm stalk borers *Oryctes* spp using light traps in
March 2003-February 2004 at Seiyun area in Wadi Hadramout-
Republic of Yemen**

Saeed A. Ba-Angood and Saleh O. Al- Baity

**Department of plant Protection- Nasir's College of Agriculture- University of
Aden**

baangood@yemen.net.ye

Abstract

Date palm stalk borers *Oryctes* spp are important date palm pests attacking date palm trees and causing a lot of losses in Wadi Hadramout. This research aims at monitoring the occurrence of the pest using modified Hjstand light traps that were installed during the period March 2003-February 2004 at Seiyun area in Wadi Hadramout; and studying the effect of some ecological factors that affect their occurrence in the area. The results have shown that the pest started to appear in light traps in the first week of March and reached their maximum number (188) in May 2003. The number decreased gradually in September, October and November; and in December, it completely disappeared. The pest started to appear again in January and February in low numbers with a mean number of 5 and 7 , respectively. It has been shown that the pest has only one generation per year, and the sex ratio was 1.8: 1 females to males. There was no statistical significant difference (at 5% level) between the increase and decrease of the population of the pest that could be affected by the decrease or increase of Temperature or Relative Humidity. The appearance of the moon has no relationship with the catching of the pest, as there was no statistical significant difference (at 5% level) in numbers caught on moony or dark nights. It has been concluded that Light traps could be used successfully in monitoring the pest and reducing its number, and could also be used in any IPM program for the management of this pest

Key words: Date palm stalk borers *Oryctes* spp, light traps, ecological factors, Wadi Hadramout

The effect of spray fertilization on growth and yield of grape cv.

Try Rush.

Omer Obied Mohammed

College of Education(Zingebbar), Univ. of Aden.

Abstract

This experiment was carried out in the Vineyard of Horticulture Department, College of Agriculture, Abu-Ghraib during the growing seasons of 2000 and 2001 to study the effect of a number of spray of Al-Nahrain nutrient solution contained NPK and Fe, Zn, Mn, Cu on yield and quality of grape cv. TryRush.

Results showed that, after spraying this solution, four sprays produced highest yield and bunch weight during both seasons. Three spray treatment in both seasons had the greatest sugar in fruits. Study treatments had an effect on titrable acidity. However, all treatments increased the dry matter in canes.

Key word : Al-Nahrain , Fertilization ,Grape .

Effect of plows and tractor speed on soil masses in different periods

Hasan Saleh Hasan

Soil and Agricultural Engineering Department, Nasser's Faculty of Agricultural Sciences - Aden University

Abstract

Two field experiments were carried out in the farm of Nasser's Faculty of Agricultural Sciences, Aden Univ., at Tuban Delta, Lahej Governorate during two conductive periods (early plowing in April 2002&2003 and late plowing in August 2002 & 2003) to study the effect of plows and tractor speed an soil masses crumbling in various periods. A split plot design was used, whereupon the main treatments were plows (disk plow –mold board plow)and the sub – main treatments were speed (first ,second and third)by three replicates. Ploughing was three : The first was disk plow by using three speeds: 2.1 km/h, 3.1km/h and 4.5 km/h); and the second ploughing was moldboard plow)by using three speeds: 1.7 km/h, 3km/h and 4.2 km/h. The second ploughing was levelling by chisel plow (leveling and coumbling) with leveling speed of 5.4 km/h and the third ploughing was rubbing by using leveling equipment with rubbing speed of 5.4 km/h .The depth of ploughing was between 27-30cm .

The results have shown that ploughing of (disk plow) treatment significantly increased the soil masses in the first ploughing of 2003 ,(the average of two seasons) and non-significant increase in all agricultural ploughings of 2002 & 2003, and the average of two seasons compared to the treatment of moldboard plow in two dates (early & late),respectively .

The first speed significantly surpassed the third speed by giving the highest soil masses in all agricultural ploughings of 2002&2003. The average of two seasons

in two dates (early & late), respectively. The first speed with ploughing by disk plow, significantly surpassed the third speed with ploughing by moldboard plow in giving the highest soil massed in all agricultural ploughings of 2002 & 2003. The average of two seasons in two dates (early & late), respectively. The results have also shown that the percentage of soil masses was decreased in the second and third ploughing of disk plow by (61.97%-22.55%) and (55.22%-18.02%) in the ploughing dates (late & early), respectively and in the moldboard plow by (53.9%-20.98%) and (51.22%- 18.02%) in the two dates of ploughing (late and early) respectively compared to the first ploughing.

Keywords: Disk plow , moldboard plow , tractor speed , early ploughing , late ploughing.

CHEMISTRY

Synthesis of 3-arylsulphonyl-1-nitropropenes

Galina Khamis¹, Dimitar Aliksiev and ²Fahed Salem Khamis

¹University "Prof. D-r A.Zlatarov", Bourgas -8010, Bulgaria

²Faculty of natural sciences "organic chemistry "

E-mail: galinahamis@mail.bg

Abstract

We take a keen interest in heteroconjugated alkenes due not only to the availability of some reactive centers in them, but also to the possibilities of obtaining new substances with potential biological activity. With respect to this, 3-arylsulphonyl-1-nitropropenes deserve special consideration. These compounds can be obtained by two independent methods. The first one is in the interaction of 1, 2-dibromo-3-nitropropanes with arylsulphinic acids sodium salts in the presence of sodium acetate and acetic acid. In the second method, 3-bromo-1-nitropropenes reacts with arylsulphinic acids sodium salts.

Key words: arylsulphonyl; 3-bromo-1-nitropropenes; 1, 2-dibromo-3-nitropropanes; arylsulphinic acid; heteroconjugated alkenes

ENVIRONMENT

The quality of drinking water in Al-Ghaydah city- Al-Mahraa governorate

A-Rahman Alawi Bin Yahai

Centre for environmental studies and science -Aden university

Abstract

The aim of this paper to study the quality of drinking water in Al-Ghaydah city .by collected eleven samples during 8-11 September 2004 for the physico-chemical analysis , the physical analysis include the following results : pH 4.2-7.9 , turbidity (NTU) 0.049-0.393 , total dissolved solids 626-5085(mg/l) , electrical conductivity ($\mu\text{s}/\text{cm}$) 1552-10700.

The results of chemical analysis (mg/l) shows : water alkalinity 200-1787.5(mg/l) , chlorides 101-2733.2 , nitrates 27-36.4 , sulphates 51.65-305.69 , orthophosphates 2.3-3.5 , sodium 9.19-79.97 , potassium 4-21.2, calcium 82.2-1361.9 ,magnesium 35.3-218.4 , total hardness (expresses as calcium carbonate) 415.5-4168 ,and the heavy metals estimation indicate the high concentrations of lead (0.002-0.199) and cadmium (0.005-0.027) in most water samples according to the world health organization standards and low concentrations of other metals.

The study conclude that wadi-Algaza wells 2,3,4 and wadi-Alfori wells are suitable for drinking use according to the local and world health organization standards.

Key words : quality, drinking water , Al- Ghaydah

MARINE SCIENCES

**Growth of Rock Lobster (*Panulirus homarus*) in the
Coastal waters of Al-Mahra Governorate**

**Mabrook Saeed Khanbash, „Mohammed Abood Ghaddaf*, Fowad Saeed
Wahdain,Abdulkareem Farag Bin Othman and Abdulla Abood Ghaddaf****

**Marine Science and Resources Research Centre / Hadramout,
*Marine Science and Resources Research Centre / Aden,
Faculty of Education**, University of Aden - Republic of Yemen.**

Abstract

**Growth Parameters of Rock Lobster of the biological data collected during the
fishing season 2002 – 2003, from the fishing areas in Al-Mahra Governorate
were estimated as the following: -**

Males : $L_{\infty}=29.2$ cm , $K=0.455$, $t_0 = -0.058$

Females : $L_{\infty}=29.2$ cm , $K=0.418$, $t_0 = -0.107$

Males and Females : $L_{\infty}=29.5$ cm , $K=0.436$, $t_0 = -0.0456$

**The small Rock lobster, grows faster than the old generation in the length
growth and slower in the weight growth.**

Key Words: - Rock Lobster, growth parameters, Al Mahrah.

**Fishing Status of Rock Lobster (*Panulirus homarus*)
In the Coastal Waters of Al-Mahra Governorate**

**Mohammed Abood. Ghaddaf*, Mabrook Saeed. Khanbash, Fowad Saeed
Wahdain, Abdulkareem Farag Bin Othman
and Abdulla Abood. Ghaddaf****

**Marine Science and Resources Research Centre / Hadramout ,
*Marine Science and Resources Research Centre / Aden,
Faculty of Education, University of Aden - Republic of Yemen.

Abstract

**This paper discusses the fishing status of Rock lobster (*Panulirus homarus*) in
the coastal waters of Al-Mahra Governorate according to the present variations
in the exploitation process. At the end of the study, recommendations have been
given to correct the over exploitation of this resource.**

Key Words :- Fishing status, rock lobster, Al Mahra Governorate.

PHYSICS
The Mechanical Properties of Thin Solid Films

S.K.J.Al Ani and Th. Al-Ani

**Department of Physics , College of Science , University of Baghdad , Jadiryia ,
Baghdad , IRAQ .**

E.mail : salwan _ kamal @ yahoo .com

Abstract

In this paper, the mechanical properties of thin solid films are presented .These properties are: stress, hardness, strain and adhesion. The available measuring methods are reviewed in details. The study of such properties is of great importance especially in their effects on the electrical , optical and related properties of thin films .

Furthermore , it improves the applications of these films, as well as protecting their internal structure from damage .

Keywords: Thin film , mechanical properties , stress , hardness , strain , adhesion .

The Effects of Sand Particles that Flow with Water on Solid Surface

Mohsen Obeid Mohammed

College of Education – Zingibar- University of Aden

Abstract

This research was carried out in Al-dew agricultural area , Abyan Governorate . Three wells were equipped with Caprari water pumps . The average quantity of sand that flows with one liter of water was different in each of the three wells : 35 , 7 and 0,2 gm respectively . The research aims to determine the effects of sand particles that flow with water on the internal surfaces of pumps . The research results show that the effects of cavitations are limited and that the main role in the erosion process is attributed to the impact of sand particles on the solid surfaces . Whereas the cavitations resulted in the erosion is about 20 gm (the third pump) , the quantity of erosion caused by hitting the surfaces by sand particles amounts to 65 gm in the first pump, and 25 gm in the second pump.

Key words : Particles , Sand , Water , Erosion of solid surfaces .