

Abstracts of Research papers Volume 25 Number 1(April 2021)

TABLE OF CONTENTS

ENGLISH TITLES

AGRICULTURE SCIENCES

**Evolution of land suitability and capability for some crops growth using
LSSM model at Al-Gabbanah valley, Ibb, Yemen
Ali Mohammed. Mayas and Khaled Ali Ahmed Al-Hakimi**

BIOLOGY

**Survey study on mosquito (Diptera: Culicidae) in Amant Al-Asimah (Sana'a
city) - Yemen
Ebtehaj, H, Al-Ajmi, Abbas Al-Azab and Mohammed Raweh**

ENGINEERING

**An enhanced threshold free-method for T-Wave detection in noisy
environment
Mohammed Sheikh, Adnan Zain and Majdi Marai**

ENVIRONMENT

**Assessment of metal contamination in deposited dust of the industrial area
and some streets - Aden city, Yemen
Mohamed Muthana Taher, Shaif Mohammed Saleh and Adel Alawi Alberkani**

GEOLOGY

**Impact of physical properties on material balance calculations:
Case study AL-Nasr oil field, Shabwah Governorate
Abdulla Ali Aldambi and Abbas Mohamed Al-Khudafi**

MATHEMATIC

q-Analogue Modified Laguerre Matrix Polynomials of Three Variables
Fadhil Salah Naser Alsarahi

On Certain Projective Motion in an N- Birecurrent Finsler Space
Abdalstar Ali Mohsen Saleem

MEDICINE

**Prevalence of Malaria / Co-Infection Dengue fever among
adult febrile patients in Al-Sadaqa Teaching Hospital- Aden**
Balqis AL-Sayeed Abdulla Ebrahim

**Laparoscopic cholecystectomy for gallbladder stone disease: preoperative
factors associated with difficult operations**
Fuad Hassan Bin-Gadeem

PHYSICS

Optical properties of blend of PMMA:PVDF
Nadhim Abduljalil Abdulla and Fatima Hamid Malk

**Bending resistance properties and combustion retardant for unsaturated
polyester reinforced with copper powder**
Ahmed J. Mohammed , Zainab J. Sweah and Israa Q. Falih

SUBJECT INDEX (Volume 24 – 2020)

**Subject index of research papers published in the "University of Aden
Journal of Natural & Applied Sciences", and their authors**

AUTHOR INDEX (Volume 24 – 2020)

(Volume 24 (April- October- 2020)

**Author index of papers published in the “University of Aden Journal of
Natural & Applied Sciences” and their addresses
Volume 24 (April- October 2020)**

ARABIC TITLES

AGRICULTURE SCIENCES

The effect of some plant extracts for the controlling of mild mold disease in potato tubers varieties

Jalal Saleh Aidrous Al-Jafri , Fuad Ahmed Al-Salami and Najeeb Sallam

Study of the efficiency of a number of bioextracts for controlling the coconut mite. *Aceria guerreronis* Keifer (Acari: Eriophyidae) in Hadhramout – Yemen

Amjad Ahmed Bagawigu and Saeed Abdalla Ba-Angood

Activity of biological control on the root-knot nematode *Meloidogyne spp.* on the eggplant plant

Nesreen Aidroos Ali and Fuad Ahmad Al- Salami

In vitro isolation and identification of Sesame seed-Borne (*Sesamum indicum*) Fungi, Abyan- Yemen

Saleh Othman Mohammed Saleh and Fuad Ahmed Al- Salami

ENVIRONMENT

Impact of sewage on some physicochemical properties of ground water wells- Tarim city - Yemen

A-Rahman Alawi Bin Yahia , Wahby Mohammed Babreash and Randa Mohammed Saif

PHYSICS

Cellulose extraction from millet husks and studying optical properties of the extracted polymer

Fatima Hamid Malk

Abstracts of Research papers volume 25 Number 1(April 2021)

ENGLISH TITLES

AGRICULTURE SCIENCES

Evolution of land suitability and capability for some crops growth using LSSM model at Al-Gabbanah valley, Ibb, Yemen

Ali Mohammed Mayas and Khaled Ali Ahmed Al-Hakimi

Plant Production Dept., Faculty of Agriculture and Vet. Medicine, Ibb University

Abstract

This study aimed at finding the productivity of the land and its suitability for the growth of some agricultural crops (field crops, vegetable crops and fruits), namely sorghum, potatoes and figs. The study area was evaluated according to its production capacity according to Sys et al. 1991 for the first and second grades (S1, S2) using a special digital model to illustrate this cartography. These lands were also classified according to their suitability to grow three types of crops, vegetables and fruits according to Sys et al. 1993, and using a special digital model to illustrate this cartography. The studied crops were suitable for cultivation in the Al-Gabbanah valley, as the results showed that sorghum in the ground sectors (1, 4) is very appropriate (S1), while in the ground sectors (2,3) it is moderate suitability (S2). The potato yield showed very appropriate result (S1) in sectors (2,4) and moderate suitability in sectors (1,3). As for the fig crop, the results showed moderate suitability (S2) in all sectors.

Key words: Land productivity, suitability of crop growth, sorghum, potatoes, figs, Ibb Governorate, Yemen.

BIOLOGY

Survey study on mosquito (Diptera: Culicidae) in Amant Al-Asimah (Sana'a city) - Yemen

Ebtehaj H, Al-Ajmi¹, Abbas Al-Azab² and Mohammed Raweh³

¹Parasitology and Medical Entomology, Zoology Section, Biology Department, Sana'a University, Yemen

² Medical Entomology, Zoology Section, Biology Department, Sana'a University, Yemen

³ Plant Protection Department, Faculty of Agriculture, Sana'a University, Yemen

¹abhajmi@yahoo.com ²abbasazab2000@gmail.com ³rawehsaeed@yahoo.com

Abstract

This study was conducted to know the common mosquito species in Amant Al-Asimah(Sana'a city) – Yemen, during the period from August 2018 to April 2019. Larvae mosquito were collected and identified to presence of two species in two genera.

Culisetalongiareolata was more prevalence (98.1%) and well distributed in most districts of Amant Al-Asimah, while *Culex pipiens* was found with less prevalence (1.9%) and distributed in only four districts. Vectors of viruses and nematodes which caused different diseases were recorded in this study.

Key word: Yemen, mosquito, *Culisetalongiareolata*, *Culex pipiens* and Vectors.

ENGINEERING

An enhanced threshold free-method for T-Wave detection in noisy environment Mohammed Sheikh, Adnan Zai and Majdi Marai

Mohammed Sheikh¹, Adnan Zain¹ and Majdi Marai²

¹ University of Aden, Yemen ² University of Hadramout, Yemen

Abstract

The electrocardiogram (ECG) signals provide information on the heart rate where it provides evidence to support the diagnoses of cardiac diseases and arrhythmias. Currently, T-wave has been used to forecast Sudden Cardiac Death (SCD). T-wave recognition is an excellent indicator in the analysis and interpretation of cardiac arrhythmia. Based on this aspect, it is necessary to develop an accurate technique for the detection of these waves. The main aim of this current study is to develop a new threshold-free method for the detection of T wave peak in an (ECG), which was characterized by a threshold free detection of T peak with a special moving window for T wave (and can be used for P wave) between each two RR peaks. A Band pass filter and a notch filter are used to enhance the detection of these required peaks. This algorithm is implemented using MATLAB tools. The database used in this work is downloaded from MIT-BIH Arrhythmia (Lead II). The method is validated using 40 recorded data. The obtained average sensitivity and average positive predictivity of the detection method are 98.4% and 99.0% respectively.

Key words: special moving windows for T or P wave, threshold free detection of R and T peaks

ENVIRONMENT

Assessment of metal contamination in deposited dust of the industrial area and some streets - Aden city, Yemen

Mohamed MuthanaTaher¹, Shaif Mohammed Saleh^{2*} and Adel AlawiAlberkani³

¹Department of Chemistry, Faculty of Education-Aldhalia, University of Aden, Yemen

²Department of Chemistry, Faculty of Science, University of Aden, Yemen.

³Department of Chemistry, Faculty of Education-Aden, University of Aden, Yemen

*Corresponding author: +967-734032296

E-mail: shamq2002@yahoo.com

Abstract

Air pollution from pollutant emissions has become a threat to the biological system and human health. The concentration levels and sources of heavy metals contamination were studied in deposited dust samples collected from various locations, including five different activity areas: industrial, highways, residential, mixed use and a remote area from contaminants in Aden, Yemen. Metal content of Cd, Pb, Cu, Zn, Co, Cr, Mn and Fe in dust was analyzed by Atomic Absorption Spectrophotometer (AAS). The results showed high concentration levels of Cd and Pb in industrial and residential areas. Deposited dust contamination was assessed by various methods: Enrichment factor (*EF*), Contamination factor (*CF*), Degree of contamination (*DC*) and potential ecological index (*RI*). The enrichment factor indicated extremely high enrichment of Cd, Pb and Zn. High *EF* of Cd, Pb and Zn showed that anthropogenic sources contribute a substantial amount of these metals to dust deposited. Contamination factor analysis showed that dust samples are significantly contaminated by Cd and Pb. Individual ecological risk (*Er*) indicated low to high contamination of Cd, but low contamination of Pb, Cr, Cu, Co and Zn. The degree of contamination (*DC*) and Potential ecological risk index (*RI*) indicated that most of the study areas demonstrated "Moderate to considerable category" risk index. The result suggest mixed origin of pollution sources; including Man-made sources, traffic sources, and lithogenic occurrences of the metals from construction sources and road construction currently in some of the sites studied.

Key words: Metal Pollution, pH, Urban Dust, Roadside Soil Dust, Ecological Risk Index.

GEOLOGY

Impact of physical properties on material balance calculations: Case study AL-Nasr oil field, Shabwah Governorate Abdulla Ali Aldambi¹ and Abbas Mohamed Al-Khudafi²

¹Faculty of Science, University of Aden, Yemen

²Department of Petroleum Engineering, Hadhramout University, Al-Mukalla, Yemen,
aldambi69@gmail.com, prof.abuahmad@yahoo.com

Abstract

The accuracy of many petroleum engineering calculations (e.g., material balance calculations, reserve estimation, well test analysis, advanced production data analysis, nodal analysis, surface network modeling, surface separation, and numerical reservoir simulations) largely depends on the accuracy of the data on pressure, volume, and temperature (PVT). An approach to improve the material balance calculation method is presented in this study.

To achieve the objective, PVTP and MBAL Software programs were applied. PVT model was built by different methods. Software was implemented to calculate stock-tank oil, initially in place (STOIIP), using different approaches. Sensitive analysis was performed to investigate the effect of different parameters on material balance calculation. Illustration of the proposed approach was done on the data obtained from AL-Nasr oil field.

The Average absolute error of PVT properties such as bubble-point pressure, relative volume, oil formation volume factor, Solution gas oil ratio and oil density is used to compare between actual and calculated values. Results showed a good agreement. History production (cumulative oil production, cumulative gas production, cumulative water production) were also calculated to investigate the match between history parameters and calculated parameters. Results indicated that the impact of PVT errors on material balance calculations can be significant.

Key words: material balance, PVT, modeling, Yemen, Shabwah Governorate.

MATHEMATIC

q-Analogue Modified Laguerre Matrix Polynomials of Three Variables

Fadhl Salah Naser Alsarahi

Department of Mathematics, Faculty of Education, Yafea, Aden University, Yemen

Abstract

In this paper, the q-analogue modified Laguerre matrix polynomials of three variables are introduced as finite series and some properties of these matrix polynomials are obtained.

Key words: q-analogue modified Laguerre matrix polynomials; generating functions; recurrence relations.

On Certain Projective Motion in an N- Birecurrent Finsler Space

Abdalstar Ali Mohsen Saleem

Dept. Of Math., Faculty of Education-Yafea, Univ. of Aden, Yemen

Abdulstar1972@gmail.com

Abstract

In the present paper, the necessary and sufficient conditions for this projective motion to be affine motion are obtained. Projective motion is studied in birecurrent Finsler space. Several results by authors extended to Finsler spaces of recurrent curvature by R. B. Misra, N. Kishore, and P. N. Pandey [6], A. Kumar, H. S. Shulka and R. P. Tripathi [2], S. P. Singh ([9], [10]) and others. C. K. Misra and D. D. S. Yadav [3] and S. P. Singh [11] discussed the affine motion in birecurrent non - Riemannian space.

Key words: birecurrent Finsler space, affine motion and projective motion.

MEDICINE

Prevalence of Malaria / Co-Infection Dengue fever among adult febrile patients in Al-Sadaqa Teaching Hospital- Aden

Balqis AL-Sayeed Abdulla Ebrahim

Department of Internal Medicine, Faculty of Medicine and Health Science, Aden University

Abstract

Malaria and dengue are the most prevalent vector-borne diseases worldwide and represent major public health problems; both are endemic in similar tropical regions and, therefore, may result in the possibility of co-infection. Aim: To determine the occurrence of concurrent malaria and dengue infection. Methods: we carried out retrospective cohort study for a total of 218 febrile patients attending Al-Sadaqa Teaching Hospital Out Patient Department over a period from August to November 2019. Blood samples were collected for malaria and dengue investigations and were tested for thin and thick film for malaria and NS-1 antigen and IgM ELISA for dengue fever. Result: Out of 218 patients, the total prevalence in malaria, dengue and co-infection patients were 50%, 62.4%, and 40.3% respectively. In term of age, the highest percentage was recorded among patients with malaria of the age over 58 was 78.3%, in dengue fever patients of the age 38-47 was 72.5 % with p value 0.05 and in co-infection among of the age 18-27 was 49.3% with p value 0.001. In term of sex the prevalence was 66.9%, 43.5% and 39.1 % in malaria, co-infection and dengue fever respectively. Conclusion: High prevalence of co-infection was observed among febrile infection compared to the isolated infection. Simultaneous infection among febrile patients is a true burden and there is a need for further study for patients in endemic areas.

Key words: Co-infection, Dengue fever, Malaria.

Laparoscopic cholecystectomy for gallbladder stone disease: preoperative factors associated with difficult operations

Fuad Hassan Bin-Gadeem

General Surgery Department, Faculty of Medicine and Health Science, University of Aden.

E mail: fuadbingadeem@hotmail.com

Abstract

Laparoscopic cholecystectomy become the treatment of choice for symptomatic gallstone disease. Difficult procedure may confront the surgeon, but these situations are often predictable based on a number of clinical and paraclinical factors. This study aimed to determine which clinical and paraclinical factors are associated with difficult laparoscopic cholecystectomy.

Total of 405 patients with symptomatic gallstone disease, who underwent laparoscopic cholecystectomy between 1st Marc 2018 and 29th February 2020, in 22 May Hospital, Aden, were included in the study. Patient with gallbladder cancer or acalcularcholecystitis were excluded from the study. Relevant data which include clinical and paraclinical findings as well as operative findings were collected to a specially designed questionnaire form. Data analysis was done by SPSS version 17 software. Univariate analysis for categorical variables was done using Chi square or Fischer's exact test. Continuous data were tested for normal distribution and analyzed using Mann Whitney test. P- value < 0.05 was considered statistically significant.

Female preponderance (88.1%) was observed. Mean age was 42.6 ± 13.7 . Difficult laparoscopic cholecystectomy found in 137 patients (33.8%). A statistically significant association were found between difficult laparoscopic cholecystectomy and gender (p-value < 0.001), history of obstructive jaundice (p-value < 0.001), previous endoscopic retrograde cholangio-pancreaticography (p-value < 0.001), previous abdominal surgery (p-value = 0.005), white blood cell count (p-value = 0.001), gallbladder wall thickness ≥ 4 mm (p-value < 0.001), impacted stone in cystic duct (p-value < 0.001), pericholecystic fluid collection (p-value < 0.001), dilated common bile duct more than 7 mm (p-value = 0.001), contracted gallbladder despite adequate fasting (p-value < 0.001).

Number of preoperative factors were identified, which have statistically significant association with difficult laparoscopic cholecystectomy. Knowledge of these factors by the surgeon before operation is imperative to make the necessary precautions before operation.

Key words: difficult laparoscopic cholecystectomy, open conversion, gallbladder, bile duct.

PHYSICS

Optical properties of blend of PMMA:PVDF

Nadhim A. Abdullah and Fatima H. malk*

Department of Materials Sciences, Polymer Researches Centre, University of Basra, Basra, Iraq
*Fatima.hameed16@yahoo.com.

Abstract

In this study, thin films of PMMA Poly (methyl methacrylate)-Polyvinylidene fluoride (PMMA-PVDF), PMMA polymer and soluble PVDF polymer were prepared at (5%) Toluene and polymeric blends in 1:1 volume ratio of polymers and in different proportions of polymers. The studied films were prepared by the Spin coating method, and the optical parameters of the thin films were measured within a range (300-900)nm and the thickness of the films were constant (223 nm). Absorbance (A), linear absorption coefficient (α), refractive index (n), extinction coefficient (K), real and imaginary dielectric constant (ϵ_r , ϵ_i), and optical energy gap E_g were studied, as the best edge of optical absorption was 5% PVDF, And electronic transmission between levels was direct transmission.

Key word: PMMA, PVDF, Spin coating, optical parameter.

Bending resistance properties and combustion retardant for unsaturated polyester reinforced with copper powder

Ahmed J. Mohammed¹, Zainab J. Sweah² and Israa Q. Falih³

¹Department of Material science University of Basrah, Polymer Research Center

²Department of Chemistry and Polymer Technology, Basrah, Iraq

³Department of Chemistry, University of Missan

ahamd.jasim@yahoo.com

Abstract

This work investigates the impact of the filler (copper powder) on the flame and resistance of bending for unsaturated polyester. The percentages of fillers (0.5%, 0.8%, 1%, 1.5%, 2%, and 2.5%) and a particle size of (150 μm) were investigated by many variables, such as flame and bending resistance. In addition, through optical microscopy, the specimens of the polymer (unsaturated polyester) were measured in a pure state and with the addition of copper powder. Results revealed strong bending resistance of 338 MPa at the percentage of 0%. The added copper powder reduced the spaces within the polymer chains, thereby reflecting the high ability of the polymer to resist the applied stress. The homogeneity is high within the polymer and additives. The findings also indicate decreased bending resistance of 120 MPa at a percentage of 2%. The average burning time starts to show a strong impact at 0%, which then increases at 181 Sec. The behavior then begins to increase when the weighed proportions are increased and then continued to increase at (1%) at 190 Sec. The maximum proportions also increased at a copper powder percentage of (2%) at 212 s. Results also indicate that the

percentage for the time of burning ranged within negative and positive values. The negative values at minimum weight ratios of copper powder percentages of 0.5%–0.8% and positive values at great weight ratios of copper powder percentages of 1% and 2%.

Keywords: bending resistance, unsaturated polyester, polymer composites, flame retardant, copper powder.

ARABIC TITLES

AGRICULTURE SCIENCES

, The effect of some plant extracts for the controlling of mild mold disease in potato tubers varieties

Jalal saleh Aidrous Al-Jafri*, Fuad Ahmed Al-Salami ** and Najeeb SaLLam**

*Faculty of Education, Lauder-University of Abyan

**Department of Plant Protection-Nasser College of Agricultural Sciences- University of Aden

Abstract

This study was conducted in the laboratory of the Plant Protection Department, Faculty of Agriculture, University of Aden, during the period from 1/10/2017 to 21/1/2018, to evaluate the efficiency of plant extracts (*Ricinuscommunis*, *Ziziphusspina-christi*, *Menthaspical*), *Al-Sabr* plant (*Aloe vacillans*), Sage (*Azadirachtaindica*), treated with alcohol (ethanol) and warm distilled water for fighting the bacteria that causes soft rot disease for potato tubers. The bacterial isolation was obtained from potato tubers infected with soft rot, using the disc diffusion method in the experiment.

The results showed that the plant extracts varied in the extent of their inhibitory effectiveness of the bacteria causing the disease (*Erwiniacarotovora*).

Results showed that the *Azadirachtaindica* leaves extract achieved the highest rate of inhibition in all repeaters (repeater 1, repeater 2, repeater 3) and in all concentrations (10%, 20%, 30%) in both types (alcoholic and aqueous) in inhibiting a diameter of (14 mm of alcohol at a concentration of 30%) and 10.8 mm of aqueous at a concentration of 30%.

The extract of *Ricinuscommunis* leaves also achieved an inhibition rate in all repeaters (repeater 1, repeater 2, repeater 3) and concentrations (10%, 20%, 30%) in both types (alcoholic and aqueous) in inhibiting a diameter of 13 mm for alcoholic at a concentration of 30% and 9.3 mm for aqueous at a concentration of 30% as well as the extract of *Menthaspical* leaves that showed an inhibitory ability in an alcoholic extract at a concentration of 20% and 30% with a diameter of 8.2 mm and in aqueous extract with a diameter of 7.8mm at a concentration of 30%, as well as extract of *Ziziphusspina-christi* leaves achieved inhibition rate in all repeaters

(repeater 1, repeater 2, repetition 3) and in concentrations 10%, 20% and 30% in both types (alcoholic and aqueous) with a diameter of 11.9 mm for alcohol and 9 mm For aqueous , while Aloe vacillans achieved the lowest inhibition rate in all repeaters and concentrations except inhibition rate in repeater 3 with a diameter of 8 mm at a concentration of 30% in the alcoholic extract .

Key words: Plant extracts –Bacteria ErwiniaCarotovora, Tubers of potato.

Study of the efficiency of a number of bioextracts for controlling the coconut mite. *Aceria guerreronis* Keifer (Acari: Eriophyidae) In Hadhramout – Yemen

Amjad Ahmed Bagawigu¹ and Saeed Abdalla Ba-Angood²

¹Agric Research and Extension Authority Eastern Coastal Branch

²Department of Plant Protection, Nasser's Faculty for Agricultural Sciences, University of Aden

Abstract

A number of aqueous plant extracts have been studied to find out their efficiency in controlling the coconut mite and to reduce the damaging of coconut crop. The first experiment was executed in the area of Shuhair, district of GhailBawazir, Hadhramout, on 22 May 2018, and was repeated in Al-Hami, district of Ash Shihr, Hadhramout, on 29 March 2019. The studied aqueous extracts were for neem seeds, arak fruit panicle, the fruit neem powder across the roots, Abamectin1.8%, sulfur 80%, Abamectin 1.8 bio, leaf manure Fizimite, (Copper- Oxychloride 35% + Metalaxyl 15%), in addition to the treatment of the water witness in the design of the complete random pieces. The results showed that all transactions were outperformed the witness in the first season after one and two months of treatment at a level of 5%; while , in the second season, all the transactions outperformed the witness in the first month. However, in the second month, all the treatments were outperformed significantly on the control at a level of 5% except the micronicsulfur which was of 80%. The treatment of aqueous extract of arak fruits was the best treatment to protect coconut from infection with coconut mite.

Key words: Control , Coconut Mite, *Aceria guerreronis* Keifer , CoconutPalm, Hadhramout,

Activity of biological control on the root-knot nematode *Meloidogyne spp.* on the eggplant plant

Nesreen Aidroos Ali and Fuad Ahmad AL Salami

Plant Protection – Faculty of Agriculture – University of Aden

Abstract

Two experiments were carried out for the year 2008, to study the effectiveness of *Bacillus thuringiensis* and *Sacchvomyces cervisiaci* bioactive in controlling *Meloidogyne* root-knot nematode on Eggplant plants.. the effectiveness of 5% of the number of galls and egg sacs and

the density of nematodes compared to the control, and it is noticed that the percentage of reduction increases directly with the increase in concentration, as the concentration was given 15%. With an average of 97.9 - 94.9%, the concentration was followed by 10% and the concentration was 5%, the least effective. Also, we find that *B. thuringiensis* bacteria improved the growth of plants and thus outperformed the control treatment at concentrations 5-10%, while we found that a higher concentration of 15% inhibited the growth of plants. The results also showed that the treatment of the baking yeast *Sacchvomycescervisiaci* with all its concentrations tested in this study was superior to that of the control. Where all the baking yeast concentrations showed efficacy in hindering the development of the nematode knot in the roots and the best of them was 1.5%, which gave a reduction rate of the galls and egg sacs by an average of 0.5-0.0% and a reduction rate of worms in the roots of plants and the station soil with an average of 92.9 - 91.4, followed by a medium concentration of 1%. The lowest concentration is 0.5%. We find that the treatment of bread yeast improved the growth of eggplant seedlings, and it significantly outperformed at the level of 5% on the control parameter, and the average concentration of 1% gave the best growth rates for eggplant seedlings among the yeast concentrations with an average length of 14.3 cm, a vegetable weight of 4.6 g and a dry weight of 2.7 g, followed by the concentration. The lowest is 0.5%, while we notice that the growth rates decreased by increasing the concentration to 1.5%.

Key words: Bacteria *Bacillusthuringiensis* -Yeast *Sacchvomycescervisiaci* –Nematode *Meloidogyne spp.* Eggplant.

In vitro isolation and identification of Sesame seed-Borne (*Sesamumindicum*) Fungi, Abyan- Yemen

Fuad Ahmed Al- salami and Saleh Othman Mohammed Saleh

Department of plant protection, Nassers Faculty of Agricultural Sciences, University of Aden

Abstract

The study was carried out in vitro plants of Education College Radfan affiliated University of Aden, during September 1, 2018 until February 25, 2018. The two incubation method Blotter paper and Agar plate were used to isolate local red kind of *Sesamumindicum*.

The five types of fungi *Aspergillusniger*, *Aspergillusflavus*, *Phoma as*, *Macrophominaphaseolina* and *Rhizopusspp* belonging to different four varieties at frequencies average 15,19,10,4 and 3 respectively have been isolated by Agar plate.

When sodium hypochlorite was used to sterilize seeds at 2% for 2 and 5 minutes, the result showed that all the above fungi exclusive *Rhizopusspp* and *Alternariaalternate* appeared at low frequencies average for *A.Flavus*, *A.alternate*, *M.phaseolina* and *Phomaspp* 1, 0.5, 2.5 and 0.5 respectively. The Blotter paper were used to isolate four fungi belonging to three kinds *Aspergillusniger*, *Aspergillusflavus*, *Alternariaspp* and *Rhizopusspp* at frequencies average 12.5, 4.25 and 3.3 respectively. The study results showed that the Agar plate outperforms the Blotter paper.

Sodium hypochlorite was used to sterilize seeds at 2% for 2 and 5 minutes led to reduce the percentage of containment seeds(16.5% and 11% respectively) compared to control 94.5% and increased germination 95% compared to control not exceed 25%.

Key words: Sesame seeds, fungi seeds, Agar plate method and Blotter paper .

ENVIRONMENT

Impact of sewage on some physicochemical properties of ground water wells- Tarim city - Yemen

A-Rahman Alawi Bin Yahia^{1&2} , Wahby Mohammed Babreash² and Randa Mohammed Saif²

Centre for Environmental Studies and Science -Aden University¹
Department of Analytical Chemistry, Faculty of Pharmacy, Aden University, Aden, Yemen²

Abstract

Tarimcity ,like other Hadramoutwadi cities is without sanitation system, and the open wells are used to remove the sewage produced from houses activities. So , the research objective is to study the impact of wastewater on the quality of masjids wells water .

Water samples were collected from five masjids wells (Al-Saggaf , Al-Mohdar , Al-Abadh , Shihab Al-Addain , Al-Zahir) and were distributed among residential neighborhoods , also water sample from Aided sanitation system and water cooperation were collected for studying some physicochemical properties of water by using official scientific methods .

The obtained resulty averages are as following : pH (7.688) , TDS (933.6mg/l), EC (20376 us/cm) , total alkalinity (1345.2 mg/l), nitrate (21.728mg/l) , phosphate (2.196mg/l) and lead (0.06516mg/l).

The obtained results revealed the impact of sewage on the wells water as the value of most studied water properties are high, compared with water cooperation sample, and the values were also higher than the allowed limits of WHO.

Key words: Impact , sewage , physicochemical properties, Tarim city , water wells ,Yemen .

PHYSICS

Cellulose extraction from millet husks and studying optical properties of the extracted polymer

Fatima H. malk

Department of Materials Science, Polymer Research Center,
Basra University, Iraq
fatima.hameed16@yahoo.com

Abstract

In this work, the cellulose Extraction of millet husks , that were thrown as waste from bird feed was extracted, as cellulose was extracted in scientific and accurate methods and re-extracted several times in order to obtain the best result. The cellulose extracted was also diagnosed with the technology of optical microscopy (FESEM) and performed for thin films The study of the optical properties within the wavelength range (300-900nm) and at a thickness of 100nm, as the nanoparticles were prepared by the method of spin coating, from which the optical absorbance was calculated, which has a fixed value for the measured wavelengths and tan of 50%, and the absorption coefficient (α), refractive index (n), inactivity coefficient (k) as a function of wavelength and optical energy gap (E_g).

Key word: Extraction , cellulose , Spin coating , optical properties.