

State of Libya

Ministry of Higher Education and Scientific Research

University of Tripoli

دولة ليبيا

وزارة التعليم العالي والبحث العلمي

جامعة طرابلس



ملخصات المنشورات العلمية

Abstracts of Scientific Publications

(دوريات محكمة – مؤتمرات علمية) (Scientific Journal – Conferences)

2014

كلية العلوم

Faculty of Science

مركز البحوث والاستشارات والتدريب – جامعة طرابلس

Research, Consulting & Training Center – University of Tripoli



The effect of detergent concentration and temperature on the water surface tension

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Detergents are an important source of water and land pollution, and since the water quality determines the detergent quantity required for reducing surface tension to a minimum in the cleaning process, and since a big share of water supply in the Arab world especially in Libya comes from different sources mainly underground with different natural quantities of minerals, salts, and suspended solids. We decided to analyze a wide range of water sources covering an area of about 1000,000 square kilometer and test the effect of detergents available in the market among other factors like PH, electro conductivity, TDS, and total hardness on reducing the surface tension of water in order to determine the minimum quantity of detergent required to give the maximum reduction in the surface tension. From such information we were able to determine the right quantity of detergents needed for cleaning according to the water source analysis results, and to our surprise the quantity needed to reduce the surface tension to a minimum is a quarter of the quantity suggested by the manufacturer.





Prevalence of Some Intestinal Protozoan Parasites among Infected Registered Human in Tripoli Central Hospital Laboratory

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This study was conducted in Tripoli Central Hospital to find the relationship between the rate of the infection of different types of protozoan intestinal parasites and the age and gender of the hosts. 727 feces samples were collected and the infection rate was found 19.89%, which represents 22.84% in males, and 17.17% in females respectively. Additionally, the infection rate was higher in the samples collected during the spring and summer seasons (where the temperature and humidity are relatively high), and the infection rate was low in the samples collected during the fall and winter seasons where temperature is relatively low. Few infected samples were diagnosed as double and triple parasites and most infected samples were single infection. The highest infection rate was for parasite *Giardia Lamblia* with 42.36%, and then *Entamoeba Histolytica* came in second with 34.72% and *Entamoeba coli* is ranked third with a percentage of 22.9%. The highest infection rate was recorded in the second age group (from 21 to 50 years old) which most of it considered as workers who are subjected to “out of home” nutritional habits with a percentage of 51.38%. Then the third age group (over 51 years old) with a percentage of 29.86% due to aging factor and weak immunity, where the first age group (less than 20 years old) was the least infected group with a percentage 18.75%.





Preconcentration and Determination of Traces of Heavy Metals with Polymer Chelating Sorbents in the Analysis of Natural and Waste Water

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Monitoring the concentrations of heavy metals in natural and waste water at and below the level of their maximum permissible concentrations is an urgent environmental problem. Hence, new procedures for the preconcentration of heavy metals with their subsequent determination by different methods are required. Along with other sorbents, significant attention is attracted to polymer chelating sorbents, which provide individual or group extraction of trace elements, eliminate matrix effects, and provide high concentration factors. The effect of the various parameters such as electrochemically and chemically synthesis methods, physical oxidation state of the polymer, polymer thickness, solution pH and metal ion concentration on the adsorption, kinetics and efficiency were investigated. The results showed a very broad concentration range of the heavy metals from (0.05 to 10 mg/L) can be adsorbed on different kinds of polymers at different pH values and different efficiently. The adsorption capacity of the polymer to different concentrations of heavy metals was evaluated as the milligram of metal ions by one gram of various forms of the polymer. The DC conductivity measurements were also employed on the solid polymer before and after adsorption of metal ions. The experimental adsorption data was fitted to different mathematical isotherms to estimate the binding constant of heavy metals with the polymer in both single and mixed ion solutions. The method provides the extraction of analytes from natural water of complex composition containing high concentrations of alkali, alkaline-earth and other elements and is characterized by rapidly, selectivity, low detection limits, and a high reproducibility of the results. The relative standard deviation is 2-4%. The technique was test with real water and wastewater samples.





The honeybees (*Apismellifera* L) of Libya

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I investigated honeybee populations of *A. mellifera* in Saharan and coastal locations in Libya to fill the North Africa gap of biogeography and distribution of honeybees. It was found that Libyan honeybees are different, morphologically and genetically, from adjacent subspecies; and majority of Libyan bees (92%) belongs to oriental evolutionary lineage (O). As well as, it was found local impact of imported European honeybees, and an effect of modern beekeeping on population of coastal region and some oases.

Keywords: *Apismellifera*, Libya, morphometry, lineages, Subspecies

<http://link.springer.com/article/10.1051%2Fapido%2F2008068#/page-1>





The impact of climate change on population trends of marine birds in Libya

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The coastline of Libyan is characterized by different wetlands that are used as roosting areas for many migratory marine birds. They provide shelter, food and nesting ground for many birds' species during their migration from their home to wintering grounds. Climate change considered as the greatest threat to natural communities in many the world's ecosystems. It is already affecting birds in different ways. Precipitation and moisture are critically important climate variables to birds. Marine (sea) birds are highly dependent on precipitation to sustain their wetland habitats. Data on wintering birds in Libya were collected through the years 2005 - 2010 and analyzed in order to investigate their relationships with some climatic factors. This study found that precipitation reductions and drought in critical stopover areas have negative implications for marine birds wintering in Libya. However, the decrease and increase in bird numbers were related to the rate of rainfall.

Keywords: Coastline, migratory, precipitation and wintering birds.

www.researchgate.net/publication/272788897 The impact of climate change on population trends of marine birds in Libya





The Impact of Using Visible Program Execution Tools on Learning Novice Students

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The process of teaching Computer Science students was and is still one of the most difficult tasks faced by most educational institutions, a group of researchers at American universities developed software packages that help students acquire what called "reading experience"; which make explicit the internal workings of program execution and as such can serve as conceptual models onto which novices students can assimilate information about the basic laws of composition of computer algorithms. The spread of these software packages was tight for several reasons, but the most important one is these packages were working under a closed software environment. This paper discusses the importance of the adoption of such tools for the educational institutions in order for novice students to easily acquire "reading experience". In recent years, scripting languages such as Python has been gaining traction as a preferred language for computer science courses across many universities, such as Computer Science department in Tripoli University, Libya; this has encouraged several famous universities to develop an open source web-based program visualization tool for Python. Both teachers and students can benefit from using these tools; novice students can easily acquire what called "reading experience", also teachers can smoothly explain the basic laws of composition of computer algorithms.

Keywords: reading experience, dynamic, Visible Program Execution Tools, scripting languages, Python





Fisheries and Fishes of the south Mediterranean Sea (Libyan coast)

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The paper presents a brief description of the longtime traditionally practiced artisanal fisheries in Libya. Fishery activity and local highly esteemed commercial fish species are briefly outlined. Main fishing harbors and fish landing sites together with numbers of fishing vessels normally anchors in them are given. Such fishing gears are named and classified according to size and effort; while fishing methods and techniques typically used to catch fish along the west, middle and east Libyan coast line are also given. Finally, the scientific, common English name and the local names of chondrichthyes fishes are tabulated; whereas small pelagic and benthic bony fish species are illustrated together with a fairly recent annual fish catch in Libya.





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