

# **ECONOMIC APPLICATIONS**

## **A STUDY ON THE POSSIBILITY OF REUSE OF INDUSTRIAL BY-PRODUCTS**

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### **ABSTRACT**

Many studies have appeared regarding many ways to dispose of industrial wastes and to counteract their negative effects on the environment through isolating three industrial wastes (gas, liquid, solid) and re around like a follow stage to what it include from adjectives and valuable especially for wastes in the production process. Through the search and investigation especially of three industrial installations in the area of Basrah located in area of Khour Al-Zubair and Al-Shaaba and the third area (from Al-Deer and Al-Najebia) that dispose of wastes in dumping areas, we found possibilities of reclaiming valuable resources and energy by conserving those industrial wastes that are otherwise discarded like rubbish, especially the gases.

## STOCK ASSESSMENT OF COMMON FISHES IN THE IRAQI SOUTHERN MARSHES

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### ABSTRACT

Growth parameters, mortality, exploitation rate and recruitment pattern of five common fish species were estimated for the period from November 2004 to May 2006. A length-based method was applied using the FiSAT program to assess the stock condition of *Alburnus mossulensis* Heckel, *Barbus luteus* (Heckel), *Carassius carassius* (L.), *Liza abu* (Heckel) and *L. subviridis* (Valenciennes). The  $L_{\infty}$  and K values obtained were (23.03, 0.38), (30.87, 0.1), (33.81, 0.38), (19.02, 0.43), and (28.99, 0.33) for *A. mossulensis*, *B. luteus*, *C. carassius*, *L. abu* and *L. subviridis*, respectively.  $L_{\infty}$  values of *B. luteus*, *L. abu* and *L. subviridis* seem to be not significantly different from those obtained in the 1980s. The results revealed that the exploitation rate of both *A. mossulensis* and *C. carassius* (0.51) are close to the optimum level of 0.5. *B. luteus* (0.47) and *L. subviridis* (0.46) were exploited at rates slightly lower than the optimum rate. However, *L. abu* was considerably overexploited ( $E = 0.62$ ). Lengths at first capture ( $L_c$ ) of investigated species were less than their lengths at first maturation ( $L_m$ ). Fishing effort currently exerted by fishing gears used (drift and seine nets) with inappropriate mesh-size may negatively influence the stocks of investigated species, where limited advantage (at least one time) may be given for spawners to support the stock by new recruits. On the other hand, unlawful fishing gears (pesticides and electrofishing) when widely used may substantially deteriorate fish stock in Iraqi marshes at earlier stages of restoration. Stock assessment for fishery resources in such an important vital region for Iraqi fishes will be continued to include other species that are now insufficiently represented to be assessed during the present study duration.

**COMPARISON OF LIVING REALITY FOR BUFFALOS (*Bubalus bubalus* L.)  
AND COWS (*Bos taurus* L.) IN THE BASRAH MARSHES DURING THE  
DRYING PROCESS PERIOD AND AFTER THE RETURN OF WATER**

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**ABSTRACT**

This study explains the changes in living reality for buffalos and cows in the Basrah marshes during the drying process period and after the return of water. The study examined changes in the numbers of animals and ratio of parturition and mortality because of water returning and growth of green plants that are considered a good food for animals. These changes eventually lowered infectious diseases as a result of good immunity in animals.

## **MARSH DESTRUCTION: OPINIONS OF FARMERS**

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### **ABSTRACT**

The study aimed at interviewing farmers in the south of Iraq about the destruction of the marshes. A sample of 951 farmers and 190 officers was requested to fill out a questionnaire of 20 questions, 10 of which supported the drainage and 10 opposed it. The results indicated no significant difference (t-test), but the conclusion was that previously farmers and officers were against the dryness procedure.

## **PRODUCTION OF GERMINATION MEDIUM FROM SEDGE PLANTS**

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### **ABSTRACT**

Vegetable and ornamental production under controlled conditions often depends on using pots and containers to produce transplants. This promotes continuous searching to find an appropriate germination medium for transplant production. Sedge due to its availability in large amounts in Iraqi marshes was tested to be used as suitable substance for the purpose of this study. Results indicated that sedge germination medium had important properties such as water-holding capacity up to 56% w/w, as well as its content of N, P, and K (2.18, 1.53 and 1.23% before washing and 1.37, 1.50 and 0.75 after washing, respectively). The germination of local cucumber, eggplant and pepper seeds was tested in sedge medium and sandy soil. Non-significant differences were detected between those media.

## **EVALUATION AND MANUFACTURE OF LIGHTWEIGHT CONCRETE BOARD BY USING CANE THAT GROWS IN THE MARSHES OF SOUTHERN IRAQ, AND ITS INDUSTRIAL APPLICATIONS**

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### **ABSTRACT**

The research aims to find new technology to manufacture lightweight and thermal insulation concrete boards contributing to reduced power consumption, to create new technology for the production of compressed sheets made from cane used in the furniture industry instead of sawdust, and to preserve the environment by making use of waste paper and waste dry cane after the completion of maturity.

Where was the preparation of samples in different percentages of the dry cane and pulp made from waste paper, cement and polymer (resol Novolac), It was to examine the impact of each of these ratios on the physical properties of these models, such as resistance to compression, density, and the percentage of absorption humidity. The results showed that the use of cane had a positive impact on the percentage of moisture absorption and also noted that the addition of cement to polymer by ratio 1: 1 leads to the possibility of cure at room temperature and also noted that one can control the density and resistance compression by controlling the addition of pulp and cane where it was noted that the increase in the percentage of these materials lead to a decrease in both the density and compression resistance and an increase in the percentage of water absorption.

The research showed that the development of new technologies listed as the following: 1) industry technology, especially for lightweight concrete boards using dry canes, as the compression strength 5 MPascal; percentage absorbed moisture reached to 5% and density 1025 Kg/m<sup>3</sup>; this technology does not require the existence of rigid vapor pressure computations, as is commonly but be crucify degree room temperature; 2) industry technology, especially to manufacture of cane sheets used in the furniture industry instead of sawdust which have compression strength reached to 2 MPa and density 750 Kg/m<sup>3</sup> and the percentage of moisture absorption of up to 15% (as percentage moisture absorption sheets are manufactured for sawdust and located in markets reaching 60%), this new technology does not require a high-pressure or high-temperature baler, but is the product of a manufacturing room temperature.

**CHEMICAL CONTROL OF CORN STEM BORER *Sesamia cretica* Lederer AND ITS EFFECT ON THE GROWTH AND YIELD OF THE SORGHUM CROP *Sorghum bicolor* L. (Moench) IN THE THI-QAR MARSHES**

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**ABSTRACT**

This investigation was conducted in one of the sorghum (*Sorghum bicolor* L. (Moench)) fields of Al-Romead village located near the border of Abu-Zirig marsh at Al-Esslah region, about 40 km from Thi-Qar city. The main objectives of this study were to evaluate the efficiency of Gaucho WS70% gust insecticide seed treatment and Match ESo1o insecticide foliar treatment against the corn stem borer (*Sesamia cretica* Lederer), and their effect on sorghum crop growth characteristics and yield in autumn 2006.

The application of Match foliar treatment resulted in significant protection of the sorghum crop against borer infestation for all seasons compared to Gaucho treatment; it significantly reduced the borer infestation rate, which was 3.62% compared with 5.11 and 17.05% for Gaucho and the untreated control, respectively. Results also revealed that Match reduced the larval population density, with an average of 1.75 larvae/10 plants compared with the Gaucho treatment and the control , which had 3.11 and 5.85 larvae/10 plants respectively. The high efficacy of Match insecticide foliar application also improved sorghum growth characteristics and increased the yield. Plant height in cm, leaf area index, number of grains / head, and yield of plant per gram, reached 131.47 cm , 5.49, 1703 grains/head, and 47.5 g/plant , as compared with the Gaucho treatment , (122.92 cm , 4.89 , 1655.2 grains/head , & 44.1 g/plant) and with the untreated control (118.12cm, 4.18, 1593.7 grain/head, and 40.9 g/plant respectively).