University of Baghdad

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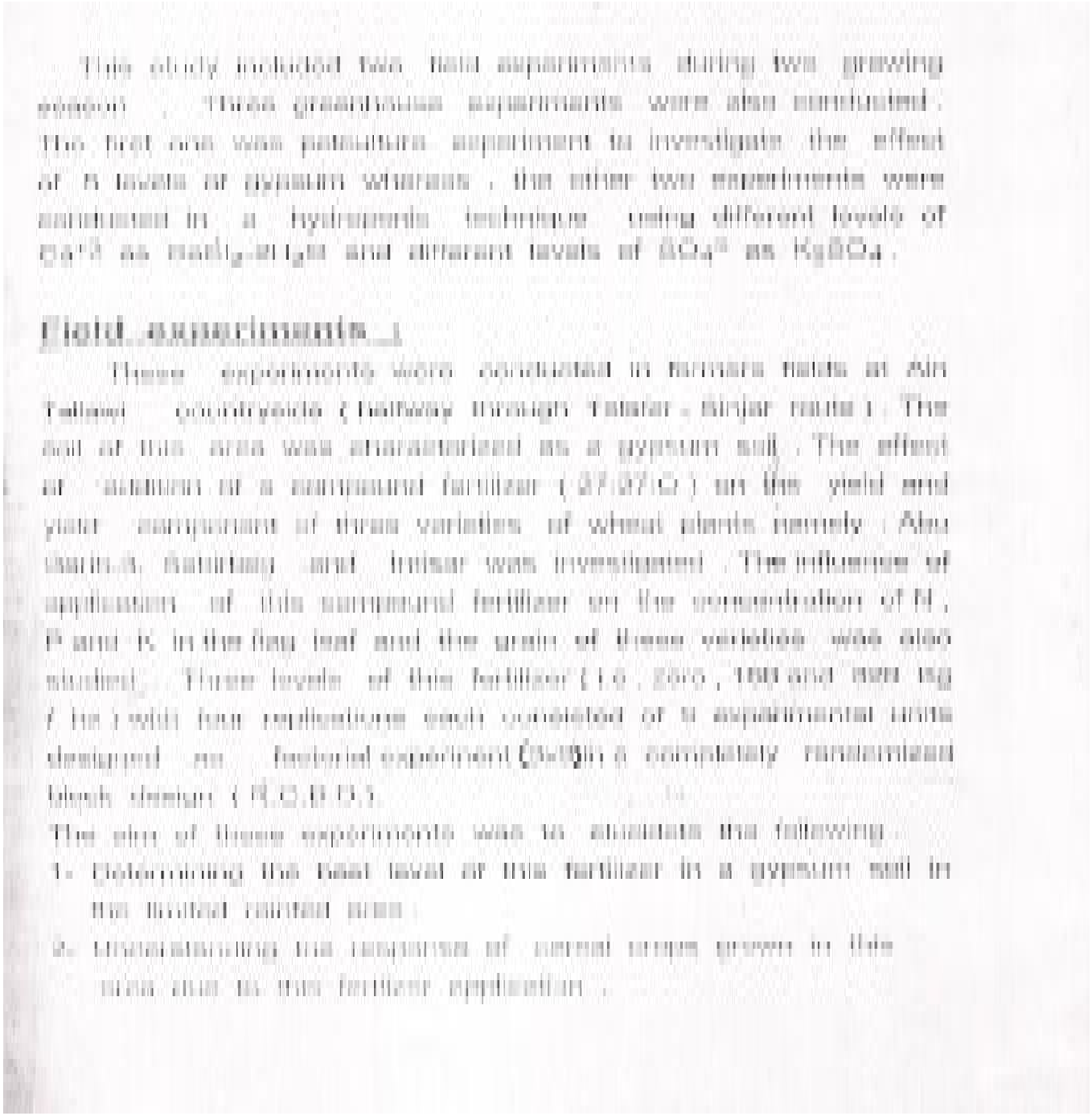
Thesis Title	A TUDY ON THE EFFECT OF GYP UM ON THE GROWTH AND NUTRITION TATU OF WHEAT GROWN IN LIMITED RAINFALL AREA			
Year	1996			

Abstract



Results of this study revealed that , application of a compound fertilizer (27:27:0) to the gypsum soil significantly increased the yield component in terms of spikelet / spike , No . of grain / spike , No . of grain / spikelet , weight of 1000 grain and the grain yield / ha for all varieties of wheat in both seasons of growing . Results also showed that , wheat var . Abu Ghardb -3 was superior in some yield component particularly in grain yield . There was a difference in the yield component due to varieties during both growing seasons as a result of the amount of precipitation during each season . This study was also revealed that addition of fertilizer markedly increased the percentage of N , P and K in the flag leaf and grain of all studied varieties , where the highest level (i.e . 320 kg / ha) was the most effective , giving differences among these varieties during growing season . This difference was due to the difference in the amount of the precipitate .

Greenhouse experiments :

This study included 3 types of experiments as follow :

1- Effect of gypsum levels .

The aim of this study was to investigate and to know the effect of different levels of gypsum on the rates of absorption and transport of previous nutrient elements . This study also aimed to know the tolerance of wheat varieties - used in field experiments - to the different levels of gypsum , which inturn affect quality and growth of cereal crops . The effect of 5 levels of gypsum (i.e . 4.5 % , 13.7% , 18.4% , 26.7% and 64.7%) on

the dry weight of tops and roots of plants , absolute growth rate , percentage of N, P,k and their rates of absorption and transport were studied . Concentration and rates of absorption and transport of calcium and sulphate of studied wheat varieties were also investigated. A factorial experiment (3x5) in a completely randomized design (C.R.D.) was used . Results of this experiment showed that , increasing gypsum levels from 4.6 % up to 54.8% pronouncely decreased the dry weights , absolute growth rate, percentages and rates of absorption and transport of studied nutrients . On the other hand , there was a marked increment in precentages and rates of absorption and transport of calcium and sulphate ions in all varieties of wheat . This study also revealed that wheat plants var . " Intisar " was the most tolerant one to the gypsum levels than " Abu Garib -3 " and "Sabirbeg " varieties inspite of their difference in all previousely mentioned characteristics .

2- Effect of Calcium ion concentration of the nutrient solution .

The aim of this experiment was to study the effect of calcium ion on the growth of three wheat varieties and their tolerance to the high concent rations of calcium through its effects on the rates of absorption and tranport of nutrient elements . Three concentrations of calcium (i.e . 1000 , 6000 , and 12000 μ M) in the nutrient solution were adopted in this study , each treatment was replicated three times . A factorial experiment (3x3) in a completely randomized design (C.R.D.) was used . This study revealed that , increasing calcium concentration caused a decrement in the dry weights of top and root growth , absolute growth rate , length , diameter and volume of roots and root

efficiency as well as percentages of nutrients and their rates of absorption and transport in the studied wheat varieties . Results also indicated that increasing calcium concentration caused an increment in the percentage , rates of absorption and transport of calcium in all studied wheat varieties . The highest concentration of calcium (i.e . 12000 μ M) in the nutrient solution was the most effective in respect of growth and calcium Percentage of wheat varieties leading to increasing rate of calcium absorption and transport in these varieties . Wheat plant var . " Intisar " was most tolerant one to the high concentration of calcium whereas , var . " Abu Garib -3 " was the lowest , inspite of the difference among these varieties in their nutrients concentrations and rates of absorption and transport .

3- Effect of Sulphate ion concentration of the nutrient solution

This study aimed to elucidate the effect of sulphate ion on the growth of previouse wheat varieties and their tolerance to the highest concentrations of sulphate ion through its effects on the rates of absorption and transport of nutrient elements . Three concentrations of sulphate (i.e . 1000 , 7000 and 14000 μ M) in the nutrient solution with three replicates for each treatment were adopted . A factorial experiment (3x3) in a completely randomized design (C.R.D.) was used .Results of this experiment showed that increasing sulphate ion in the nutrient solution markedly decreased dry weights of tops and roots growth , absolute growth rate , length , diameter and volume of roots and roots efficiency Nutrient elements concentrations and their rates of

absorption and transport of wheat varieties were also decreased due to increasing sulphate ion in the nutrient solution . Increasing sulphate ion in the nutrient solution increased this ion in wheat varieties leading to an increase in its rates of absorption and transport . It is worth mentioning that , there was a difference among these varieties of wheat in terms of dry weights , absolute growth rate , root efficiency . nutrients concentration and their rates of absorption and transport . This difference in the previouse characteristics was due to the difference of these varieties to tolerate the addition of sulphate ion .

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Thesis Title	**Ecology And Taxonomy Of Parasites Of Some Fishes And Biology Of *Liza Abu* From Al-Husainia Creek In Karbala Province, Iraq**
Year	2007
Abstract	The general outline of this thesis included a series of studies concerned with the parasitic fauna of seven species of fishes from Al-Husainia creek, Karbala province. These studies included the investigation of the important physical and chemical factors of waters of this creek, determination of the parasitic species of these fishes, their sites of infection, prevalence of infection and the relationship between the infections of three species of fishes (*Aspius vorax*, *Cyprinus carpio* and *Liza abu*) with their sex, length and season of infection. In addition, the food and feeding habits of the mugilid fish *Liza abu* (the most common fish in Al-Husainia creek) were studied in order to determine the food items of this fish and relate them to the biology of this fish and its infection with some internal parasites. Also, some aspects of the reproductive biology of this fish and the determination of the impact of the parasitic infections on gonad growth and development were

investigated.

The study of physico-chemical factors of water of Al-Husainia creek, during the period from May 2005 till the end of April 2006, indicated that water temperature showed clear monthly fluctuations which ranged from 10 Cº during January to 33 Cº during August. Dissolved oxygen values ranged from 5.5 mg/ml during August to 14.8 mg/ml during January. Slight monthly changes were noticed in pH values which ranged from 7.7 during May to 9 during January. Also, slight monthly changes were recorded in salinity values which ranged from 0.67 ppt during October to 0.91 ppt during May. Clear fluctuations occurred in turbidity values which ranged from 12 cm during April to 177 cm during January.

During the present investigation, a total of 2615 fishes, belonging to seven species, were collected. These included 526 *L. abu*, 412 *A. vorax*, 397 *Barbus luteus*, 366 *C. carpio*, 317 *B. xanthopterus*, 311 *B. grypus* and 286 *B. sharpeyi*. These fishes were examined for ecto- and endoparasitic infections. They were infected with 33 species of parasites which included two species of ciliated protozoans, 16 monogenetic trematodes, one species each of digenetic trematodes and cestodes, two nematodes, four acanthocephalans and seven crustaceans. Among these parasites, five monogenetic trematodes were recorded for the first time in Iraq. These included *Dactylogyrus rohdeianus*, *Diplozoon paradoxum*, *Paradiplozoon homoion*, *P. megan* and *P. vojteki*. Also, 22 new host records in Iraq were added for 15 of the studied parasites. *B. luteus* harboured 17 species of parasites, followed by

L. abu (14 species), *A. vorax* (13 species), *B. Sharpeyi* (8 species), *B. Xanthopterus* (7 species), *B. grypus* (6 species) and *C. carpio* (5 species).

No significant differences were noted in the infection of males and females of three species of fishes (*A. vorax*, *C. carpio* and *L. abu*) with some parasites occurring in appropriate percentages of infection which facilitate their study. These parasites included two acanthocephalans (*Neoechinorhynchus iraqensis* and *N. rutili*) and three crustaceans (*Ergasilus barbi*, *E. mosulensis* and *E. sieboldi*). In connection with the relationship between these infections and the total length of infected fishes, only one case of a decrease of prevalence of infection of *A. vorax* with *N. iraqensis* was noticed, while the infection of the same fish with *E. barbi* showed fluctuations. The majority of other parasitic infections showed an increase with increment of fish length. Generally, most parasitic infections showed clear seasonal changes as most infections were high during spring and summer and sometimes autumn, while low infections were reported during winter and sometimes autumn.

Clear monthly changes in percentage of food items of *L. abu*, calculated according to the frequency of occurrence method, were noted although no significant changes in food items of males and females of this fish were noticed. The important food items, arranged in a descending order, included sand grains, diatomes, filamentous algae, aquatic plants, aquatic insects, crustaceans, detritus and nematodes. Through studying the food items of three different sizes of *L. abu*, it became clear that smaller fishes tend to select animal food items while larger fishes consumed both animal

	and plant items. Feeding activity (indicated as number of empty stomaches) was high during spring and summer, with a gradual decrease during autumn and low value during winter. A direct relation was noticed between the infection with some internal parasites and consumed food items (crustaceans and aquatic insects). The overall sex ratio (number of males: females) in *L. abu* tended to be in favour of females (1: 1.5). The proportion of females in this ratio increased with the increase in fish length. Values of gonadic index of male and female *L. abu* showed a slight increase during August with a gradual monthly increase till a maximum value during March, a gradual decline during April and a sharp decline during May. This means that such fishes expelled their gametes during April and May. During June and July, very slight reduction was noticed. It was clear that values of gonadic index of male and female *L. abu* infected with parasites (internal or both internal and external) were non significantly less than those of noninfected fishes due to the smaller size of these parasites and their occurrence with small numbers.

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Thesis Title				
Year				
Abstract	The present study was conducted to find out economic, easy and potential method for screening and/or evaluation of wheat genotypes for salt tolerance. Another aim of the study was to compare salt tolerance of some promising genotypes of wheat and study the mechanism of salt tolerance of the tolerant genotypes. The experiments was carried out in a filed equipped with rainfall shelter. The treatment were six wheat genotypes (Mexipak, Zahra 2, L2, CI 5938, Alaiz and Alnakhwa) and three salinity levels (4, 10 and 14 dS/m). Seeds of the test genotypes were planted in their respected column and irrigated with enough amount of water of 10 and 14 dS/m salinity levels in order to reach ionic balance within the soil column and maintain the salinity level the same along the life cycle of plant. The treatments were arranged in a randomized complete block design with five replications. Results indicated that the size of column used in experiment was appropriate for plant to complete its life cycle. The salinity was maintained within the levels used in the experiment along the life cycle of plant. The system appeared to be useful, cheap and potential for evaluation and/or screening a large number of wheat genotypes for salt tolerance. Salinity significantly reduced plant height, yield and yield			

	components and carbohydrate content of grain. However, protein content of grain was significantly increased. Also, salinity either increased or decreased ions accumulation in leaves causing nutritional imbalance in plants. The test genotypes showed different response to salinity stress. Alnakhwa and L2 were more salt tolerance than the other genotypes. Subsequent work indicated that the tolerant genotypes where tended to exclude sodium ions from their leaves and build up high K/Na ratio in comparison with the salt sensitive genotypes.

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

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Thesis Title	**HAEMATOLOGICAL , BIOCHEMICAL AND IMMUNOLOGICAL STUDY IN PATIENTS WITH HYDATID CYST**			
Year	2009			

Abstract

The study was carried out on 60 confirmed human hydatid cyst in liver(46 patients), lung(8), spleen(2) and in liver and lung together(2), focusing study was conducted on (46) patients with liver hydatid cyst diagnosed surgically, beside 22 niave hydatid cyst Socioechonomic state of people under study was taken . Haematological, immunological and biochemical observations were conducted on blood samples taken from both groups .

Infection was higher in women (71.74%) than men (28.26%) . Lowest age infected was 10 year and the highest was 70 year, the high percentage was found in the age range 21-30year .The primary infection was 65.22% while secondary infection was 34.78%.

From the distribution of hydatid cyst, it was recorded that the liver was in the first rank, then the lung . The percentage of infection in right lobe of the liver (82.61%) was higher than the left lobe (17.39%). The size of the hydatid cyst diameter > 5cm, was more predominant(71.74%) than < 5cm (28.26%). Investigation on the role of same dangerous factors related with infection revealed that 19.57% of patients were direct contact with animal, infection was 80.43% in people who eat green vegetables.

According to education and infection it was found that most infection was accounted in the group of primary school study (47.83%) then in group no read no write(26.09%), while the relation of profession and infection revealed that house wife, had high infection (69.57%) followed by worker group (19.57%).

Hematological parameters showed significant increases in the mean of Neutrophils, lymphocyte, monocyte and eosinophil in hydatid cyst patients compared with the control, also an increased in the mean of these cells in secondary infection compared with the primary infection. Comparing with size of cyst in patients, it was recorded that, the large size(>5cm) , had significant increase in neutrophil and eosinophil than in small size(<5cm) cyst patients , but it was not significant for monocyte and lymphocyte .

	The role of cytokines in immunological response against Hydatid cyst parasite showed a significant increase in the level of IFN –γ , IL-2, IL-4 and IL-5 in patient with hydatid cyst compared with control group. Also significant increase in the level of IL-5,IL-4 and IL-2 in the secondary infection comparing with primary infection , while significant decrease was noticed in the level of the IFN-γ in the secondary infection than primary infection, on the other hand there was a significant increase in the level of IL-2 ,IL-4 in patients with > 5cm hydatid cyst diameter while IFN –γ was decreased significantly in patients with > 5 cm hydatid cyst diameter compared with < 5 cm hydatid cyst diameter . In general , there was a significant increase in the level of cytokines produced by Th1, Th2 in primary hydatid cyst infection while the predominance of cytokines produced by Th2 in secondary infection . An increase in humoral immunoglobulins (IgG , IgA , IgM and IgE) which was significantly higher in the hydatid cyst infection than control. Also there was significant increase in immunoglobulins in secondary infection than primary infection, beside significant increase in the level of immunoglobulins IgG, IgE in patients with > 5 cm hydatid cyst diameter compared with < 5 cm hydatid cyst diameter, while the increase in the level of IgA , IgM was not significant . Significant increase of GOT , GPT and ALP levels were recorded due to Hydatid cyst infection and had direct effect on the liver function, beside an increase in total bilirubin in patients serum compared with the control, also the same occurred in the secondary infection compared with primary infection, patients with > 5cm showed significant increase in the above levels compared with < 5cm which indicated the disturbance of the liver functions in patients whose revealed the growth of the cyst in the liver.

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Thesis Title	Culture Establishment for Proliferation and Characterization of Hematopoietic Stem Cells Isolated from Human Peripheral and Umbilical Cord Blood
Year	2007

Abstract

In this study two sources of hematopoietic stem cells [Peripheral blood (**PB**) and Umbilical cord blood (**UCB**)] were used, using both serum-dependent and serum-free media investigating the efficiency of two types of media [RPMI 1640 and TC 199] with different combinations of three growth factors[Granulocyte-colony stimulating factor(**G-CSF**), Granulocyte-macrophage-colony stimulating factor(**GM-CSF**), and Erythropoietin (**Epo**)].

The study was performed in the Bone Marrow Transplantation Centre / Baghdad Medical City.

Peripheral blood samples were obtained by leukapheresis on day **3** from **10** normal volunteers treated with **5 µg/ kg /day G-CSF** for **2** consecutive days, while **UCB** samples were obtained from **8** normal full-term deliveries after informed consent.

Peripheral blood mobilization by **G-CSF** yields a significant increase (**p< 0.001**) in the total leukocyte and the percentage of neutrophil, exceeded baseline by **3.3**-fold, and **1.3**-fold, respectively.

Using semi-solid media (RPMI 1640 and TC199), progenitor cell growth was evaluated after **14** days of incubation and the result shows that RPMI 1640 medium gave the highest effect on the total colony number in comparison with TC 199 medium for both **PB** and **UCB** samples.

Regarding the role of growth factors, **G-CSF** gave the highest significant effect (**p< 0.001**) when added alone to the media, while Epo, showed the lowest effect when used alone.

In contrast, using different combinations of growth factors showed that the addition of [**GM-CSF + G-CSF**] gave a better result than the addition of [**G-CSF + Epo**] to the media, while

mixing the three factors together gave the most highest significance for the total number of colony forming units.

Six types of colonies were identified for both **PB** and **UCB**, Colony forming unit-granulocyte **(CFU-G)**, colony forming unit-granulocyte, macrophage **(CFU-GM**), Colony forming unit-macrophage **(CFU-M),** Colony forming unit-granulocyte, erythrocyte, macrophage, megakaryocyte **(CFU-GEMM**), Burst forming unit-erythroid **(BFU-E),** and Colony forming unit-megakaryocyte **(CFU-MK).**

The lowest percentages among all types of the colonies were for the types **M, GEMM**, and **BFU-E**. But showing obvious increase when **Epo** was supplemented to the medium, in contrast, the types **G, GM**, and **CFU-MK** showed a variable percentage according to the addition of different growth factors and their combinations.

Expansion cultures of both **PB** and **UCB** cells were preformed, using liquid RPMI 1640 medium supplemented with **10%** fetal calf serum (**FCS**), and containing **G-CSF, GM-CSF**, and **Epo** at low (**20 ng,10ng,2 IU)/ml,**and high**(40ng,20ng,4 IU)/m**l concentrations, respectively.

A number of parameters, including the total mononuclear cell number, the percentage of $CD34^+$ cells, and the total sialic acid (**TSA**) levels have been used to assess the quality and stability of the expanded cells in culture.

The highest cell number was seen on day **14** for both **PB** and **UCB** cells, reaching **(5.52 ± 0.77 & 3.18 ± 0.39)x 10^6**, respectively, while day **21**, of incubation, showed a significant decline (**p< 0.001**) in the total number of those cells, in contrast, the percentage of $CD34^+$ cells increased significantly **(p< 0.001**) at day **7** for both PB and **UCB** reaching **(0.5 & 0.56)%** , respectively. However day **14** showed extensive differentiation, as evidenced by losing all of the $CD34^+$ expression.

Parallel to these results, sialic acid concentration in the homogenate of the cultured cell showed a significant increase (**p< 0.001**) in the levels of **TSA** at day **14** of culture, for both serum, and serum-free media reaching **(105.5 ±1.28 & 113.3 ± 1.23) mg/dl**, respectively, when compared with the initial value **99.43 ±1.33 mg/dl** for **PB** cells, and **(124 ± 2.23 & 124.3 ± 2.20) mg/dl**, respectively, in comparison with the initial value **114.43 ± 1.23 mg/dl** for **UCB**.

No significant differences were seen in all experiment sets when comparing between serum and serum -free cultures.

In order to improve our culture, we decided to investigate the effect of adding a homogenate of special human tissues obtained from two different sources (**A&B**),and their addition to the culture was performed depending on using different protein concentrations **(50,100&150)µgpr/ml**, and the results showed that only the homogenate **A** at **150 µg pr/ml** gave a significant effect**(p<0.001)** on the expansion of cells for both low and high concentrations of growth factors reaching (**3.44 ± 0.3 & 5.79 ± 0.7) x 10^6 cells/ml**, respectively for **PB** cells, and (**2.22 ± 0.1 & 3.28 ± 0.2) x 10^6 cells/m**l, respectively for **UCB**

cells.

In addition, our improved culture has succeeded to make the expansion of cells extended beyond **3** weeks with a slight decline at day **28** although it is still significantly higher than that for day **21** culture in comparison with the previous experiment that lacked this homogenate,with the remaining of CD34 expression till day **14**.

Surprisingly, these results have been accompanied with the appearance of a highly specialized cells having a different cell shapes including a spindle-like shape and a star-like shape which morphologically assumed to be one (or more) type(s) of dendritic cells, but that needs further investigations to classify them into their certain types.

In conclusion ,**G-CSF**-mobilized **PB** leukapheresis products and **UCB** had a great yield and enrichment of hematopoietic stem cells in comparison with the steady-state **PB**. Although, no significant difference was noted in the frequency of **CFUs** in **PB** versus **UCB**, but the results of cell expansions suggest a higher responsiveness of mobilized **PB** cells to selected growth factors as compared with **UCB** cells , and **HSCs** can be expanded in short-term cultures using certain media.Thus,RPMI1640 gave a better expansion than TC199, and this expansion can be successfully improved by adding some nourishment or factors extracted from certain human tissues.

This *ex vivo* culture may have a potential for clinical application for transplantation,but that remains to be fully defined.

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Thesis Title	**Effect of Licorice Extract on Reproductive Performance of Awassi Rams .**			
Year	2000			
Abstract	The study was conducted to study the effect of Licorice extract on reproductive performance of Awassi Rams .Twelve Awassi lambs 3-4 months and eleven Awassi Rams 2-2.5 years of age orally received 0, 100, 200 and 400 mg/kg body weight /week of licorice extract for 12 weeks . Rams semen physical properties were determined weekly , whereas the libido test was performed at the end of the experiment and after 12 weeks , lambs body weight and testis morphometric analysis were determined . Rams semen physical properties , lambs body weight and testis morphrmetric analysis were improved . In conclusion , treatment with licorice improve reproductive performance of rams. Results were encouraging to apply such treatment for improvement of sheep reproductive fertility .			

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Thesis Title	Water Shortage and Riparian Issues and their Impact on Rice Production in Iraq			
Year	2010			
Abstract	Rice is one of the most important crops in the world and Iraq but requires a large amount of water to produce. In Iraq rainfall has decreased and the rivers Tigris and Euphrates are receding owing to turkey's control of the headwaters and constructing dams that reduce downstream water. The main objective of the dissertation is to study the impact of water shortage on rice productivity in Najaf province, southern Iraq, and its effects on the country's economy. Results show significant relationship between water shortage and reduced cropping and acreage. The contribution of agriculture and rice production in the province to the overall economy and rural livelihoods is high but environmental problems are serious. Agricultural policy reflects agriculture's importance and is state directed. Agriculture's contribution to national GDP declined after 1975, when cultivated area reduced. In 1991 after the embargo, modern techniques resulted in improvements in agricultural production. There is an urgent need to increase production efficiency of rice. Area cultivated fluctuates with river water levels; most provinces growing rice depend on the Euphrates. Najaf provided on average 38% of the cultivated area in the country from 1991-2009. Improved varieties of rice have higher yields than local varieties. Experiments in new rice growing methods are reviewed. Changes in varieties and crop management methods have the potential to improve productivity and sustainability.			

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Thesis Title	Influence of foliar application Proline acid in tolerance of wheat plant Triticum aestivum L. Irrigated with saline water			
Year	2010			
Abstract	An experiment was conducted by using pots in the greenhouse of the Department of Biology College of Education(Ibn Al-haitham) , University of Baghdad during the growing season of 2008- 2009 . The experiment aimed to demonstrate the effect of increasing concentrations of both Sodium chloride and Proline acid and their interactions on some morphological and physiological characteristics of shoots and some yield components of wheat cv. Ibaa 99. The experiment included the study of the effect of four concentrations of Sodium chloride 0, 50, 100, 150 mM/L and four concentrations of Proline acid 0, 10, 20, 30 ppm and their interactions on some morphological characteristics : plant height , dry weight , and the leaf area as well as some physiological characteristics : the content of nitrogen , phosphorus , potassium , calcium , magnesium , sodium , chloride , protein percentage , total chlorophyll content and Proline acid content , besides some yield components : biological yield , spike length , number of spikelets/spike , number of grains/spike , weight of 1000 grain and grains yield . The experiment was designed as Completely Randomized Design (CRD) by three replicates (3×4×4) consisting 48 pots . Data were statistically analyzed to find out the least significal differences (LSD) between treatment at 0.05 level . Results indicated that the increase of Sodium chloride concentration from 0 to 150 mM/L caused significant decreases in the average of morphological and physiological characteristics and yield components as well as significant increases in the average of sodium and chloride content in the plant tissue. There were decreases in average of plant height from 63.00 to 50.10cm , dry weight from 3.57 to 2.62 gm , the leaf area from 25.10 to 17.25 cm^2 , as well as decreases in the contents of nitrogen from 107.80 to 61.11 , phosphorus from 19.93 to 12.59 , potassium from 120.37 to 66.49 , calcium from 147.79			

to 76.21 and magnesium from 57.30 to 20.91 mg/plant. Increase in the averages of sodium content from 105.91 to 173.05 mg/plant and chloride content from 72.12 to 134.09 mg/plant , was also noticed as well as decreses in the averages of protein percentage from 18.71 to 14.39 % , total chlorophyll content from 41.88 to 33.08 μgm/cm^2 and an increase in the average of proline content from 10.44 to 27.73 mg/L There were decreases in the average of each of biological yield from 13.28 to 8.87 gm , spike length from 16.38 to 11.37 cm , number of spikelets/spike from 16.48 to 12.44 , number of grains/spike from 32.15 to 24.61 , weight of 1000 grain from 31.26 to 19.93 gm and average of grains yield from 4.23 to 2.59 gm . There was an adverse effect of high concentration of sodium chloride on the plant growth , so that the plant appeared dwarf and had rolled , wiltted leaves with burned margines with the increase in the free proline acid content in the shoot of the plant . The treatment with proline acid indicated significant increases in the average of morphological and physiological characteristics , yield components , and significant decreases in the average of sodium and chloride contents , particularly in the concentration of 20 and 30 ppm of proline acid . The increases in the concentration from 0 to 30 ppm caused increases in the average of plant height from 53.00 to 58.13 cm , dry weight from 2.50 to 3.34 gm , the leaf area from 18.28 to 21.93 cm^2 and increase in the average contents of , nitrogen from 55.02 to 92.81 , phosphorus from 11.91 to 18.02 , potassium from 65.62 to 106.93 , calcium from 74.16 to 124.80 , magnesium from 21.60 to 40.84 mg/plant as well as a decreases in the average of sodium content from 163.81 to 137.63 mg/plant and chloride content from 129.00 to 105.36 mg/plant . There were increases in the average of protein percentage from 13.57 to 17.14 % , total chlorophyll content from 32.64 to 39.03 μgm/cm^2 and proline acid content from 12.04 to 26.71 mg/L . moreover there were increases in the average of biological yield from 8.79 to 11.72 gm , spike length from 10.78 to 14.21 cm , number of spikelets/spike from 11.94 to 15.53 , number of grains/spike from 25.03 to 29.45 , weight of 1000 grain from 22.04 to 26.39 gm and average of grains yield from 3.00 to 3.48 gm . Results for the interactions for both factors indicated that foliar application of proline acid counteracted the adverse effects of high concentrations of sodium chloride for both morphological and physiological characteristics and yield components of the plant , particularly in the case of the interactions of concentration of 50 mM/L Sodium chloride and 20 ppm proline acid , they gave the highest values for plant height as 62.00 cm , dry weight as 3.41 gm , the leaf area as 21.89 cm^2 and the following values of nitrogen as 90.92 , phosphorus as 18.05 , potassium as 112.38 , calcium as 122.56 , magnesium as 34.73 , sodium as 140.97 , chloride as 112.37 mg/plant . Values of protein percentage was 16.69 % , total chlorophyll content 39.30 μgm/cm^2 , proline acid content 20.50 mg/L and the values of each of the biological yield of 11.95 gm , spike length of 13.55 cm , number of spikelets/spike of 16.35 , number of grains/spike of 31.50 , weight of 1000 grain of 26.85 gm and grains yield of 3.80 gm .

أنموذج (أ) الخاص برسائل الماجستير **و** اطاريح **الدكتوراة (اخر** شهادة)

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

University of Baghdad

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Career	◌ Assistant Lecturer	◌ Lecturer	◌ Assistant Professor	◌ Professor
	◌ Master		◌ PhD	
Thesis Title	An phycological study on Razzaz lake			
Year	1992			
Abstract	Asystematical and ecological study on algae were done in Razazza lake which extended within karbala & Anbar district The algae in Razazza lake were studied for aperiod of one year (November 1990 to October 1991)at least monthly sampling were taken from different location of the lake atotal of 12 station were involved in this study to cover almost all the lake Water column analysis some area were also included in this survey with 3 depth sample at each side The different input chanals were taken in consideration Water temperature were range was between 10-33C Which with air temperature The water was alkaline with PH Value more than 7 in all station The Hardness were ranged between 3214- 7200 The water considered as mesohaline in the lake The dissolved oxygen concentration between 5-10mg During the present study 179 species were identified 151 species were found in lake and only 109 sbecies at mian during water 81 species were found as common in lake during as only 6 species were common at all localities namely The total cell count for algae were range between 47000-2342000 cell/leter Result of chlorophyll constration were varied between 0.05-1.53Mg ch			

University of Baghdad

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	◌ Master		◌ PhD	
Thesis Title	**Study of The Factors Affecting In The Production Of Streptokinase From *Streptococcus pyogenes***			
Year	**2001**			

Abstract

Twenty fife *Streptococcus pyogenes* isolates were identified from a handerd throat swab sample .

After several steps of screening ,one isolate (AS_{24}) was selected due to its streptokinase productivity ,the isolate (AS_{24}) was cultured in different solid and liquid media to determine the suitable media for streptokinase production .

Wheat bran media (Solid substrate fermentation media) proves to be the highest streptokinase reproductive .

The most favorable condition for enzyme production in solid state media were the inoculation of wheat bran (hydrated with phosphate buffer at pH (7) with (6×10^7 cell /gm wet wt.) and incubated at (37)C for (24)hr .

The enzyme was partially purified by precipitation with ammonium sulphate (35% saturation) and ion exchange chromatography utilizing DEAE – celilose (batch wise) .

Fold of purification was (5.9) with (47.6%) enzyme recovery .

The effects of pH and temperature on enzyme activity and stability were studied ,pH(7) was the optimum pH for enzyme activity and stability , the highest enzyme activity appeared at (37)C , it was more stable at (20-40)C .

The enzyme was treated with different chemical agents to determine their effects on enzyme , the results showed that PMSF and inhibit enzyme activity , Cu^{++} , Zn^{++} and Hg^{++} had on effects .

Sodium azide , Peptone , Casein and glucose was added to enzyme solution as stabilizers , the results showed that the enzyme retained 98.6% and 96.4% of their activity in the presence of casein and glucose respectively , while it retained 58.7% and 46.4% in the presence of peptone and sodium azide . respectively .

When the enzyme was immobilized on DEAE –cellulose it retained (99%) of the original activity when it was storage at (4)C for (4)days .

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

University of Baghdad				
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Career	◌ Assistant Lecturer	◌ Lecturer	◌ Assistant Professor	◌ Professor
	◌ Master		◌ PhD	
Thesis Title	Histopathological and Immunological study on The Effect of Some Free Radicals and Antioxidants on The Placenta of Rheumatic Heart diseases			
Year	2003			
Abstract	The study shows an agreement between the biochemical and immunological with histopathlogical results for the patients and control groups.The increase of Malondialdehyde(MDA) in this study reflect the high level lipid peroxidation(LPO),therefor (LPO) has a significant role in this disease.There is a relation between immunological reactions with tissue damage of placenta and the immune complexes agglutination are considered as an essential cause of fibrosis and fibrin deposition.			

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

University of Baghdad				
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Career	● Assistant Lecturer	○ Lecturer	○ Assistant Professor	○ Professor
	● Master	○ PhD		
Thesis Title	Taxonomical Study of the Genus *Pisum* L. (Papilionaceae) In Iraq			
Year	2010			

Abstract

The current study included a comprehensive classification of some species of the genus *Pisum* L., family Legumenosae distributed in Iraq. The study also included the general and specific morphological study and anatomical aspects, however environment and geographical distribution have been studed.

Field's survey demonstrated included the distribution of the five available species. This survey revealed new locations to must of the species under study. This work also included studying the entire reserved samples in Iraq herbaria. The morphological aspects were studied and a comparison of all species starting from the roots and ending with the fruits and seeds, The most consistent and most important features were investigated and relied upon in diagnosis and isolation of these species. Tables and figures were also made, many schematic representations were drawn to serve this purpose. The colors of the corolla and shapes of the stipules and their sizes, the shape of the leaflets and their margins, as well as the shape and size of the pods in addition to the color of the seeds and their surface and size, all has a significant classification importance for diagnosis and isolation of the species.

The difference in shapes and dimensions of the pollen grains

shows useful differences to the concernd species of the genus under study.

It also included the anatomical study of the leaflet, petiole, and the stem for all Taxa, however the stems and the shape of their cross section showed remarkable results through anatomical study in comparison with other parts.

The study also showed that the trans sections of the blade has a significant importance in classification based on the thickness of the blade and shape of the middle vascular bundle and thickness which was used to classify species to two categories. in addition, the ordinary epidermal cells were studied with the stomata complexes of the leaflet, this raised some important features in diagnosis. The anatomical features for petiole and their cross section shape showed important classifying feature, which helped to divide the species to three categories, which simplify their diagnosis and isolation.

The geographic distribution for all species were also reported according to their various environments. Maps have been drawn for distribution to all the species with their new habitat in Iraq.

A key was established to separate different Taxa in this study, although five taxa of the genus *Pisum* L. were fully described.

أنموذج (أ) الخاص برسائل الماجستير **و** اطاريح **الدكتوراة (اخر** شهادة **)**

University of Baghdad

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Thesis Title	Plasma total and Lipid bound sialic acids levels in acute myocardial infarction patients.			
Year	2003			

Abstract

There is increasing evidence that carbohydrate moieties of glycopeptid and glycopteins play an important role in their biological activity. Sialic acid one of the nine monosaccharides that form carbohydrate portions of these glycoconjugates and they are commonly has terminal position and appear in coatings cell surfaces or in secretions. Sialic acids play acentral role in the biomedical functioning of humans and number of reports described elevated sialic acids levels in various diseases, as in malignant disease.

In this study 20 normal individual, 25 diabetic patients, 20 hypertensive patients and 35 acutely infracted patients were involved.5 ml of blood were aspirated from antecubital vein, the blood then was centrifuged for plasma separation.

The plasma was divided into two half: one half was used after 4 hours of aspiration for lipid profile and enzymes measurements, and the other was kept in -25c^0 until use for sialic acid

	measurements. Plasma sialic acid measurement containing total and lipid bound sialic acid, and then we calculate lipid bound sialic acid /total sialic acid %. Lipid profile measurements containing; total cholesterol (TC), triglyceride (TG), high-density lipoprotein (HDL), low-density lipoprotein (LDL) and very low-density lipoprotein. Enzyme measurements containing creiten phosphokinase (CPK), lactate dehydrogenase (LDH). These measurements were obtained for each group of patients and then compared with normal subjects. Our data showed elevation in plasma TSA in diabetic patients ,insulin dependent diabetes mellitus(IDDM) and non insulin dependent diabetes mellitus (NIDDM),associated with decline in plasma LSA In hypertensive patients TSA was not elevated, but LSA had significant elevation that lead to significant decline in LSA/TSA percentage. AMI patients in general had significant elevation in plasma TSA and LSA and this elevation was gradually on the first three days after acute myocardial infarction, but when this group divided according to cause of infarction we found alteration in level of TSA and LSA between rise and fail. TSA and LSA were correlated to plasma lipid in these disease, this correlation can be explain part of this elevation or decline in TSA and LSA. The percentage value of LSA /TSA can explain the effect of LSA

	concentration on TSA elevation. In conclusion we found that TSA and LSA could be risk factor for AMI due to their relation to other risk factor like diabetes mellitus, hypertension, and dyslipidemia and also can be regard as marker for myocardial necrosis.

University of Baghdad				
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Career	◉ Assistant	○ Lecturer	○ Assistant Professor	○ Professor
	◉ Master		○ PhD	
Thesis Title	Comparative morphological study for more than thirty species of *Salvia* L. (Labiatae) in Iraq			
Year	2004			
Abstract	The present study work includes comparative systematic study for the species of the genus *Salvia* L. grown wildly in Iraq. Gross and micromorphological characters and geographical distribution were completed. Phytogeographical Iraqi district were used for this purpose and new location of species distribution were recorded too. New Collection were obtained and studied , in addition to the Old Collection deposited in the Iraqi herbaria , including foreign materials. The study covered thirty three species which grown wildly in Iraq and a comparative study for all kinds of morphological characters were done. The most stable and important taxonomic characters were pointed out , diagrams , illustrations , scheduals , micrographs were also documented. Stamens , nutlets , basal leaves , bracts , bracteoles , calyces , corollas and their trichomes were very important taxanomic characters. The trichomes were variable in variable species therefore used as a diagnostic characters for the species. New species *Salvia margasurica* Al-Musawi & Al-Hussaini was suggested to be new record for science , so as *S. hypargia* Fish. & Mey. New for Iraq. Key for the species were presented and detailed description for *Salvia* spp. of Iraq were recorded.			

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

University of Baghdad

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Career	◌ Assistant Lecturer	√ Lecturer	◌ Assistant Professor	◌ Professor
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Thesis Title	Cytogenetic and Morphological Studies of Three Species of Iraqi Freshwater Cyprinidaes (Barbus luteus , Cyprinion macrostomus , Chondrostoma regius)			
Year	2008			

Abstract

These present studies were carried out to determine the karyotypes & the system of sex determination between the two sexes as well as the sexual morphological characteristics of three species of Iraqi fresh water fish *Barbus luteus* , *Cyprinion macrostomus* , & *Chondrostoma regius* that were fished from Tigris river at Baghdad during 2005 .

The cytogenetic studies revealed that the chromosome number of *Barbus luteus* is 2n = 148 & the karyotype of males is (80m + 52sm + 16st) while the females has (80m + 51sm + 17st) . The chromosome number of *Cyprinion macrostomus* is 2n = 50 the males has (6m + 24sm + 12st + 8t) while the females has (6m + 23sm + 13st + 8t) . The chromosome number of *Chondrostoma regius* is 2n = 48 and the karyotype is (14m + 30sm + 4st) .

Sex chromosomes were identified in *Barbus luteus* & in *Cypinion macrostomus* for the first time , the sex is determined by ZZ / ZW system, the female was considered as heterogametic (ZW) while the male was considered as homogametic (ZZ) , & the chromosome Z was represented as submetacentric chromosome & chromosome W as small subtelocentric chromosome .

In spite of the difference in their chromosome number , the ratio between red blood cell diameter & it's nucleus was approximated in these species . The differences among these species in both of the diameter of

cell and the nucleus didn't match with the differences at the polyploidy levels or with the difference in chromosome number within the same level .

The liver & intestine were recommended as new sources for chromosomal studies , because of the good ratio of dividing cells (71.4 % & 58.2 %) respectively from the whole dividing cells in kidney that was considered as a control .

The crude aqueous extract of fresh *convolvulus arvensis* leaves showed good effect in arresting the cell division of fish at metaphase , the concentration (0.4 , 0.6 , 0.8 ,) mg / gm arrested kidney cells of carp fish at the metaphase in ratios 71.1 % , 88.1 % , 94 % respectively from the colchicines treated kidney cells (control) . Positive significance correlation was found (r = 0.9518) between the percentages of arrested cells at metaphase & the concentrations of crude extract .

Comparison between the females and males of the three species revealed that in *Barbus luteus* the distance from head edge to the anal orifice & from head edge to the dorsal fin were larger in males than females . The females have dark colored fins with reddish ventral aspect of head & body

in comparison with the males during the whole months of study . So , they were considered as permanently sexual dimorphism characteristics . But , during the spawning seasons (May & June) a more brighting color of male with reddish coloration of both sides of body were noticed in comparison with female with a golden orange corneal coloration in both sexes . Thus , they were considered as temporary sexual dimorphism characteristics .

In *Cyprinion macrostomus* the distance from the head edge to the anal orifice was larger in females than males . The colors of anal & caudal fins

were darker in females than in males during the whole monthes of study . So , they were considered as perminantly sexual dimorphism characteristics . While , during the spawning seasons (May , June , July & August) , the gill operculum was of orange color only in male that extend to the end of pectoral fin . So , this was considered as a temporary sexual dimorphism

characteristic .

In *Chondrostoma regius* the distance from the head edge to the dorsal fin & from the dorsal to caudal fin as well as the pectoral fin base length were larger in females than in males during the whole months of study it was considered that they are permanently sexual dimorphism characteristics . Differential characteristics were not noticed during the spawning season (February & March) .

The permanently sexual dimorphism & the general characteristics were not affected by the differences of standard length , weight , age & season , because they were observed in fishes of different lengths , weights & ages & during the months of study 2005 . But , the seasons affect the development of temporary characteristics in *Barbus luteus* & *Cyprinion macrostomus* , because these characteristics were observed during the spawning season only .

Aging of *Barbus luteus* was accompanied by growth increase as indicated by the mean of standard length during May , July , August , September & December & by the mean of weight during May , August , September , October & December .

A positive correlation was found between standard length & weight during the months of study , with the exception of January . While aging of *Cyprinion macrostomus* & *Chondrostoma regius was not* accompanied by growth increase as indicated by the means of standard length & weight , but a positive correlation between standard length & weight was found during the studied months .

Same growth type were observed in the three species of fish , it was allometric in two sexes .

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Career	◉ Assistant Lecturer	○ Lecturer	○ Assistant Professor	○ Professor
	◉ Master		○ PhD	
Thesis Title	Histological structure of the optic tectum in the freshwater Turtle- *Clemmys caspica caspica* (Gmelin, 1774) and Rock Dove- *Columba livia gaddi*(Gmelin, 1789).			
Year	2009			
Abstract	The histological structure of optic tectum has been studied in two species of Iraqi vertebrates, which are *Clemmys caspica caspica* (Gmelin, 1774) and *Columba livia gaddi*(Gmelin, 1789). In this study 25 animals were used (12 turtles and 13 pigeons). The brains removes from the skulls and the mid brain of each animal separated and fixed. Their optic tectum which represent the roof of mid brain were determined. Histological study revealed that the number of major strata of optic tectum in *Clemmys caspica caspica* were seven.			

University of Baghdad

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Thesis Title	A comparative systematic study for the species of the genus *Onosma* L. (boraginaceae) in Iraq.
Year	1993
Abstract	The study in this thesis includes a comparative systematic study of about 30 taxa of the genus Onosma belonging to the family Boraginaceae. Gross and micro morphology , cytology , chemistry , ecology and geographical distribution were conducted for all species of the genus above . Iraqi phytogeography districts were surveyed to detect the fact distribution of the studied taxa. All plant parts were studied in detail to separate and identify the species . pollynological studies as pollen shape and diameter have been aid for identification. The anatomy of stem , leaf and leaf petiole of all taxa were investigated . haploid and diploid number of chromosome was determined for all taxa for the first time in Iraq. Chemical side of view for phenolic compounds were identified . the geographical distribution and ecology of the species were studied using Iraqi phytogeographical district . all the taxa were treated taxonomically.

University of Baghdad

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Thesis Title	A comparative systematic study for the species of the genus *Onosma* L. (boraginaceae) in Iraq.
Year	1993
Abstract	The study in this thesis includes a comparative systematic study of about 30 taxa of the genus Onosma belonging to the family Boraginaceae. Gross and micro morphology , cytology , chemistry , ecology and geographical distribution were conducted for all species of the genus above . Iraqi phytogeography districts were surveyed to detect the fact distribution of the studied taxa. All plant parts were studied in detail to separate and identify the species . pollynological studies as pollen shape and diameter have been aid for identification. The anatomy of stem , leaf and leaf petiole of all taxa were investigated . haploid and diploid number of chromosome was determined for all taxa for the first time in Iraq. Chemical side of view for phenolic compounds were identified . the geographical distribution and ecology of the species were studied using Iraqi phytogeographical district . all the taxa were treated taxonomically.

University of Baghdad

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Thesis Title	Effct of crude hot aqueous extract of soy bean seeds in fertility and some physiological parameters in albino female mice
Year	2010
Abstract	This work was designed to study the effects of crude hot aqueous extract of soy bean seeds on fertility and some physiological parameters in albino female mice. The measurement of the body weight, level of 17- β estradiol, total & differential count of (WBCs) , total count of red blood corpuscles (RBCs) and platelets , Packed cell volume (PCV) and concentration of heamoglobin (Hb) were conducted. In addition the histological changes in ovaries and uterus , their weight and fertility performance were also measured , The chemical analysis of active compounds revealed that the extract contain Saponins, Flavonoids. Sixty mature female mice were randomly divided into four groups, (15 mice / group) The first group (A) , Second group (B) and third group (C) were orally treated daily with 0.1 ml 4% , 6% and 8% of the extract respectively , for 4 weeks. The fourth group was treated

	with distilled water and served as a control group . Five animals of each group were killed for histological and hormonal studies . Other five were killed to study the blood parameters . The remaining animals were left for mating with healthy males. The results showed that crude hot aqueous extract of soy bean seeds significantly ($P<0.05$) decreased body weight of all treated animals when compared with the control.On the other hand, the treatment caused a significant ($P< 0.05$) increase in ovary and uterus weight in group (B), a decrease in group (C), and no effect in group (A). 17- β estradiol level significantly ($P<0.01$) increased in group (B) with no change in groups (A and C). The birth rate of treated female was also negatively affected after mated with healthy fertile males when compared with the control. Total number and differentlial count of WBCs and haemoglobin level were significantly ($P<0.01$) increased in treated animals, while the number of platelets and red blood cells was significantly ($P<0.01$) dropped by the treatment in all three groups. Packed cell volume was also significantly ($P<0.01$) decreased in groups (B and C) but not affected in group (A) when compared with control.

	The histological sections of the ovaries revealed a significant ($P<0.05$) increase in number of primary, secondary and mature follicles in group (B), decrease in number of corpora lutea in groups (A and B), in number of follicles and increase in number of corpora lutea in group (C) when compared with the control animals. Generally, it could be concluded that crude hot agueous extract of soy bean seeds has a negative effect on fertility of female albino mice.

University of Baghdad				
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Career	Assistant	Lecturer		
Thesis Title	Activity of low power laser on candidasis by using photosensitive (In vivo & in vitro)			
Year	2005			
Abstract				

The present study conducted to investigate the effect of (He-Ne) Laser at wave length (632.8) nm and energy (10) mw with different periods of radiation (1, 2, 3, 4) min. on growth and viability of two pathogenic isolates (vaginal and nails isolates) in addition to standard isolate of *C. albicans* after treating the cells with different concs of photosensitizers included:

Methylen Blue at concs (400, 500, 600), Toluidine Blue O (150, 200, 250, 300, 350) and Crystal Violet at conc (10, 20, 30, 40) µg/ ml at two phases of growth (incubation) 24 and 72 hours.

The results showed the following:

- General reduction in growth due to irradiation with laser only without photosensitizers.
- Inhibition effect of growth due to laser irradiation increases with the increasing concentrations of the photosensitizers until the lethal conc. All vaginal isolate cells aged (24) hours treated with MB killed at conc. 60 µg/ ml and irradiation far 2, 3 min. Additionally, all cells of nail isolate treated with 350 µg/ ml TBO were killed at the two phases of growth. However, cells of standard isolate killed completely after (72) hr using TBO at (300) µg/ ml and irradiation for 3 min. Crystal violate at (40) µg/ ml also led to complete inhibition of vaginal and nail isolates at 72 hr. of growth and 3 min irradiation.
- Reaction of (He-Ne) laser with different conc. Of photosensitizers after morphology types of *C. albicans*, Reduction in percentage of pseudohyphae and budding cells occurred, compared to the control in which percentage of single cells were predominate. This result indicated possible effect of the reaction on division and reproduction of the yeast cells.
  Reaction of He-Ne laser with different concs. Of photosensitizers reduce colony diameters of the three isolates
- Reaction of the He-Ne laser with different concs of photosensitizers inhibit the cells to form germ tubes which refer to one of the virulence factor of this yeast.
- Reaction of the He-Ne laser and photosensitizers showed practical efficiency to treat mice infected superficially with *C. albicans* in the lab. the result revealed good recovery within almost the same time of antibiotic recovery.

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

University of Baghdad				
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Career	◌ Assistant Lecturer	◌ Lecturer	◌ Assistant Professor	◌ Professor
	◌ **Master**		◌ PhD	
Thesis Title	Comparative Histological Study on The Optic Tectum in Some Iraqi Vertebrates			
Year	2004			

Abstract

The ceiling of the midbrain has a couple of optic lobes which are prominent in all vertebrates and used as an optic center that reflex what it receives from fibers of the eye retina.

The histology of optic tectum has been studied in two species of Iraqi vertebrates *Barbus luteus* Heckel and *Natrix tesselata tesselata* . In this study the used 26 animals (11 fish, 15 snakes). After doing the preparation of midbrain and optic tectum histological sections of there animals`.

It was found that the number of strata of optic tectum in *Barbus luteus* Heckel were six major strata organized from the outside to the inside as follows:

The Stratum Marginal (SM), the Stratum Opticum (SO), the Stratum Fibrosum et Griseum Superficialis (SFGS) , the Stratum Griseum Central (SGC), the Stratum Album Central (SAC), the Stratum Periventricular (SPV).

As for the number of optic tectum strata in *Natrix tesselata tesselata* they were found to be seven major strata organized from the outside to the inside as follows:

The Stratum Zonula (SZ), the Stratum Opticum (SO), the Stratum Fibrosum et Griseum Superficialis (SFGS), this strata consist of (3) sub strata it is (a, b, c), the Stratum Griseum Central (SGC), the Stratum Album Central (SAC), the Stratum Griseum Periventricular (SGP) , the Stratum Album Periventricular (SAP).

It was noticed that the thickest strata in optic tectum in *Barbus luteus* Heckle brain is the fourth strata which is the Stratum Griseum Central its thickness is (80-100) µm ,and the thickest strata in optic tectum in *Natrix tesselata tesselata* brain is the third strata that is the Stratum Fibrosum et Griseum Superficialis (SFGS) and it's thickness is (150-180) µm .

It was found that the optic fibers that come from eye retina enter the optic tectum through the second strata which is the Stratum Opticum (SO) in both kinds. So these fibers go out from optic tectum through the fifth strata which is the Stratum Album Central (SAC) in *Barbus luteus* Heckle brain. As for the *Natrix tesselata tesselata* brain it goes out of the sixth strata which is the Stratum Griseum Periventricular (SGP).

So that optic tectum strata in *Barbus luteus* Heckle are sixth strata only. And there is no substrata except the Inner Plexiform Layer and it is a thick streak fibrous that consists of a net of fine processes in the main fourth strata.

As for the optic tectum strata for *Natrix tesselata tesselata* brain they are seven main strata in addition to three substrata related to the third main strata. So, the total of main and substrata for optic tectum is nine strata only.

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Thesis Title	A comparative study of growth regulation in fungi
Year	1984
Abstract	The effect of two plant growth regulating substances(GA_3 and IAA) has been investigated on growth of *Mucor muucedo* and *Saprolegnia parasituca*. Results showed no stimulatory effect of both substances on low concentration, whereas gradual inhibition was found at higher concentration, results were discussed in terms of relation to growth rate of the two fungi, using electron microscope. Studies of regeneration of protoplasts from *Phycomyces blakesleanus* and *S. parasitica* reveal two different patterns of regeneration. Serological methods used to study the relationship between the chitin and cellulose walled fungi revealed weak antigenic reactivates between representatives of both groups of fungi likewise between the members of the chitin-walled fungi, in contrast to the high cross reactivates between the cellulose walled fungi.

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Thesis Title	In vitro study of umbilical cord blood – derived stem cells and their neurogenic differentiation.			
Year	2oo7			
Abstract	This study found a successful method of isolating ,culturing and differentiation of umbilical cord blood – derived stem cells .a protocol that permits the in vitro generation of neural progenitors from cord blood to induce differentiation of UCB –derived stem cells (HSCs and MSCs) at ahigh efficiency into neural pathway . HSCs were treating with EGF which played an important role in differentiation of HSCs toward the neural cells. MSCs were treated with RA which played an important role in the differentiation of MSCs toward the neural cells. The immunocytochemistry staining indicated that the cells gave positive response for GFAP .			

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

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Thesis Title	Morphologyical ,Anatomical and Cytological Study For Pteridophyte *Salvinia natans* (l)			
Year	2008			

Abstract

During a Period of four seasons, samples of *Salvinia natans* (L.) were collected from Iraqi swamps or marshes particularly from Al-Hammash swamp in Theyqar province.

The sample plants were then left to grow in an environment similar to that in marshes at Baghdad province for four different seasons.

For the first time, the plants were subjected to the following extensive studies:

Morphological investigations: The Sporophyte stage was composed of a rhizome stem and leaves, with lack of roots, the average length of the stem and lateral branches was 12cm.

The stem was composed of nodes and internodes, the average length of internode was 1.4cm. The leaves were arranged in triples in each node. The leaves were of two kinds:-

Floating leaves have an oval and boat - like leaves averaged 2-3 in each node, opposite or whorled with reticulate venation and average length of l.4cm and 1cm width, it were borne on a short pedicel which had an average length of 0.4cm.

Submerged leaves were covered with water, numbering 1-2, partioned into 13-23 filiform branches. The average length of these branches were 8cm, they were borne on an 0.5cm peduncle. The submerged leaves replace the missing roots.

The sporocarps which were formed twice in a year were dioecious, and are globe-shaped, borne on the end of the petiole of the submerged leaves between its filiform branches through a short peduncle of length 0.2cm.

Anatomical investigations were undertaken through paraffin sectioning of all plant parts such as stems, floating leaves with their petioles, submerged leaves with their petioles, sporocarps stalks and their constituents. The upper surface of floating leaves contained waxy hairs, and the mesophyll of these leaves not distinct to spongy layer and palisade

layer. The mesophyll consists of many air chambers. The cortex of all studied sections consist of parenchyma. Endodermis was clearly in all of plant parts. All parts of plant contained starch grains and oil drops.

Cytological investigations: Sporocarps at different stages of growth were subjected to paraffin sectioning in order to study the developmental stages of the micro and megasporangia. Both of which were initiated from a single cell. Sections in the apical bud of the stem were prepared in order to estimate the number of chromosomes which were found to be 18 chromosomes.

Finally, statistical studies were conducted for eight mature sporocarps, (four microsporocarps and four megasporocarps). Their dimensions were measured. The average dimensions of the first four microsporocarps were 4.39mm length and 4.82mm width. The average number of microsporangia in the four microsporocarps were 562 ranged between 498-625. The dimensions of 400 microsporangia ranged between 0.34mm length and 0.34mm width. Each microsporangia were stalked.

The average stalk length was 0.38mm. The average dimensions of megasporocarps were 3.72mm length and 4.43mm width. The average number of megasporangia were 23 ranged between 19-26 for each fruiting body. The dimensions of 87 megasporangia were measured ranging between 1.05mm length and 0.77mm width. Each megasporangia were stalked and the average stalk length was 0.23mm.

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Thesis Title	An Electron and Light Microscopic Studies of the Effect of Thyroxine and Borage (*Borago officinalis*) in the Function and Structure of Thyroid Gland ,the Activity of Alkaline phosphatase in Neutrophils and Some Blood Indices in Male Albino Mice.
Year	2006

Abstract

The aim of this study was to determine the effect of the thyroxine and the aqueous extract of Borage (***Borage officinalis***) a lone or when they are given together on the following:

1. The functional, histology, and ultrastructure for the thyroid gland.
2. The levels of (T_4, T_3, TSH) hormones.
3. The activity of leucocyte alkaline phosphatase (LAP) in neutrophils.
4. The phagocytic activity of the neutrophils and some blood indices i.e. (WBC count, WBC differential, and (PCV) estimation).

A total of 105 mature male Swiss albino mice were used in this study. Animals were divided them into two main groups that contains seven equal sub groups as follows:

- **The First Group:** this group contains four sub groups which were treated for 11 day. Animals weights were measured before the start of the experiments, and these sub groups were:

1. A group treated via thyroxine (subcutaneous) (G_1) with concentration 0.2 mg/kg.
2. A group treated with administration of the aqueous extract of Borage (G_2) with concentration 6 gm/100 ml.
3. A group treated with thyroxine and Borage together (G_3).
4. The control group (G_4) which was injected with distled water (subcutaneous) of dose 0.9 ml.

- **The Second Group:** this group contains three sub groups treated for 22 day. All the animals were weighted before experiments, and these sub groups were:

1. A group treated with thyroxine for 11 day then treated with Borage for 11 day too (G_5).
2. A group treated with thyroxine for 11 day then the animals were left for 11 day too without any treatment (G_6).
3. The control group (G_7) which was injected with distled water (subcutaneous) of dose 0.9 ml for 22 day.

At the end of the experiments all animals groups were weighted.

The following results were observed:

1. A significant decrease ($P < 0.05$) in the mean of animals weight of the (G_1, G_3, and G_6). While non significant changes in the (G_2, and G_5) in comparison with the two control groups.
2. A significant increase ($P < 0.05$) in T_4 Hormone level, in all groups in comparison with the two control groups.
3. A significant decrease ($P < 0.05$) in TSH hormone level, in the (G_1, G_3, and G_6). While non significant changes in the (G_2, and G_5) in comparison with the two control groups.
4. A significant increase ($P < 0.05$) T_3 hormone level in the (G_1, G_3, and G_6). While there is

significant decrease ($P < 0.05$) in the (G_2, and G_5) in comparison with the two control groups.

5. A significant increase ($P < 0.05$) in the mean value of the percentage of phagocytic activity for neutrophils in the (G_1, G_3, and G_6). While non significant changes in the (G_2, and G_5) in comparison with the two control groups.
6. Intensive enzymatic activity of (LAP) in the neutrophils of the (G_1), and the (G_6). While moderate activity was found in the (G_3). On other hand a normal activity of the enzyme was observed in the (G_2, G_4, G_5, and G_7).
7. A significant increase ($P < 0.05$) in the mean value of WBC count, and in the mean value of percentage of WBC differential i.e. neutrophils and monocytes and significant decrease ($P < 0.05$) in the WBC differential i.e. lymphocytes, in the (G_1, G_3, and G_6). While non significant changes in the (G_2, and G_5) in comparison with the two control groups.
8. Non significant changes in the mean value of percentage: for WBC differential i.e. basophiles and eosinophils, and the PCV, in all groups that treated for 11 and 22 day in comparison with the two control groups.

In this study of light and electron microscope the following results were observed:

1. Degenerative changes were observed in the epithelial tissue of thyroid gland in the (G_1). There changes include: Hypertrophy, hyperplasia and infiltration with inflammatory cells, as well as a little a mount of colloid in the follicular lumen was observed. The same results were observed in the (G_6).
2. A normal appearance of the thyroid gland was observed in the (G_2, and G_5). While the colloid reflects a scallope appearance.
3. In the (G_3) the epithelial cells reflect a low columinar with a little-moderate amount of colloid with the little infiltration of inflammatory cells. These effects in this group are less passive in comparison with both control group, and the (G_1).

From these results we can concluded that the injection of thyroxine has a negative effects, and the active components of Borage (***Borago officinalis***) reflects an important role in the inhibition of the negative effects of thyroxine in different parameters that has been taken by consideration in this study.

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

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Thesis Title	Variable ecological effect on growth and yield of two (bread wheat) *Triticum astivium* L. cultivars			
Year	2008			

Abstract

A biological experiment was conducted at the biological garden of dep. of biologe,Collage of Education (Eban-Al –Hathem) , Baghdad university , during season of 2006 – 2007 to the aim of the experiment to determined variables ecological effect on two genotype performance (bread wheat) IPA 99 and Abu – Garib .The two genotype planted in date 16th Oct , 1Nove , 16 th Nove and 1 Dec.

Using random is completed block design ,arranged Split plot in with three replicates. The two genotype occupied the main plots while sowing date were in the sub plots . Fertilizer was applied for an experiment with the rates of 200 kg P2O5 / ha and 400 kg urea/ha in equal four doses (sowing, three complete leaves appearance, two nodes on steam appearance and in booting).

Using sowing rate 120 kg/ ha . Plants were harvesting at 6th .May .2007.

The sowing date 16th Nov. gave the highest value to the characters studied (Number grains / spike, Number spikes / m^2 and the weight of 1000 grains. gm) and the yield value to this date was 5.86 tan /ha. While, the sowing date 1Dec. gave the lowest value of yield grains was 2.29 tan /ha and gave the highest mean growth weekly 8.63 gm / grain / week , while , the sowing date 16th Oct gave a lowest mean growth weekly for grain 5.87 mg / grain / week , that belong to height temperature degree causing reduce the filling period grain and that negative effect for weight grain .

Abu-Garib dominated in plant height with increase of 41%, IPA 99 where as IPA99 genotype dominated in contain total cholorophyl with increase of 13% percent. highest growth weekly rate genotype , IPA 99 4.97 mg / grain / week while genotype Abu-Graib gave alowest growth weekly rate 4.88 mg / grain/ week .

Effect significant interaction between sowing dates and genotype in weight of 1000 grain / gm , gave IPA 99 genotype cultivated at 16 th Nove highest weight of 1000 grain / gm .

Studied conclusion that must sowing in 1/2 Nove because all ecological condition suitable for all growth plant stages.

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Thesis Title	In vivo and in vitro studies of adult bone marrow stem cells and its role in induced myocardial infarction in albino rats			
Year	2007			

Abstract	The study is aimed in vitro isolation of adult stem cells from bone marrow specially mesenchymal stem cells .The second passage were used of BM-MSCs for in vitro and in vivo studies .in in vitro study the MSCs were differentiated into cardiomyocytes by treating the cells with embryonic heart extract .The differentiated cells were detected by using anti-myosin and anti-cardotin. The in vivo studies ,the MSCs cultures labeled with DAPI stain before cells transplantation ,after that cry injury was produced in adult rat as a model of myocardial infarction .The immunohistochmical studies indicated that some grafted cells were found to be in corporated into the post tissue and these cells express positive response for cardiac specific marker.

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Thesis Title	Study of Antibiotic Resistance and Virulence Factors of ***Neisseria gonorrhoeae***
Year	2000
Abstract	The study investigated 760 specimens collected from gonorrhoea patients in Baghdad including 300 males and 440femles at different age groups. The results demonstrated that 16% of males and 0.9% females were infected. Three types of media were tested fore preservation of ten isolates of ***N .gonorrhoeae***, these media were LSPQ, Yamai and TSBG. The preservation was carried out at -20º C. After six months of storage, the percentage of loss in the viability was (3.2-705) and (3.2-8.5) in both LSPQ and Yamai respectively, whereas the percentage of loss in viability was (27.5-63.9) in TSBG. The colonial types (T1,T2,T3 and T4) were maintained well in three types of media. However, a slight decrease in frequency was observed in T1& T2 ranging from (2-10%) in both LSPQ and Yamai preservation media, whereas high decrease in frequency of T1 & T2 ranging from (5-25%) was observed in TSBG. Antimicrobial susceptibility of the ***N .gonorrhoeae*** indicated that the tested 52 isolates were resistance to clindamycin sulphate, cloxaciline sodium, nitrofurantion, lincocin HCL, metronodazole, orbenin, Trimethoprim, and sulphameizol. On the other hand all isolates were sensitive to chloramphenicol base. Penicillinase-producing ***N .gonorrhoeae*** (PPNG) was found to constitute (76.9%) of the isolates. Five different methods were employed for detection of Penicillinase. The nitrocefin and the ***N .gonorrhoeae*** API NH KIT methods were proved to be efficient as compared with congo red, disc diffusion and rapid iodometric methods. Detection of plasmids was performed in the seven-penicillinase producer ***N .gonorrhoeae*** (PPNG) which were, tetracycline resistant ***N .gonorrhoeae*** (TRNG) and three non-penicillinase producing ***N .gonorrhoeae*** (NPPNG), which were tetracycline sensitive ***N .gonorrhoeae*** (TSNG). The results indicated that a correlation between resistance to pencillin and tetracycline and plasmid contents might exist. Detection of plasmids was performed in four phenol types (T1,T2, T3 and T4) of two isolates (I18 & I52). The results indicated there is no correlation between the ***N .gonorrhoeae*** phenotypes and plasmid contents. MIC values of ten selected ***N .gonorrhoeae*** isolates for penicillin, tetracycline, nalidixic acid, ciprofloxacin and norfloxacin were: (>>32-0.06) µg/ml, (8-0.06) µg/ml, (8-0.12) µg/ml, (0.005-0.001) µg/ml, and (0.20-0.06) µg/ml respectively. The MIC values did not change after six months of preservation of the isolates. The ***N .gonorrhoeae*** isolates were IgA1 protease producers when using Audry Norma Medium (ANM) broth culture. IgA1 protease was purified with a yield of 5.53% by ammonium sulfate precipitation, ion exchange, and gel filtration chromatography. IgA1 protease enzyme was inhited by 10 mM, 15 mM, and 50 mM of EDTA, by 4M and 6M of urea and 1% & 2% of SDS. The obtained results showed that there is no correlation between the plasmid contents of bacterial isolates and enzyme production.

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Thesis Title	Effect of plant extract from *Zygophyllum fabago* L. and essential oil from green peel of *Citrus aurantium* L. feuits on growth & activity of some microorganisms			
Year	2004			
Abstract	The study was conducted to evaluate the antimicrobial activity of aqueous and ethanolic extracts (cold and hot), and alkaloid extracts from leaves, seeds, roots of *Zygophyllum fabago* in addition to the essential oil from green peels of *Citrus aurantium* fruits, against several microorganisms including gram negative bacteria (*Pseudomonas aeruginosa & Escherichia coli*), gram positive bacteria (*Staphylococcus aureus & Bacillus subtilis*), yeast (*Candida albicans*) and fungi (*Aspergillus flavus*). Analysis of *Z. fabago* was carried to determine its contents from biologically active compound and crude alkaloids were isolated from extract, results of the sensitivity of the microorganisms towards crude extracts showed alcoholic and aqueous extracts were deferent in their antimicrobial activity, mean while, the alcoholic extract was the best in their activity followed by the hot aqueous extract, the two alcoholic extract of seeds showed more antimicrobial activity compared to the other extracts. Concerning the bacterial isolates *B. subtilis* was more sensitive, its growth inhibited by all extracts of *Z. fabago*, *P. aerugenosa* bacteria which was the most resistant for all extracts. The essential oil extracted from green peels of *C. aurantium* fruits showed high inhibitory effect against *C. albicans* followed by *B. subtilis*. The crude alkaloidal extract of *Z. fabago* seeds and essential oil of *C. aurantium* inhibited growth of *A. flavus* in many different ways, both alkaloidal extract and essential oil inhibited the spore germination, while the lower concentration showed significant delay of spore germination gradually with the increasing concentration, so both alkaloidal extract and essential oil reduced the growth diameter of *A. flavus* gradually with the increasing concentration, on the other hand thin layer chromatography (TLC) separated of crude alkaloid extract, indicated there were three unknown spots. Bioautography technique carried out detect the active alkaloidal site, which was isolated on TLC using *A. flavus* and *B. subtilis*, results showed			

	the inhibitor effect the three isolated spots against *A. flavus*, while only one spot inhibit *B. subtilis* growth. The antimicrobial activity of crude alkaloid extract of *Z. fabago* seed and essential oil of *C. aurantium* were investigated practically by treating mice infected with *S. aureus* and *C. albicans* in the lab. The results revealed good recovery concerning the use of alkaloid extract and essential oil within almost the same time of antibiotic recovery

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Thesis Title	Study of the effect of Some Plant Extracts on Amoebic Dysentery Parasite *Entamoeba histolytica In Vivo*
Year	2008
Abstract	Abstract Within the interest in the study of medicinal plants and herbs which have effect on the parasite *Entamoeba histolytica* which causing amoebic dysentery disease, and to investigate the ability of using oil extracts for some medicinal plants as a treatment for this disease instead of Metronidazole which had many side effects, we choose this study. We used in this study :- 1- *Cinnamomum zeylanicum* used in three concentrations : 0.03, 0.09, 0.15 2- *Mentha spicata* used in three concentrations : 0.01, 0.05, 0.10 3- *Cymbopogon citratus* (Dc.) Stapf used in three concentrations : 0.01, 0.08, 0.16 . Oil extracts for three plants were prepared with the same method (Steam distillation), stool samples which have the parasite were collected from Al-Yarmook hospital, Al-Kadhmia hospital and Al-Noor hospital (in Al-She'la city) and use it to cause the infection in mice, the infection by *E. histolytica* was confirmed through the microscopic examination . At last the specific doses for each concentration were experimented and the results of experimental histological study on mice were compared . The results of this study could be summarized as follows The infection by *E. histolytica* was caused in mice, resulted necroses in the surface layer of intestinal mucosa and sever cellular infiltration in the intestine tissue .

	* The used of oil extract of *Cinnamomum zeylanicum* and *Cymbopogon citratus* was successes in killing the parasite and treat the damage. * When we compare between the low concentrations, we conclusion that the low concentration of *Cymbopogon citrates* (0.01) was more effect in killing the parasite compare with the anather low concentrations . * Whears when we compare between moderate concentrations and between high concentrations, we conclusion that the *Cinnamomum zeylanicum* and *Cymbopogon citratus* were more effect in killing the parasite and treat the damage causing because it compare with *Mentha spicata* .

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Thesis Title	Taxonomic Studies ON The Leafhoppns Genus Eupteryx Curtis (Elomopten cicadellidae)in Britain			
Year	1990			

Abstract

Broad investigations on the external and internal morphology of the fifteen British species of genus Eupteryx Curtis (Homoptera: Cicadellidae: Typhlocybinae), were carried out. Previously used characters were examined for interspecific and intraspecific variation to determine their reliability in separating the species. These investigations were performed using Scanning Electron Microscopy and Light Microscopy. The former provided useful information on intraspecific variability in the form of the aedeagus in E.cyclops (number and arrangement of spines of the aedeagal appendages and shape of the tail) and in that of E.urticae (shape of the lateral prominence). Also, it revealed interspecific variability in the shape of the abdominal apodeme processes. Light Microscopy revealed interspecific variability in the shape of the apex and number and arrangement of teeth of the second valve of the ovipositor. All species could be distinguished using a combination of previously used characters and new ones discovered by me. Discriminant Analyses performed on females and males supported the external morphological separation and provided additional diagnostic characters to discriminate between species. The analyses confirmed the value of the dimensions of the posterior median spot on the vertex in separating females of E.cyclops and E.urticae. Discriminant Analyses of host plant-associated populations of E.aurata revealed host-induced variation. Principal Component Analyses on such populations of E.aurata were performed to determine whether the intraspecific variation recorded in the Discriminant Analyses has any genetic basis.

Phenetic classifications of the fifteen British species

of Eupteryx using both Traditional Taxonomy and Morphometrics were constructed. Previously

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

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Thesis Title	STUDIES ON THE HAUSTORIAL MYCOPARASITE PIPTOCEPHALIS XENOPHILA DOBBS &ENGLISH			
Year	1983			

Abstract

The biology of Piptocephalis xenophila was studied in relation to its host range, its effect on host growth and morphology, and the effects of extra-cellular nutrients on mycoparasitic development. In addition physiological investigations were carried out on the effect of the mycoparasite on nutrient uptake and leakage by selected hosts.

The host range of P. xenophila was found to include species of Sclerotinia, Paecilomyces and Penicillium, although there was little effect of mycoparasitism on host growth and development. Nutrient status strongly affected mycoparasitic development on Sclerotinia species with the nature of the nitrogen source appearing to be particularly important. P. xenophila induced leakage of K^+ and ^{14}C-labelled metabolites from host mycelia which indicated direct intervention of the mycoparasite in host membrane function. Incorporation of label from ^{14}C-glucose into soluble carbohydrates was significantly lower in dual mycelia of Sclerotinia sclerotiorum and S. fructigena than in host mycelia alone. However, this was not true for S. curreyana which suggested that the physiology of this host was not as strongly affected by mycoparasitism as the others.

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Thesis Title	ENZYMATIC ,CYTOGENATIC ,STUDYON BLOOD SAMPLE IN IN PATIENTS WITH COLON CANCER			
Year	2002			

Abstract

This investigation has been done on the peripheral blood sample which drawn from patients suffer from colon carcinoma by using peripheral blood culture technique. There were three-study groups:

- First group (preoperative group) patient at pre-clinical stage (15 samples Male and female).
- Second group (postoperative group) patient after surgical resection of intestinal mucosa and they were under treatment with cytotoxic drug (15 samples Male and female).
- Control group. Which included (25 healthy persons Male and female).

The blood samples divided into two parts each part contain (5 ml). One part employed in the cytogenetic study and the other for enzymatic study

The cytogenetic study has been done in order to define the damaging effect of the cancer and the anticancer drug in the genetic material of the patient. These damages were manifested through the significant reduction in the blastogenic index (BI). Mitotic index (MI) and replicative index (RI) in the lymphocyte cells of patient. This accompanied by significant increase in sister chromatid exchange (SCE). In addition to investigate mutation fraction (MF) for two genes (HGPRT, DHFR) by culturing cells in selective medium which contain selective agents (6-TG, MTX) respectively. The result was 26% of MC which represent the resistant cell to the drug which mentioned above. So the result suggest that the mutation assay are sensitive system to abroad spectrum of mutagens and useful genetic marker for DNA-mediated transformation of mammalian cells.

The second part of this study represent the enzymatic study that included three enzymes, HGPRT, DHFR, and ADA.

- (Hypoxanthin-Guanin phosphoribosyl transferase) HGPRT which involve in the synthesis of IMP (inosine mono phosphate) by salvage pathway.

This enzyme is responsible for the sensity of cells to purine analogues drug such as 6-Thioguanine.

- (Dihydrofolate reductase) DHFR which catalyzes the NADPH-dependent reduction of dihydrofolate to tetrahydrofolate which is in turn plays a control metabolic role as a carrier of one-carbon unit in the biosynthesis of purine and pyrimidine basis so it is play a major role in the DNA synthesis.
- (Adenosine deaminase) ADA, which represents the immune enzyme it is responsible for, catalyzes the deamination of adenosine and deoxyadenosine to inosine and deoxyinosine respectively.

The major finding of this study were as follows:

- A simple and rapid spectrophotometric assay has been developed in order to measure the activity of HGPRT in human erythrocyte lysate and represent an alternative assay instead of radio-chemical assay which is very expensive, time-consuming rather than it can not be used in our country because the hard and fast embargo. The result was significantly reduced specific activity in the two studying groups in comparison with control so the finding suggest that there was a relation between the mutant form of this enzyme and the disease (cancer) so this assay may can be use as a simple tool for early detection of the disease especially the sporadic colon carcinoma (SCC).
- The DHFR has higher specific activity in the second group with respect to control while the first group has differs specific activity of enzyme according to the age in comparison with control group.
- The ADA has reduced specific activity in comparison with control group.

The studies on purine and pyrimidine metabolism have shown how a biochemical imbalance may be responsible for a selective growth advantage for tumor cells and explain their faster proliferation with respect to normal tissue.

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Thesis Title	Detection of Aflatoxin B1,B2,Ochra A and Citrinin in Habbia , Burgul and Gerreesh			
Year	2005			

Abstract	The aim of the study was to detect fungal contamination and Aflatoxin B1,B2,Ochra A and Citrinin in duram wheat kernels and som wheat product (habbia,burgul,gerreesh) and to monitor the concentration of these toxins during processing and storage . the results were as follows: 1- seven genera of fungi were isolated from wheat kernels,which are:Alternaria,Aspergillus,Penicillium,Rhizopus,Mucor,Fusarium,Cladosporium,The first three were the most frequently isolated and the genera Alternaria ,Aspergillus, Penicillium , Rhizopus , were isolated from habbia.the mostfrequently was Aspergillus and the genera Aspergillus , Rhizopus , Penicillium ,Mucor , were isolated from burgul while Aspergillus was isolated from gerreesh only. 2- wheat kernels used for manufactoring habbia were contaminated with aflatoxin B1, Ochratoxin A and citrinin ,these toxins levelswere decreased by processing.Through out the storage , the levels of these toxins were decreased and were nearly disapeared after 90 days of storage at room temperature . 3- wheat kernels manufactured to burgul contained Aflatoxin B1,Ochratoxin A and citrinin these levels were decreased by processing . 4- Aflatoxin B1,Ochratoxin A and citrinin were increased after one month of storage at room temperature and after the second month of storage , Ochratoxin A and Citrinin were decreased , while Aflatoxin B1 was enhanced . Toxins concentrations were decreased after three months of storage. 5-Wheat kernels used for manufacturing of gerreesh were contaminated with Aflatoxin B1,B2 Ochratoxin A and citrinin . Processing steps of gerreesh led to decrease the toxins concentrations .

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Thesis Title	STUDIES ON SOME APSTRACTS OF THE BIOLOGY OF BROWN TROUT (*Salom truttu* L.), MINNOW (*Phoxinus phoxinus* (L.)) AND THE THREE-SPINED STICKLEBACK			
Year	1986			
Abstract	The present investigation commend in July 1982. The main aim of this work was determination the possible causes of decline in the brown trout (*Salmo trutta* L.) populations in the Rrounded Reserver System. Large population of minno (*Phoxinus phoxinus* (L.) and three-spined sticklebeback (*Gasterosteus aculeatus* L.), were observed in the system and both species sampled. Various aspects of the biology of the three species were studied, viz., age, growth, length-weight relationship, reproduction, food and feeding habits. The age data of the brown trout showed that there were six year classes in the South Lake. The age structures of minnow and stickleback were determination from the otoliths. The dominant food organisms taken by trout were trichopteran larvae and pupa, molluscus and chironomid larvae. While cladocerans, copepods, molluscus and chironomid larvae were the dominant food organisms found in the gut\or stomach of the minnow and stickleback. Supplemental samples of brown troute and minnow from Vartry River and other feeder streams were also examined. Sticklebacks were extremely scarce in the Vartry River and the feeder streams. Food of the fish from the River Vartry and the feeder streams contained more ephemeropteran nymphs than lake fish. Seasonal differences in the dite are noted at all sites. The dites of the three species were compared using Spearman Rank correlation coefficients and Schoener s index of dietary overlap. The diets of the minnow and stickleback regularly showed significant correlation but the trout dite rarely showed significant correlation with either of the other species. Littoral and benthic macroinvertebrates from each reservoir were sampled. Oligochaetes and mollusks were the dominant organisms in the littoral and benthic areas. Trichoptera and chironomidae were the most abundant insects groupin both lakes. The light trap samples reinforced that view. Other groups of bmacroin vertebrates were poorly represented. Vertical and horizontal haules of zooplankton were also collected. These samples revealed that there were twelve species of zooplankton present. *Daphnia hyaline* leyding and *Bosmina coregoni* Baird were the two dominant species			

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

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Thesis Title	**Study the influence of Zn, Cd, Co and SO_4^- Ions on green algae**			
Year	**1988-1989**			

Abstract

This study was carried out to identify the effects of heavy metals (Zn, Cd, Co) and sulfate ions salinity on the Bioproductivity of fresh water ecosystem. Therefore we design an ecological model in order to detected the interaction impact of sulfate ions and studied elements as fallow:

1- **Detected the associated impact of SO_4^- salinity and heavy metals on functions of phytoplanktoic algae through diagnostic the levels of energy fixation.**
2- **Estimate the single effect of Zn, Cd, Co elements and sulfate ions on studied organisms.**
3- **Detected the toxical impact of studied pollutants on Charophytic algae by using some biophysical methods to estimated the following:**
   a- **Impact the using pollutants on the movement speed of protoplasmic particles.**
   b- **Impact the using pollutants on the membrane potential.**

To applied the experiment algae *Scenedesmus quadricauda* and *Nitella flixilis* has been using as a biological test.

The results showed that there was significant impact on all parameters which used in this study:

1- **The growth ranges of *Scenedesmus quadricauda* was decreased under the effect of Zn,Cd and Co elements 20-30%.**
2- **The effect of the metals was started after 30 menuts.**
3- **The impact of the metals on movement speed of protoplasmic particles was very high.**
4- **The presents of sulfate ions in water media decreased the growth range about 25-40%.**
5- **Also the results founded that the associated impact of heavy metals and sulfates ions on the both algae more than the signal effect of each pollutants on all the properties that testing.**

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

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Thesis Title	**Genetic and biochemical studies on stress tolerance in *Rhizobium***			
Year	2001			

Abstract

The present work was undertaken to collect a large number of *Rhizobium* strains from different locations, study the ability of the isolated strains to tolerate stresses of salts and low levels of pH, and carry out biochemical, genetic and symbiotic studies on the stress tolerant strains.

Seventy-six strains of *Rhizobium leguminosarum* biovar *trifolii* were isolated and purified from root nodules of Egyptian clover (*Trifolium alexandrium*) plants which were collected from different agroclimate locations of Uttar Pradesh state of India. *Sinorhizobium meliloti* strain Rmd201, a streptomycin resistant derivative of strain AK631, was also included in this study. All isolated strains were tested for nodulation ability with their host plants.

The growth of all the seventy-six strains of *R. leguminosarum* bv. *trifolii* along with Rmd201 strain of *S. meliloti* was tested on mannitol salt yeast extract (MSY) solid medium containing different concentrations, from 1.0% (w/v) to 6.0% (w/v), with intervals of 0.5% (w/v), of sodium chloride (NaCl) or potassium sulphate (K_2SO_4). Eight salinity tolerant strains which could tolerate up to 5.0% (w/v) NaCl or 5.0% (w/v) K_2SO_4 were selected for further studies. *S. meliloti* strain Rmd201 was found to tolerate 2.5% (w/v) NaCl.

All strains of *R. leguminosarum* bv. *trifolii* were tested for their tolerance to acidic and alkaline conditions; the pH values of the medium ranged between 4.0 and 10.0. Eight strains which could grow at pH 4.0 were selected for further studies.

Resistance patterns of the various stress tolerant strains were determined for six antibiotics, viz, streptomycin sulphate, kanamycin sulphate, tetracycline hydrochloride, nalidixic acid, chloramphenicol and ampicillin. The various concentrations, starting from 10.0 $\mu g.ml^{-1}$, of antibiotics were used in MSY solid medium. Stress tolerant strains were found to differ in their tolerant to different concentrations of antibiotics.

Symbiotic properties of stress tolerant strains were studied by inoculating the respective host plants with these strains. Parameters like shoot length, shoot dry weights, number of days to the appearance of the first nodule in plants

and number of nodules per plants were recorded. Analysis of variance revealed significant differences among stress tolerant strains for all these parameters.

pH changes during the growth of tolerant strains on MSY solid medium were observed under normal and stress conditions by supplementing the medium with bromothymol blue dye (25.0 $mg.l^{-1}$). Changes in pH in MSY broth medium were recorded at 24, 48 and 72 hours stages. Significant changes in the pH values of the broth medium inoculated with tolerant strains were observed in salt stress conditions (5.0% w/v NaCl or K_2SO_4) from inoculation stage to 48 hours stage. Under normal conditions significant changes in pH values were recorded only up to the 24 hours stage.

R. leguminosarum bv. *trifolii* strains showed an adaptive acid tolerance response (ATR) within one generation when grown under mildly acidic conditions. An exponential rate of death was observed when the cells of these strains were exposed to an external pH 3.0.

Mean generation times (MGTs) of *R. leguminosarum* bv. *trifolii* were higher under stress conditions as compared to those under normal conditions. Colony forming units (CFUs) of all salinity and acidity tolerant strains were recorded under normal and stress conditions at 24, 48, and 72 hours stages from the time of inoculation. The results revealed a decrease in these values under stress conditions in comparison to normal at each of the above stages for all stress tolerant strains.

Different tests were used to study the surface properties of stress tolerant strains under normal and stress conditions. Cyclic β-glucans of tolerant strains were found to be produced more under 5.0% (w/v) NaCl or acidity stress (pH 4.0) conditions in comparison to normal condition. No differences were found in the production of lipopolysaccharides (LPS). Cellulose fibrils and succinylated exopolysaccharides (EPS I) of tolerant strains in both conditions. The stress of 2.5% (w/v) NaCl resulted in the increased production of succinylated exopolysaccharides in case of *S. meliloti* strain Rmd201. Motility of tolerant strains on tryptone yeast extract (TY) swarm plates (0.3% w/v agar) was found to be reduced under stress conditions in comparison to normal condition.

Total cell proteins were isolated from the cells of each of the tolerant strains and the amount of total proteins in each sample was estimated. Protein patterns were obtained by sodium dodecyl sulphate polyacrylamide gel electrophoresis (SDS-PAGE). No differences were detected in protein profiles for all stress tolerant strains under normal and stress conditions.

S. meliloti strain Rmd201 was streaked on TY solid medium supplemented with different concentrations of proline or glutamate (25.0, 50.0 and 100.0 $\mu g.ml^{-1}$) under normal and stress (2.5% w/v and 3.0% w/v NaCl) conditions. The supplementation of these amino acids did not increase the NaCl tolerating ability (2.5% w/v NaCl) of *S. meliloti*.

Root hair curling and infection thread formation in alfalfa (*Medicago sativa* cv. T9) infected with S. meliloti strain Rmd201 were observed under light microscope during two weeks starting from the time of inoculation. No differences were found between normal and salt stress conditions.

The growth of 25 auxotrophic mutants (uracil, 5, tryptophan, 4, purine, 6,

	leucine, 1, methionine, 1, cystine, 1, isoleucine+valine, 3, adenine+thiamine, 1, uracil+arginine, 1 and tryptophan+tyrosine+phenylalanine, 2) of *S. meliloti* strain Rmd201) was studied on TY solid medium containing 2.5% (w/v) NaCl. No changes in growth on this medium as compared to that on TY medium was noticed indicating that the mutated genes do not have any effect on the stress tolerating ability in this strain of *S. meliloti*. An attempt was made to transfer by conjugation the genes for high salt tolerance from *R. leguminosarum* bv. *trifolii* strain IHS8 to *S. meliloti* strain Rmd201. Ability to tolerate high salt (5.0% w/v NaCl) stress could not be transferred to *S. meliloti* by this approach. Random transposon mutagenesis of S. meliloti strain Rmd201 was carried out with the help of suicide plasmid vector pGS9 carrying Tn5. Conjugation between *Escherichia coli* strain WA803 (*met,thi*) harboring the suicide plasmid pGS9 and *S. meliloti* strain Rmd201 yielded 4800 Tn5 transconjugates. Salt tolerating abilities of these Tn5 derivatives were not affected indicating that none of the Tn5 insertions has taken place in any gene involved in salt tolerance.

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Year				
Abstract	Thesis Title: Effect of ETEC *Escherichia coli* enterotoxins on cancer cells, cell lines and Laboratory animals			

Summary

This study aimed investigating the cytotoxic effect of crude enterotoxins on normal and cancer cells both *invitro* and *invivo*. the present study included isolation and identification of Pathogenic *Escherichia coli,* From Children (under 3-years for both sexes) infected with severe diarrhea, from March to June 2005, and as follows:

*Sixtysix Islates (60%) were obtained from 110 samples. These Isolates were Identified according to morphological and biochemical tests, and for confirmation by Api-20E System.

*Serological identification for these Isolates(66 isoleates)showed that only 12 (18%) isolates were belonged to Enteropathogenic group of *E. coli*. (EPEC).

* The results of using Suckling Mouse Assay(SMA) showed that

	only 13 (19.6%) out of 66 Isolates were capable of producing heat-stable (ST) enterotoxin, therefore these isolates belonged to Enerotoxigenic group of *E.coli* (ETEC).Whereas the EPEC isolates were all negative for this test. According to the toxin activily that was evaluated by (SMA) the Isolate No. 99 determined as the most efficient Isolate in producing the (ST). The same Isolate (99) of *E. coli* showed its ability to produce heat Labile enterotoxin (LT), by using Rabbit lileal Loops. The Isolate (99) revealed for sensitivity to Ampicillin, Gentamicin, Nalidixic acid and Nitrofurantoin antibiotics, but resistance to Amoxicillin , Cefixime, Cephallothin, Ciprofloxacin and trimethoprim. This Isolate also showed its ability to adhere by using the special media that contain the congo red stain, and by using hemagglutination test because it posseses the colonization factors antigen (CFA/1) and CFA /III However it failed in producing hemolysin enzyme that hemolyze red blood cells The toxin reserved Its activity at temperatures (20,40,60 and 80)c^0 , but loss some of its effect at 100 c^0 and kept its activity at 4 c^0 for (24-48) hrs, It was found that the highly toxic activity reduced in the PH 5,9.5. The time of mice response to enterotoxin was determined. At 90 minutes, as the maximum of response and 180 minutes as the optimum time of response. Enterotoxin was purified partially by using sepharose CL-6B, and the molecular weight for (ST) was 17378 dalton. LD50 of both bacterial Suspension and crude enterotoxin in mice was 2.13×10^8 cell/ mice, and 48.75 mg/ mice respectively. The crude enterotoxin showed more severe effect than the bacterial suspension in spleen,

	Intestine, and Lung, while the effect of bacteria suspension was more severe in Liver. The therapeutic dose of crude enterotoxin was determined according to LD50 in mice it was revealed that the concentration of 390 mg/kg have the activity in reducing the tumor volume when injected directly in tumor, with an inhibition ratio between(83-89)% beginning at 8th day of the 25th injecting days. While when the toxin was injected intraperitonealy, the inhibition ratio of tumor was Less than the injection in tumor it self. The dose 97.5 mg/kg that given daily for 25 days showed more efficiectly in reducing the tumor in percent of 73.3. The Comparitive study between the relative volume of tumor in treated group and the relative volume of tumor in control group revealed that there was significant difference statistically important all over the treatment time.. The necrosis and fibrosis were the most important characteristics in treated groups after histopathological examination which appearantly with the progress of treatment associated with volume decrease of tumor, so it was found that the last stage of treatment showed the cancer cells presented like The treatment by small Land Surrounded by dense fibrous tissue. using all toxin concentration in both ways of injections on murine bone marrow cells, showed significant increase in blast Index (BI) and mitotic Index (MI) when compared with control.The toxic effect of crude extraction was studied in tumor cell lines *(in vitro)*, Hep-2 and AMN-3 and the normal cell line REF, the study showed that the toxic effect depend on the type of cells, the dose and the

	time of exposure. This study revealed that the AMN-3 Cells were more Susceptible from that of Hep-2 Cells and the high concentration caused inhibition to the growth of the tumor cells, Specially the concentration of 60000 Mg/ml, Also growth and multiplication of REF cells. Whereas the concentrations of 1875 and 3750 Mg/ml were found as an inhibitor to REF Cells. Partially purified enterotoxin (ST) showed that it's effect was found to in hibit Hep-2, AMN-3 and REF cells at 72 hrs of exposure and has an inducer effect to growth of cells at 24 hrs of exposure in all concentrations,but the effect was differ in the time of exposure at 48hrs,that the three concentrations (1.986,3.965and 7.95) Mg/ml showed inducing effect ,while the three hight concentrations(15.86,158.6 and1586) Mg/ml showed inhibition effect to AMN-3 cells.Also the hight concentrations(30000 and 60000) Mg/ml were found as inhibitor to REF cells at(48,72)hrs,but they were inducer of growth at 24hrs of exposure. The toxicity effects of crude enterotoxin were studied in human Lymphocyte multiplication *(in vitro)* , and the higher concencentration showed decline in Mitotic index (MI), but It was induced cells to transform in present of mitogen, so there was inverse in blast index (BI) when compare with the control.

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Year	March 2001			

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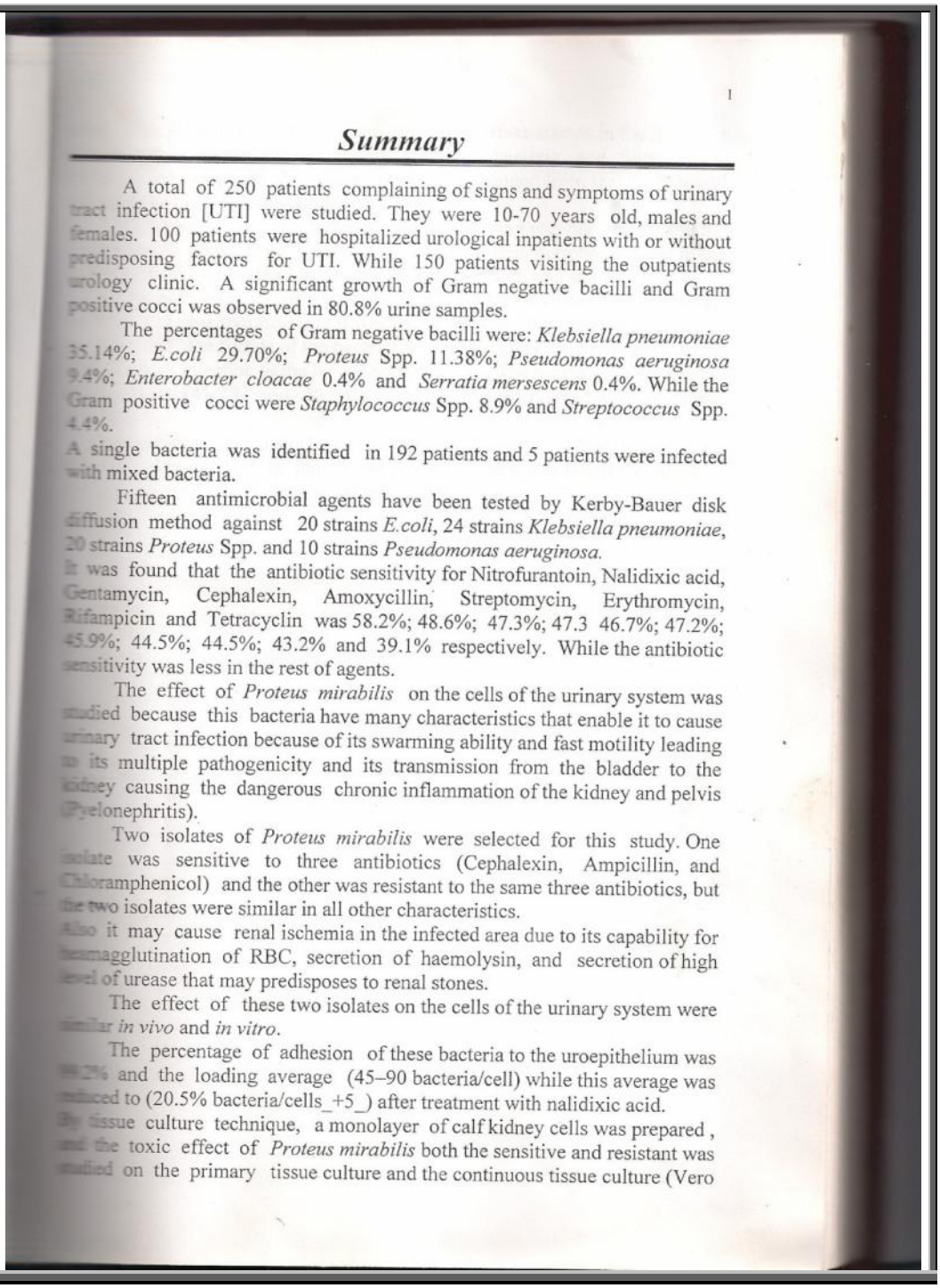
Abstract	

Summary

A total of 250 patients complaining of signs and symptoms of urinary tract infection [UTI] were studied. They were 10-70 years old, males and females. 100 patients were hospitalized urological inpatients with or without predisposing factors for UTI. While 150 patients visiting the outpatients urology clinic. A significant growth of Gram negative bacilli and Gram positive cocci was observed in 80.8% urine samples.

The percentages of Gram negative bacilli were: *Klebsiella pneumoniae* 35.14%; *E.coli* 29.70%; *Proteus* Spp. 11.38%; *Pseudomonas aeruginosa* 9.4%; *Enterobacter cloacae* 0.4% and *Serratia mersescens* 0.4%. While the Gram positive cocci were *Staphylococcus* Spp. 8.9% and *Streptococcus* Spp. 4.4%.

A single bacteria was identified in 192 patients and 5 patients were infected with mixed bacteria.

Fifteen antimicrobial agents have been tested by Kerby-Bauer disk diffusion method against 20 strains *E.coli*, 24 strains *Klebsiella pneumoniae*, 20 strains *Proteus* Spp. and 10 strains *Pseudomonas aeruginosa.*

It was found that the antibiotic sensitivity for Nitrofurantoin, Nalidixic acid, Gentamycin, Cephalexin, Amoxycillin, Streptomycin, Erythromycin, Rifampicin and Tetracyclin was 58.2%; 48.6%; 47.3%; 47.3 46.7%; 47.2%; 45.9%; 44.5%; 44.5%; 43.2% and 39.1% respectively. While the antibiotic sensitivity was less in the rest of agents.

The effect of *Proteus mirabilis* on the cells of the urinary system was studied because this bacteria have many characteristics that enable it to cause urinary tract infection because of its swarming ability and fast motility leading to its multiple pathogenicity and its transmission from the bladder to the kidney causing the dangerous chronic inflammation of the kidney and pelvis (Pyelonephritis).

Two isolates of *Proteus mirabilis* were selected for this study. One isolate was sensitive to three antibiotics (Cephalexin, Ampicillin, and Chloramphenicol) and the other was resistant to the same three antibiotics, but the two isolates were similar in all other characteristics.

Also it may cause renal ischemia in the infected area due to its capability for haemagglutination of RBC, secretion of haemolysin, and secretion of high level of urease that may predisposes to renal stones.

The effect of these two isolates on the cells of the urinary system were similar *in vivo* and *in vitro*.

The percentage of adhesion of these bacteria to the uroepithelium was 80.2% and the loading average (45–90 bacteria/cell) while this average was reduced to (20.5% bacteria/cells_+5_) after treatment with nalidixic acid.

By tissue culture technique, a monolayer of calf kidney cells was prepared, and the toxic effect of *Proteus mirabilis* both the sensitive and resistant was studied on the primary tissue culture and the continuous tissue culture (Vero

cells). The sloughing of cells from the glass surface started in the first hour after exposure to the whole bacteria, sonicated bacteria, and filtrate of the bacteria. The shape of the tissue culture cells changed from spindle to round and the cells floated in the culture media fluid.

Cytogenetically, the technique of karyo typing was performed. and the chromosomes taken from lymphocytes of the human peripheral blood in the group infected by filtrate of bacteria were fragile, short, and sparse.

The pathogenicity of *Proteus mirabilis* was studied for both antibiotic-resistant and sensitive isolates . It was found that the whole bacteria, sonicated bacteria, and the filtrate of the bacteria for both isolates were pyrogenic when introduced as injection to the New Zealand rabbits. The maximum temperature of the rabbit (41.7°C and 40.7°C) in the two groups injected with whole and sonicated bacteria was obtained.

In addition, the histopathological changes in the mice with urinary tract infection were studied in four stages in kidney and it was found the infection with this bacteria have pathological effect on the kidney .