

ENGLISH TITLES

AGRICULTURAL SCIENCES

Effect of tillage and sowing methods on some physical properties of soil germination percentage, growth and yield of cotton

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Abstract

Two field experiment's were carried out at the research farm of Nasser's faculty of agricultural sciences, Aden university during the seasons 2000/2001 and 2001/2002 to study the effect of tillage and sowing methods on physical properties of soil , germination percentage , growth and yield of cotton and its components .

The experiment involved two types of tillage with two methods of sowing in a split -plot design with three replications. After statistical analysis, the following results are obtained :

- 1)The bulk density in the tilled layer 0-15cm decreased for all treatments, and increased in the depth 15-30cm with chisel plough comparing with mould board plough.
- 2) The moisture content was higher in the depth 0-15cm for both treatments and significantly decreased with chisel plow in the layer 15-30cm depth.
- 3) Germination percentage and cotton yield were significantly higher with mould board comparing with chisel plow.
- 4) Sowing on ridges gave higher yield comparing with rows in both seasons.

Key words: tillage- sowing methods- soil properties -growth-yield-cotton

BIOLOGY

Study and Classification of Yemeni Avifauna into specific ecological groups

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Abstract

Three governorates were chosen for the sake of ecological study three governorates were chosen, these are Aden, Lahej and Abyan.

The aim of study and survey is a real contribution to classifying and identifying the Yemeni birds in relation to their movement, habitat and mode of nutrition .Through long survey and observation and in addition to the literature,

The attempt succeeded to record and classifying 363 birds species into six ecological groups. These species belong to 19 orders, 63 families. They were arranged in sequence according to their abundance as: arboreal bird group(151 species), shore and wading bird group (107 species), prey bird group (49species), swimming and diviny bird group(35species), terrestrial bird group (11 species), and aerial bird group (10 species).

Key words: Yemen, Avifauna, Classification, Ecological group.

**A Contribution to the Herpetofauna of Yemen:
Distribution study of dangerous snakes in Yemen**

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Abstract

This study depended on a collection of 54 specimens during the period 1997 to 2004. They were collected from various localities in Yemen, identified, classified and kept in the collection of Sana'a University (BCSUR), Ibb Univ. (BCIUR), Hadhramout Univ. (BCHUR) and Biodiversity Department of Ecological Studies, Aden University (BCAUR). A brief history of the reptilian faunal investigations and studies in Yemen is included. The status and distribution of 8 taxa of dangerous poisonous snakes from Republic of Yemen are discussed. The English names, common local names and habitat are given.

This study revealed eight species of dangerous poisonous snakes in Yemen. They include all members of the families: Atractaspididae, Elapidae and Viperidae. New locality data for these poisonous snakes except *Cerastes cerastes* and *Echis pyramidum* are recorded.

Key words: Distribution, Poisonous snakes, Yemen.

CHEMISTRY

Aquatic Photocatalytic Degradation of Cypermethrin Insecticide “PUNZIX” by TiO₂/ CdS in Sunlight

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Abstract

This paper investigates the photocatalytic degradation of the cypermethrin form insecticide “PUNZIX”, using TiO₂/CdS as a catalyst, in an aquatic environment in the presence of sunlight. We found that when a solution of TiO₂/CdS catalyst was mixed with the insecticide solution in the presence of sunlight, the concentration of the insecticide decreases rapidly with time. No effect on the concentration of the insecticide when the mixture was placed in the dark.

This puts the emphasis on the role of sunlight in producing ^{*}OH radicals, that react with the insecticide and degrade it from its original form. The method was described, also the reaction rate constant and half-life for the degradation rate were determined.

This novel technique can lead to wide applications, particularly in the treatment of waste water, and the fight against organic pollutants, such as chlorophenols, herbicides, dyes, and insecticides.

Keyword : photocatalytic, TiO₂ , cypermethrin insecticide, aquatic degradation, CdS, Organic chemical pollutants.

A Study On Trace Elements (Heavy Metals) Contamination in Expired Canned-Food Products, Randomly Selected from Yemeni Markets

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Abstract

A selection of expired canned-food products from Yemeni markets were chosen to study the concentrations of heavy metals in them, using Atomic Absorption Spectrometry (AAS). Two methods were applied, in the first method, using washing filtrates analysis, two brands of expired canned-food of brown beans (*foal mudamas*), were analyzed, and the following high concentrations of trace elements were found: 0.342 ppm Al, 0.033 ppm Cr, 6.97 ppm Mg, 0.329 ppm Sn, 11.58 ppm Fe, and 2.26 ppm Zn. In the second method, using dry ash analysis, various expired canned-food products were analyzed, and the following high concentrations of trace elements were found: 5.96 ppm As, 1.49 ppm Ag, 4.7 ppm Zn, 0.6 ppm Co, 39.7 ppm Fe, 1.7 ppm Mn, 0.84 ppm Pb, and 2.0 ppm Cu.

The concentrations of the trace elements for both methods were investigated, and compared with the daily allowed dietary intake⁽¹⁾. The study reveals that trace elements contents in expired canned-food products, bought from Yemeni markets constitute a health risk to consumers.

Keyword : expired canned-food, trace elements concentrations, food poisoning, atomic absorption spectrometry AAS, dry ash analysis.

ENGINEERING

Concrete Mix-Design for Precast Reinforced Concrete Pipes

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Abstract

The purpose of this research paper is to obtain a concrete mix-design of high quality concrete that has to be used for producing reinforced concrete pipes in Banyeas pipe factory, Abu-Dhabi, UAE. These pipes have to be used for storm water and sewerage pipelines projects in Abu-Dhabi. Their diameters are varied from 0.6m to 2.4m with a maximum length of 3.0m.

In this study, numerous trials of concrete mix-design were carried out in the laboratory by adding superplasticizing admixture material to the concrete mix with different (w/c) ratio. The objective is to study the effect of this type of admixture and the rate of dosage on the properties of the ordinary concrete so as to make it more suitable for the structural requirements, site conditions and the factory requirements. The test results have been discussed thoroughly and the optimal benefit of using such type of admixture material on the properties of concrete have been highlighted and recommended for used.

Key words: admixture material, concrete mix-design, concrete pipes

Development of load flow solution using a fortran-90 program

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Abstract

A load-flow solution has been developed and subsequent computation of line power flow using Newton-Raphson method. In this solution, PV bus and tap changer controllers have been manipulated in a way that provides more accurate results.

For solving load flow a detailed FORTRAN-90 program has been built taking advantage of the significant enhancements in F-90 language, especially its dynamic storage, structures, derived types, and array language.

The work documented in this paper is tested on a four-bus five-line power system and prove it's efficient. In fact it can be used as a basic step for helping any researcher who intended to use the F-90 standard instead of the old F-77 standard in power system analysis area.

Key words: Power System Analysis, Load Flow, Fortran-90

ENVIRONMENT

Stratification and Physiognomic Classification of Flora in Hawf

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Abstract

Hawf forest is exposed to saturated winds that come from Arabian Sea and meet the mountains at Hawf from mid of June to mid September. During this period (monsoon), the winds are moisture-laden and the area is characterised by fog and drizzle. During the monsoon season, the mountains looks as if wearing beautiful clothes, green in colour. All greenery is a result of the presence of various types and sizes of trees and shrubs, some of them rare in occurrence like *Anogeissus dhofarica*. Besides this plant, there are other trees like *Acacia* sp, *Commiphora* sp, and few plants of *Pistacia* sp which appears like umbrella on the mountain slopes, and *Ficus* trees in vallies where there is more humidity. In between these trees, there are seen some other shrubs like *Euphorbia* sp, *Croton*, *Dodonea*, *Maytenus*, and *Ruttiya*. These trees and shrubs make most of Hawf forest. Beside these trees and shrubs there are various types of herbs and grasses on the floor of the forest. All the different genus and species form the physiognomy of the flora in Hawf forest.

Key Words : Stratification , physiognomic , Vegetation, Hawf forest

Floral Diversity Of Hawf Forest

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Abstract

Biological diversity refers to the variety of life on the Earth. Forest ecosystems are characterised by predominance of trees, fauna, flora and ecological cycles with which they are closely associated. Forests in developing countries are under great pressure. Population increase and economic growth are primary driving

forces behind conversion of forests to agricultural land. This holds good in the case of Hawf forest too.

The Hawf forest is a result of monsoon winds; the forest is wet, lush green with enriched growth for 3 months during the monsoon months; it is dry and leafless for the rest of the year. A systematic approach by plot method was adopted for sampling and quantification of the vegetation. Qualitative as well as quantitative sampling was carried out at 130 locations in Hawf.. . The structure and composition of forest as well as distribution of species varies with climatic and edaphic factors. The paper discusses – (i) taxonomical composition of vegetation, (ii) physiognomical classification, (iii) structure of the forest, (iv) associations of plant species, (v) distribution, and (vi) ecological status.

Key words : Yemen , flora ,vegetation ,floral diversity .

MEDICINE

**Pattern of positive Rift Valley Fever (RVF) Cases
during the epidemic period Sep.- Dec. 2000.
in Al-Zuhrah District- Hodiedah Governorate- Yemen**
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Abstract

This study was conducted at the time of Rift Valley Fever (RVF) epidemic in Al-Zuhrah district, Hodiedah Governorate-Yemen for the period Sep.-Dec.2000, with the aim of determining the epidemiological and clinical pattern of the proved RVF cases in Yemen. The files of 48 patients who were clinically RVF suggest cases and proved by serology (IgM capture ELIZA) done by the Naviation American Military Research Unit 3 (NAMRU3) with association of the World Health Organization Collaborating Center in Egypt, were studied and followed up for 3 months since the onset of the attack.

The prevalence of RVF positive cases in Al-Zuhrah district, Hodiedah Governorate, at the time of RVF epidemic was 0.05% with a mean age of 37.8 years. Nearly 79.2% of the cases were working in close contact with animals. 60% of the cases have the onset between Sep. 16th – 23rd. All the proved positive cases suffered fever and headache, and high percentage of them suffered joint pain. Severe presentation appeared with higher percentages (41.6% for eye syndrome, 20.8% for hemorrhagic fever, and 18.75% for neurological manifestations). Most of the cases were completely cured (81.35%), only 12.4% were complicated, and 6.25% were died.

RVF affected few number of people mainly those who were in close contact with infected animals and the clinical presentations were usually mild. But in Al-Zuhrah district, most cases appeared with severe presentation of the disease and this is may be attributed to group of factors.

Key words: Rift Valley Fever, RVF, Positive cases, Al-Zuhrah district, Yemen.

Normal delivery retinal complications in high myopic pregnant women

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Abstract

Some obstetricians and ophthalmologists still believe that pregnant women with high myopia may develop retinal complications with spontaneous delivery .The risk of indirect retinal injury due to labor is feared and caesarean section is recommended .Although there has been increasing agreement that normal delivery is not contraindicated even in patients with myopic degenerations ,there are very few studies concerning this question .

The aim of this paper was to examine the eye fundus and the retinal changes in a group of pregnant women with high myopia before and after delivery to note if there is any difference .

Material and method: 38 pregnant women with high myopia were studied and followed from the third trimester of pregnancy ,through labor and delivery into the post-partum period looking for changes in their retinal status .

Results: in our study there was no progression of retinal changes or development of retinal detachment in the post partum period except in one case.

Conclusion: We concluded that prenatal and post partum fundus examination is necessary for high myopic pregnant women and spontaneous vaginal delivery may be allowed to take place in women with high risk retinal lesions .

Key words: Pregnant women, Myopia, retina, delivery, fundus

Urolithiasis In Yemeni Children

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Abstract

Aims & Objectives: Urinary tract stones are common disease in Yemen as in other asian countries. Here we tried to reflect light on this disease in our children.

Patients and Methods: 165 records were analyzed retrospectively. The patients were admitted and treated in three governmental hospitals and one private urologic clinic during the period of January 1999 and December 2003.

Results: The admitted patients were 136 boys and 29 girls with M: F ratio of 4.7:1, median age was 6±4.3 years. UTI was the most common presenting symptom with stones. The majority of stones (63%) were in the lower urinary tract. Stones of 78.8% of the patients were removed by open surgery.

Conclusion: Childhood urolithiasis is a serious problem in Yemen. In order to prevent the development of end-stage renal failure and to improve the patients' quality of life, more efforts should be made with respect to early diagnosis and management of renal stones and urinary tract infections

Key words: Urolithiasis, Yemeni children

**Road traffic accidents in Aden during 2000 – 2004 :
Frequency, natures, causes and consequences**

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Abstract

This study aimed at identifying the magnitude, the causes of road traffic accidents, injuries and fatality rate in Aden governorate. It is a descriptive and retrospective study based on available data obtained from the Traffic Directorate in Aden. The records for 5 years, 2000 – 2004, were reviewed, presented and analyzed using the Chi-square χ^2 and p-value.

The cars & trucks crash and collision with pedestrians represent the highest rates 36.2% and 35.6% among the natures of road traffic accidents during the 5-year period; statistically highly significant ($\chi^2= 140.9$, p: 0.0000).

Driver's errors represent the highest rate 86.8% among the causes of road traffic accidents; statistically highly significant ($\chi^2 = 65.4$, p = 0.0000).

The rates of annually road traffic injuries decreased from 18.4 % in 2000 to 17.6 % in 2001 and then raised annually 19.3 % in 2002, 21.5 % in 2003 and 23.2 % in 2004; statistically significant ($\chi^2 = 21.4$, p = 0.00026).

The road traffic fatality rates ranged between 14.7 % in 2000 and 22.1 % in 2001.

It could be concluded, that road traffic accidents are an important problem and urgent intervention is needed to minimize the occurrences and their consequences.

Key Words: Road traffic accidents, Causes, Injuries, Fatalities, Aden.

PHARMACOLOGY

Flow injection analysis of enzyme activity in free and dexamethasone conjugated cellulase

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Abstract

Enzyme activity for cellulase and dexamethasone - cellulase complex was determined after the preparation of Lucifer yellow - labelled cellulose substrate and was used in a flow injection bioreactor monitoring system to get the reproducible signals and calibration curve and this system proved to work well in a continuous flow injection format.

Keywords: Flow injection analysis (FIA) , Dexamethasone cellulase (Dex-cellulase) Complex, Enzyme Linked immunosorbent assay (ELISA).

PHYSICS

The Optical properties of Bismuth - doped Germanium Selenide Semiconductor

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Abstract

The optical energy gap (E_{gopt}) and energy band tailing (ΔE_t) for $Ge_{33}Se_{67-x}Bi_x$ ($x=0, 5, 10, 15, 20$) vacuum deposited amorphous thin films of about (300 ± 5) nm thickness are studied in the photon energy range ($h\nu = 1$ to 5.4) eV.

The optical study showed that the optical energy gap decreases rapidly with increasing Bi concentration from (0-10)% , then it decreased slowly with increasing x. The width of tails of localized states at the band edges showed an increase with increasing Bi concentration.

Depending on these optical and related thermoelectric properties for these Films , a tentative energy band diagram is being suggested .

Key words : Vacuum deposition , Thin films , Germanium Selenium Bismuth , Optical energy gap , Energy band tailing , a tentative energy band diagram .

RENEWABLE ENERGY

Economical evaluation of a Hybrid (PV/electric grid) system to meet tropical Greenhouse ventilation load

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Abstract

Renewable energy sources like photovoltaic (PV) panels are used today in many applications. However, each individual PV system usually supplies energy only to one consumer. This paper presents a study on the design of a complete photovoltaic hybrid system for cooling a tropical greenhouse and controlling the inside micro-climate environment. The life cycle cost (LCC) of the system was estimated. A hybrid photovoltaic system consists of three photovoltaic sub-

systems connected to each other. This system includes 28 photovoltaic solar Panels, three invertors, and 4 charge controllers and battery bank. The national electricity grid is used as a backup unit. The load consists of four misting fans for cooling greenhouse with 1040 Watt electric power and five hours daily operation. The real greenhouse production system at Malaysian Agricultural Research and Development Institute (MARDI) was selected as the site for the hybrid PV system performance testing. The main difference between the method used in this system and other techniques used in the past is that these hybrid PV sub-systems are capable of compensating each other and enables the excess energy to another sub-system or to charge the battery. This enables us to decrease the discharge of battery during the day, resulting in the extension of its lifetime. In addition PV has the advantage of reducing the emission from electric generation by using fossil resources.

Keywords: Hybrid system, Greenhouse, Ventilation, Agriculture production.

VETRINARY SCIENCES

Comparative study on the dissemination and pathology of the experimental infection of chicks by oral and intraperitoneal routes with *Salmonella typhimurium*

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Abstract

A study was designed to find the variation in bacterial dissemination and pathological findings associated with *S. typhimurium* infection following oral and intraperitoneal route in one-day-old cross-breed chicks and two –week old broiler chicks respectively. The results show that a variable dissemination of *S. typhimurium* occurred in the visceral organs (brain, kidney, liver, heart, spleen and lungs) and in cecal tonsils. Spleen and cecal tonsils were the main target organs of infection by the *S. typhimurium* following both routes of infection. A variable pathological changes were found in the visceral organs and in cecal tonsil. The pathological lesions were mild granulomatous lesions in the internal visceral organs following oral route of inoculation whereas extensive granulomatous lesion in these organs following intraperitoneal route of inoculation. Also typhilitis was demonstrated in all chicks following both routs of inoculation by these microorganisms.

Key words: Salmonellosis, Broiler chicks, Orall, Intraperitoneal, Infection, Visceral organs, Histopathology.

SHORT COMMUNICATION

PHARMACOLOGY

The in vitro antimicrobial activity of some Yemeni medicinal plants

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Abstract

The results of the screening for antimicrobial activity of 27 plants, collected from different areas of Yemen were reported. *P. Cinnabari* and *R. chalpensis* had exhibited the wide antimicrobial activity against the microorganisms tested (80% and 70%) respectively.

Key words : antimicrobial activity, ethanolic extract , medicinal plants

ARABIC TTLES

AGRICULTURAL SCIENCES

Studying grafting date of Anna cultivar. on three rootstocks of apple in nursery

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Abstract

This study was conducted at Agricultural Research & Extension Authority (AREA) nursery , at Dhamar during 1992/1993 and 1993/1994 seasons , on clay silt soil . This investigation aimed to determine the success in grafting date utilizing budwood. The experiment involved five grafting dates 21/6, 21/7, 21/8, 21/9 and 21/10 on rootstocks: M26 (dwarf) MM106 , MM111(semi dwarf) produced at East Malling Research Station , in England. The scion applied was from Anna cultivar.

The experiment was designed in complete randomized block design and consisted of date of grafting and rootstocks distributed in four replicates.

The result revealed no significant differences among the dates of grafting, but the percentage of success in the third and fourth grafting date in the first season, and the third and second grafting date in the second season was higher . Rootstock MM106 in the first season and rootstock MM111 in the second season were superior . The interaction showed that fourth , second and third grafting date achieved higher percentage in the first season . The interaction between fourth grafting date with rootstocks MM111 and interaction between

second and third grafting date with rootstock MM106 gave the higher value . The interaction of fourth grafting date with rootstock MM111 and interaction between third grafting date with rootstock MM 106 were superior in the second season .

The height of plant within the grafting date revealed that highest plant heights were found in the third and fourth date in the first season . During the second season , the highest plant height was noted in the third grafting date . The rootstock MM106 in the first season and rootstock MM111 in the second season yielded highest plant height . The interaction between the fourth grafting date with rootstock MM111 gave highest plant height in the first season . The stem thickness was superior in the fourth and third grafting dates . The rootstock MM106 revealed the best stem thickness . The interaction showed significance for stem thickness in the fourth grafting date with rootstock MM111 during the first season . In the second season , the fourth grafting date gave the highest thickness with rootstock MM106 . The effect of grafting date on the stem thickness above the grafting line did not differ significantly, but highest value reached in the fourth grafting date in the first season and in the third grafting date in the second season. The rootstock MM106 gave significant differences in stem thickness above grafting line . The results of interaction for stem thickness above the grafting line showed that the first grafting date with rootstock MM106 and fourth grafting date with the same rootstock gave highest value . The results showed that the third and fourth grafting date were superior for stem thickness below the grafting line. The rootstocks, MM106 and MM111 achieved best values for this parameter . The interaction showed the best performance in fourth grafting date with rootstock MM111 .

Keyword: Apple , grafting date , rootstocks, grafting .

Effect of the osmotic pressure of the mannitol on the germination and growth of the seedlings of some local cultivars of maize(*Zea mays L.*)

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Abstract

A laboratory experiment was conducted to determine the influence of osmotic pressure of the mannitol on the germination and growth of the seedlings of some local cultivars of maize .

This experiment was established at the laboratory of the department of agronomy and botany at Nasser's Faculty of Agricultural Sciences , University of Aden during 2001 .

The experiment included 3 cultivars of maize : Knega 36 , Tehama -1 and City Lagoss, with 5 levels of the osmotic pressure : 0 . 5 , 10 , 15 and 20 Atmo. P. mannitol , with three replications incomplete randomized design . The results were as follows ;

The percentage of germination , the length of the stem , the length of the roots , the fresh and dry weight of seedlings decreased significantly with increasing of the osmotic pressure of the mannitol .

There were significant differences between the cultivars in percentage of germination but the variety of Knega 36 gave the highest percentage of germination compared with the two other cultivars. With regard of the characteristic of the growth , the variety of Tehama –1 gave the highest value of the length of the stem , the length of the root , the fresh and dry weight and percentage of water in the seedlings compared with the two other cultivars. The interaction between the cultivars and the osmotic pressure of mannitol was significant on the characteristic of the growth and the percentage of water in seedlings .

Key wards: Osmotic pressure- Mannitol- Germination –Seedling-Maize

ENGINEERING

Scheduling of building construction activities Salem Khamis Bin Shamlah

Abstract

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The research states the basics needed for specifying the duration of the execution for the buildings through the usage of the machines and the availability of the building raw materials as well as their effects upon decreasing the time frame. The research further shows the types of chronological programs and the method of formation of the network plan and the time schedule. It also indicates the applicability of the time schedule. In addition to all that, it shows the economical analysis of the feasibility of the time plans for the construction projects as well as explaining the equivalence point between the time and the costs. The research concentrated specially on the use of the MCAD program as an assistant factor in facilitating the solving of the sequence problems related to the building objects.

The Objective of the research is to minimize the costs of construction while preserving the quality and the security as those may be achieved by finding the simplified solutions for preparing the network plan and the time schedule and the proposing of the solutions for the work teams suspension intervals during the progress of the execution which reflect very clearly in the form of profits for the contracting companies implementing the industrial projects and the general services projects which may reach up to 10% of the general gross profits for the company. The research urges those companies, by far, to begin using the programming from timing the single operation until they reach the complete duration of the project.

Key words:

Duration of the execution - The building objects - The construction process - The costs.

ENVIRONMENT

**Environmental impact of using treated wastewater for irrigation in
Al- Hotah plant –Lahej Gov. - Yemen .**

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Abstract .

A study has been conducted to evaluate the environmental impact of treated wastewater for irrigation .Results showed that salinity value (EC) was closed to permissible limits issued of Yemeni standards .

Chloride and residual sodium carbonate value were high , in that case crops resists to salinity and did not sensible to chloride and carbonate are requested for planting . regarding the value of BOD , COD , TSS , concentration of cd , cu , and density of faecal coliforms , as all , exceeds the permissible limits cited in the guide lines of Yemeni Standards and of world health organization .

Reuse of treated wastewater for irrigation of the green fodders (sorghum and Para grass) caused to pollute 7.69 and 76.92 % of fodders leaves by faecal coliforms , respectively .

Although the average of faecal coliforms and salmonella removed was around 88.1 and 93.7 % respectively , yet residual count ,was still high . reuse of this pri – treated effluent for irrigation conduit to pollute the rural environment and forms risks to ecosystems .

Keywords : environment , impact , treated wastewater , irrigation , al – hotah plant .