

ENGLISH TITLES

AGRICULTURAL SCIENCES

Effect of planting date and method of cut on the propagation of *Bougainvillea glabra* by stem cutting

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Abstract

Bougainvillea is a popular ornamental plant grown both as shrub and as climber , it is a much branched woody plant and a quick growing . Influence of planting date and method of basal cut on rooting , shoot and root growth of stem cutting were investigated in Nasser's Faculty Of Agricultural Sciences under shelter house during 2004 and 2005. In all treatment cuttings grown for the period of 3 months, there were significant differences in rooting percentage, shoot and root growth. Cuttings planted in December had higher rooting percentage (71.25 , 78.75 %) , higher average number of shoot (2.5 , 3.2) , longer shoot (18.29 , 28.04 cm) , more number of leaves per shoot (15.08 , 18.85) , longer roots (28.39 , 24.31 cm) , more number of roots (13.53 , 15.30) and higher fresh and dry weight in first and second year respectively , whereas rooting and growth was slow and restricted in April , June and October planting . For the basal cut , there were no significant differences in rooting and shoot growth, while root growth was significantly higher in cuttings that had slanting cut .Cuttings planted in December that had slanting cut significantly recorded higher rooting and growth through interaction .These results suggest that *Bougainvillea glabra* cuttings should be planted in December with slanting basal cut to achieve higher rooting , shoot and root growth .

Key words : Planting date , basal cut , propagation , cuttings , Bougainvillea glabra .

ENVIRONMENT

Natural wild flora and vegetative composition of Hawf forest

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Abstract

The investigated area is a result of monsoon winds; it is dry and leafless for about 8-9 months .The forest is wet and green, with enriched growth during the monsoon months June – September, where all plants species grown, and all

mountains become green. The structure and composition of the forest as well as distribution of species varies with climatic and edaphic factors such as rainfall, moisture ,landscape exposure, soil quality and thickness of layer, and most importantly biological activities.i.e.grazing,cutting,and agriculture.. The dominant species in the forest is *Anogeissus dhofarica* .

The flora of the investigated area represented by 236 species. These species belong to 63 families of which 177 are genera .The vegetative composition in Hawf Forest is mostly herbaceous; herbs 45.76%,where shrubs come in the second position 35.17% . trees 13.13 % and Grasses 5.94 %.

Key words: Vegetative composition , flora, monsoon , Hawf forest .

Contribution to the vegetation of Hadramout, Yemen

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Abstract

The study area represents a sector from the coastal area of Hadramout, mainly at Al-Thabbah near Riyan on the coast of Arabian Sea, to Masila in the Southern Jols of Hadramout Plateau, which reaches up to 1524 m.a.s.l. This area stretches for 135 km. The study area is divided into three zones according to their physiological characteristics as follows : 1. the Plateau zone, 2. the Wadi Zone, and 3. the Coastal Zone.

This work is an attempt to study the vegetation of each zone in detail, following the dominant community type system.

Eighteen plant communities are reported. The most widespread communities are those dominant by *Acacia spp.* - *Commiphora spp.*

Kew words: Vegetation, Plant community and Dominant species.

Availability and concentration of heavy metals in soft tissue and byssal threads of *Perna perna* and the associated sediments at Sherma Coast, Hadramout, Yemen.

Anis A. Ali and Abdul-Aziz A. Moqbil
Center of Environmental Studies and Sciences, University of Aden.

Abstract

The heavy metals (Cd, Co, Cu, Fe, Mn, Pb, and Zn) in soft tissue and byssal threads of *Perna perna* and associated sediments investigated at Sherma coast were determined by atomic absorption spectrophotometer, AAS (Vario 6). The results of the soft tissue, byssal threads, and the associated sediments in this research, revealed that Sherma coast is still in the range values of the pollutants. The metal concentration values are considered as lithogenic in origin, and the concentration factor (CF) of metals in the organism samples is <1. The obtained results show that *Perna perna* is a good biomonitor for heavy metals. Strong correlation ($p < 0.001$) was seen between byssal Pb and byssal Cu, and significant correlation between tissue Cu and byssal Cu, tissue Cu and tissue Mn, and byssal Cu and byssal Pb. No correlation was seen between the concentration of the metals in the mussel and the associated sediments.

Key words: Heavy metals, availability, *Perna perna*, Sherma coast.

The ability of plants to absorb and accumulate lead from environment in Aden Governorate, Yemen.

Anis A. Ali and Ulfat A. Kaed
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Abstract

Lead and its compounds may enter the environment at any point during mining, smelting, processing, use, recycling, or disposal. Estimates of the disposal of lead (Pb) emissions into the environment indicate that atmosphere is the major recipient. Mobile and stationary sources of lead emissions tend to be concentrated in areas of high population density, and near smelters. From these emission sources, lead moves through the atmosphere to various components of the environment. Lead is deposited on soil, surface waters, and plants and, thus, is incorporated into the food chain of animals and humans. Furthermore, humans and animals inhale lead directly from the atmosphere. Five-transplanted plant species that are usually present in public gardens, yards and high ways were taken from the nursery: *Dodonaea*, *Canna*, *Hibiscus*,

Thevitea, and Azadirachta. Each specimen was sub-divided into four sub-samples to irrigate them with gradual concentrations of lead nitrate for forty days in order to know their ability to tolerate these concentrations.

The results showed that the leaves of Dodonaea and Azadirachta were the highest in lead concentration, and the shoots of Canna were the highest too. The roots of Canna, Dodonaea, and Azadirachta showed considerable concentration in lead.

From this research paper, it could be concluded that that these plants are good remedy for treating the environment from lead, and they could be planted at the public gardens, yards and high ways.

Key words: Lead emissions, phytoremediation, lead concentration.

GEOLOGY

Utilization of remote sensing imagery data for groundwater exploration in rocky terrain of Sana'a basin, Yemen Republic

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Abstract

Spatial analysis of geological fractures, using Landsat Thematic Mapper Imagery Data, was utilized to study the groundwater exploration in the rocky terrain of Sana'a basin, Republic of Yemen. The spatial analysis includes fracture counting on cell grid of 5x5 km to estimate (1) total fracture density, (2) total fracture length, and (3) the number of fracture -to- fracture intersections.

The results are presented as an isopleths maps showing the spatial distribution of the fracture density fracture length, and fracture -to- fracture intersections per 25 km². It was found that, in hard rock terrain, groundwater occurrence is more dependent on fractures density and length. The fracture intersection and the connectivity of the intersected fractures can indicate potential areas for groundwater occurrence. For the rocky terrain of Sana'a basin, the areas that can be considered as potential groundwater direct occurrence, sites are the fracture-to fracture intersections and along the fractures system .

Key words: Groundwater exploration, Sana'a basin, rocky terrain, remote sensing imagery data, Spatial analysis of geological fractures .

An Assessment of some heavy metals pollutants in sediments from the sea coasts in Al-Mahara Governorate, Yemen.

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Abstract

Sediment samples are taken from the seacoasts in Al-Mahara Governorate to assess the availability and concentration of some heavy metals (Cd, Co, Cu, Fe, Mn, Pb, and Zn). Atomic Absorption Spectrophotometer (Vario 6) was used to determine the metals concentration. The results show comparable concentrations like unpolluted marine environments and, generally, within the normal range of values reported for the other regions in the world. The variations within the site were mainly attributed to the geochemical nature of beach deposits more than anthropogenic input, such as cobalt in Ramdood, Nashtoon, and Sayhoot; and copper in Ramdood. On the other hand, the enrichment factors show that all the metals are anthropogenic in nature ($EF > 1$), which is due to sources other than natural weathering of the earth's crust, or to Tsunami Waves.

Significant positive correlation ($p < 0.01$) between Pb concentration and Cd and Co concentrations was seen, and strong positive correlation ($p < 0.001$) between Zn-Cu which is in agreement with results obtained from other areas.

Key words: Assessment, heavy metals, sediments, Al-Mahara sea coasts, Yemen.

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Five-transplanted plant species that are usually present in public gardens, yards and high ways were taken from the nursery: Dodonaea, Canna, Hibiscus, Thevitea, and Azadirachta. Each specimen was sub-divided into four sub-samples to irrigate them with gradual concentrations of lead nitrate for forty days in order to know their ability to tolerate these concentrations.

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GEOLOGY

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Key words: Groundwater exploration, Sana'a basin, rocky terrain, remote sensing imagery data, Spatial analysis of geological fractures .

MATHEMATICS

Modules in which every subgenerated module is Quasi-Loewy

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Abstract

Xue [6] characterized rings whose all right modules are quasi-Loewy modules .We characterize modules with every subgenerated module as a quasi-Loewy module and some results in his work have been extended.

Key words: Rings, Modules, quasi-Loewy modules and quasi-Loewy right rings.

A class of improper bilateral generating functions involving orthogonal polynomials

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Abstract

In this paper we will use the group-theoretic method for obtaining generating functions from a given class of improper partial bilateral generating functions involving Bessel, Laguerre and Gegenbauer polynomials

Key words : Bessel polynomials ,Gegenbauer polynomials and Laguerre polynomials, proper and improper bilateral generating functions

The proof of the nine- points formula with applications

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Abstract

Nine points formula introduced by using finite difference method has been derived in [2][3]. This formula proved to be of order $O(h^2)$ [2]. Another approach to prove that this formula of order $O(h^2)$ is present in this work. In addition, an application of this formula has been introduced with another formula, we compare some of the results with the finite element method.

Keywords: Laplace Operator, Finite Difference, Finite Elements, Poisson Equation.

MEDICINE

Use of double-J stents prior to extracorporeal shockwave lithotripsy: a prospective randomized study assessing symptoms and complications

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Abstract

Since introduction of extracorporeal shockwave lithotripsy (ESWL) in treating patients with urinary tract stones in our clinic five years ago, we stented all patients with kidney stone $>1\text{cm}$ routinely before the procedure.

The aim of this study is to compare symptoms and complications of patients with and without stenting. In 2003, 120 patients with renal stone(s) and amenable to ESWL management were prospectively treated in two groups: 60 Stented patients and 60 unstented. All patients were admitted for 48 hours after ESWL and then followed up for three months after discharge by the same treating group of doctors. Patients were followed-up radiographically in order to assess stone-free rate after one and three months. The results showed that there was no statistical difference in flank or abdominal pain, nausea, vomiting, transient hematuria, temperature or use of analgesics in the first and second day, after ESWL in the stented or unstented group. Fifty - one patients (85%) of stented group complained of side effects attributable to stent including urinary frequency and urgency, bladder pain and hematuria with urination. In all stented patients, we removed the stents after two weeks. Plain x-ray film was done for all patients after one and three months. Three months stone-free rate

was 88% in stented and 91% in unstented group, respectively. It could be concluded that the use of double-J stents prior to ESWL treatment is not beneficial.

Key Words: Double-J stents, Extracorporeal shock wave lithotripsy.

**Patients' satisfaction with primary health care in the health centers;
Aden, 2005**

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Abstract

A random sample of 1440 adults attending the 6 centers were interviewed. 53.75% of interviewees were women and 46.25% were men.

They were characterized by a predominance of young female group of the age 20-29 years, with 44.3%, whereas the male gender group of age 40-49 years constituted 31.2%. At the same time, the predominant females were of primary school level and the predominant males were of preparatory school level (32.5% vs. 35%, $p < 0.05$). The predominant interviewees, females and males, were of the group with monthly income 10000–19000 YR (41.5% vs. 43%, $p < 0.05$). In general, 71.25 % of interviewees were without medical records. Satisfaction was positively associated with “courtesy and consideration shown by doctors” ($p < 0.05$), and negatively with “courtesy and consideration showed by nurses” ($p > 0.05$). The degree of satisfaction with “courtesy and consideration shown by doctors” and the degree of “waiting time” increased with the age ($p < 0.05$).

Satisfaction towards “doctors' willingness to listen to patients' explanations of problems” was significant in relation to females and males ($p < 0.05$).

Generally, 51.2% of interviewees answered to the variable “physical examination” with “occasionally”, 39.1% with “always” and 9.7% with “never” ($p < 0.05$).

The degree of satisfaction with “doctors' advice” decreased with the education level ($p < 0.05$).

These findings suggest that the majority of people are moderately satisfied with the health services in Aden.

The findings should provide encouragement to overwork primary health care providers in the health centers and to motivate empathetic relationships with their patients.

Key words: Patient's satisfaction, primary health care services, health centers, Aden.

Prevalence of tuberculin reactivity among physicians, health care workers and medical students in Taiz, Yemen

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Abstract

Health care workers (HCWs) have carried a heavy burden of tuberculosis infection than that of general public. The prevalence and risk factors for tuberculin reactivity were measured for a sample of (151) physician and health care workers and 41 medical students in Taiz Province. They were interviewed to fill a questionnaire and to be tested for tuberculin intradermal skin test. The prevalence of tuberculin reactivity between physician and HCW (74%) was higher than the estimate for Yemeni general population. The prevalence of tuberculin reactivity was found to be significantly higher in male than in female, as well as older ages, which reflects the effect of longer duration of medical practice on the prevalence. The prevalence was also found to be related to history of TB exposure. The tuberculin reactivity was 4 times more among those non BCG vaccinated compared to those with history of vaccination since birth. This observed excess risk may be due to factors linked to medical practice specially the reactivity that was nil among students who were not in practice yet and they may reflect pre-exposure prevalence rate.

Key Words : Tuberculosis , Tuberculin Skin test , Prevalence.

Thyroid gland swellings and fine needle aspiration cytology: Some findings in Aden

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**** Morphology Sciences Department – Faculty of Medicine, Aden University.**

Abstract

The present study was undertaken to evaluate the outcome and the frequency of gland swellings. 124 cases over a three-year period FNAC in diagnosis of thyroid

(2001-2003) were retrieved from the records of Al-Gumhoria Teaching Hospital Laboratory and Al-Mona Private Laboratory in Aden.

Of the 124 cases, 111 (89.5%) were females and the remaining 13 (10.5%) were males, and the approximate ratio of female-to-male was 8.5:1.

The higher prevalence rate (71%) of thyroid swellings was at the age group 21-40 years. No significant differences were encountered between males and females according to the age ($\chi^2 = 6.73$; $p > 0.05$).

The most common FNAC-findings were Non-toxic colloid goiter (37.9%), Hashimoto's thyroiditis (34.7%) and toxic-nodular goiter (16.9%), while benign neoplasm constituted the least common (10.5%).

Difference in diseases frequency in males and females were not statistically significant ($\chi^2 = 1.62$; $p > 0.05$).

Thyroid gland swellings were mild in 11-to 20 years old subjects, and progressively increased with age up to 30 years and tended to decline thereafter.

Key words: Fine needle Aspiration cytology, Thyroid gland swelling, Aden.

Birth weight distribution among Al-Wahdah Teaching Hospital newborns in the period January 1998-December 1999, Aden, Yemen.

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University of Aden**

Abstract

The main objective of this study is to contribute in establishing local standards of B.W. distribution at least at district or governmental hospitals level, and to determine the incidences of pre-term and post-term deliveries of low birth weight infants in A.T.H..

Data are collected from the medical records of delivered women in the same period at Al-wahda Teaching Hospital. Calculation of statistical parameters, such as means, standard deviations and percentiles, in relation to the length of gestation, parity and sex , are made. The overall mean birth weight of Al-wahda Teaching Hospital newborns is 2984.72 ± 527.81 Gr; and the males are statistically heavier than females. The increment in the birth weight is steady up to the fifth delivery and up to the end of the 42nd week of pregnancy. Pre-term deliveries are stated at 6.32% of all deliveries; the frequency of post-term deliveries is 11.23 % and the magnitude of low birth weight is 15.27%.

Key words: Mean birth weight, percentiles, preterm, post term, low birth weight

Short Communications:

BIOLOGY

Intestinal protozoans among secondary school students in Alboriqa city

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Abstract

Two secondary schools in Alborika city in Aden Governorate R. Yemen, namely, Saba'a Boys Secondary School and Mohammed Aldorah Girls Secondary School have been selected for the study. 524 Fecal samples were collected from the period November 2003 – April 2004 . Three main protozoans ; Entamoeba histolytica, Giardia lamblia, and Entamoeba coli were detected as a common intestinal infection among 210 students. The rate of protozoan infection is 40 %. The Study recorded 100 cases as positive males (40.8 %), and 110 were females (39.4). G.lamblia exhibited the highest rate of infection (43.8 %) . Mixed infections were reported in few cases. Few of the students who are living in small villages (Alkhissa, salaah –AldeenEmmran, and Fooqom) are at high risk of infections (65 %). Socio- economic status is responsible of the infection.

Key words: *protozoan, Entamoeba histolytica, Giardia lamblia, Entamoeba coli,*

Arabic Titles

AGRICULTURAL SCIENCES

Ali Khamis Basbaa

**Effect of *Alhagi maurorum* extracts on germination
and seedling growth of some field crops**

Ali Khamis Basbaa

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Abstract

To study the effect of *Alhagi maurorum* extracts on germination and seedling growth of some field crops, this experiment was carried out at the laboratory of Agronomy and Botany, Faculty of Agriculture, Aden University, and included (18) treatments which were the combination of six field crops: (wheat - *Triticum aestivum* , Maize - *Zea mays* , Sorghum - *Sorghum vulgare* , Alfalfa - *Medicago sp.* , Cow pea - *Vigna sinensis* and sunflower-*Helianthus annuus*, and the extracts of vegetative and underground parts with three concentrations (0 , vegetative extract 100 % , underground extract 100 %). A completely randomized design with three replications were used.

The results could be summarized as follows- :

The vegetative and underground extracts decreased the germination percentage of all studied plant species, and the effect of vegetative extract in decreasing the germination percentage was higher than that of underground extract .

The inhibitory effect of vegetative extract on germination was different according to the used crop, therefore, the germination percentages obtained were:- 0% for Alfalfa, 20% for Cow pea, 33% for Wheat, 40% for Sunflower, 50% for Maize and 65% for Sorghum.

The vegetative growth was affected by the extracts, therefore, the seedling length of all studied field crops was decreased compared to the control. However, the effect of vegetative extract was higher than that of underground extract.

The used extracts significantly decreased the root height of all studied species, but the effect of underground extract was higher than that of vegetative extract.

Key Words: vegetative extract, underground extract, *Alhagi maurorum*, seedlings, field crops.

Age-specific fecundity schedules and life tables of *Tenuipalpus punicae* P. and B.(Acari: Tenuipalpidae).

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Abu-Ghraib, Baghdad, Iraq**

Abstract

The relationships between the pomegranate false spider mites, *T. punicae* population dynamics and temperature were studied at constant conditions of 25, 30, and 33 °C and 60 to 70% RH, with a light duration of 14hr. It is apparent that the optimum temperatures for *T. punicae* are 30 and 33°C. The shortest pre-oviposition period, the greater egg-laying and the developmental of immature, optimum conditions were noted at 33°C followed by 30°C. Complete age- specific fecundity schedules and life tables were computed from these date for each of three temperatures. Temperature also had the greatest influence on longevity (1x), net reproduction rate (Ro), intrinsic rate of increase (rm), mean generation time (T), finite rate of increase (λ) and the doubling time of a population (DT).

Keywords: Age-specific fecundity schedules, life tables, *Tenuipalpus punicae*, biology, Iraq

BIOLOGY

The Yemeni origin of some botanical scientific names

**Abdul Nasser Al-Gifri
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Abstract

This work is an attempt to compile Latin – Arabic Botanical Dictionary. As a result of this work, 176 plant names are named after local Arabian names, Yemeni localities, as well as honorary names for some Yemeni queens, sultanates, tribes and researchers.

Key words: Scientific plant names, local names, localities, honorary names, dictionary.

CHEMISTRY

Determination of lead, copper and arsenic in food grade salt Extracted from Khormakser Salt-bans, Aden, Yemen

Mohsen A. Al-Gahri

Chemistry Department, College of Education , Aden, Aden University

Abstract

The world produces large quantity of solar and rock food salt . Most of it is used in industry , and the remaining quantity is consumed by human . Table salt should be free from poisonous and heavy metal contained according to the local and international standards. The aim of this research study is to determine the content of poisonous heavy metals in food salt extracted from Khormakser Saltern in Aden using the atomic absorption spectrophotometer [AAS] method . The results show that the content of the studied poisonous heavy metals in food salt is low ; lead [0.0742 μ g/g] , copper [0.7057 μ g/g] and arsenic [0.0324 μ g/g] .These contents, compared with local and international standard, are considered low.

Key words: Khormakser salt-bans, table salt, Poisonous heavy metals , International standard.

ENGINEERING

Study of boron effect in minimizing sulphur and phosphorus percentage from lubricating additive packages

Hamed Nasser Bin Harharah

Hadramout University of Science and Technology - Yemen

Abstract

This paper studied the effect of alkyl amine borate (AB) on lubricating properties at every aminized zinc diary- dithio- phosphate (AZDTP), sulphurized animal triglyceride (STG) and tricresylphosphate (TCP) in additive mixtures using a standard four-ball machine (SFBM), then tracing the elements consumption in the samples before and after every check by Atom Emission Spectrometer (AES) . This analysis can provide valuable information for additives and metal surface film. The study proves the possibility of replacing considerable amount of compounds which contain a high ratio of sulphur and phosphorus with a compound of a lower boron content in the synergetic mixtures from lubricating oils. Better ratios found are: S/B = 50 , 25 or P/B = 100 , 50 without any sacrificing lubrication properties. The above mentioned ratios are optimal and recommended. This opens up the field for the formulation of synergetic packages of additives with an improved ecological and human compatibility.

Keywords: Alkyl borate-glyceride, Standard four-ball machine, Tribology, Oil additives, Lubricating Properties.

PHYSICS

On fluid flow through porous media

Mohsen Obeid Mohammed

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Abstract

During fluid flow through a porous media , the fluid forces affect the porous media , resulting in its deformation . This deformation, in turn , affects the rate of fluid flow. To find the mutual relation between fluid flow and the deformation of porous media , an experiment is performed in two stages . The first stage is concluded in finding the relation between the stress and deformation without fluid flow, and the second stage is landed in finding a relation between the fluid flow and the pressure change at different values of deformation of the porous media . These results

have been used in computing the filtering speed .

The results of the first stage have revealed that the stress changes slowly in the first few moments of deformation . Afterwards , it increases in a faster rate when the degree of deformation of the specimen under consideration is increased . The results of the second experiment revealed that , during low fluid pressure ,the rate of flow is low too . This rate , however , increases as we increase the pressure . But , under lower deformation , the flow rate of the fluid is high , while it reduces when the deformation is increased . In all cases under consideration , the speed of filtering increases as deformation is reduced .

Key words : Fluid Flow , Deformation of a porous media , Filtering speed

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Abstract

During fluid flow through a porous media , the fluid forces affect the porous media , resulting in its deformation . This deformation, in turn , affects the rate of fluid flow. To find the mutual relation between fluid flow and the deformation of porous media , an experiment is performed in two stages . The first stage is concluded in finding the relation between the stress and deformation without fluid flow, and the second stage is landed in finding a relation between the fluid flow and the pressure change at different values of deformation of the porous media . These results have been used in computing the filtering speed .

The results of the first stage have revealed that the stress changes slowly in the first few moments of deformation . Afterwards , it increases in a faster rate when the degree of deformation of the specimen under consideration is increased . The results of the second experiment revealed that , during low fluid pressure ,the rate of flow is low too . This rate , however , increases as we increase the pressure . But , under lower deformation , the flow rate of the fluid is high , while it reduces when the deformation is increased . In all cases under consideration , the speed of filtering increases as deformation is reduced .

Key words : Fluid Flow , Deformation of a porous media , Filtering speed