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**ENGLISH TITLES**

**BIOLOGY**

**Antioxidant activity of melatonin in liver of male rabbits**

**Shikoo Ebtisam Yassin<sup>1</sup> and Alsakaf Galal Mohammed<sup>2</sup>**

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**Abstract**

Melatonin, [N- acetyl- 5- methoxytryptamine] (ME), is an endocrine product of pineal gland. The present work was conducted to investigate the hepatoprotective effect of exogenous (ME). Thirty six healthy male rabbits weighting 1500-1700g.were divided into six groups with 6 animals in each group. Animals in the first group served as control, animals in the second, third, fourth, fifth, and sixth groups were intraperitoneally (i.p) injected with D-Galactosamine (GalN) in a single daily dose of 50mg/kg for the period of 20 days for the induction of hepatocellular injury. Animals in the third and fourth groups in addition to GalN were orally treated with ME in a single daily dose of 300µg/kg, as follows: animals in the third group received ME at 9am; and those in the fourth group received ME at 9pm, for the period of 20 days. Animals in the fifth and sixth groups, in addition to GalN, were orally treated with ME in a single daily dose of 600µg/kg, as follows: animals in the fifth group received ME at 9am, and animals in sixth group received ME at 9pm for the period of 20 days. The level of Albumin, Total Protein, Alanintransferase (ALT), Asparatetettransferase (AST), and Alkalin-phosphatase (ALP) in serum was estimated. Results showed that ME significantly (P<0.01) reduced the toxicity of GalN.and that ME is more effective when given at evening times.

**Key words:** Melatonin, Antioxidant activity, Liver.

**CHEMISTRY**

**Application of water quality index to assessment of groundwater quality**

**Shaif M. K. Saleh<sup>1\*</sup>, Sanaa H. Gh. Al-Alaiy<sup>2</sup> and Badr Abdul-Razzak<sup>3</sup>**

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## **Abstract**

The main objective of this study was to: assess groundwater quality in rural areas of Zabid, Hodeidah, for drinking purpose using water quality index (WQI). Forty groundwater samples were collected from the study area. The water quality index (WQI) is a mathematical method used to facilitate water quality explanation. The WQI calculations required several physiochemical water parameters, including pH, Electrical Conductivity (EC), Total Dissolved Solids (TDS), Total Hardness (TH),  $\text{Cl}^-$ ,  $\text{SO}_4^{2-}$ ,  $\text{HCO}_3^-$ ,  $\text{NO}_3^-$ ,  $\text{Ca}^{2+}$ ,  $\text{Mg}^{2+}$ ,  $\text{Na}^+$  and  $\text{K}^+$ . The values of WQI indicated that 75% of groundwater in the study area was good for drinking (class II), 25 % Poor water (class III), and the WQIs ranged from 76 and 98; 101 and 126, respectively. It can be said, from this assessment, that groundwater in the study area was generally in Good-Poor water quality status. The reasons for the high WQI values of some study areas were due to the anthropogenic activities, as well as domestic and agricultural wastes.

**Keywords:** Ground Water, Water Quality Parameters, Water Quality Index.

## **ENVIRONMENT**

### **A study on hydrographic properties in the coastal waters along Hadhramout coast of Yemen**

**Nabil Al Shwafi<sup>1</sup>, Mohammed Al-Wosabi<sup>1</sup>, Hisham Nagi<sup>1</sup> and Nada Mol-Aldwila<sup>2</sup>**

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<sup>2</sup>Department of Environmental Sciences, Faculty of Environmental Sciences and Marine Biology, Hadhramout University, Yemen

## **Abstract**

Data were collected from five sites at Hadhramout, Yemen, on seasonal basis from August 2013- May 2014; where the physical and chemical properties of seawater were measured. It was found that the physical and chemical properties of seawater have significant seasonal variations within the coast with values ranging from 7.9-8.8 , 24.3 °C -31.4 °C, 51.7-52.8 ms/cm, 5.2 mg/l - 6.8 mg/l for water pH, temperature, electrical conductivity and dissolved oxygen, respectively. The higher concentration of PH and temperature during May was found at station 11, while Concentration of dissolved oxygen (DO) was relatively high during August at station10,12 and 14, and, salinity were at their minimum level during this period at station 4, 8 and 15. The results obtained reflect the effect of the warm tropical zone of the Gulf of Aden and the Arabian Sea, irregular topography, local hydrographic condition and the result of upwelling current.

**Key words:** Coastal waters, physicochemical properties, Seasonal variations, Hadhramout coast of Yemen.

# MATHEMATICS

## An application of N-Fractional calculus to solve ordinary differential equation of fourth order

A. M. H. Al-Hashemi and A. A. Bassim

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### Abstract

There are many papers which have been published in the same direction of this paper by K. Nishimoto, S. Owa, Shih-Tong Tu and H. M. Srivastava [7],[8]. In this paper, application of N-fractional calculus to solve ordinary differential equation of fourth order is obtained.

**Key words:** N-fractional calculus, ordinary differential equation, homogeneous and non-homogeneous differential equations.

## On certain $P_2$ –Like and $P^*$ –Generalized $BK$ –Recurrent Finsler Space

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### Abstract

In the present paper, we study a certain types of generalized  $BK$ -recurrent Finsler space, we shall introduce a definition for a generalized  $BK$ -recurrent space to be  $P_2$  –like space and  $P^*$  – space, respectively. We shall call them  $P_2$  – like generalized  $BK$  –recurrent space and  $P^*$  –generalized  $BK$  –recurrent space, respectively. Different theorems concerning these spaces, we also plan to obtain some identities in these spaces.

**Key words:** Finsler space,  $P_2$  – like generalized  $BK$  –recurrent space,  $P^*$  – generalized  $BK$  –recurrent space.

## Double and triple generating functions of Laguerre polynomials of two variables

Mubarak Abood Al-Qufail , Ahmed Ali Atash and Salem Saleh Barahmah

Department of Mathematics, Faculty of Education, Aden University, Yemen

### Abstract

The aim of the *present* paper is to obtain *some double and triple generating functions for Laguerre polynomials of two variables*. A number of interesting *generating functions* (known or new) *are also derived as special cases* of our main results.

**Key words:** *Generating functions, Laguerre polynomials, Generalized Lauricella function, Hypergeometric functions.*

## **MEDICINE**

### **Cesarean section rate in Al.Wahda teaching hospital, Aden, (January - June) 2011**

**Huda A. Basorra, Nahla S. Alkaaky and Dalia S. Owlaqi**

Department of Gynecology & Obstetrics, Faculty of Medicine & Health Sciences, University  
of Aden

#### **Abstract**

The aim of the study is to estimate the monthly rate of cesarean section (CS) in Al-Wahda Teaching Hospital and to evaluate the most common indications for cesarean section, and some factors such as: maternal age, parity; as well as Apgar scoring for fetal outcomes of cesarean sections for (391) audited cesarean section done at Al-Wahda Teaching Hospital in Aden Governorate from January 1<sup>st</sup> to June 30<sup>th</sup> 2011.

A retrospective descriptive review of cesarean section files was conducted at the Department of Obstetrics and Gynecology, Al-Wahda Teaching Hospital.

There were a total of 2741 deliveries performed during the six months period with cesarean section of 391, giving a rate of 14.26% of the total deliveries. The majority were primary cesarean sections (66.75%) while the remaining (33.25%) were repeated cesarean sections. This rate was not running in a harmonious flow each month. It was noticed that in April 2011, the rate was the highest (21.23%), and the lowest rate was On May (7.93%).

Nearly half of the cesarean sections were pluripara (48.8%), and the age groups from 21 to 40 years represented a percentage of (85.4%). The main three indications of CS were cephalo-pelvic disproportion (28.39%), breech presentation (13.30%) and fetal distress (11.00%). All still births (SB) were due to a rupture uterus and Abruptio placenta.

**Key words:** Cesarean, Apgar score, grand multipara, cephalo-pelvic disproportion, breech.

### **Puerperal sepsis and related factors at Al-Sadaqa teaching hospital, Aden Oct, 2015 – Mar, 2017**

**Entisar M. Abdulla. Huda A. Basorra and Nahla S. Alkaaky**

Department of Gynecology & Obstetrics, Faculty of Medicine & Health Sciences, University  
of Aden

#### **Abstract**

Puerperal sepsis is defined as the infection of the genital tract occurring at labor or within 42 days of the postpartum period. The puerperal sepsis/pyrexia presents commonly with fever and other symptoms like pelvic pain, foul smelling vaginal discharge and delayed reduction of the uterine size. This infection may originate at the placental site or within lacerations of the cervix, vagina, or perineum.

Since puerperal sepsis is a preventable factor of maternal morbidity and mortality, the objectives of this study are to identify risk factors and to evaluate maternal morbidity and mortality from sepsis in Al-Sadaka Teaching Hospital.

This study employed a descriptive, retrospective observational study design, evaluated 10718 women of them 45 women going through puerperal sepsis, over a period of 18 months, presenting with symptoms and signs of puerperal sepsis/pyrexia.

The demographic data showed that women aged 20-34 years (66.7%) were the most affected with a full term pregnancies (85%). Most (57.8%) of the respondents were of low parity level. The obstetric data showed that most (62.2%) of the respondents were delivered at hospital, 91.1% had spontaneous deliveries, and 60% of the deliveries attends by medical personnel. Anaemia was the main risk factor detected in all of the patients. Three quarters of the respondents develops the disease within the first 12 postnatal days, most frequent presenting complains were secondary PPH (17.8%), fever with foul-smell vaginal discharge (15.6%), sole presence of fever (11.1%), septicemia (8.9%) and Fever & abdominal pain (6.7%). Other morbidities associated with puerperal sepsis were found less frequently. Regarding the ultrasound findings, signs of endometritis were present in more than three quarters of the case (80%).

Monitoring of infection rates should become a priority in all maternity units may be a preventive intervention in itself. The introduction of postpartum uterine scanning, especially for women with risk factors for puerperal complications, all are need to be considered in order to improve the quality and safety of health facility care in our country.

**Key words:** Puerperal sepsis, maternal mortality, fever, foul smelling vaginal discharge.

## ARABIC TITLES

### AGRICULTURE SCIENCES

#### **Effect of intercropping cowpea with maize on the growth and productivity of maize**

**Maged Saeed Bamuaafa<sup>(1)</sup>, Ziad Othman S.<sup>(1)</sup> and Basel Abdullah Al-Koor<sup>(2)</sup>**

<sup>(1)</sup>Agronomy and Botany Department, Nasser's Fac. of Agric. Sci Univ. of Aden.

<sup>(2)</sup>Livestock Research Center, Lahej Gov

#### **Abstract**

Two field Experiments were carried out at the Research Farm of Nasser's Faculty of Agricultural Sciences, University of Aden (Delta Tuban) Lahej Governorate, during 2015/2016 and 2016/2017 seasons, to study the effect of intercropping cowpea with maize on the growth, yield and yield components of maize. This experiment included three inter planting systems and maize only. The following systems were included:

- (1:1) a line maize and one cowpea.
- (2:1) two lines maize and one line cowpea.
- (1:2) one maize and two lines cowpea.
- Without intercropping (maize pure planting).

The results showed that the different inter planting systems significantly increased the plant height, leaf area, leaf area index, shelling percentage and 1000-kernel weight, compared with planting maize only. The highest grain yield of 3.74 and 4.00 tons/hectar under (2:1) pattern, was obtained, compared with the other intercropping treatments in both seasons, respectively. Increasing maize population density significantly increased yields, thus planting without intercropping treatment gave the highest yield of corn, compared with intercropped treatments. This might be due to the reduction in plant density in inter planting system (2:1) to 33.3%, in (1:1) to about 50% and in (1:2) to 66.6%, compared to non- inter planting system.

**Key words:** Intercropping, maize, cowpea.

### **Effect of licorice extract (*Glycyrrhiza glabra* L.) on germination and growth of seedlings of onion (*Allium cepa* L. cv. Bafatiem)**

**Nora Mohammed Al-Saqaf<sup>1</sup>, Othman Saad Al-Hawshabi<sup>2</sup> and Mohammed Abdullah Hussein<sup>3</sup>**

<sup>1</sup> Biology Dept., Faculty of Education – Zingabar, Aden University, Yemen

<sup>2</sup> Biology Dept., Faculty of Sciences, Aden University, Yemen

<sup>3</sup> Biology Dept., Faculty of Education – Aden, Aden University, Yemen

#### **Abstract**

Two experiments were conducted during 2016 in the laboratory of the Faculty of Education – Aden, Aden University to study the effect of four different concentrations of the licorice extract, viz., 0, 5, 10 and 15%, on the germination and growth of seedlings of Onion cv. Bafatiem. The first experiment the seeds were soaked for 24 hours in various concentrations of aqueous extract of licorice were planted in plastic dishes and distilled water was added. The second experiment was planted 20 Onion seeds were planted in plastic dishes then treated by aqueous extract of licorice. Two experiments were conducted in complete randomized design with three replicates. Results showed that the seeds soaked in concentration of 5% of licorice extract were improved in germination percentage reached 83.3% comparing with all other treatments, the germination percentage was significantly with control and 10%. The control was increased in fastness germination which reached 3.89 day/seed, caused a significant increase in velocity of seeds germination comparing with all the concentrations of the licorice root extract. The seeds which soaked in a concentration of 5% was homogeny, and reached 23.33 seed/day, this value was a significant comparing with concentrations of 10%, 15% and control.

Soaked seeds or direct added to the dishes of licorice extract in the concentrations decreased radical length comparing with control, while soaked seeds at 5% increased plumule length which reached 4.8 cm long, with significant differences comparing with 10% and

control. The direct added of licorice extract to the dishes caused inhibition in germination percentage in all concentrations. The control caused a significant increase in germination comparing with all concentrations. Concentration of 15% caused increase in velocity of seeds germination reached 4.28 day/seed. The low concentrations caused increase in homogeneity of seeds germination, the control was more homogeneity, reached 21.93 seed/day. Length of plumule influence at direct added of licorice extract and caused a significant decrease at all concentrations comparing with the control which gave 6.81 cm long.

**Keywords:** Licorice extract, Onion, Soaked, Concentration, Germination.

## **BIOLOGY**

### **Location and shape of calcium oxalate crystals in stem, petiole and limb for *Cissus rotundifolia* (Forssk.) Vahl. Vitaceae.**

**Saeed Salem Mohamed**

Dep. of Biology, Faculty of Education, Saber, University of Aden

#### **Abstract**

The present study has examined the morphology and location of calcium oxalate crystals in the stem, petiole and leaf of *Cissus rotundifolia* (Forssk.) Vahl. The results showed that: no crystals were observed in epidermis cells for all organs that were studied (epidermis/hypodermis), and no crystals in mesophyll tissue, as well.

Out of the five types of calcium oxalate crystals, mentioned in the specialized sources, four of them were noticed: raphides, druses, crystal sands and prisms. In addition, crystalline were observed rosette-like inner and outer of cortex cells and spherical shape on cell wall pith tissues of stem.

Calcium oxalate crystals were observed in hypodermis layers of leaf, and cortex and pith parenchyma cells of petiole and stem. The raphides idioblasts (cells that containing raphides) were different in their shapes, some of them are ovate, others are oblong or rectangular with papillae at ends, or with elliptical shaped cell wall; crystal sands idioblast of rounded cells Raphides and crystal sands idioblastes were differed from surrounded cells, whereas in druse and prism idioblasts they were similar to those cells around them. Raphides of the second type were observed in this study.

**Key words:** calcium oxalate crystals, *Cissu rotundifolia*, raphides.

## **Male infertility resulting from epidemic parotitis**

**Abdulla Mohamed Lakal**

Department of biology – university of Aden

### **Abstract**

The study was conducted on 82 male people, aged 20-40 years old, living with infertility and suffering from epidemic mumps without symptoms of clinical orchitis in childhood depending on the incidence of mumps, they were divided into groups. All groups were subjected to the estimation of the concentration of hormones in the blood plasma (testosterone, estradiol and corticosterone) which is carried by the radioimmunoassay method and competitive protein-link method issued for cortisol estimation. The ejaculate (semen) examination in a manner count on light microscope were conducted.

The results showed low levels of increase of the testosterone and steroidal hormones in the infected group, compared to the control group. The results also showed higher levels of corticosterone and cortisol hormones in the infected groups, compared to the control group. The result of ejaculate examination showed that 36 patients (55.2%) have disturbed spermatogenesis and 8 of them (12.3%) have azoospermia, i.e. complete sterility.

**Key word :** parotitis, testosterone, corticosterone , spermatogenesis.

## **The allelopathic effect of *Senna italica* (Mill) upon the germination and seedling growth of three species of weeds**

**Ghassan Abdulwahid Obad<sup>1</sup> and Mahroos Abedalla Bahwirth<sup>2</sup>**

<sup>1</sup>Biology Dept–Faculty of Education/Saber –University of Aden

<sup>2</sup>Biology Dept –Faculty of Science , Hadhramout University

### **Abstract**

Many compounds that are excreted from various parts of plants in the soil show an allelopathic effect upon the germination and growth of many species of neighboring weeds in the field. A laboratory experiment has been carried out in order to evaluate the poisonous effect of *Senna italica* (Mill) Lam Ex Stues in fighting three species of weeds. Those three species of weeds are as follows: *Chenopodium murale* L , *Echinochola coloumn* L and *Cyndon dactylon* L. The experience treatments upon the air branches extract have the following averages: (%0.5, %1.0, %2.0, %4.0, and distilled water control). Moreover, the effect of the extracts upon the germination of seeds and growth of seedlings has been studied. The air branches extract showed a significant effect with its various concentrations upon lowering the length of the root and the length of the air branches and the dry wet by increasing its concentrations. Furthermore, the treatment of 4.0% has lowered the weed germination by the rate of 24.6 % for *Chenopodium murale* L , 28.1 % for *Cyndon dactylon* L and 33.4 % for *Echinochola colonum* L. Finally, regarding the other growth descriptions, the

same treatment of 4.0 %with *Cyndon dactylon* Lshowedthe lowest averages: 6.4 cm of the root length, 11.1 cm. of the feather length and 0.11 mg. of the dry wet.

**Key words:** Allelopathy, Senna italic, weed,germination.

## ENVIRONMENT

### **Medicinal herbs used in the treatment of digestive system diseases at Coastal area of Hadramout- Yemen**

**Salem M. Binsalman<sup>1</sup>, Mohammed Saeed Bin Gadeem<sup>1</sup>, Mohammed A. Hussein<sup>2</sup> and Ahmad Subeet Bamusa<sup>1</sup>**

<sup>1</sup>Biology Dept. Faculty of Science Hadramout University

<sup>2</sup>Biology Dept. Faculty of Education- Aden University

#### **Abstract**

The study was carried out to know the herbal medicinal plants that used for the treatment of digestive diseases. The study explain the strong relationship between the human and its environment in this area and how to benefit, where they used its plants for treatments of digestive system diseases. The study had conveyed 34 wild plant species , belonging to 33 genera and 24 family, that are used for medical purposes. The use of the plant parts differs as the diseases require.

**Key words:** Medicinal herbs, plant parts , digestive system diseases.

### **Check list of the poisonous wild plants of Al-Daleh Governorate**

**Ahmed Mohammed Moqubel**

Department of Biology, Faculty of Education Al-Daleh- Aden University.

#### **Abstract**

The study was carried out to limit toxic plant species in the study area. The study was dividing into two phases (stage): the first is making interviews with the people who experienced poisonous wild plants, reporting important information about plants , the second is the carrying out of field survey, searching for poisonous plants and collect samples for identification and classification .

The results of the field survey showed that 61 plant species belonging to 42 genera and are consolidating 26 families are all toxic.

The toxic plants varied from one plant to another.

**Key words:** poisonous plants, plant family Al-Daleh governorate.

## **Wild plants that popular use for medical purposes in the District of Moudy - Abyan Governorate Yemen**

**Abdulhakeem Abdul Ghani <sup>1</sup>, Zamelal Mohamed Masdous <sup>2</sup> and Mohammed Abdullah Hussein<sup>1</sup>**

<sup>1,2</sup>Department of Biology Faculty of Education, University of Aden

<sup>2</sup>Department of Life Sciences, Faculty of Education, Sana'a University

### **Abstract**

The study area is located in Abyan Governorate between latitude and longitude 45° 50 to 46° 50 E 13° 00 to 14° 00 N. The study was carried out during the period from May 2007 to August 2009 by a trip every month during the summer. The results of the field survey were identified by 79 plant species belonging to 62 genera, and 34 family were used for different therapeutic purposes. The difference of plant uses varied with the diversity of the plants. The uses varied between the external and internal uses. The difference of plant use varied between leaf, juice, whole plant and other parts. Conscious of the difference of benefits of plant parts.

Through the plant list it is clear that the highest percentage of uses was for the leaves, which were represented by 46, followed by the fruit and the plant juice and then the whole herb, which each represented 13 species followed by the roots that represented 7 types of plants and then seeds with 4 species and leg and flowers with 3 types and finally the envelope. In both types of plant and in the type of use it is clear that most of the internal uses were high at 56.36% and then external uses, which amounted to 43.63%.

**Key words:** Plant Uses, Medical Plants, Leaf, Plant species.

## **FOOD SCIENCES**

### **Producing date honey of some Yemeni date types by heating method**

**Abdulla Omer Ba-Khawar, Ali Abdulla Ba-Oam, Mukhtar Abood Munsser, Abdul-Mlik Abdo Al-Haj, and Zakariya Saleh Bin Haider**

Nutrition Researches and Post-Harvest Technology Center, the Public Authority for Researches and Agricultural Guidance

### **Abstract**

This study was conducted during the period June 2007-March 2008, on a number of Yemeni date types, collected from three different Yemeni regions: Coast of Hadhramout ( Al-Goleizmiya and Socotry ), Tihoma plain ( Tha'al, Shabaha and Dhakhar ), and Hadhrmout Valley ( Saree'a, Hashedy, Hamra and Azar ). The aim of this paper is to study the extent of suitability of date types, under investigation, for producing date honey (Dabis) by mild heating on fire through the physiochemical description of the extracted date honey ( Dabis ).

It is found that Hamra type was the best of all the types in most of its physiochemical description ranking as no. 1, followed by Goleizmiya as no. 2 and Saree'a as no. 3, ( Tha'al, Shabaha and Hashedy ) as no. 4, and Azar as no. 5; whereas Dhakhar which was found not suitable for producing date honey ( Dabis ) by this way as no. 6.

Key words: Dabis, mild heating on fire, date types, Yemen.

## **GEOLOGY**

### **Spatial distribution of shallow earthquake epicenters in Ibb Governorate, Republic of Yemen**

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#### **Abstract**

In this article, the spatial distribution of earthquake epicenters in Ibb Governorate was investigated. According to the seismic record, this area is characterized by microearthquakes activities, although macro-earthquakes may also occur such as those of Al-Udain earthquake (22 Nov.1991,  $M_b=4.6$  and 19 May 1992,  $M_b=4.5$ ). Based on these facts. This paper would outline the seismicity of the study area with reference to the prevailing rock formations and associated geological structures. The dominant rock unit is the Tertiary Yemen Volcanic that covers nearly 87% of the total area. Most of the earthquakes (844 events) were reported during the period between 1991 to 2014, with an average about 37 earthquake per year. Their magnitude range from 0.3 to 4.6, in which 18.5% have magnitude of more than 3. The focal depth of the reported earthquakes varies between 1 to 28 km. It is believed that the events are related to lithospheric deformations within the earth crust. The seismic activity in the study area may be classified as low to medium ( $M \leq 4.6$ ) and predominantly localized along the major fault trends in three regions: Al-Makhader-Al-Qafr, Hubaysh and Al-Udain.

**Key words:** Yemen, Ibb, Earthquakes, Epicenters, Yemen Tertiary Volcanics.

## SHORTCOMMUNICATION

### FOOD SCIENCES

#### **The loss of harvesting millet crop in Tihama plain, Al-Hudeida Govt. during the agricultural season 2008-2009**

**Abdulla Omer Ba-Khawar, Ali Abdulla Ba-Oam, Ahmed Omer Bukir and Mukhtar Abood Munsser**

Nutrition Researches and Post-Harvest Technology Center, the Public Authority for Researches and Agricultural Guidance

#### **Abstract**

This study was carried out during the period from Dec. 2008 to ... 2009, in Tihama plain, Zabeed, Al-Hudeida govt. at two sites ( Al-Soweiq a and Al-Tahita villages, on the crop of millet ( local item ), during the two stages of harvesting and post-harvest ( drass ).

The study revealed that the percentage of loss during harvesting and drass ( post-harvest ) of millet crop in Al- Soweiq a village has reached 6% and 7.6% respectively, and that of Al-Tahita village has reached 4.3% and 8.6% respectively; whereas the percentage of loss altogether for the both sites has reached 13.6% and 12.9% respectively.

This study has reflected the cost of loss of millet crop as 141,250,000 Y.R. for the harvesting stage and 178,950,000 Y.R. in Al-Soweiq a village, whereas that loss of Al-Tahita village during both stages ( harvesting and post-harvest ) was 101,250,000 Y.R. and 202,500,000 Y.R., respectively.

**Key words:** Loss of harvesting and post-harvest ( drass ), mellit, Tihama plain, Yemen.