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Cover Page, Introduction, Contents, Call for Papers, All papers in one file

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4	**Role of Sacred Plants in Religion and Health-care system of local people of Almora district of Uttarakhand State (India)** Vijay Sharma* and B. D. Joshi Department of Zoology and Environmental Sciences, Gurukula Kangri University, Haridwar-249404, Uttarakhand (India) * vijaysharma_mediplants@yahoo.com **Abstract:** Uttarakhand, the mountainous state of Indian Himalayan Region (IHR) is famous for its religious culture, traditions and pronounced as Dev Bhoomi (Land of Gods). People of this state are highly religious and variety of rituals related to God, Goddess worships are performed in various ways, round the year by the local people in which plants have their defined roles and importance. A preliminary survey was carried out to find the role of sacred plants in the lifestyle and health-care system of local people of Almora district of Uttarakhand State. It was observed that 19 plant species have high utility and importance in such religious activities as well as traditional healing system. These believes not only show the human relation with plant diversity but also help in conserving these species. [Academia Arena, 2010;2(6):19-22] (ISSN 1553-992X). **Key words:** Religious beliefs, Traditional culture, Sacred rituals, Healing system	Full Text
5	**Mathematical Theory On Evolution Of Universe** Manjunath. R. (Reader in physics) #16, 8th Main road, Shivanagar, Rajajinagar, Bangalore-560010, Karnataka, India **manjunathr1988@yahoo.in** **Abstract:-**Most of the theories like Big bang ,Steady state theory..... were proposed to explain the evolution of universe. The inherent goal of proposal of this theory is to explain the early evolution of universe to some extent through mathematical derived equations. The fundamental concepts like energy,time,temperature ,mass ..are incorparated to frame this mathematical theory to explain the formation of universe . The new mathematical model allows to calculate Poynting–Robertson force. It is shown that the equation for the calculation of Poynting–Robertson force accounts for the force exerted by incoming solar radiation,gravitational radius of sun and dust grain's orbital radius. The new mathematical model is putforward to calculate momentum of emitted hawking radiation. [Academia Arena, 2010;2(6):23-36] (ISSN 1553-992X). **Key words :** Energy ,time , mass speed of light in vacuum.	Full Text
6	**Standardization of Sterilization Protocol for Micropropagation of *Aconitum heterophyllum*- An Endangered Medicinal Herb** Nidhi Srivastava[1], Barkha Kamal[1], Vikas Sharma[1], Yogesh Kumar Negi[2], A.K. Dobriyal[3] Sanjay Gupta[1] & Vikash Singh Jadon[1] 1. Plant Molecular Biology Lab., Department of Biotechnology, Sardar Bhagwan Singh (P.G.) Institute of Biomedical Sciences & Research Balawala, Dehradun-248161, Uttarakhand, India 2. Department of Microbiology, Sardar Bhagwan Singh (P.G.) Institute of Biomedical Sciences & Research Balawala, Dehradun-248161, Uttarakhand, India 3. Department of Biotechnology, H.N.B.Garhwal University, Campus Pauri, Pauri Garhwal-246001, Uttarakhand, India. nidhi_srivastava27@rediffmail.com. jadon@rediffmail.com, **Abstract:** A protocol has been standardized for sterilization of nodal segments and seeds of *Aconitum heterophyllum* for its micropropagation intended for its mass propagation and conservation. Three sterilizing agents *viz.*, $HgCl_2$, NaOCl and H_2O_2 were tested for sterilization by varying their concentration and time of exposure. 100% healthy shoots were obtained when explants were sterilized with 0.1% $HgCl_2$ for 5 minutes, inoculated on MS basal media with appropriate hormones and observing them for 30 days, while at 7.5% concentration of H_2O_2, 5 minutes exposure provided 90% of aseptic seed germination. Results showed that out of three sterilizing agents $HgCl_2$ was significantly reducing the contamination of explants and H_2O_2 of seeds in *in-vitro*, which shows that requirement of sterilization may vary with the type tissue used for micropropagation. [Academia Arena, 2010;2(6):37-42] (ISSN 1553-992X). **Keywords***: Aconitum heterophyllum*, sterilization, micropropagation, conservation, contamination	Full Text

Leaching of Galena in Butanoic Acid

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Abstract: A model has been derived for predictive analysis of the concentration of dissolved lead during leaching of galena in butanoic acid solution. The model;

$$Pb = \text{Antilog}\ \exp(\gamma/\alpha)^{0.7407}\left[\left[\quad\right]\right]$$

shows that the concentration of dissolved lead during the leaching process is dependent on the values of the initial and final leaching solution pH. The validity of the model was found to be rooted in the expression $(LogPb)^N = e^{(\gamma/\alpha)}$ where both sides of the expression were correspondingly approximately almost equal. The maximum deviation of the model-predicted concentrations of dissolved lead from the corresponding experimental values is less than 7% which is quite within the acceptable deviation limit of experimental results. [Academia Arena, 2010;2(6):54-61] (ISSN 1553-992X).

Key words: Model, Lead Dissolution, Solution pH, Butanoic Acid, Galena Leaching

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Standardization of Sterilization Protocol for Micropropagation of *Aconitum heterophyllum*- An Endangered Medicinal Herb

Full Text

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Abstract: A protocol has been standardized for sterilization of nodal segments and seeds of *Aconitum heterophyllum* for its micropropagation intended for its mass propagation and conservation. Three sterilizing agents *viz.*, $HgCl_2$, NaOCl and H_2O_2 were tested for sterilization by varying their concentration and time of exposure. 100% healthy shoots were obtained when explants were sterilized with 0.1% $HgCl_2$ for 5 minutes, inoculated on MS basal media with appropriate hormones and observing them for 30 days, while at 7.5% concentration of H_2O_2, 5 minutes exposure provided 90% of aseptic seed germination. Results showed that out of three sterilizing agents $HgCl_2$ was significantly reducing the contamination of explants and H_2O_2 of seeds in *in-vitro*, which shows that requirement of sterilization, may vary with the type tissue used for micropropagation. [Academia Arena, 2010;2(6):62-66] (ISSN 1553-992X).

Keywords*: Aconitum heterophyllum*, sterilization, micropropagation, conservation, contamination

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Effect of Melting Temperature of Pb-Sb-Cu Alloy on Its Electrical Resistivity and Power Dissipation Capacity

Full Text

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Abstract: The effect of melting temperature of sand cast Pb-Sb-Cu alloy (designated for production of battery heads and plates) on its electrical resistivity and power dissipation capacity was studied following determination of the electrical properties of the alloys (cast using three different techniques; Technique A, Technique B, Technique C and cooled in the furnace) and then heating of the alloy until melting occurred. Technique A, involves simultaneous addition of Cu powder and pouring of the molten Pb-Sb into the mould. Techniques B, involves addition of Cu powder intermittently as pouring of Pb-Sb into the mould was going on and Technique C involves pouring a stirred mixture of heated Pb-Sb alloy and powdered Cu into the mould. The results of the investigation indicate that the current flow, power dissipation and electrical conductivity increases with increase

	in the melting temperature of the Pb-Sb-Cu alloy. It was also found that the electrical resistance and resistivity of the alloy decrease with increase in the melting temperature. This is sequel to the fact that the minimum additional energy (energy gap) which a bonding electron must acquire to leave the bond in the valence band and move into the conduction band hence becoming free to conduct electricity, decreases with decrease in the electrical resistance, resistivity and with increasing temperature. Increased copper addition (up to a maximum of 8.26%) to the base alloy (Pb-Sb) was discovered to have increased correspondingly the current flow, power dissipation, electrical conductivity and decreased correspondingly the electrical resistance and resistivity of Pb-Sb-Cu alloy so produced. This is attributed to the increased melting temperature of the alloy as a result of increased impurity atoms in the alloys in the form of copper. [Academia Arena, 2010;2(6):67-71] (ISSN 1553-992X). **Keywords:** Effect, Melting Temperature, Electrical Resistivity, Power Dissipation, Pb-Sb-Cu Alloy	
12	Evaluation Of The Distrbutive Trade Channels For Selected Food Staples In Imo State, Nigeria. Oguoma, N.N.O. Department of Agricultural Economics, Federal University of Technology, Owerri, P.M.B 1526, Owerri, Imo State, Nigeria. e–mail: nnooguoma@yahoo.com **ABSTRACT:** This study analyzed the efficiency of the distributive trade channels for Cassava, Maize and Yam in Imo State, Nigeria. It aimed specifically to identify the types of markets for these staples, the category of channel members, their relative efficiency and the factors influencing their relative efficiency. Survey conducted, following the use of the multistage sampling technique, identified a decentralized market for cassava and maize with the dominance of "freelance" retailers followed by the wholesalers and, then, the cooperative retailers ,in that order, as the channel members. The centralized market type was identified for yam, with a predominant north – south flow. Despite the relatively small volume of trade executed by the cooperative retailers, they were found to be relatively more efficient in the channel management of these staples. The factors that influenced the efficiencies of the channel members were the volume of sales and the volume of losses incurred by each category in transaction, cost of capital, type of channel member, cost of transportation and storage. It was recommended, among others that, for these staples, renewed emphasis should be placed on the activities of such group-based channels as the cooperative retailers in order to reduce the level of losses occurring along the channels as well as reverse the trend towards food insecurity staring the economy in the face. [Academia Arena, 2010;2(6):72-79] (ISSN 1553-992X). **KEY WORDS:** Evaluation; Efficiency; Distributive Trade Channels; Selected Food Staples; Imo State; Nigeria	Full Text
13	***In vitro* Antimicrobial activity of water extract of *Moringa oleifera* leaf stalk on bacteria normally implicated in eye diseases** Thilza I.B.[1], Sanni S.[2], Zakari Adamu Isah[3], F.S. Sanni[4], Muhammed Talle[5], Musa Bamaiyi Joseph[5] 1. Department of Veterinary Medicine, University of Maiduguri, p.m.b 1069, Borno state, Nigeria. 2. Department of Veterinary Pharmacology, University of Abuja, Gwagwalada, Abuja, Nigeria. 3. Department of Veterinary Pharmacology, University of Maiduguri, p.m.b 1069, Borno state, Nigeria. 4. Department of Biochemistry, University of Maiduguri, p.m.b 1069, Borno state, Nigeria. 5. WHO National Polio Laboratory University of Maiduguri Teaching Hospital. thilzathilzathilza@yahoo.com **Abstract:** The *in vitro* antibacterial activity of the water extract of *Moringa oleifera* leaf stalk extract was conducted. Paper disc diffusion method was used to assess the effect of the extract on *Pseudomonas aerogenosa, Staphylococcus albus, Staphylococcus aureus, Escherichia coli, Staphylococcus pyogenus* and *Enterobacter aerogenes*. At dilution of 1000mg/ml, 700mg/ml, 400mg/ml and 200mg/ml only mild activity against *Escherichia coli* and *Enterobacter aerogenes* was noticed. *Pseudomonas aerogenosa, Staphylococcus albus, Staphylococcus aureus* and, *Staphylococcus pyogenus* was resistant at these concentrations. The highest activity was produced by *Escherichia coli* at 1000mg/l which comparably is less than that of the standard drug tetracycline (250mg/ml). in conclusion, this study has shown that the water extract of *Moringa oleifera* posses some degree of antimicrobial activity especially at high dose. [Academia Arena, 2010;2(6):80-82] (ISSN 1553-992X). **Keywords:** *In vitro;* Antimicrobial activity; *Moringa oleifera;* diseases	Full Text
14	***In-vitro* antibacterial activity of *Allium humile*** Himanshu Agarwal[1], Shashi Ranjan[1], Garima Kishore[1], JP Bhatt[2], Sanjay Gupta[1] 1. Department of Biotechnology, Sardar Bhagwan Singh (P.G) Institute of Biomedical Sciences & Research, Balawala, Dehradun, Uttarakhand, Pin- 248161, India, 2. Department of Zoology & Biotechnology, HNB Garhwal University, Srinagar, Uttarakhand, India	Full Text

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Abstract: This review aims to obtain the preliminary information regarding the inhibitory effects of the extracts of *Allium humile* on the test strains *B. subtilis, S. aureus, E. coli* and *P. aerugenosa*. The anti-bacterial activities of five solvent extracts viz. n-Hexane, Chloroform, Ethyl acetate, Methanol and Aqueous fractions of *Allium humile* were evaluated using disc diffusion technique. The extracts and fractions demonstrated significant anti-bacterial activity. Extract from Chloroform was the most potent against all the test organisms with the largest diameter of zone of inhibition. n-Hexane also showed considerable zone of inhibition. Ethyl acetate, Methanol and Aqueous fractions also exhibit slight inhibitory effects on both the gram-positive and gram negative test strains. [Academia Arena, 2010;2(6):83-86] (ISSN 1553-992X).
Keywords: *Allium humile*, Antibacterial, Zone of inhibition, chloroform extract, Inhibitory effect

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The effect of aqueous leaves extract of henna (*Lawsonia inermis*) in carbon tetrachloride induced hepato-toxicity in swiss albino mice

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ABSTRACT: The hepato-protective effect of aqueous leave extract of *Lawsonia inermis* on Carbon tetrachloride induced liver damage in swiss albino mice was investigated by measuring the serum of Alanine aminotransferase (ALAT) and Aspartate aminotransferase (ASAT). Groups A and F were administered carbon tetrachloride and distilled water respectively. Groups B and C were administered the extract at 100mg/kg and 150mg/kg body weight respectively for seven days prior to carbon tetrachloride treatment, while groups D and E were administered extract alone at 100mg/kg and 150 mg/kg body weight respectively. The extract significantly ($P \leq 0.05$) decreased the serum levels of ASAT and ALAT, even though not dose dependant. The results suggest that aqueous leave extracts of *Lawsonia inermis* has hepato-protective effects at appropriate dosage. [Academia Arena, 2010;2(6):87-89] (ISSN 1553-992X).
KEYWORDS: Hepato-protective, *Lawsonia inermis*, Carbon tetrachloride, Alanine aminotransferase (ALAT), Aspartate aminotransferase (ASAT).

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Factors Influencing the Use of Fertilizer in Arable Crop Production Among Smallholder Farmers In Owerri Agricultural Zone of Imo State

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Abstract: The study evaluated the factors influencing the use of fertilizer in arable crop production among smallholder farmers in Owerri Agricultural Zone of Imo State. The objectives determined factors influencing the use of fertilizer in arable crop production among smallholder farmers, and determined socio-economic characteristics of smallholder arable crop production farmers in the study area. A multistage random sampling technique was adopted in selecting six Local Government Areas (LGAs), two community from each selected LGA, two villages from each selected communities and five farmers from each selected village. Data were collected with the aid of a well-structured questionnaire from one hundred and twelve farmers. Data were analyzed using frequency distribution, and logistic regression analysis. Results of the analysis showed that output of crop, level of education, farm size and price of fertilizer were important factors influencing farmers' use of fertilizer in arable crop production while gender, age and household size were not. The result further showed that the average age of the farmers were 54.3years, 52.7% of them were males. The farmers spent about 8.5years in school and 20.6 years was their average farming experience. They have an average farm size of 1.3ha and household size of 7persons. The number of extension contact per month was twice. [Academia Arena 2010;2(6):90-96]. (ISSN 1553-992X).
Key words: Fertilizer use, arable crops , smallholder farmers, Nigeria