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Tel: +91 9533 42 1234

Prof. Dr. Ratnakar D Bala
CEO & Director (Academics)
IMRF Institute for Research & Education



Dear Associates

Welcome to each and every one of you congregated for the prestigious IMRF's 135th International Gathering - Proceedings of the International Conference on Multidisciplinary Academic Research Cambodia 2019 hosted at Build Bright University Siem Reap, Cambodia organized by IMRF Institute of Higher Education & Research - Cambodia Chapter which is considered to be one of the premier events for the distinguished academic and research cult.

We know that an academic conference is a symposium for inventive academicians and imaginative researchers to give academics an opportunity to present their academic works, concepts and new discoveries and to exchange their ideas and develop their works and also to share ideas in presenting for development in the new research and topics and so forth. Together with academic or scientific journals, conferences plausibly provide a central channel for exchange of information among earnest researchers.

IMRF with its Academic Chapters in many Countries, since inception, has a great academic, research and social priorities to promote the spirit of values and orientations in multidisciplinary research functions of education by working out in dexterity required by the integrity of a sophisticated social world order duly transmitting central heritage with scientific bent of mind forming socialization process in respect of reformation of attitudes to confer a serene status for a rational being called man on this civilized planet, of course, from the threshold of Ratna Prasad Multidisciplinary Research and Educational Society.

IMRF with its collaborative organizations, has left no stone unturned for the accomplishment of its vision and mission catering its influential services in the academic and research disciplines comprising the streams of Human Rights, Social Sciences, Arts and Education, English Studies, Business Sciences, Engineering Sciences, Mathematical Sciences, Life Sciences, organizing International Conferences humbly witnessing the virtuous presence and innovative presentations of investigating pioneers, potential leaders, promising researchers, intellectual academicians, working faculty, industry magnates, advanced educationists, eminent scientists, rational thinkers, earnest scholars and superior students with their bonafide work of discovery from as many as 50 and more countries in the world (with their recurring presence) including home towards showcasing their professional performance with excellent communication skills based on their accumulated experience in the fields concerned successfully.

Globalization is a fact. Its internalization process integrates multidisciplinary fields to embark on an adventure in the realm of academics and research. As such, this conference by International Multidisciplinary Research Foundation (IMRF). I am pleased to unveil the fact that this Copy of Proceedings marked with ISBN No 978-93-86435-75-0 presents an educative network of research with strength of quality, originality and contribution to knowledge of significant fields of multidisciplinary realms duly identified by the solemn research portals and academic destinations in the world.

While presenting you with this sonata of latest academics and research findings, I humbly place on record my loyal acknowledgement of sincere appreciation, due recognition and heart-felt thanks to all intellectual paper presenters, article contributors, members on the esteemed Editorial Board, centres of higher learning in collaboration with IMRF, foreign-national delegates, erudite plenary speakers, scholarly participants and all those who are directly or indirectly in conformity with this IMRF conferences from home and abroad for their righteous everlasting support in one and all aspects and my sincere thanks to Build Bright University Siem Reap, Cambodia for their ever dynamic support and cooperation. Gratitude is attitude!

With effusive thanks,

Dr. Ratnakar D. Bala
Conference Chairman

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CEO & Director (Academics)
International Multidisciplinary Research Foundation

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Faculty of Management Sciences
Mae Fah Luang University, Thailand

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Rajapark Institute, Bangkok ,Thailand

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Madurai Kamaraj University, Madurai,India

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SCIECNES

REMARKS ON MULTIFACETEDNESS OF NANO TOPOLOGY

DR. M. LELLIS THIVAGAR

Abstract: General Topology is vast and has many different ramifications and interactions with other fields of Mathematics and Science. Topology based methods are of increasing importance in the analysis and visualization of all types of field data. Nano topology is one of the latest feathers in topology that applies to real life situations. Lellis Thivagar introduced and established a new topology namely “Nano topology” in 2012. The word “Nano” comes from the Greek word ‘nanos’ which means ‘dwarf’, in its modern scientific sense, an order of magnitude - one billionth of something. When used in the context of modern discussions, the word nano - is prefixed to unit of length or meter, referring to structures and processes occurring on a nanometer scale. But certain nano-terms are satisfied simply to mean “very small”. For example “Nano-car”. Here the topology is named as Nano topology, because of its size namely, whatever may be the size of universe it should have atmost five elements only. The elements of Nano topology are called the Nano open sets. Equivalence relation plays a vital role in Nano topology, which made us a thirst to look after equivalence relations in various topics such as multi granular nano topology, groups, rings and graphs. This paves way to define Nano topology on universes namely multi granular topology groups, graphs and rings. I hope the intrinsic beauty of these new concepts will induce wider real life applications of Nano topology in different branches of Sciences and Humanities.

Dr. M. Lellis Thivagar
Professor & Head, School of Mathematics,
Madurai Kamaraj University, Madurai, Tamilnadu, India
Email: mlthivagar@yahoo.co.in

VIBRANT APPLICATIONS OF CONTEMPORARY DIFFERENT PARAMETERS OF GRPHS IN SCINECE AND TECHNOLOGY

DR. G. MAHADEVAN

Abstract: Our various real life problems can be solved with the help of graph theory especially domination theory. For this, we have to convert the reality into graph model. With the help of the existing algorithm or new algorithm, we can solve it and interpret it with our real life problem. A subset S of V is called a dominating set of G if every vertex in $V - S$ is adjacent to at least one vertex in S . The domination number $\gamma(G)$ of G is the minimum cardinality taken over all minimal dominating sets in G . Plenty of new concepts with applications were invented by imposing conditions on the dominating set and/or its complement and there by produce excellent new domination parameters with fantastic application. Recently the concept of triple connected domination number of a graph was introduced by G.Mahadevan et.al.,...Moreover, the authors introduced plenty of variety of different types of triple connected related domination parameters with applications of science and technology, In this talk, I focus many real life models with special reference to networks and elaborate how the various concept of triple connected domination parameters of graphs plays an vibrant role in Science and Technology.

Dr. G. Mahadevan
Department of Mathematics,
The Gandhigram Rural Institute, Deemed to be University, Gandhigram
Email: drgmaha2014@gmail.com

SOLUTIONS AND APPLICATIONS OF GENERALIZED DIFFERENCE EQUATIONS IN GENETICS

V. CHANDRASEKAR

Abstract: In this talk, we define the generalized difference equations and obtain some relations between difference operator and shift operator, Leibnitz theorem, Monotone's theorem and Taylor's theorem respectively. Also we define the solutions of generalized difference equations and derive in any population in which random mating takes place with respect to characteristics after some generation in the field of genetics.

Keywords: Hybrid, Recessive, Dominant.

V. Chandrasekar
Assistant Professor and Head,
Thiruvalluvar University College of Arts and Science,
Thennangur, Vandavasi, Tamil Nadu, India
E-mail: drchanmaths@gmail.com

EXCELLENT ROLE OF GRAPHS IN DIGITAL INDIA

DR. G. MAHADEVAN

Abstract: In this Digital era, with the help of Mathematics, especially Graph Theory, many things of our real life problems will be converted in to graph model. Using existing algorithm or new algorithm, we can solve it and interpret it with our real life problem. Recently, the theory of domination plays an vital role as far as application side is concerned. The solutions of many real life problems are noting but finding various domination number of the corresponding graph of the real life situation. A subset S of V is called a dominating set of G if every vertex in $V-S$ is adjacent to at least one vertex in S . The domination number $\gamma(G)$ of G is the minimum cardinality taken over all minimal dominating sets in G . Nowadays new concepts with applications were invented by imposing conditions on the dominating set and / or its complement and there by produce many new domination parameters with fantastic application.

In this talk, I it is proposed to explain the situation and the solutions of many problems in our Digital era using graphs.

Dr. G. Mahadevan
Department of Mathematics,
The Gandhigram Rural Institute, Deemed to be University, Gandhigram
Email: drgmahaz014@gmail.com

ENERGY EFFICIENCY FOR WIRELESS SENSOR NETWORKS

DR. P.J.A. ALPHONSE

Abstract: Computers, communication, and sensing technologies are converging to change the way we live. Wireless Sensor Networks (WSNs) can be defined as a self-configured and infrastructure-less wireless networks to monitor physical or environmental conditions, such as temperature, sound, vibration, pressure, motion or pollutants and to cooperatively pass their data through the network to a main location or sink where the data can be observed and analysed. A sink or base station acts like an interface between users and the network. These networks are based on collaborative efforts of a large number of sensor nodes. These nodes have the capabilities of sensing, data processing, and communicating. Special consideration is needed in the design of protocols in terms of characteristics like large number of nodes, their failure rate, **limited power**, high density, etc. In this talk the impact of wireless sensor networks will be addressed, several of the design and communication issues will be discussed. It will mainly focus on the area of energy efficiency of WSN using clustering techniques. The talk will also focus on 2D and 3D WSN energy efficiency schemes and a case study of energy efficiency in underwater wireless sensor networks will be given.

Dr. P.J.A. Alphonse
Professor, Dept. of Computer Applications,
National Institute of Technology, Tiruchirappalli

SHEAR WAVE PROPAGATION IN AN INITIALLY STRESSED SANDY MEDIUM UNDER COUPLE STRESS

L. ANITHA, S. SELVI

Abstract: The propagation of shear waves in an initially stressed sandy medium under the effect of couple stress has been studied. The frequency equation for the problem has been attained to determine the shear wave velocity using linear inhomogeneties. The numerical computation have been performed for distinct values of sandiness parameter.

L. Anitha

Department of Mathematics, Nandha Arts and Science College,

Erode, Tamil Nadu, India

Email: anitha1729@yahoo.co.in

S. Selvi

Department of Mathematics, Bannari Amman Institute of Technology,

Sathyamangalam, Tamil Nadu, India

Email: selvi@bitsathy.ac.in

GENERALIZATION OF NANO OPEN SETS AND ITS APPLICATIONS

DR. A. VADIVEL

Abstract: In 2013, a new topology called Nano Topology was introduced by Lellis Thivagar which is an extension of rough set theory and also he introduced Nano Topological Spaces which was defined in terms of approximations and boundary region of a subset of a universe using an equivalence relation on it. The elements of nano topological space are called the nano open sets and its complements are called the nano closed sets. Nano means something very small. Nano Topology thus literally means the study of very small surface. The fundamental ideals in Nano Topology are those of approximations and indiscernibility relation. The topology introduced here is named so because of its size, since it has atmost five elements in it. In 1970, Levine introduced generalized closed sets in topological space in order to extend many of the important properties of closed sets to a larger family. The notion of M-open sets in topological spaces were introduced by El-Maghrabi and Al-Juhani in the year 2011. By these motivations, we present the concept of nano M-open sets and study their properties and applications in nano topological spaces.

Dr. A. Vadivel
Assistant Professor, Department of Mathematics,
Govt. Arts College(A), Karur-5
Deputed from Annamalai University, Annamalai Nagar

GENERALIZED NANO CONTINUOUS MAPS AND ITS APPLICATIONS

DR. P. MURUGADAS

Abstract: Topology has been firmly established as one of the basic disciplines of pure mathematics. Its ideas and methods have transformed large parts of geometry and analysis almost beyond recognitions. Open and closed sets are the most fundamental concepts of study in general topological spaces. The notion of continuity is one of the most important concepts in Mathematics. Several authors working in the field of general topology have shown more interest in studying the properties of generalizations of continuous and closed maps. In 1991, Balachandran et. al introduced generalized continuous maps in topological spaces and proved that the class of generalized continuous maps includes the class of continuous maps. Lellis Thivagar and Carmel Richard introduced nano continuous and irresolute maps in nano topological spaces in the year 2013. El-Maghrabi and Al-Juhani in 2011 introduced the notion of M-open sets and M-continuity in topology. By these motivations, we present the concept of nano M generalized closed sets, nano M generalized continuous maps and nano M generalized irresolute maps in nano topological spaces. Also, several characteristics and applications related to it are investigated.

Dr. P. Murugadas
Assistant Professor, Department of Mathematics,
Govt. Arts College(A), Karur-5
Deputed from Annamalai University, Annamalai Nagar

HETEROGENEOUS TWO SERVER QUEUE WITH UNRELIABLE AND RELIABLE SERVERS

KALYANARAMAN. R

Abstract: In this paper we consider a two heterogeneous server Markovian queue. In which the second server is an unreliable server, that is, during service the server may break down. But, immediately repair has been carried out. The model has been solved in steady state. Some performance measures and numerical results are obtained.

Kalyanaraman. R
Department of Mathematics, Annamalai University
Annamalai Nagar, Tamilnadu, India
Email: r.kalyan24@rediff.com

QUEUEING MODEL WITH HETEROGENEOUS AND UNRELIABLE SERVER

M. SEENIVASAN, K.S. SUBASRI

Abstract: We consider two server queueing model. The service time at both the servers follows exponential distribution. First server is always available and the second server is intermittently available. Catastrophe occurs according to exponential distribution. Second server may be breakdown. The breakdown is also exponential. This type of queueing model is analyzed in the steady state using Matrix Geometric Method. From this model, we compute the probability vectors.

Keywords: Catastrophe, Heterogeneous server, Intermittently Server, Poison distribution, Server Breakdown, Matrix-Geometric Method.

AMS Subject Classification Number: 60K25, 60K30, 90B22.

M. Seenivasan

Department of Mathematics, Annamalai University, Annamalainagar

Email:emseeni@yahoo.com

K.S. Subasri

Department of Mathematics, Annamalai University, Annamalainagar

AUTOMATED WEED REMOVAL USING IMAGE PROCESSING AND IOT TECHNIQUES

PROF. A.SENTHIL RAJAN

Abstract: Weeds is a widely procedure to be remove in agriculture field. It is a process to remove the unwanted plants in and around the agriculture field. The weed will affect the plants and trees growth. The weed also takes all the nutrients in the soil and water content. Detecting the harmful weeds and eradicate the weed is the challenging task for farmers. Weed removal in the agriculture filed requires more man power and leads to more expansive in terms of cost. To achieve this, an effective weed removal automated machine using the image processing techniques and IOT is proposed.

Keywords: Weed, Agriculture, Plants, Digital Image Processing.

Prof. A.Senthil Rajan
Director, MIS , Alagappa University, Karaikudi, Tamilnadu, India
Email: directorccalu@gmail.com

**EQUIVALENCE OF CHOICEAXIOM,
ZORN'S LEMMA AND ZERMELO'S THEOREM ON FS-SETS- A STUDY**

VADDIPARTHI YOGESWARA

Abstract: This paper is an attempt to extend the famous statements choice axiom, zorn's lemma and zermelo's theorem on crisp set theory to Fs-set Theory.

Keywords: Fs-set, Fs-subset, choice axiom, zorn's lemma and zermelo's theorem on Fs-sets

Vaddiparthi Yogeswara
Associate Professor Dept. of Mathematics, GIT,
GITAM Deemed to be University, Visakhapatnam, A.P, India
Email: vaddiparthyy@gmail.com

**PHYTOCHEMICAL PROPERTIES, ANTIMICROBIAL
& ANTIOXIDANT ACTIVITIES OF THE ETHANOLIC EXTRACT OF
AKAPULKO (*SENNA ALATA* (L.) ROXB.) LEAVES AND THE EVALUATION OF ITS
BIOACTIVE COMPOUNDS USING GC-MS ANALYSIS**

**JHANIFA M. DIBAGULUN, MUHMIN MICHAEL E. MANTING,
MARK ANTHONY J. TORRES, MARK LLOYD G. DAPAR, AGNES T. ARANAS,
ROLAND ANTHONY R. MINDO, CLINT CABRIDO, CESAR G. DEMAYO**

Abstract: Medicinal plants have been part of human existence because of their ability to treat various diseases. Akapulko (*Senna alata* (L.) Roxb.) is one of such plants containing biomolecules that can be used to cure some diseases. The current investigation aimed at the detection or screening of active phytochemical compounds from the leaf ethanolic extract of *Senna alata* L. with the different tests. Phytochemical screening revealed the presence of alkaloids, anthraquinones, flavonoids, cyanogenic glycoside, saponins, steroids, and tannins, which can account for its various biological processes such as antioxidant, antimicrobial, anti-inflammatory, etc. The leaf ethanolic extract of the plant was used to analyze its antioxidant activity using DPPH scavenging effect. The sample showed that *Senna alata* is an excellent potential source of antioxidant having lower IC₅₀. The sample also showed antimicrobial activity against the selected test microorganisms: *S. typhimurium*, *K. pneumoniae*, *S. aureus*, *B. subtilis* and *C. albicans* except *A. niger* using agar well method. The 30 bioactive compounds were identified using Gas Chromatography-Mass Spectrometry (GC-MS) Analysis by direct comparison of the mass spectrum of analytes at particular retention times to the reference standard present in National Institute of Standards and Technology (NIST) Library in which most of them revealed antioxidant, antimicrobial and other medicinal properties of the plant.

Keywords: Phytochemical, Antimicrobial, Antioxidant, Bioactive, Medicinal.

Jhanifa M. Dibagulun
Department of Biological Sciences, College of Science and Mathematics,
MSU-Iligan Institute of Technology, Iligan City, Philippines
Muhmin Michael E. Manting
Department of Biological Sciences, College of Science and Mathematics,
MSU-Iligan Institute of Technology, Iligan City, Philippines
Mark Anthony J. Torres
Department of Biological Sciences, College of Science and Mathematics,
MSU-Iligan Institute of Technology, Iligan City, Philippines
Mark Lloyd G. Dapar
The Graduate School and Thomas Aquinas Research Complex,
University of Santo Tomas, España, Manila, Philippines
Agnes T. Aranas
Chemistry Department, Ateneo de Davao University, Roxas Avenue, Davao City
Roland Anthony R. Mindo
Chemistry Department, Ateneo de Davao University, Roxas Avenue, Davao City
Clint Cabrido
Chemistry Department, Ateneo de Davao University, Roxas Avenue, Davao City
Cesar G. Demayo
Department of Biological Sciences, College of Science and Mathematics,
MSU-Iligan Institute of Technology, Iligan City, Philippines
Email: cgdemayo@gmail.com

NUTRIENT COMPOSITION AND SUGARS EFFECTS ON SALMONELLA CLINICAL ISOLATES BIOFILM FORMATION

BOIMPOUNDI EUNICE FLAVIE OUALI, HAO-VEN WANG

Abstract: Biofilm is an important factor used by *Salmonella* to survive environmental stress conditions conferring resistance to antimicrobial and chemical treatments. The aim of this work was to investigate the ability of *Salmonella* clinical isolates to form biofilm *in vitro* in various culture media and assess the importance of sugars in the process. A microplate-based crystal violet staining method was used to quantify biofilm formed by the isolates and the results showed that the blood isolate B2 was the single strain that formed strong biofilm with an optical density of about 0.5 and 0.6 respectively in M9 and EAO medium. Moreover, B2 biofilm formation was dependent on environment richness, glucose and salts concentration in M9 medium. In the current situation of estimated million cases of new infection annually, combined pathogenicity studies to outbreaks survey with a focus on biofilm formation are crucial for clinical decision making and disease management.

Keywords: *Salmonella*, Clinical Isolates, Biofilm Formation, Virulence Factors.

Boimpoundi Eunice Flavie Ouali

Department of Life Sciences, College of Biosciences and Biotechnology,
National Cheng Kung University, Tainan, Taiwan (R.O.C)

Hao-Ven Wang

Department of Life Sciences, College of Biosciences and Biotechnology,
National Cheng Kung University, Tainan, Taiwan (R.O.C)

CURRENT STATUS AND FUTURE SCENARIO OF BIOTECHNOLOGY CROPS

DR. REDDY, P.B

Abstract: Food security, malnutrition and climate change are major burning global problems today .We cannot make a happy world on bare stomachs. In the present situation we are going to face a massive mission of feeding a mounting populace projected to reach 9.7 billion by 2050. The challenge of feeding the nourishing food to skyrocketing populace will be even more severe for developing nations including India.

To solve the above issues, I feel that modern biotechnological approaches such as genome editing, molecular breeding and genetic engineering will be useful to contribute towards achieving food and nutrition security. Biotech crops have reduced the amount of insecticides and pesticides used by 620 million kilograms. It reduced carbon dioxide emissions by 26.7 billion kilograms, which is equivalent to taking 11.9 million cars off the road for a year. Biotech crops helped lessen poverty by helping 18 million small farmers and their families, totaling 65 million people. A recent report reveal that 26 countries (19 are developing and 7) are developed nations established a biotech crops with a global increase of 3% from 179.7 million hectares to 185.1 million hectares, which is equal to 5.4 million hectares. The study also reports that the global economic benefit 15.4 billion US\$ (7.5 billion US\$ was from developing and 7.9 billion US\$ was from industrial countries) in 2015.

However, rivals raise concern over the ecological impacts of such crops and the patent conditions for small farmers. This concern has directed to the farming of GMOs being banned in more than 30 regions. However, strong politicization from organizations against GMOs has created a negative public perspective that even science is having a hard time to break through. For scientists, GMOs are not the only solution for food security but they are an important one for environment conservation. This review paper will discuss about an updated pros and cons on socio economic, environmental and health benefits of modern biotech crops in food security.

Keywords: GM Crops, Food Security, Environment, Public Concerns.

Dr. Reddy, P.B

Department of Zoology, Government PG Arts and Science College, Ratlam (M.P), India

Email: reddysirr@gmail.com

STUDIES ON THE PHYSICO-CHEMICAL PROPERTIES OF *APIS MELLIFERA* (L.) HONEY FROM MAJOR BEE FLORA

POONAM SRIVASTAVA, NIVEDITA KRISHNA, M.S. KHAN

Abstract: A comparative study was conducted among the *Apis mellifera* (L.) honey samples which were collected from different bee flora for evaluating the physico-chemical uniqueness of honey from four different monofloral Indian honey that are Mustard (*Brassica* spp.), Litchi (*Litchi chinensis*), Coriander (*Coriander sativum*) and Berseem (*Trifolium alexandrinum*) at G.B.Pant University of Agriculture & Technology Pantnagar. The honey parameters, such as the pH, Moisture content, EC, Total dissolved solids, Color as well as the sugar content were measured. The results revealed that the Mustard honey has significantly higher moisture content (19.56%) while Litchi honey has highest EC (0.58 mS/cm) and Total reducing sugar (68.59%). However, Berseem honey has the highest total acidity (47.40 meq/kg) and Diastase activity (25.86 DN). The colour of different floral honey varies from extra white to amber i.e. Pfund value ranges from 9-114mm. The mean content of Minerals was highest in Mustard honey with Ca:8.54, Fe:2.67ppm, while in Litchi honey Mn:2.68, Mg:263, Ni:0.81ppm, whereas in Coriander honey Zn:1.10 and Cu:0.30ppm, likewise, highest content of Cr:0.50ppm was observed in Berseem honey. The results concluded that all the four varieties of honey which were analyzed follow the criteria of the European commission Regulation as well as the codex standard which proves that the quality of honey is high.

Keywords: Physico-Chemical Characteristics, *Apis Mellifera* (L.), Honey, Bee Flora.

Poonam Srivastava

Department of Entomology, College of Agriculture,
G.B. Pant University of Agriculture and Technology, Pantnagar, U.S. Nagar, India
Nivedita Krishna

Department of Entomology, College of Agriculture,
G.B. Pant University of Agriculture and Technology, Pantnagar, U.S. Nagar, India
M.S. Khan

Department of Entomology, College of Agriculture,
G.B. Pant University of Agriculture and Technology, Pantnagar, U.S. Nagar, India

**A STUDY ON THE GROWTH PATTERNS OF CHILDREN ATTENDING
ANGANWADI, IN ELURU, WEST GODAWARI DISTRICT. AP. INDIA.**

DR. P. JYOTHI KUMARI

Abstract: Prevalance of Malnutrition in India is found to be greater then 43% among children. Intergenerated poverty and poor Nutrition are the root cause of malnutrition in our country as there is an increased population. Childhood is the age (1-5yrs) was found to be crutial for physical and cognitive development that controls the future life of children. Hence it is the responsibility of not only the parents but also community and Government should take an active role in preventing malnutrition.

Dr. P. Jyothi Kumari
Department of Nutrition and Dietetics
CH.S.D.St. Theresa's College for Women, Eluru
Email: jyothikommini2012@gmail.com

BALANCED DIET- A HEALTHY WAY FOR YOU

DR. M. PADMAJA ,SR. SUNILA RANI. P

Abstract: To live one must eat. But, we not only eat to live, what we eat also affects our ability to keep healthy, do work, to be happy and to live well. Knowledge of what to eat and in what quantities is a prerequisite to the healthy and happy life. Good nutrition requires a satisfactory diet, which is capable of supporting the individual consuming it, in a state of good health by providing the desired nutrients in required amounts. It must provide the right amount of fuel to execute normal physical activity. If the total amount of nutrients provided in the diet is insufficient, a state of under nutrition will develop. Nutrition is one key to developing and maintaining a state of health that is optimal for you. In addition, a poor diet coupled with a sedentary lifestyle is known to be risk factors for life- threatening chronic diseases and death: Heart disease, Stroke, Hypertension, Diabetes and some forms of Cancer. The major health problems are largely caused by excessive energy intake and not enough physical activity. Proper Nutrition is the basis for optimum health. Proper Nutrition is the basis for optimum health and well being. Modern medicine focuses on treating a symptom rather than the root cause. Food not only provides the energy needed to function in our daily lives but constantly supplies the nutrients which are required to build and regenerate body tissue, bone, muscle, fat and blood. The nutrients in food are also necessary to produce substances for the chemical processes that take place in our bodies millions of times a day.

Keywords: Balanced Diet, Nutrition, Energy, Deficiency Disease.

Dr. M. Padmaja,
Assistant Professor, Department of Home Science,
Ch. S. D. St. Theresa's College for Women (Autonomous), Eluru, Andhra Pradesh, India
Email: padmajaprasad93@gmail.com
Sr.Sunila Rani. P
Ch. S. D. St. Theresa's College for Women (Autonomous), Eluru, Andhra Pradesh, India

NEW ANALYTICAL METHOD DEVELOPMENT AND VALIDATION FOR SIMULTANEOUS ESTIMATION OF ALOGLIPTIN AND METFORMIN BY RP-HPLC METHOD IN BULK AND SOLID DOSAGE FORMS

K.NAGARAJU, V. NAGALAKSHMI, G.SRINIVAS RAO

Abstract: A new, simple, precise, accurate and reproducible RP-HPLC method for Simultaneous estimation of bulk and pharmaceutical formulations. Separation of Alogliptin and Metformin hydrochloride was successfully achieved ODS C₁₈ (4.6×250mm, 5µm, Hypersil) or equivalent in an isocratic mode utilizing Acetonitrile :water : Methanol (70:20:10) v/v at a flow rate of 0.8ml/min and elute was monitored at 278nm, with a retention time of 1.336 and 2.186 minutes for Metformin and Alogliptin respectively. The method was validated and their response was found to be linear in the drug concentration range of 1µg/ml to 5µg/ml for Metformin and 1µg/ml to 5µg/ml for Alogliptin. The values of the correlation coefficient were found to be 0.986 for Metformin hydrochloride and 0.967 for Alogliptin respectively. The LOD and LOQ for Metformin hydrochloride were found to be 0.174 and 0.527 respectively. The LOD and LOQ for Alogliptin were found to be 0.120 and 0.3099 respectively. This method was found to be good percentage recovery for were found to be 99 and 100 respectively indicates that the proposed method is highly accurate. The specificity of the method shows good correlation between retention times of standard with the sample so, the method specifically determines the analyte in the sample without interference from excipients of tablet dosage forms. The method was extensively validated according to ICH guidelines for Linearity, Accuracy, Precision, Specificity and Robustness.

Keywords: Alogliptin And Metformin Hydrochloride, High Performance Liquid Chromatography.

K.Nagaraju

Sir C.R. Reddy College Of Pharmaceutical Sciences, Eluru. A.P, India

V. Nagalakshmi

Ch.S.D.St. Theresa'S College for Women (A) ,Eluru, A.P, India

G.Srinivas Rao

Ch.S.D.St. Theresa'S College for Women (A) ,Eluru, A.P, India

A PILOT STUDY ON THE MANAGEMENT OF EMU FARMING IN SELECTED AREAS OF WEST GODAVARI DISTRICT, A.P

**R.INDIRA, K.S.V.K.S. MADHAVI RANI, N. LAKSHMI PRASANNA, N.NIRMALA,
SK. MASARAT JAHA BEGAM, D. HIMA BINDU**

Abstract: Emu (*Dromius novaehollandiae*) is a rare and interesting species with unique attributes and habits. Emu farming will be a booming agri-business due to their benevolent donations to the human race viz. pain relieving oil, red healthy meat, soft, supple leather and gorgeous feathers. Hence this study was conducted to know the management practices followed by the emu farming entrepreneurs in West Godavari district of Andhra Pradesh. Emu farming has become commercial rearing in India. It promises a long-term return as compared to the initial investment. Emu farming is basically just like Poultry. The reason for the growth of Emu farms today is the increasing demand for the bird meat and oil, which is believed to have medicinal properties, especially for treating joint pains and also high economic value for their eggs, skin and feathers. This study includes the infrastructural and live stock management administrated in three groups of Emu farms. This gives the baseline data like the characteristics of study, the general management method adopted in Emu farming, the infrastructural facilities to be provided for the Emu birds. Estimation of live stock numbers, and their management in captivity, the composition of feed, feed timings, types of feeds and method of feeding, the disease prevalence, prevalence rates and then prevention and treatment in all study sites.

Keywords: Emu, Oil, Feed, Disease, Management.

R.Indira

Associate Professors, Department of Zoology,
Ch.S.D.St.Theresa's College for Women (A), Eluru, AP, India
K.S.V.K.S. Madhavi Rani

Associate Professors, Department of Zoology,
Ch.S.D.St.Theresa's College for Women (A), Eluru, AP, India
N. Lakshmi Prasanna

Assistant Professors, Department of Zoology,
Ch.S.D.St.Theresa's College for Women (A), Eluru, AP, India
N.Nirmala

Assistant Professors, Department of Zoology,
Ch.S.D.St.Theresa's College for Women (A), Eluru, AP, India
Sk. Masarat Jaha Begam

Assistant Professors, Department of Zoology,
Ch.S.D.St.Theresa's College for Women (A), Eluru, AP, India
D. Hima Bindu

Assistant Professors, Department of Zoology,
Ch.S.D.St.Theresa's College for Women (A), Eluru, AP, India

STUDIES ON DISSIPATION KINETICS AND RISK ASSESSMENT OF IMIDACLOPRID RESIDUES IN TARAI REGION OF UTTARAKHAND

R.M. SRIVASTAVA, SNEHA JOSHI, A.H. AHMAD, G.S. BOHRA

Abstract: Dissipation behavior of neonicotinoid insecticide, imidacloprid (Imidacel 17.8 SL), in okra fruit was studied following application at dose 20 g a.i. ha⁻¹ at VRC G.B.P.U.A.T. Pantnagar Uttarakhand, India, showed an initial deposit of 1.027 mg kg⁻¹ imidacloprid in okra fruit samples. The residue level in okra fruit dissipated to 33.008 % of initial deposition after one day and it further declined to 80.817% after 5 days of last spraying. The residues dissipated below detection limit within 7 days in okra fruits. The half life (t_{1/2}) of imidacloprid in okra fruits was estimated 2.094 days. The residue level went below MRL (0.7mg kg⁻¹ for okra) within 3 days at the recommended dose.

Keywords: Imidacloprid, Okra, *Abelmoschus Esculentus*, Residues, Uttarakhand, Dissipation.

Introduction: Okra [*Abelmoschus esculentus* (L.) Monech] is a member of family Malvaceae and close relative of cotton and hibiscus, having good nutritive value and is cultivated during summer and rainy seasons in all over India. Use of various insecticides is normal and traditional practice for the control of different insect pest in okra^{1, 2}. Imidacloprid, is a systemic insecticide of neonicotinoid group and is widely used against variety of pest in okra^{3,4}. Mode of action of imidacloprid is similar to naturally occurring nicotinoids. Imidacloprid disturbs transmission of impulse in nervous system of insect, by acting as an antagonist to the nicotinic acetylcholine receptor, it causes continuous excitation of nerve cells, finally resulting in death of treated insect⁵.

Although there have been various studies on the dissipation of imidacloprid on food^{6, 7, 8}, few articles have been published on degradation of its residues on okra and as significant concern is being given over magnitude of pesticide left in vegetable following their use it is therefore, present study is conducted in okra to evaluate the level of imidacloprid residues following its application under tarai agro-climatic condition of Uttarakhand.

Material and Methods:

Chemical and Reagents: Analytical standard of imidacloprid (purity>99%) used in present study was purchased from SIGMA-ALDRICH Inc, USA. Imidacloprid 17.8 % SL (Imidacel®) was used in the field study. The Chemicals and reagents used were acetone (HPLC grade) and acetonitrile (HPLC grade) were purchased from HiMedia Laboratories Pvt.Ltd. Water used was double distilled. To 10 mg of imidacloprid standard, 100ml of acetonitrile was added to prepare a stock standard solution of imidacloprid, which was further diluted to prepare working solution of different concentration ranging from 1 to 100 µg/ml.

Field Study: Field experiment was conducted during *Kharif* (summer) 2017, using randomized block design (RBD) with three replication at Vegetable Research Centre G.B.P.U.A.T. Pantnagar. This area is under tarai agro climatic zone of Uttarakhand with hot and humid conditions during rainy season. The okra variety *Parbati kranti*, best suited in this area for good yield, was cultivated adopting all recommended agronomic practices. An aqueous solution of the insecticide Imidacel® (imidacloprid 17.8 SL) was sprayed at the time of fruiting at recommended dose (T₁: 20 g a.i./ha) along with untreated control (T₂: 0). In order to evaluate dissipation of imidacloprid in okra, fruit samples of okra were collected from each of treated plots (including control) by using standard sampling procedure on 0 (2 hr. after spray), 1, 3, 5, 7, 10, 15 days after last spraying was transferred to laboratory in dry Ice box for further analysis. All the samples were taken for residue analysis after using quartering method.

Laboratory Processing of Samples:

Extraction and Cleanup: The extraction and cleanup was done by the method⁹ described earlier with some modification. To 50 g okra fruit samples 100 ml extracting solvent (acetone) was added and blended in a pestle mortar and were kept in orbital shaker for 2 hours. The extract was then filtered and decanted in a round bottom flask. The process was repeated two times to achieve quantitative extraction and the extract was kept for ten minutes each time and then pooled. It was then filtered through Whatman No. 1 filter paper and concentrated in rotary vacuum evaporator to near dryness, dissolved in as low volume of HPLC grade acetonitrile as possible. Extract was then filtered through SPE cartridges before analyzing in HPLC.

Method Validation: A recovery experiment was conducted just before analyzing the samples, to evaluate the reliability and efficiency of extraction and cleanup process of analytical method chosen. For this okra fruit samples (untreated) were spiked at two different concentration level (25 and 50 µg/gm). The spiked samples were allowed to stand for 15 minutes before extraction. The amount of residues was evaluated by comparing the response of sample with the standard response under same operating conditions.

HPLC Analysis: The estimation of imidacloprid residues in okra fruit samples was done by using high performance liquid chromatography. The HPLC system (Shimadzu Corporation, Kyoto, Japan, Model SPD 10A LC 20 AD) comprised of double plunger pump, Rheodyne injector with a 20 µl loop coupled with PDA detector. The chromatographic separation was achieved on C₁₈ reverse phase column (4×150mm), particle size of 5 µm. The mobile phase consisted of acetonitrile : water (25: 75 v/v) with a constant flow rate of 0.6 ml/min. The chromatography was performed at 25±1°C. The UV detection will be at 270 nm. The chromatogram was analyzed by software and under this operating condition retention time of imidacloprid was 6.22 min.

Statistical Analysis: The quantification of imidacloprid residues was done by comparing the peaks of sample with that peak of standard. The imidacloprid dissipation in fruits of okra follows the first- order dissipation kinetics. The degradation rate constant and half life period were calculated using first - order rate equation, $C = C_0 e^{-kt}$, where C_0 represents pesticide concentration in µg/g at the 0 days after spray (initial concentration), C represents concentration of pesticide (here imidacloprid) residues at time t ; and k is degradation rate constant. And the half life ($t_{1/2}$) was calculated from k value (rate constant) for each and every experiment ($t_{1/2} = \ln 2/k$).

Result and Discussion:

Method Efficiency: The mean percent recoveries of imidacloprid from okra fruit samples at fortification level of 50, 100 mg/kg were 97.63 and 98 per cent, respectively. Mean percent recovery was found to be more than 85 per cent so the results have been discussed as such without employing any correction factor. The calibration curve for imidacloprid standard displayed good linearity with correlation coefficient 0.996 within the test range. The retention time of tested sample analyte in the spiked samples matched with those of the standards. Thus the used extraction and cleanup procedure for methodology was observed to be highly précised and efficient.

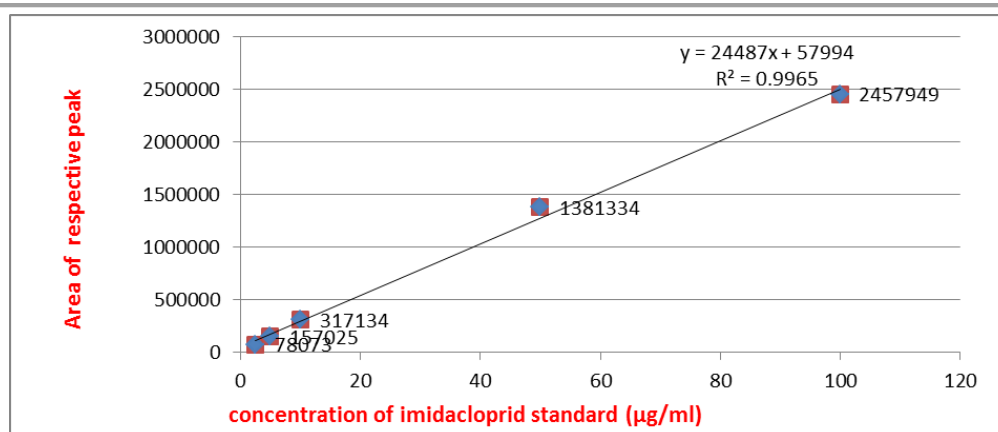


Figure 1: Calibration Curve of Standards of Imidacloprid

Dissipation of Imidacloprid: The results of dissipation dynamics of imidacloprid residues in okra fruits at different time intervals at 20 g *a.i.* /ha and percent dissipation on residues have been presented in Table 1. The initial deposit of 1.027 mg/kg of imidacloprid in okra fruits against recommended was found to decline to 0.688 mg/kg on 1 day after the last application contributing a dissipation of 33.008 percent. Within 5 days of the last application, the dissipation reached 80.817% of the initial amount and within 7 days the residue content reached below detectable level (BDL). Hence more than 80 per cent of imidacloprid residues got dissipated in five days following its spray @ 20 g *a.i.* /ha. The fast and rapid dissipation of imidacloprid in okra fruit samples might be due to the dilution of chemical because of plant growth. Several agro climatic factors such as temperature, radiation and relative humidity also would have played considerable role in dissipation of imidacloprid residue.

Table 1: Residues of Imidacloprid (mg/kg) on Okra Fruits at Different Time Interval After The Application of Imidacloprid 17.8 SL at 20 g *a.i.*/ha:

Interval (day)	Imidacloprid residue (mg/kg)	Dissipation rate (%)
0(2 hr after spray)	1.027	-
1	0.688	33.008
3	0.367	64.264
5	0.197	80.817
7	BDL	100
10	BDL	-
Dissipation rate regression equation between days after treatment and residue level: $y = -0.159x + 0.928$		
Correlation coefficient = 0.931		

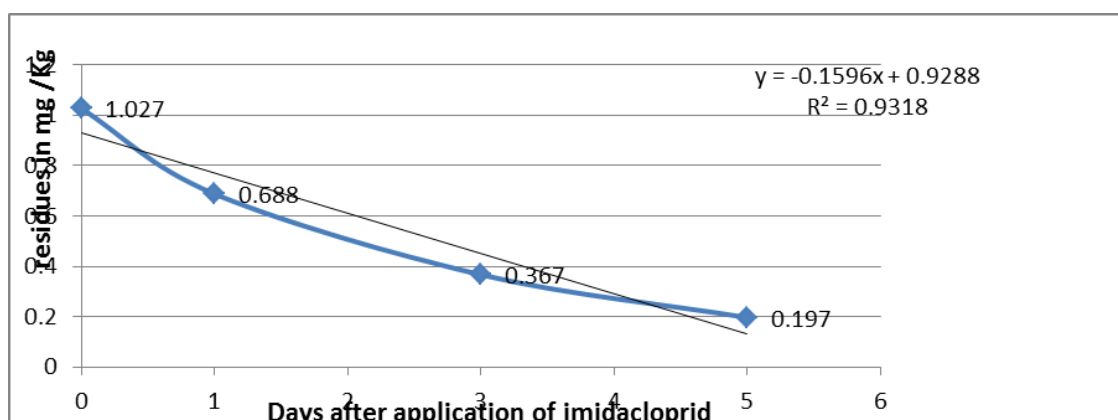


Figure 2: First Order Dissipation of Imidacloprid 17.8 SL in Okra Fruit

The results are in agreement with those of Pandit *et al.*¹⁰ who reported an initial deposit of 1.96 mg/kg following application of imidacloprid at 24.5 g *a.i./ha* in okra fruit at tarai region of west Bengal. It has been reported that imidacloprid residue persisted upto 5 days after treatment with imidacloprid at doses 24.5 g *a.i./ha* and 49 g *a.i./ha* in okra fruits¹¹. The results are not in agreement with those of Pratheeshkumar *et al.*¹² who studied the persistence of imidacloprid in fresh cardamom capsules following application at 20 and 40 g *a.i./ha* and reported that residues were persisted to 21 days after last application for both doses. And also with Sahoo *et al.*¹³ and Utture *et al.*⁶ who reported an initial deposition of 0.18 mg/kg and 0.12 mg/kg following application of imidacloprid at 0.42g *a.i./ha* and 0.25 ml/l in okra and pomegranate fruits, respectively. These differences in persistence of imidacloprid may be due to varied weather conditions, variation in doses and variation in substrates in which insecticide applied.

Table 4.19: Statistical Data on Regression Analysis and Half Life for Dissipation of Imidacloprid on Okra Fruit:

Insecticide	Dose (g <i>a.i./ha</i>)	Regression equation	Half life (days)	Correlation coefficient(R ²)
Imidacloprid	20	Y= 57944+24487X	2.094	0.996

The dissipation of imidacloprid residues followed first order kinetics (fig 2) with half life of 2.094 days for recommended dose, generally the persistence of imidacloprid is expressed in terms of half-life ($t_{1/2}$), i.e time for degradation of pesticide to 50% of its initial concentration. The half-life value of imidacloprid was observed 2.66 days in okra¹⁰ and 2.31 days in brinjal fruits¹⁴. While earlier studies reported 1.04 and 1.13 days half-life ($t_{1/2}$) of imidacloprid at applied doses of 24.5 and 49g *a.i. ha*, respectively in okra¹¹. This variation might be due to difference in agro climatic conditions of areas under these studies.

Hence, based on the MRL prescribed in okra (0.7µg/g) by European (EU) and approved by Agricultural and Processes Food Products Export Development Authority (APEDA), a waiting period of 3 days is suggested before consumption of okra fruits to reduce health hazards. Therefore, application of imidacloprid 17.8 SL at recommended dose on okra is quite safe from consumer's health risks and environment contamination point of view.

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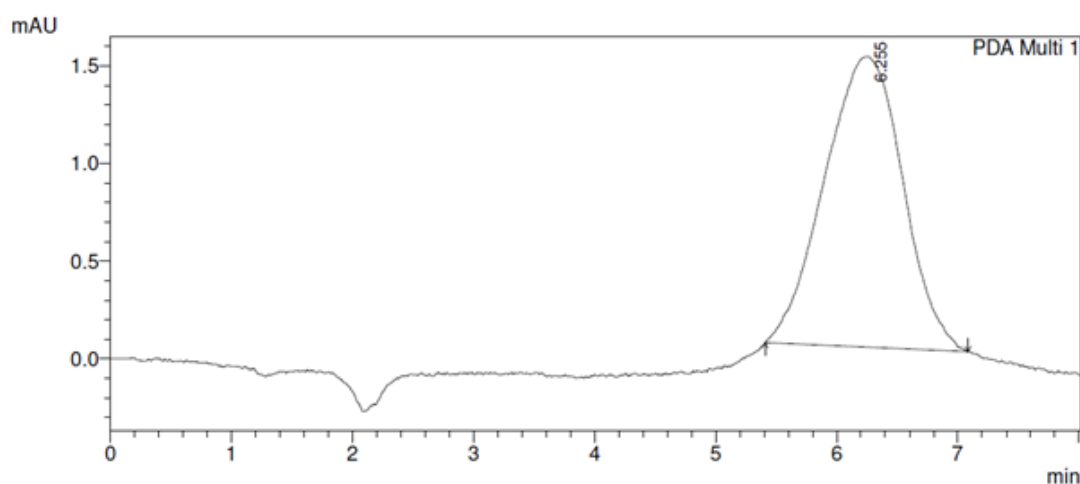


Figure 4.12: Chromatogram of Okra Fruit Sample of on The Day of Spray

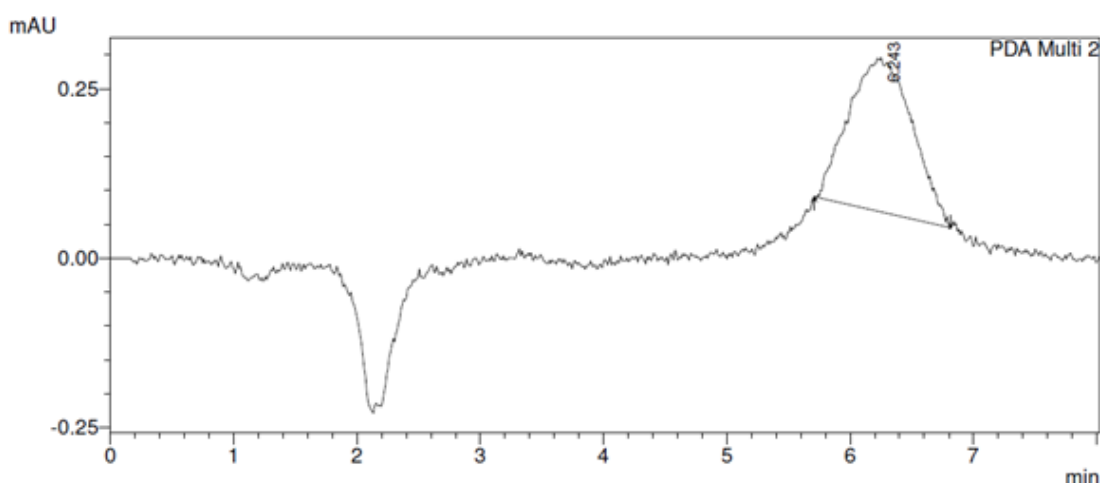


Figure 4.13: Chromatogram of Okra Fruit Sample of 5th Day After Spray

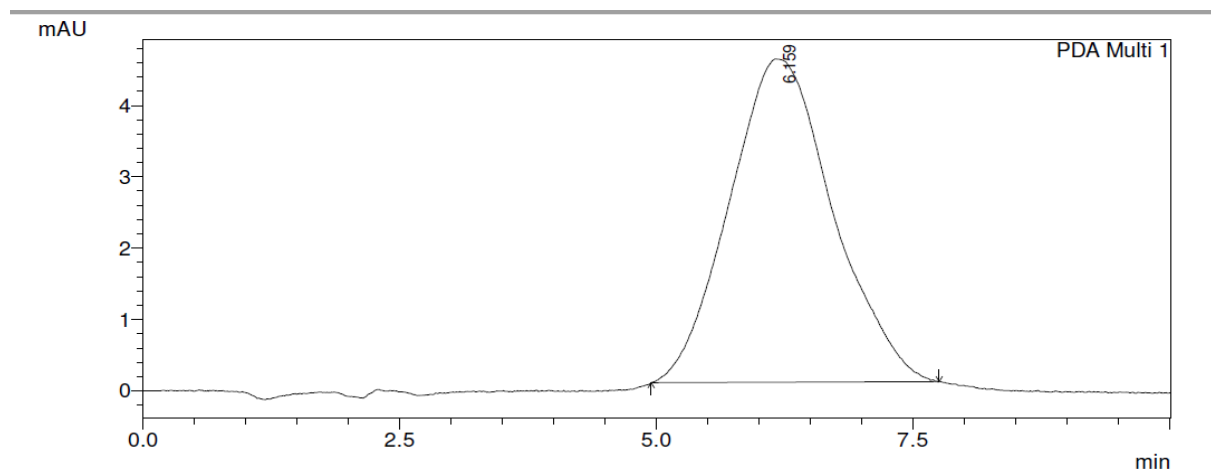


Figure 3: Chromatogram of 10 µg/ml imidacloprid standard

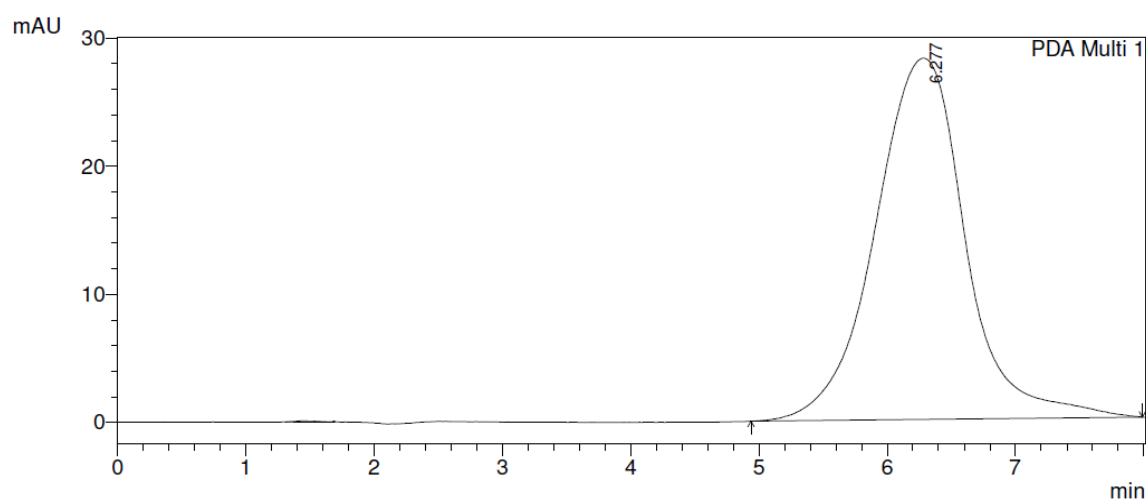


Figure 4: Chromatogram of 50 µg/ml Imidacloprid Standard

R.M. Srivastava,
Department of Entomology,
Govind Ballabh Pant University of Agriculture and Technology
Pantnagar, Uttarakhand, India
Sneha Joshi, A.H. Ahmad and G.S. Bohra
Department of Vet. Pharmacology and Toxicology,
Govind Ballabh Pant University of Agriculture and Technology
Pantnagar, Uttarakhand, India

HUMANITIES

CODE-SWITCHING AS MEANS OF ENHANCING ENGLISH ACQUISITION

DR J. JOHN SEKAR

Abstract: Code-switching/-mixing has enormous pedagogical value in the Indian bilingual context of teaching English and it can promote interactive classroom which is otherwise difficult in an artificial monolingual “English only” classroom. In addition to creating a healthy and encouraging home-like ambiance for interaction in the formal classroom setting, this bilingual approach by learners helps them overcome certain social-psychological problems like cultural disloyalty, negative language attitude, and subconscious language behaviour, and linguistic factors like lexical gap, low level of competence, and communicative inability. Moreover, code-switching/-mixing is a rule-governed behaviour as a result of interaction between two contact languages in society aiding communication in both languages at once. Code-mixing and -switching between the home language and English is more beneficial to the acquisition of the latter at phonological, grammatical, lexical, sentence, and discourse levels. It creates awareness in learners of similar and dissimilar linguistic elements and idiomatic expressions between languages. It is also a natural way of learning a second language in a multilingual context. Some teachers’ attitude toward this natural bilingual phenomenon is negative on the ground that it promotes communication neither in English nor in the home language. They fail to perceive language basically as a social phenomenon and they fear that it will ultimately stunt learners’ growth at the level of subordinate bilingualism, an unfounded fear. The present paper analyzes the attitudes of English teachers toward the use of Tamil, the home language of the majority of English learners both in regional and English medium schools as a perfect strategy in the English class.

Keywords: English Acquisition, Code-Mixing, Code-Switching, Code-Meshing, Teacher Attitudes, Home Language.

Dr J. John Sekar,
Head & Associate Professor, Research Department of English
Dean, Academic Policies & Administration, The American College, Madurai, India
Email: jjohnsekar@gmail.com

GENDER EQUALITY

DR. K.V.PADMAVATHI, MAJOR DR.P.MARY CELINE ROSE

Abstract: The word gender describes the socially-constructed roles and responsibilities that societies think about acceptable for men and women. Gender equality implies that men and women have equal power, equal rights and equal opportunities for monetary independence, education, and personal development. Gender discrimination can be seen at all ages and stages of development over the Globe. Women's management may be a crucial facet of achieving gender equality. It includes increasing a woman's sense of self dignity, self-worth, decision-making power, access to opportunities and resources, power and management over her own life within and outside the house, and her ability to result in the amendment. Nonetheless, gender problems aren't centered on girls alone, however on the connection between men and women in society. The actions and attitudes of men and boys play a vital role in achieving gender equality. Gender equality may be a right, however, our world faces a persistent gap in access to opportunities and decision-making power for women and men. Women have fewer opportunities for economic participation, less access to basic and better education, larger health and safety risks, and fewer political participation than men globally. Guaranteeing the rights of women and giving them opportunities to achieve their full potential is crucial not just for attaining gender equality however conjointly for meeting a good social order and prosperity. Women contribute to the health and productivity of their families, communities, and countries, making a ripple result that advantages everybody.

Keywords:

Gender: Socially-constructed roles and responsibilities that societies consider appropriate for men and women.

Gender equality: Equal power and opportunities for men and women.

Gender discrimination: Inequity towards men and women that affects the lives of both genders.

Dr. K.V.Padmavathi
HOD, Dept. of Home Science
Ch.S.D.St.Theresa's College for Women(Autonomous)
Eluru, West Godavari (Dt), Andhra Pradesh, India
Major Dr.P.M.Celine Rose
HOD, Dept. of Physical Education
Ch.S.D.St.Theresa's College for Women(Autonomous)
Eluru, West Godavari (Dt), Andhra Pradesh, India

COMMUNITY SERVICES AND THEIR IMPACT ON LEADERSHIP QUALITIES AMONG COLLEGE STUDENTS OF WEST GODAVARI DISTRICT OF ANDHRA PRADESH – A STUDY

DR. SR. MARIETTA D'MELLO

Abstract: The present Education through the curricular or Institutional training identified the importance of introducing the functioning of official training programmes like NSS and NCC for students to improve their moral stature, leadership qualities and organizational capabilities with selfless motives. While serving the society as a volunteer or as a public servant or as an organization the students need to realize that “Discipline” is the key success in any field of their life. Thus, the Educational institutions with the introduction of NSS and NCC activities rightly trying to improve the standards of the students in respect of the discipline, leadership and volunteering capabilities.

Unless the present youth realizes that a part of their life should be service to the humanity then only the total structure of the society will become progressive and peaceful. To reach such a tranquil state of mind, students should be trained systematically and simultaneously with academics. Community participation and community services provide our educational institutions with an effective means to become committed communities and to achieve the academic aims and plans. Thus opening a door for our young people to enter and grow in leadership, which is transformational.

The aim of NCC is to train young boys and girls to be better citizens and future leaders in all walks of life. The participation in NCC programmes the students will be benefited by developing the qualities of character, courage, discipline, leadership, and secular outlook, spirit of adventure and sportsmanship and selfless services to become useful citizens. NCC also plays a unique role in the community development. The NCC participants actively involved in some of the activities namely a) Adult Education b) Environment c) Social services and d) Health etc.

Participation in NSS programmes gives a broader scope for the students to involve in various activities. For example: - a) Environment Enrichment and Conservation, b) Health, Family welfare and Nutrition programme, c) Awareness for improvement of the status of women d) Social Service programmes, e) Production oriented programme, f) Programmes for working during emergencies, g) Education and Recreation etc.

Active participation of students in the above mentioned NSS programmes helps in developing qualities like character, courage, resourcefulness, confidence, decision making, democratic attitude, leadership skills etc.

Keywords: Moral Stature, Selfless Motives, Discipline, Volunteering Capabilities, Transformational, Tranquil, Enrichment, Conservation.

Dr. Sr. Marietta D'Mello
Principal, Associate Professor, Department of Psychology,
Ch. S. D. St. Theresa's College for Women (Autonomous), Eluru, AP, India
Email: mariettadmello93@gmail.com

WOMEN'S ATTEMPTS TO DEFY PATRIARCHAL SUBJUGATION IN ANITA NAIR'S *MISTRESS*

DR. R.MADHAVI

Abstract: *Mistress*, a novel by Anita Nair, deals with the subjugation of women by patriarchal hegemony. In this novel the author depicts women from across the different rungs of society grappling to find meaningful existence. They willingly enter into relationships that are taboo and detrimental to their well being. This paper examines how Nair's novel portrays the defiance of women who are not afraid to fight for their rights. The results of these acts of defiance are unimaginably punishing, yet these women act as would their western counterparts. Normally such acts of violation of societal norms could prove lethal to the Indian woman. These middle-class Indian women boldly follow their dreams and fulfil their heart's desires with a vengeance aiming at proving their worth in a man-made world. The paper attempts to study women in contrasting roles as contenders for traditionality and on the contrary as breakers of societal norms held sacrosanct.

Keywords: Patriarchy, Subjugation, Meaningful Existence.

Dr. R.Madhavi
Assoc Prof., English, Ch S.D. St. Theresa's College for Women, Eluru, AP

WOMEN EDUCATION - AN INVESTMENT WITH FULL RETURNS

G.KHYATHI PUSHPASRI

Abstract: It is no secret that women too can contribute to the development of society. The role of women in development and society has always been undermined by male chauvinists. Gender equality is one of the issues that has always caused struggle between the two sexes. Gender, class, race and ethnicity are the issues the modern woman continues to navigate away. Women are struggling to move away from these issues, and contribute positively to sectors such as education, health, business and to the same as men, women can be useful in teaching and also acquire knowledge to apply it positively in society. To educate girls is to reduce poverty.

G. Khyathi Pushpasri
Student, Ch.S.D.St.Theresa's College For Women,
Eluru, West Godavari Andhra Pradesh, India

STRENGTHENING SOCIAL SCIENCES AND HUMANITIES FOR A SUSTAINABLE SOCIETY

UME SALMA

Abstract: The United Nations General Assembly has taken a resolution for Sustainable Development Goal for the year 2030. This resolution itself is a danger bell, that the Humanity is in Crisis. “The hour of crisis is the hour of self examination, and the right self examination lies nearer to the decisions taken in the past”. If we grope into the recent past of humanity we find the roots of the present crisis in the process of Modernization or Westernization. The Empire of Industrialization has built on the foundations of Science and technology which is basically empirical, logical and analytical in nature and the basic philosophy behind industrialization is utilitarianism which promises maximum good to the maximum number of people. Today we see that western Imperialism and colonization has influenced almost all the people of the world and the success of western civilization in terms of material affluence has forced everybody to believe that Science and Technology is the only way out for the development. Hence in the present educational Scenario Science and technology enjoys a high profile and the Humanities and Social Sciences vice versa.

While the whole world is running behind Science and Technology, an American - expert on thinking Edward De’ Bono says – “The last millennium has not been a success. We have made huge advances in Science and Technology but have still been let down by excellent and limited ways of thinking”. In his book “New thinking for new millennium “Admitting the drawbacks of Western educational system he says “ Education is obsessed with Literacy and Numeracy, yet operacy (skills of doing) is almost entirely neglected. “ The alarming rate of increase in the number of suicides and homicides in the affluent countries have prompted the American Psychologists for further research on human mind I.e. , the software of brain. The findings of research provides a firm base to defend the Social Sciences and humanities in the field of education. Even in Andhra Pradesh the ignorance on the part of parents and also teachers who misguide their students is creating havoc in the lives of our youth who are the future of our country and future oh humanity.

In the field of education it is a traditional practice that students with higher I.Q. levels are considered highly intelligent and they opt for Science subjects and students with lower I.Q. are considered to be less intelligent and they opt for Social Sciences and Humanities. “ All these years we were believing that intelligence has to do with thinking, analyzing, remembering, comparing , applying, appearing for exams, obtaining high marks etc. These qualities, it is argued lead to top position, lucrative pay packages palatial houses, imported cars, security, success holidays etc. Consequently people work hard to develop their I.Q. and ignore their emotions. How far it is correct to nurture our I.Q. ignoring E.Q. or nourishing the rational mind and ignoring the emotional mind or nourishing sciences and technology ignoring Humanities and social Sciences. Now the question arises whether human beings have two minds? Research done in the field of Neurobiology gives a positive answer to this question.

In 1980s two American Psychologists, Peter Salovey of Yale University and John Mayor of University of New Hampshire coined a phrase called Emotional intelligence. Science reporter of New York Times adopted it and introduced it in his best seller “Emotional intelligence why it matters more than I.Q. “. According to Goleman I.Q. accounts for only about 20% person’s success in life and the balance can be attributed to emotional intelligence. Emotional intelligence is also called as E.Q. the Emotional Quotient. In a lay persons language this could be defined as what feels good and how to get from bad to good. A more formal academic definition refers to Emotional awareness and emotional management skills which enables you to balance emotion and reason so as to maximize one’s own long term happiness. Emotional intelligence is ability to balance between head and heart or thinking and feeling parts of the mind.

Basing on the research done in the field of Neurobiology individual person should nourish one's own mind with Science and Technology on one hand, Humanities and Social Sciences are the other. Man's greed has already disturb the balance of Nature and now it is on the verge of creating imbalance in Human mind by forcing the children to study Science and Technology, irrespective of the capabilities of an individual child. Unilateral development of Science and Technology ignoring Social Sciences and humanities made the human society unsustainable. Increased conflict, mental sickness, crime, suicides and genocides shaking the foundation of human existence. Since emotional intelligence is moving from bad situation to good schooling of E.Q. is the solution for this human tragedy. Enriching or balancing our syllabi with Social sciences and Humanities will help to create balanced individuals with a rational mind and a feeling heart.

Globalization is an outcome of utilitarian thinking. Even in this age of Globalization the experts in organizational behavior opine that the work force with technological skills need to have peoples skills. Along with technological knowledge the managers need to have the knowledge of Social sciences and Humanities. Understanding other person's culture, social background and emotions, aids a person to empathize with peers and subordinates. Today distances and national borders are disappearing rapidly and management is no longer confined to the National borders. Along with Science and Technology if a person has social skills he will be successful in his work place. Here social consciousness and emotional awareness play an important role and these can be inculcated through social sciences and humanities.

The people and races with ethnocentric views suffer from parochialism and parochialism is detrimental to human society. Hence creating individuals with empathy and emotional intelligence is need of the hour for a sustainable human society. Social sciences and Humanities is the remedy for the present social malady.

Ume Salma
Associate Professor, Department of Hindi,
Ch. S.D.St. Theresa's College for Women, Eluru, West Godavari District,
Andhra Pradesh, India.
Email: ume.salma22@gmail.com

**WOMEN EMPOWERMENT
THEME: REALIZE YOUR POWER – REALIZE YOUR IDENTITY.**

KRITIKA JAIN

Abstract: Empowerment can be defined in many ways, however, when talking about women's empowerment, empowerment means accepting and allowing women who are on the outside of the decision-making process. women are empowered when they are able to access the opportunities available to them without limitations and restrictions such as in education, profession and lifestyle. Feeling entitled to make your own decisions creates a sense of empowerment.

Content: To attain this one has to realize their power and also the identity, because if she how underestimate her own determination and ability, so it's important to realize the girl power, only then one could achieve and inspire others to be strong.

I do not wish women to have power over men, but on themselves.

Kritika Jain

Student, Ch.S.D.St .Theresa's College for Women, Eluru, AP, India

BAMA'S 'SANGATI'- A CRITICAL STUDY OF CONTINUED AND UNABATED OPPRESSION OF DALITS

DR. CHARU MEHROTRA

Abstract: Dalit (oppressed or broken) is not a new word. This word was used in 1930s as a Hindi and Marathi translation of 'depressed classes' a term the British used for what are now called the Scheduled Castes. In 1970s the 'Dalit Panthers' revived the term and widened its reference to include scheduled tribes, poor peasants, women and all those being exploited politically, economically and in the name of religion. Therefore, Dalit is not a caste. It is a symbol of change and revolution. Dalit struggle against casteist tradition has a long history. The main motive of Dalit Literature is the liberation of Dalits. While dealing with the trends of Dalits literature, the writer will make a humble attempt to point out the core issues of its ideology. Shame, anger, sorrow and indomitable hope are the stuff of Dalit Literature. Due to rage against the age-old oppression, the expression of the Dalit writers have become sharp and bitter. The title of the novel 'Sangati' means news, events, happenings and book is one of the interconnected anecdotes. It is written by Bama, a Tamil Dalit Feminist. Originally it is written in Tamil. In 'Sangati' Bama has successfully drawn a real picture of growth, decline, culture and liveliness of dalit women. In this novel she has described all kinds of difficulties of dalit paraiyar women, their boldness and weakness. She shows the lives of dalit women who face the double disadvantage of caste and gender discrimination. Double standard treatment is common in Dalit Community. The power is in the hands of man.

'Whatever a man does in the end blame, falls on the women.' Dalit are sufferers throughout. Mariamma, the main women character in the novel is beaten by her husband badly everyday. Girl who studies a little, writes a little or has the courage to speak up in public places, is not admired in the society. Women must be conscious every minute of their day that men are at the very centre of their lives. In the end of the novel Bama writes- 'If we rear our children like this from the time they are babies, women will reveal their strength. Then there will come a day when men and women will live as one with no difference between them, with equal rights.'

Keywords: Dalit, Discrimination, Identity, Injustice, Oppression, Anguish, Male – Domination, Harassment, Indecent Treatment, Objectionable, Hunger, Molestation.

Introduction: Indian is generally known as the classic land of castes and creeds. The early Indian society was based on Varn Asram in which the Brahmins were the top most and Sudras were meant to serve the upper three- Brahmins, Kshatriyas and Vaisyas. They are the 'untouchables' or 'Scheduled Castes' in the Indian Constitution as the British used the phrase. But Gandhi named them 'harijan' and Ambedkar – Dalit. Both of them encouraged education among the Dalit which became a powerful tool for them in future and lead to a new writing. Indian Dalit Literature sprouted out as a movement in the 1960s. It got impetus in Maharashtra. Many writers, thinkers, political figures and social reformers contributed in it like B. R. Ambedkar, M.K.Gandhi, Baburam Bagul, Bandhu Madhav, Shankarao Kharat etc. Dalit Literature is always marked by revolt and a great struggle of lower caste against the high class people. Dalit caste organisations like, 'Dalit Panthers of India' in Maharashtra, 'Dalit Mahasabha' in Andhra Pradesh, 'Dalit Sangharsha Samiti' in Karnataka and 'Arundhatiyar' in Tamil Nadu were in demand for equal share in the society. Most of the Dalit activists are good writers. In Indian society some communities are at the lowest step like: dalits, females, poor, eunuchs etc. Dalit women are double victimized-first as a women and second belonging to the lowest community.

Writers like Mary Wollstonecraft's, 'Vindication of Rights of Women' (1792), Simone de Beauvoir's 'The Second Sex' (1949), Virginia Woolf's 'A Room of One's Own' etc, has contributed a lot in Women's Movement. Women's condition was not good in 1960s and 1970s but in 1980s the situation changes. Being a Tamil, dalit Christian women, Bama examines caste and gender oppression together. In 'Sangati' Bama centres on the double oppression of females. It is a unique Dalit Feminist narrative. It is related to women's movement in India, especially in Tamilnadu. Women's are considered as the symbol of sex and

object of pleasure. A study of dalit women reveals a story of endless miseries, in human victimization and shocking gender discrimination.

Sangati was originally written in Tamil in 1994. It was translated by Laxmi Halmstorm into English. The whole story is in the form of a narrative divided into twelve chapters. The title of the novel 'Sangati' means news, events, happenings and the book is one of the inter connected anecdotes. In Sangati, Bama also known as Bama Faustina Soosairaj is successful to draw a real picture of growth, decline, culture and liveliness of dalit women. All kinds of difficulties of dalit Paraiyar women their boldness and weakness are described by Bama in her novel. She chooses only women characters for every story in her novel. The novel 'Sangati' contributes both to the dalit movement and to the women's movement in India specially Tamilnadu.

India is generally known as the classic land of castes and creeds. Caste is said to be in the air and even Muslims and Christians have not escaped infection. We can easily experience that a man having no caste identity is good for nothing with a social political point of view. Like her early novel Karukku Bama's Sangati focuses on the oppression of Dalit women in the church as well. This shows that it has got the religious sanction as well. Bama has been successful in presenting the inner outrage of Dalit women in oppressed stage.

The novel Sangati is a record of the joint oppression of caste and gender faced by the Dalit Women in an autobiographical manner. In this novel Bama shows the lives of dalit women who face the double disadvantage of caste and gender discrimination. Bama says in one of her interviews. "All women in the world are second class citizens. For Dalit women, the problem is serious. Their dalit identity gives them a different set of problems. They experience a total lack of social status; they are not even considered dignified human being..... Dalit women have to put up triple oppression based on class, caste, and gender." (Bama: 2007:09). Dalit women workers fight against injustice on their own. Even the writer expresses her anguish saying, "as for the men, their work ends when they've finished in the fields. If you are born into this world, it is best you were born a man." (Bama: 2008 :59). The baby boys are sucked longer than girls and are cared better and nursed properly. But girls are neglected. Boys enjoy great respect in the family. They eat and play according to their likes and dislikes whereas the girls are compelled to do household works. Even there is a distinction between the girls and boys games. Girls are not permitted to play boys' games like Kabaddi, Chellangucchi or marbles otherwise they were badly abused. Even in plays, the boys always assumed important roles of Naicker and Nadar Mudalaali-the dominating castes in the society and the girls were assigned subordinate roles. Thus, the gender discrimination is filtered into the minds of the small children.

Even women workers are paid less than the men. Bama says, "Even when women did the very same work, they were less paid. Even in the matter of tying up firewood bundles, the boys were given better price. Women workers often have to face sexual harassment and indecent treatment. Paati does not allow her grand daughter to go alone to gather firewood. Bama tells about the danger- if upper caste fellows clap eyes on you, you are finished. They'll drag you off and rape you that's for sure.(Bama2008 :10). Bama reminds of many sorrowful and miserable incidents. One day Mariamma kept her firewood bundle under the banyan tree and went to drink water from the tubewell of Kumarasami, Ayya's field. The upper caste Ayya, seeing her alone seduces her. Shocked Mariamma wanted to punish him but her friends at home suggested her to keep quiet otherwise these upper caste people would blame her and called her whore. On the otherhand, afraid of his reputation Ayya lodged a complaint against her that the girl Mariamma and the boy Manikkam were found in an objectionable condition in his field. The head men of the village in the meeting discussed the ugly event before the villagers and accused Mariamma. She was asked to pay a fine of Rs 2000/- and Manikkam a fine of Rs100/- . Above all the head men, the naattaamai concluded the meeting giving warning to her saying "it is you female chicks who ought to be humble and modest. A man may do a hundred things and still get away with it. You girl should consider what you are left with in your bellies"(Bama : 2008:26).

Double standard treatment is common in Dalit Community. The power is in the hands of man. Even caste courts are male dominated and rules and judgements are different for women : The say he's man , if he sees mud hill step into it; if he sees water ,he'll wash himself. It's one justice for man and quite another for women"(Bama:2008: 24) ' What ever a man does in the end blame, falls on the women.' (Bama 2008:26)

The narrator is frustrated to know that women were sidelined at the village women meeting. When it was asked from Paati he had gone to collect firewood with Mariamma why she had not spoken the hidden truth that day: Paati reacted to this that it had been this time memorial that what man says is right and contrary to this what women say will be wrong . Paati says," Whether it is fright or not it is better for women not to open their mouths . You just try speaking out about what you believe is right. You'll only get kicked and beaten and trampled on for your pains."(Bama:2008:29)

This gender based discrimination is right from the very childhood. The girls are not allowed to talk loudly or laugh loudly.They were asked to walk with their heads down. They are controlled to say rubbish. Bama writes, ' Even when our stomachs are screaming with hunger, we must n't eat first. We are allowed to eat only after the men in the family have finished and gone.' (Bama:2008:29)

Moreover, Muukkamma complained to her sister-in-law Lourda that her son was screaming after pissing over the cradle cloth and she was busy in playing with dice. It was quite unjustified to leave her son alone and crying. When Mukkamma left his place and the narrator asked the justification of such double standard behaviour . At this Vellakkannu Perimma said: "after all tomorrow he's the one who 'ill fill a mouth that's desperate for food and water . You rear a girl child and give her away into some one else's hands. Is she the one who is going to look after you in the end?"(Bama:2008:31)

Maikkanni was the first girl to climb into the factory bus and rushed to find a window seat. But the boys riding on the bus from Kakkalayakudi, pushed her back and take all the window seats. She is also beaten by her father for money at home and by Maistri Annacchi in the factory for her small mistakes.

Bama even condemns casteism and patriarchy within the church. She is against the rules of the church regarding divorce and keeping women under control by religious mechanism. She describes that even priests in the village do not care for women's personal choice for life partners and they ploughed in the meanest job of the church. Women were not allowed to peep into the church. The tiniest boys, born on the other day, were allowed to get in. But girls were not allowed to join the church. Bama writes about the fate of Dalit women, "In the fields they have to escape from upper-caste men's molestations. At church they must lick the priests shoes and be his slaves while he threatens them with tales of God, Heaven, and Hell. Even when they go their own homes, before they have had a chance to cook some kanje or lie down and rest a little, they have to submit themselves to their husband's torment." (Bama: 2008:35)

Dalit are sufferers throughout. They are violently treated by fathers, husband and brothers. If a women is seduced that becomes her fate for the whole time and life. Because of some upper caste man's foolishness, her whole life is destroyed. Mariamma was married to a wrong man. She is beaten by him badly everyday. Bama says "he abused her as commom whore and mother fucker's daughter. He cuts her hair off and tied the big hunk to the post door of the threshold to put down her pride. The girl, Raakkamma suffered a lot of her husband's cruelty. Paakkiraj drunk and violent, abused her in a vile and vulgar manner. Then he dragged her by her hair, pushed her down, and kicked her lower belley." (Bama: 2008:61). Such violent domestic assaults are commom publicly and in this course even women fight back. Women's shameless war is waged against the patriarchal societal forces which has hindered her feministic qualities to bloom.

There are certain psychological reasons behind such oppressive behaviour. Dalit males' violent behaviour towards their women may be a reaction against the suppressive attitude of upper caste people. Exploitation, threat of rape by the upper class resulted in overlapping patriarchy. Dalit women are tortured both inside and outside home. When a man does intercaste marriage it does not matter,

contrary to it if a girl does the same it creates a chaos in the society. Bama writes of the chaos; But if a girl marries outside here caste, the honour and pride of the whole community is lost.' (Bama: 2008:109). Girl who studies a little, writes a little or has the courage to speakup in public places, is not admired in the society. B. Mangalam has written; 'by foregrounding the oppression of Dalit women at the hands of Dalit men, upper caste men and repressive structures of the state, Dalit women writers question the legitimacy of grouping Dalit as a homogenous category, unproblematically represented as the brahminical order, (Mangalam: 2004:114).

The concept of the male oriented society is that God has made women only for the sake of men. Women only consideration is the comfort of men and her whole activities revolve round men. Bama also says about women a main concentration on men. " In daily practice women have to make sure that men don't suffer discomfort, that they are consoled and comforted, all their needs looked after, and all their bodily hungers satisfied. In short, they must be conscious every minute of their day that men are at the very centre of their lives. (Bama: 2008:122).

Bama feels pathetic on the insensitiveness of male society. Her sexual oppression, economic exploitation and socio-cultural subjugation are due to unequal gender relations and the gender based society. She says that in the present times through news papers, electronic media, legal system every where the position of women in patriarchal society is discussed. It is also a matter of great discussion of the rights that have been plucked away from them. But the reality is different we discuss a lot about her status and place in the society and wherever any case of women is registered it is side-lined or forgotten by patriarchy.

The novelist Bama uses the discourse style to focus on the continued and unabated oppression of Dalits. She has a feminist outlook in emphasizing the fight of women. But her outlook is different from the bra-burning novels by the Western feminists. Bama has not waged war against the system or male counter parts rather for positive measures. She wants to convey the message through her novel that women must be educated respected and empowered. She must be treated equally to man and given freedom. The last line of the novel is notable when Bama says, " We should educate boys and girls alike, showing no difference between them as they grow into adults. We should give our girls the freedom we give our boys. If we rear our children like this from the time they are babies, women will reveal their strength. Then there will come a day when men and women will live as one with no difference between them; with equal rights. Then injustices, violence, and inequalities will come to an end, and the saying will come true that 'women can make and women can break.' (Bama: 2008:123)

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Dr. Charu Mehrotra
Associate Professor in English, Bareilly College, Bareilly
MJP Rohailkhand University, Bareilly
Email:charubareilly@gmail.com

ENVIRONMENTAL SECURITY IS ESSENTIAL TO COMBAT GLOBAL CATASTROPHES

DR. SARIKA DUBEY

Abstract: Today we are living in the 21st century, which is much more developed and advanced from the past centuries. While technology and development have taken us to new heights, on the other hand, there is a crisis for our survival. Stephen Hawking, the great scientist of this century, warned that the earth would not be habitable in the next 1000 years so if we have to save our existence, we have to explore the alternatives to the Earth. The environment is one important aspect that sustains mankind. Global catastrophic risks tell about a hypothetical future event which could damage human well-being on a global scale. It includes anthropogenic risks caused by humans and non-anthropogenic risks which don't involve humans directly.

Global warming, Climate change, Environmental degradation, Technological advancement, Urbanization, Over Population, Consumerism, Lifestyle, Nuclear arm race and governance are those issues which are directly affecting our little blue planet Earth. Many island countries are at high risk from global warming and climate change. Scarcity of fresh air and water posed serious threats to humanity. Therefore, it becomes important to focus on environmental security. This paper is an attempt to describe and analyze global catastrophes which poses direct threats to the mankind. The paper will discuss causes of environmental degradation and climate change. It will examine the human impact on the environment, different forms of environmental abuses and their impact to peace and sustainable development. The paper will focus on viable solutions and environmental security to sustain mankind.

Keywords: Climate Change, Environmental Degradation, Environmental Security, Global Catastrophes, Global Warming.

Dr. Sarika Dubey
Associate Professor, P. M. V. Degree College, Prayagraj, India

DECLINING FOREIGN FUNDS FOR NGOS AND CAREERS OF FIELD WORKERS IN BANGLADESH

MOHAMMED MAMUN RASHID

Abstract: NGOs (Non-governmental Organizations) activities have virtually grown into a movement in Bangladesh and eventually playing a very significant role in the nation's development process. This article looks at the field-workers employed by local NGOs in Bangladesh. The main objective of this paper is to find out funding pattern, project continuation and their effects on the careers of field workers. Total 50 respondents were randomly selected from 10 local NGOs of Rajshahi City Corporation Area (in the north-western part of Bangladesh). It was found that foreign funding for NGOs had been declining in Bangladesh due to its transformation to middle-income economy. A large number of field-based workers lost their jobs from local NGOs due to fund crisis. Current development workers were worried about their job. Their lives and livelihoods were at risk. Local NGOs have been playing a vital role in the country's socio-economic development, especially in health, education, microfinance and women development. Services of field workers are still very much needed.

Keywords: Bangladesh, Career, Field-Workers, Foreign Fund, Local NGOs, Well-Being.

Mohammed Mamun Rashid
PhD Candidate, Department of Social Work
School of Social Sciences, Universiti Sains Malaysia (USM)
E-mail: rashidmamuns@yahoo.com

NEW DIMENSIONS IN LEGAL EDUCATION, ISSUES AND CHALLENGES

DR. KRISHNA KISHOR TRIVEDI

Abstract: “From last few years legal education and legal system in developing countries is suffering from various problems. Some innovative ideas can change the frame of legal education. There are many Law colleges and Universities working for betterment of legal education but result is zero. Legal education is having more young students to work f together. They can work with a systematic framework with research, in universities many Research Scholars and P.G. Students are making research as doctrinal study, but in legal education innovation can change that in field research which helps court system. A helping group made by some legal practitioners, final year law students and research scholars can work for betterment of legal education. Legal education must be a compulsory part for School Education.”

Dr. Krishna Kishor Trivedi
Assistant Professor, Dr. Anushka College of Law,
Udaipur (Raj) India

THE OTHER SIDE OF THE PHRASE “NARCOTIC DRUGS”

P. YAMINI CHANDRIKA

Abstract: In this era of GenX, the term “Narcotic Drug” became a serious ban. Drugs are essentially poisons. The amount taken determines the effect. A small amount acts as stimulant and a greater amount acts as sedative, an even larger amount poisons and can kill. The blindfolded goddess of justice failed to realize the reality of the other side of the fence “drug consumption” Medicines are drugs that are intended to speed up or slow down or change something about the way your body is working, to try to make it work better. Sometimes they are necessary. But they are still drugs: they act as stimulants or sedatives, and too much can kill you. So if you do not use medicines as they are supposed to be used, they can be as dangerous as illegal drugs. Many people may mistakenly synonymize “Drug consumption” as “Drug Addiction”. While the lawmen seriously imposing restrictions and the laymen breaching those for necessity. We feel it as high time to spotlight this, henceforth the author of this article would explicitly enunciate the other side of the phrase “Narcotic Drugs”.

Keywords: Narcotic Drugs, Drug Consumption, Drug Addiction.

P. Yamini Chandrika
Advocate, AP.High Court, Andhra Pradesh, India
Email: chanduo2211@gmail.com

**INNOVATIVE RESEARCH METHODOLOGY: HOW DOES THE AUSTRALIAN
DEPARTMENT OF HOME AFFAIRS' ORGANISATIONAL CULTURE COMPLY
WITH THE REFUGEE CONVENTION REQUIREMENTS, PROCEDURAL FAIRNESS
AND INTERNATIONAL HUMAN RIGHTS STANDARDS?**

KAMAL KITHSIRI KARUNADASA HEWAWASAM REVULGE

Abstract: The present research seeks to unravel the organisational culture of the Australian Department of Home Affairs and identify the extent to which it affects procedural fairness in dealing with asylum and refugee applications. The central argument is that Australian asylum seeker and refugee protection schemes must be consistent with international human rights standards, if Australia claims it supports and protects asylum seekers and refugees and respects human rights.

Each asylum seeker or refugee claim is unique, so decision-makers should focus on the specific circumstances of each case. The research literature to date suggests that Australian visa decision-makers do not display a satisfactory level of harmonised practice in the area of determination of refugee status in keeping with international standards. However, no empirical evidence is available on these points. The researcher seeks to make an original contribution by filling this gap in the literature.

The data collection for the research consists of an ethnographic approach, interviews and document analysis. This methodological approach differs from many previous studies, as it includes the researcher's deep and personal understandings of the social dynamics of the Department of Home Affairs in dealing with refugee and asylum applications. This part of the methodology involves an examination of the Department of Home Affairs' decision-making process through an auto-ethnographic analysis. In utilising the above-mentioned methodology, the researcher will also attempt to make an original methodological contribution to the field of law.

Keywords: Migration Law, Human Rights Law, Refugee Law, International Law, Organisational Culture, Research Methodology and Decision-Making.

Kamal Kithsiri Karunadasa Hewawasam Revulge
School of Law, Queensland University of Technology (QUT)
2 George St, Brisbane QLD 4000, Australia
Genovasi University College (GUC)
Lot 2A, Jalan 13/2, Seksyen 13, 46200 Petaling Jaya, Selangor, Malaysia
E-mail: k.hewawasamrevulge@hdr.qut.edu.au, kamal.karunadasa@hotmail.com

ROLE OF PUBLIC INTEREST LITIGATION IN SOCIAL JUSTICE

ANAND SHANKAR DUBEY

Abstract: Public Interest Litigation (PIL) is a common concern among citizens in the management and affairs of Local, State, and national government. It does not mean mere curiosity, but is a broad term that refers to the body politic and the public weal. Public interest litigation aims at giving common people an access to the Judiciary to obtain legal redress for a greater cause. PIL is working as an important instrument of social change. It's working for the welfare of every section of society PIL has been used as a strategy to combat the atrocities prevailing in society. PIL is a distinctive litigation of public interest it aims at the protection of people against the violation of public interest. PIL is an important tool in the enforcement of fundamental rights of the citizens at large.

PIL gives an opportunity to right, wrong or redress injustice done to the poor and weaker sections of the society. PIL widens the range and scope of the judiciary and gives it power to intervene in the areas of the legislature and executive areas within the 'Judicial Jurisdiction'. It is the effect of the PIL that the court gives directions to the Governments that no one should be deprived of the facilities of education at all levels, and creates idea for removing poverty and social backwardness from the society. It is a very Important Instrument for healthy democracy. PIL is a petition which is field by an individual or citizens groups or non-government organization in the court pursuing Justice on a problem which has a broader public interest. The concept of social Justice is quite fundamental which represent an ideal state of society. PIL help us in ensuring peace in the society the role of PIL in the development of the human rights Jurisprudence can never be Ignored. In India, PIL acts as a very Important Instrument in dealing important issues like poverty, environment and human rights etc. The concepts of public interest litigation in India provides new legal horizon in which a court of law can initiate, enforce action to serve and secure significant PIL.

This paper is an attempt to understand the importance of public interest litigation in a broader sense. It focuses on the role of PIL and its impact on modern democratic societies. The paper also seeks the facts that how it can be used as a tool of social change by providing justice to the large section of the society.

Anand Shankar Dubey
Advocate, Allahabad High Court, Prayagraj, India