ISSN 0975-8941

RESEARCH LINES

Peer Reviewed

Interdisciplinary Research Journal

TRUTH WILL MAKE YOU FREE

DEVA MATHA COLLEGE

Kuravilangad, Kerala-686 633

An ISO 9001:2008 Certified Institution

Reaccredited with 'A' Grade by NAAC

www.devamatha.ac.in

Volume XI No.1&2 December 2018

ISSN 0975-8941

RESEARCH LINES

Peer Reviewed
Interdisciplinary Research Journal

DEVA MATHA COLLEGE
Kuravilangad, Kerala-686 633
Phone No. : 04822-230233, 232951
Email: researchlineseditor@yahoo.in
Website: www.devamatha.ac.in

Owned, Printed & Published by
Dr. JOJO K. JOSEPH
Principal

Chief Editor
Dr. PRIYA JOSEPH

Periodicity: 2 issues per year

ISSN 0975-8941

Research Lines

Peer Reviewed
Interdisciplinary Research Journal published from Deva Matha college Kuravilangad

Contact Address

Dr. Priya Joseph
Chief Editor, Research Lines
Devamatha college, Kuravilangad
Kottayam Dist, Kerala
Website: www.devamatha.ac.in
email: drpriyajoe@gmail.com

ISSN 0975-8941

Contents

ISSN 0975-8941

Dust Particles on Activated Signal Transduction Pathways in Rat Cancer Cell lines

Dhanush B. Danes and Prakash P. Pillai
Division of Neurobiology, Department of Zoology, Faculty of Science, TheMaharaja Sayajirao University of Baroda, Vadodara 390 002, Gujarat, India

ABSTRACT

Airborne dust particles also known as particulate matter (PM) is a complex mixture of chemical and/ or biological elements, composed of solid and liquid components that originate from vehicle exhaust, road dust, power plant stacks, forest fires, windblown soil, etc. The adverse effect of PM in public health has attracted signiûcant concern.The international agency for research on cancer (IARC) recently designated PM in outdoor air pollution was a Group I carcinogen. Recent studies show that the central nervous system (CNS) has also been proposed to be a target organ for the detrimental effects of airborne pollutants. Malignant behavior can be induced by aberrant expression of growth factors and their receptors (PDGF,bFGF and EGF). PDGF autocrine signaling characterized in many malignant gliomas is found to regulate survival and proliferation of glioblastoma cells.The PDGF receptor system in rat lung myofibroblasts expression was induced by PM particles. ERK pathways activation in C6 glioma cells can be stimulated by PM. The present study focuses on the dust particles on activated signal transduction pathways in rat cancer cell lines.

Keywords: Particulate matter, PDGF, C6 Glioma

INTRODUCTION

Fresh air is turning out to be a myth in the 21st century. Air pollution has become one of the biggest and toughest challenges that humans are confronted with.Developing countries have greater risk of air pollution (Johnson et al., 2011; Akimoto, 2003). The World Health Organization (WHO), International Agency for Research on Cancer recently classified air pollution as carcinogenic to humans (Group 1). Dust particles are often termed as Particulate Matter (PM). Their size differs accordingly.Studies suggest the ability of PM to enter the brain, and can be associated with various neurodegenerative pathology in vivo (Block et al., 2004). However, the correct mechanism of how PM-inducing neurological disorders remains a mystery. Thechemically induced tumors on rat cell line have been used by scientist for many glioma studies. The C6 cell line resemble closest to GBMs by Microarray technology (Hendryx et al., 2010). The growth factors associated with glioblastoma cell cultures and tissues, when aberrantly activated are able to transform cells to malignant (Nazarenko et al., 2012).One of the most common abnormalities found in molecular studies of gliomas the increased activity of the receptor tyrosine kinases (Libermann et al., 1985). MEK/ ERK pathway may be important to the tumor behavior of the C6 cell line as shown by various studies(Lind et al., 2006). Inflammatory activation of C6 glioma cells in dose- and time-dependent manners can be triggered by PM. C6 glioma cells activation and the release of inflammatory factors through MAPK and JAK2/STAT3 pathways can be facilitated by the action of Particulate Matter (Li et al., 2016).

ISSN 0975-8941

MATERIALS AND METHODS

Collection of PM sample

Sample collection of PM was carried out from Jamnagar area in Gujarat using PM 2.5 sampler for over 24 hrs.Yash Electronics, Vadodara provided the PM 2.5 loaded filter.

Preparation of PM sample

The PM 2.5 loaded filter paper was vortexed for 5 minutes after socking in autoclave water overnight. Centrifugation was carried out at 5000 rpm for 25 minutes for the PM 2.5 samples thus extracted. In comparison with a blank eppendorf, the pellet thus obtained was weighed in the weighing machine. The weight of the pellet recorded was 50 mg. A 50 mg/ml stock solution was prepared by dissolving the pellet in 1 ml PBS. Sonication of the dissolved pellet was carried out for uniform distribution for 20 min at 50% amplification and pulse of 50 sec on and 10 sec off atVikram Sarabhai Cell and Molecular Biology Institute, M.S University, Vadodara.PM 2.5 was stored in refrigerator for future use after autoclaving at 10 psi for 20 minutes.

Cell culture

The rat C6 glioma cell line was provided by the National Centre for Cell Science, Pune, India. Maintenance of the cells were carried out at 5% CO2 and 37°C in DMEM/F12 medium (Gibco) supplemented with 10% FBS and1% Penicillin and Streptomycin.

Cell viability (MTT) assay :(Slater et al., 1963)

The pellets obtained from trypsinizion from T-25 flask followed by centrifugation at 1000 rpm for 10 minutes were dissolved in culture media. 96-well plates were seeded at a density of 5×103 cells/well of C6 cells and incubated overnight at 37°C.Cells were treated with PDGF-A (10 ng/ml), PDGFR inhibitor AG1295 (10 M) alone and in combination with different concentration of PM 2.5 (50 µg/ml, 100 µg/ml, 250 µg/ml) at 37°C for 24 hours on the next day. MTT reagent was added to every well of 20 µl and incubated at 37°C for 3.5 hours after 24 hrs. The media was carefully removed and 150 µl of DMSO was added to all wells and mixed gently for 10 min to dissolve the dark blue formazan crystals. Color formed was read on a microplate reader at 570–630 nm.

Cell migration (scratch) assay

(Nature protocols Vol.2 No.2/2007) .Cell migration was examined using scratch assay also known as Wound healing assay.A "wound gap" is created by scratching in a cell monolayer with a sterile pipette tip. Cell migration and growth causes the "healing" of this gap whichis monitored after 24 hrs. The observation was carried under inverted phase contrast microscope.

Statistical Analysis:

The data from more than two groups were analyzed by one-way analysis of variance (ANOVA) followed by post-hoc analysis of multiple comparisons. Results are expressed as mean standard error mean (SEM). A value of $P<0.05$ was considered statistically significant (*$P<0.05$, **$P<0.01$, ***$P<0.001$, ****$P<0.0001$).

RESULT AND DISCUSSION

Effects of PM 2.5 on rat glioma cell survival

MTT assay was carried out in order to study the effect of PM 2.5 on C6 cell viability. C6 cell were exposed to different concentration (50 µg/ml, 100 µg/ml, 250 µg/ml) of PM2.5 in presence or absence of

ISSN 0975-8941

PDGFR inhibitor (AG1295 10 µM) for 24 hours. The data of MTT indicate that there were slight increase in cell viability in PM 2.5 exposed groups compare to control or PDGF-A. A decrease in cell viability was observed in cells exposed to PM2.5 along with AG1295, compared to PM 2.5 alone and Control or PDGF-A. Highest C6 viability was shown in PM 2.5 dose 250 µg/ml. Earlier Study has also shown that PM exposure to C6 glioma cells has enhanced cell viability (Li et al., 2016).Thus, It can be concluded from these results that PM 2.5 enhance the cell viability in dose dependent manner and this effect is reverse in presence of PDGFR inhibitor.

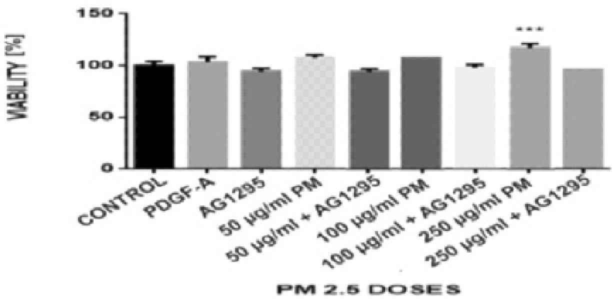
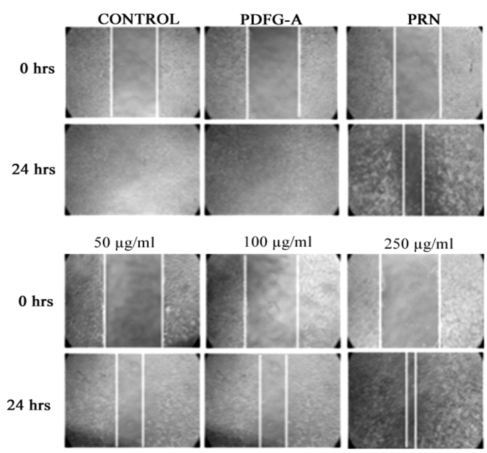


Figure 1. Effect of PM 2.5 and PDGFR inhibition on C6 cell viability. C6 glioma cells were exposed with different concentration of PM 2.5 in presence or absence of PDGFR inhibitor (AG1295 10 µm) for 24 hours. Values are represented as mean ± S.D. from triplicate.

Effects of PM 2.5 on rat glioma migration

Tumor progression is characterized by increased migration and invasion. Scratch assay was carried out to check the effect of PM 2.5 on C6 glioma cell migration. C6 cell were exposed to different concentration (50 µg/ml, 100 µg/ml, 250 µg/ml) of PM2.5 in presence or absence of PDGFR inhibitor (AG1295 10 µM) for 24 hours. It was observed that exposure of PM 2.5 decrease the C6 migration compared to control and PDGF-A treated group. Further treatment of C6 glioma with combination of PM 2.5 and AG1295 decrease the migration compared to C6 treated alone with PM 2.5.

Previous studies have shown PM to increase the incidence of cancer (Hendryx et al., 2008,Ahern et al., 2010; Hendryx et al., 2010).The data from scratch assay conclude that PM 2.5 inhibits the migration of C6 glioma.



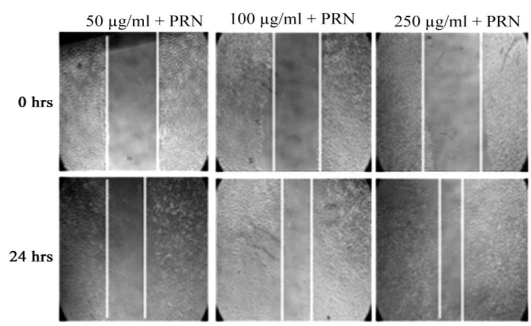


Figure 2. Migration of C6 glioma cells after wounding. (A) Wounded C6 cells were treated with PM 2.5 for 24 hours. Photographs of wound were taken at zero and 24 hours after wounding

ISSN 0975-8941

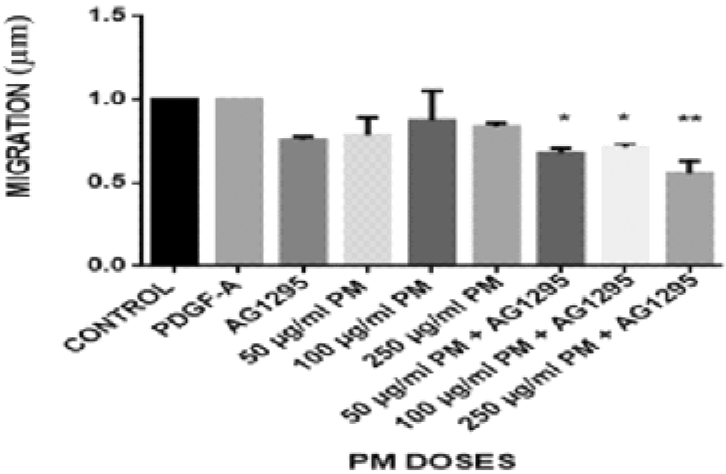


Figure2. (B) Effect of PM 2.5 on C6 cells migration were plotted as a percentage of wound closure. The results are expressed as mean standard deviation

Each year millions of people are exposed to levels of air pollution above promulgated safety standards. Studies showed PM could trigger inflammatory activation of C6 glioma cells in dose- and time-dependentmanners. In the present study, focus was given on the effects of PM2.5 on PDGFA activated MAPK-ERK pathway in rat C6 glioma metastasis. MTT assay data indicates that PM 2.5 increases the C6 cell viability in dose dependent manner. The scratch assay data shows exposure of PM 2.5 along with PDGFR inhibitor further reduce the cell migration compared to control and PM 2.5 alone, suggesting a synergistic effect by PM 2.5 and PDGFR inhibitor on cell migration.

Acknowledgments

We thank Dr. Kedarlal Sharma and Ms.Juhi Singh for their support. We are very much thankful to Dr. Vikram Sarabhai Institute of Cell and Molecular Biology, Faculty of Science, The Maharaja Sayajirao University of Baroda, for providing us the sonicator facility.

Conflict of Interest

The authors declare that they have no conflict of interest.

References

1. Ahern, M.; Hendryx, M. Cancer mortality rates in Appalachian mountaintop coal mining areas. J. Environ. Occup. Sci. 2012, 1 (2), 6370.
2. Akimoto H, 2003. Global air quality and pollution. Science 302:1716–1719. doi:10.1126/science.1092666
3. Becker, S., J. M. Soukup, M. I. Gilmour, and R. B. Devlin. 1996. Stimulation of human and rat alveolar macrophages by urban air pollution: effects on oxidant radical generation and cytokine production. Toxicol. Appl. Pharmacol. 141:637–648.
4. Block ML, Wu X, Pei Z, Li G, Wang T, Qin L, Wilson B, Yang J, Hong JS, Veronesi B, 2004. Nanometer size diesel exhaust particles are selectively toxic to dopaminergic neurons: the role of microglia, phagocytosis, and NADPH oxidase. FASEB J 18:1618–1620. doi:10.1096/fj.04-1945fje

ISSN 0975-8941

5. Bonner, j. C., P. M. Lindroos, A. B. Rice, C. R. Moomaw, and D. L. Morgan. 1998. Induction of PDGF a-receptor in rat myofibroblasts during pulmonary fibrogenesis in vivo. Am. J. Physiol. 274(lung cell. Mol. Physiol.18):l72–l80.
6. G. Oberd ¨orster and M. J. Utell, "Ultraûne particles in the urban air: to the respiratory tract—and beyond?" Environmental Health Perspectives, vol. 110, no. 8, pp. A440–A441, 2002.
7. Genc, S., Zadeoglulari, Z., Fuss, S. H., &Genc, K., 2012. The adverse effects of air pollution on the nervous system. Journal of Toxicology, 2012.
8. Hamra GB, laden F, cohen AJ, raaschou-nielsen O, brauer M, loomis D. 2015. Lung cancer and exposure to nitrogen dioxide and traffic: a systematic review and meta-analysis. Environ health prospect 123:1107–1112; http://dx.Doi.Org/10.1289/ehp.1408882
9. Hendryx, M.; Fedorko, E.; Anesetti-Rothermel, A. A geographical information system-based analysis of cancer mortality and population exposure to coal mining activities in West Virginia, United States of America. Geospat. Health 2010, 4 (2), 243"256.
10. Hendryx, M.; O'Donnell, K.; Horn, K. Lung cancer mortality is elevated in coal-mining areas of Appalachia. Lung Cancer 2008, 62 (1), 1"7.
11. Kobzik, L. 1995. Lung macrophage uptake of unopsonized environmental particulates. J. Immunol. 155:367–376.
12. Li, T., Zhao, J., Ge, J., Yang, J., Song, X., Wang, C., Mao, J., Zhang, Y., Zou, Y., Liu, Y. and Chen, G., 2016. Particulate matter facilitates C6 glioma cells activation and the release of inflammatory factors through MAPK and JAK2/STAT3 pathways. *Neurochemical research*, *41*(8), pp.1969-1981
13. Libermann TA, Nusbaum HR, Razon N, Kris R, Lax I, Soreq H, Whittle N, Waterûeld MD, Ullrich A, Schlessinger J, 1985. Ampliûcation, enhanced expression and possible rearrangement of EGF receptor gene in primary human brain tumours of glial origin. Nature 313:144–147.
14. Lind, C. R. P., Gray, C. W., Pearson, A. G., Cameron, R. E., O'Carroll, S. J., Narayan, P.J., &Dragunow, M., 2006. The mitogen-activated/extracellular signal-regulated kinase kinase 1/2 inhibitor U0126 induces glial fibrillary acidic protein expression and reduces the proliferation and migration of C6 glioma cells. *Neuroscience*, *141*(4), 1925-1933.
15. M. Johnson, N. Lam, S. Brant, C. Gray, D. Pennise, Modeling indoor air pollution from cookstove emissions in developing countries using a Monte Carlo singlebox model, Atmos. Environ. 45, 2011. 3237–3243.
16. Ma JY, Ma JK, 2002. The dual effect of the particulate and organic components of diesel exhausts particles on the alteration of pulmonary immune/inflammatory responses and metabolic enzymes. J Environ Sci Health C Environ CarcinogEcotoxicol Rev 20:117–147. doi:10.1081/GNC-120016202
17. Nazarenko, I., Hede, S. M., He, X., Hedrén, A., Thompson, J., Lindström, M. S., &Nistér, M. (2012). PDGF and PDGF receptors in glioma. Upsala journal of medical sciences, 117(2), 99-112.
18. Sibenaller, Z. A., Etame, A. B., Ali, M. M., Barua, M., Braun, T. A., Casavant, T. L., &Ryken, T. C., 2005. Genetic characterization of commonly used glioma cell lines in the rat animal model system. Neurosurgical focus, 19(4), 1-9.
19. Strawn, L. M., Mann, E., Elliger, S. S., Chu, L. M., Germain, L. L., Niederfellner, G., Ullrich, A., and Shawver, L. K. Inhibition of glioma cell growth by a truncated platelet-derived growth factor â receptor. J. Biol. Chem., 269: 21215–21222, 1994.

ISSN 0975-8941

Aquatic Insect Diversity and Bioassessment of Meenachil River at three sites near Teekoy Adukkom in Kottayam District, Kerala

Justin Jose
Department of Zoology,
Deva Matha College, Kuravilangad, Kottayam 686633
E:mail: justin.jose@devamatha.ac.in, noblejose1@gmail.com

ABSTRACT

Aquatic insect diversityand bioassessment of three sites of MeenachilRiverwere studied.184 specimens belonging to 15 Genera coming under 12 Families and 8 Orders were identified. Trichopteraconstitutes the highest percentage of sampled specimens (36%) followed by Plecoptera (24%), Ephemeroptera(21%), Coleoptera(7%), Odonata (5%), Hemiptera/Heteroptera (6%) and Lepidoptera (1%).Specimens belonging to the family Hydropsychidae(36%) are the most abundant taxa recorded from all three sites, followed by Heptageniidae (21%). TheFamily Biotic Index of the sites reveals 'Excellent' water quality in Vellani, Chamapara and Marumala. The Dominance_D value is lowest in Marumala (0.1541) followed by Vellani (0.2199) andChamapara (0.278) indicating better water quality at Marumala than the other two sites.

Keywords: Bioassessment, Biomonitoring, Rapid Bioassessment, Water quality, River, Stream, Water Pollution, Aquatic insect, Benthos

INTRODUCTION

Benthic Macroinvertebrates, especially aquatic insects have been used to assess water quality in water bodies throughout the world for rapid bioassessment along with chemical testing due to the fact that Biomonitoring techniques such as "Rapid Bioassessment" are less expensive and deliver scientifically valid results which can be used to take quick remedial measures. Many pollutants may be 'invisible' to chemical analysis due to the fact that there are thousands of toxic chemicals that may be discharged into the water and there is a limitation to the number of chemicals that get detected or are tested. Chemical detection "window period" may be too small in case of chemical spills or accidental one time discharge of toxic chemicals into water. It may become untraceable after some time but still have its impact on aquatic ecosystem for an extended period of time. Benthic organisms which are constantly exposed to the physical and chemical constituents of water are sensitive to changes in physical and chemical parameters and therefore are useful for monitoring water quality.

Since Biomonitoring techniques relies heavily on precise identification of organisms collected, more accurate results can be expected by better taxonomic knowledge base. Family level taxonomy has been recommended by many investigators – Kaesler and Herricks (1979), Armitage (1987) and Hilsenhoff (1988) which requires less taxonomic training and thereby minimising cost of hiring and training personnel.

ISSN 0975-8941

However genus or species level identification increases the precision of results (Resh and Unizicker 1975, Hilsenhoff 1982).

REVIEW OF LITERATURE

Biomonitoring group with limited resources can focus either on certain intolerant taxa which can be easily identified or on certain specific Taxa groups such as “EPT” collection method. “EPT” collection method was developed in North Carolina and it involves the use of fewer samples (4 per site) and collections limited to *Ephemeroptera, Plecoptera and Trichoptera* (Eaton and Lenat, 1991).

Study conducted on two catchments GunungJerai (GJ) and Royal Belum State Park (RBSP) observed that environmental parameters were key factors than geographical location in segregating Ephemeropteran communities in their respective catchments. Environmental parameters such as water temperature and pH were strong descriptors of Ephemeropteran community structure in GunungJerai (GJ). High water temperature was favourable to *Isonychia sp., Crinitella sp., Habrophlebiodes sp.* and*Tricorythus sp.* In Royal Belum State Park (RBSP), pH, water velocity, and canopy cover were important in shaping Ephemeropteran communities. *Heptagenia sp., Campsoneuria sp*., and *Habrophlebiodes sp*. were negatively associated with elevating pH and fast running water (MohdHafezul 2016).

Al-Shami et al. (2013) concluded that biochemical oxygen demand (BOD), velocity of the river, ammonia content, and dissolved oxygen (DO) were the determinant factors affecting diversity and abundance of EPT taxa at large spatial scale.

In another study involving family-level biotic index for use in a river in west-central Mexico, that receives organic point-source pollution from untreated municipal sewage and sugar-cane processing, the biotic index was highly correlated to dissolved oxygen and could detect different levels of pollution.

Diversity Indexes

Three commonly used measures of diversity, Simpson’s index, Shannon’s entropy, and the total number of species, are related to Renyi’s definition of generalized entropy. According to Hill and Mark there is a continuum of possible diversity measures. These Indexes themselves are not actual diversity but provide estimates or indicators of the effective number of species present, and differ only in their tendency to include or to ignore the relatively rarer species. The notion of the diversity of a community as opposed to that of a sample is examined, and is related to the asymptotic form of the species-abundance curve. Hill, Mark (1973)

Hill numbers, or the effective number of species, are increasingly used to characterize the taxonomic, phylogenetic, or functional diversity of an assemblage. However, empirical estimates of Hill numbers, including species richness, tend to be an increasing function of sampling effort and, thus, tend to increase with sample completeness.

Family Biotic Index

Family Biotic Index was introduced by Hilsenhoff, William L. (1988) for the purpose of Rapid Field Assessment of Organic Pollution with a Family-Level Biotic Index. Hence it is also known as Hilsenhoff Biotic Index or HBI. Recent studies have observed that family-level taxonomic resolution (Hewlett, 2000); Bailey *et al*.,(2001); Lenat&Resh, (2001) and single-habitat sampling (Hewlett, 2000) were adequate enough for Biomonitoring on a larger scale.

Rapid Assessment of Organic Pollution in a West-central Mexican River using a Family-level Biotic Index observed that the biotic index was highly correlated to dissolved oxygen, and could detect different levels of pollution. Information from rapid assessment biomonitoring was used successfully by local natural resource managers to help bring about improvements in water resource management. J. Henne, Lisa (2002).

METHODOLOGY

At each site a habitat was selected and 10 to 15 sampling were done in varying environmental gradient after plotting the species area curve. Sampling was done after stratifying the study area on the basis of substratum (rocky/pebbles/sandy), riparian cover, type of water movement (waterfall/cascade/riffles/pools).

Aquatic insects were collected from different habitats using kick net and D frame aquatic net. The kick-net is held against water current and an area of $1m^2$ in front of the net is disturbed for one minute. The specimens were preserved in 80% ethanol (Morse C.J 1994pg 19).

The dissolved oxygen content and pH of the water were measured on the spot using portable equipments (EI make). Geographical location of the collected specimens was also noted using GPS device. The collected specimens were identified under stereo zoom microscope using standard taxonomic keys Dudgeon (1999), Morse et al. (1994). The corresponding data were analysed and diversity indexes such as Simpsons Index, Shanon Index, Margalef Index etc were computed using PAST 3 statistical software. The effective number of species at each site were calculated using the equation { exp(He) } where (He) represents Shanons Index. Other metrics such as % EPT and Family Biotic Index were calculated based on the observation.

Locations: Samples were collected from the following locations (Table 1) of Meenachil River and data pertaining to the reference stream was collected from upper Chittar

Table 1: Locations of sample collection in Meenachil river

Sampling Site	Location
Vellani	9.741589 N, 76.832300 E Vellani, tributary of Meenachil river, Near Sreedevi Temple Adukkom, Teekoy)
Chamapara	9.719855 N, 76.828244 E Meenachil stream near Chamapara
Marumala	9.711101 N, 76.848537 E , Meenachil river, Marumala, Adukkom P.O, Vellani, Erattupetta
Upper Chittar (Reference Stream)	8.784209 N, 76.917981 E Irunootimeenmooti Waterfalls, Upper ChittarKummil

RESULTS AND DISCUSSION

Aquatic insect sampling for Bioassessmentof three sites of MeenachilRiver were conducted. 184 specimens belonging to 15 Genera coming under 12 Families and 8 Orders were identified. Trichoptera constitutes the highest percentage of sampled specimens (36%) followed by Plecoptera (24%), Ephemeroptera (21%), Coleoptera (7%), Odonata (5%), Hemiptera/Heteroptera (6%), and Lepidoptera (1%).

ISSN 0975-8941

Diversity Index

Table 2. Diversity Indexes of three sites Vellani, Chamapara, Marumala and reference Stream Upper Chittar

Sites/Indexes	Taxa_S	Individuals	Dominance_D	Simpson_1-D	Shannon_H	Evenness_e^H/S	Margalef	Equitability_J	Fisher_alpha	Berger-Parker
Vellani	11	129	0.2199	0.78	1.762	0.53	2.058	0.735	2.875	0.318
Chamapara	7	18	0.2778	0.722	1.536	0.664	2.076	0.79	4.208	0.389
Marumala	11	37	0.1541	0.846	2.113	0.752	2.769	0.881	5.293	0.27
Upper Chittar (Ref S)	11	49	0.1287	0.871	2.201	0.821	2.569	0.918	4.411	0.225

The diversity index such a Shannon-Weiner, Simpsons, Berger-Parker, Margalefetc were computed using PAST(Paleontological Statistics Software Package for Education and Data Analysis).Simpson indexë or 1-D and Shannon Index H take both abundance and evenness into account even though their index value range differs. Upper Chittar and Marumala waterfalls recorded high Index values

In case of Evenness Index, Vellani scores low index of 0.5295. Like Evenness Index, Equitability Index also indicates level of equitable representationin number by different taxa in that community.

Berger–Parker index is the fraction of total sampled individuals that is contributed by the most abundant species.Marumala and Upper Chittar exhibits better score of 0.2703 and 0.2245 compared to Vellani and Chamapara which exhibits score of 0.3178 and 0.389.Margalef Species Richness indicate that Marumala with highest index value of 2.769 followed by Upper Chittar with an Index value of 2.569.

Effective Number of Species

The limitation of Biodiversity Indexes is that they only indicate the index values and not the actual measure of biodiversity; furthermore each of the indexes may not completely represent all the three aspects of biodiversity - Richness, Abundance and Evenness. Hence the indexes can be used to extrapolate or estimate effective number of species by converting them into 'True Diversity'. In the current study, Shannon index value is converted into Effective Number of Species by the following formula EXP(He), where, He represents Shannon Index. EXP(He) e raised to the power of number. The constant e equals 2.71828182845904, the base of the natural logarithm. Table 3 provides calculated Effective Number of species per site based on the Shannon Index.

Table 3. Shannon Index and Effective No of Species at each site

Site Name	Shannon's Index (He)	*Effective Number of Species at each site EXP(He)*
Vellani	1.762	5.824
Chamapara	1.536	4.646
Marumala	2.113	8.273
Upper Chittar	2.201	9.034

ISSN 0975-8941

Among the three test sites Marumala recorded highest 'Effective Number of Species EXP(He)' compared to the other two sites however the reference stream of upper Chittar shows a higher value compared to all the test streams

Family Biotic Index

Family Biotic Index was introduced by Hilsenhoff, William L. (1988) for the purpose of Rapid Field Assessment of Organic Pollution with a Family-Level Biotic Index. Hence it is also known as Hilsenhoff Biotic Index or HBI. Tolerance values are assigned to organisms at family level which is based on the organism's sensitivity to changes in water quality and habitat. A sensitive organism is assigned lower tolerance value compared to a resistant one. It is calculated using the following formula

HBI = Total(n x a)/Total(n)

Where (n) is the number of organism belonging to a specific family, (a) represents tolerance value of that particular family. The following tabled values were used to interpret the Family Biotic Index values of each site. Lower scores indicate better water quality.

Table 4. Family Biotic Index Interpretation

Family Biotic Index	Water Quality	Degree of Organic Pollution
0.00-3.75	Excellent	Organic pollution unlikely
3.76-4.25	Very Good	Possible slight organic pollution
4.26-5.00	Good	Some organic pollution probable
5.01-5.75	Fair	Fairly substantial pollution likely
5.76-6.50	Fairly poor	Substantial pollution likely
6.51-7.25	Poor	Very substantial pollution likely
7.26-10.00	Very poor	Severe organic pollution likely

Table 5. Family Biotic index of test sites and reference site

Sampling Site	Family Biotic Index	Interpretation
Vellani	3.21	Excellent
Chamapara	3.06	Excellent
Marumala	3.76	Excellent
Upper Chittar	3.88	Very Good

CONCLUSION

The main objectives of the study were identification of major taxa in three sites of MeenachilRiver, analysis of the diversity index and evaluation of the water quality with the reference stream. In the Bioassessment based on Hilsenhoff Biotic Index, the three streams exhibited 'excellent' water quality. In comparison to the reference stream,the test streams Vellani and Chamapara exhibited higher values of dominance index which means presence of few dominant forms which could be due to slight pollution from residential areas on the banks of these streams. The site at Marumala exhibited better values for various indexes which may be due to relatively few settlements near the site and increased turbulence because of its proximity to the waterfall.

ISSN 0975-8941

References

1. Al-Shami, S., M. R. CheSalmah, A. Abu Hassan & M. MadziatulRosemahanie. 2013. Biodiversity of stream insects in the Malaysian Peninsula: Spatial patterns and environmental constraints. Ecological Entomology 38: 238-249.
2. Armitage, Patrick & J. M. Gunn, R & T. Furse, M & F. Wright, J & Moss, D. (1987). The use of prediction to assess macroinvertebrate response to river regulation. Hydrobiologia. 144. 25-32. 10.1007/BF00008048.
3. Bailey, R.C., Norris, R.H. &Reynoldson, T.B. (2001) Taxonomic resolution of benthic macroinvertebrate communities in Bioassessment, Journal of the North American Benthological Society, 20(2), pp. 280–286.
4. Dudgeon, D. (1999). Tropical Asian Streams-Zoobenthos, Ecology and Conservation. Hongkong University Press. Hongkong.
5. E. Eaton, Lawrence &Lenat, David. (1991). Comparison of a Rapid Bioassessment Method with North Carolina's Qualitative Macroinvertebrate Collection Method. Journal of the North American Benthological Society. 10. 355-358. 10.2307/1467606.
6. Hewlett, R. (2000) Implications of taxonomic resolution and sample habitat for stream classification at a broad geographic scale, Journal of the North American Benthological Society, 19(2), pp. 352–361.
7. Hilsenhoff, William L. (1988). Rapid Field Assessment of Organic Pollution with a Family-Level Biotic Index. Journal of the North American Benthological Society, Vol.7, No. 1, pp. 65-68.
8. Hill, Mark. (1973). Diversity and Evenness: A Unifying Notation and Its Consequences. Ecology. 54. 427-432. 10.2307/1934352
9. J. Henne, Lisa & Schneider, Daniel & Martinez Rivera, Luis. (2002). Rapid Assessment of Organic Pollution in a West-central Mexican River Using a Family-level Biotic Index. Journal of Environmental Planning and Management. 45. 613-632. 10.1080/0964056022000013039
10. Jost, Lou & Devries, Philip & Walla, Thomas &Greeney, Harold & Chao, Anne & Ricotta, Carlo. (2010). Partitioning diversity for conservation analyses. Diversity and Distributions. 16. 65 - 76. 10.1111/j.1472-4642.2009.00626.x.
11. Kaesler, R. L. and Herricks, E. E. (1979), Hierarchial Diversity of Communities of Aquatic Insects and Fishes. JAWRA Journal of the American Water Resources Association, 15: 1117-1125. doi:10.1111/j.1752-1688.1979.tb01090.x
12. Lenat, D.R. &Resh, V.H. (2001) Taxonomy and stream ecology—the bene.ts of genus- and species-level identifcations, Journal of the North American Benthological Society, 20(2), pp. 287–298
13. MohdHafezul W.A.G., Wan &Salmah, Md&Ab Hamid, Suhaila& Al-Shami, Salman & Hassan A., Abu & Hassan A. N., Nik. (2016). Variation in environmental conditions influences diversity and abundance of Ephemeroptera in forest streams of northern Peninsular Malaysia. Tropical Ecology. 57. 489-501.
14. Morse C.J, Yang Lianfang and TianLixin (ed.) (1994). Aquatic Insects Of China Useful For Monitoring Water Quality. Hohai University Press, Nanjiing People's Republic Of China pg 19
15. Resh, V., &Unzicker, J. (1975). Water Quality Monitoring and Aquatic Organisms: The Importance of Species Identification. Journal (Water Pollution Control Federation), 47(1), 9-19. Retrieved from http://www.jstor.org/stable/25038592
16. Subramanian, K.A. and Sivaramakrishnan, K.G. (2007). Aquatic Insects forBiomonitoring Freshwater Ecosystems-A Methodology Manual. Ashoka Trust for Ecology and Environment (ATREE), Bangalore, India. 31pp

ISSN 0975-8941

Coloured silk cocoon production by modified feeding method

***Maya George and Sreekala S.**
**PG Department of Zoology, Alphonsa College Pala, Kottayam (Dist), 686574*
Email:mayarosegeorge@gmail.com, sreekalas91@gmail.com

ABSTRACT

Dyeing of textiles is one of the most polluting industries.A promising technology that can clean up textile industry involve generation of intrinsically coloured silk cocoons. Silkworm larvae can make coloured cocoons byfeeding mulberry leaves containing dyes. The experiment was conducted by using three different azo dyes; Acid Red33, Acid Orange II and Mordant black 17 at five different concentrations. These dyes produce coloured cocoons in pink, yellow and light violet colour. Acid Orange II was found to be better dye than other dyes. The growth of silk worm and rearing performance were found to be deteriorated with the increasing concentration of dyes.

Keywords: *Bombyx mori*, Azo dyes, coloured cocoon.

INTRODUCTION

India has unique distinction of being the only country which produces all commercial varieties of silk. Mulberry silkworm has been exploited for over 4000 years. All the strains of mulberry silkworm belong to the species *Bombyx mori*. It contributes about 95% of world's silk production. Bivolatine varieties produce only two generation in a year. It is mostly seen in Japan, China and India. Multivolutine produce more than three generations in a year. It is mostly seen in South India and is more disease resistant.

The mulberry silk worm (*Bombyx mori* L) is a domesticated insect which feed exclusively on mulberry leaves to produce raw silk in the form of cocoon. The mulberry silkworm is a very important economic insect that contributes substantially to the national economy of India and provides gainful occupation to lakhs of people. The silk production in India is mainly concentrated in the states of Karnataka, West Bengal, Andhra Pradesh and Jammu and Kashmir. It is well known that one of the country's rare and rich potential for sericulture abounds in mulberry silkworms. Jammu and Kashmir state represent an ideal and fertile land for the growth and development of bivoltine silkworm and mulberry cultivation. The silkworm has been extensively utilized as model organism in biological studies as well as for economic gains. Commercial rearing of silkworms has been practiced for over 5000 years in different parts of the world (Nagaraju and Goldsmith,2002) and an estimated 4310 silk germplasm strains are being reared worldwide.

Silkworm larvae after the fourth moult,spin their cocoons. This process is achieved by the worm through a dense fluid secreted from its structural glands, resulting in the fibre of the cocoon. The silk is a continuous filament comprising fibroin protein, and a gum called sericin, which cements the filaments(Nishal *et al*., 2013). The sericin is removed by placing the cocoons in hot water. The immersion in hot water also kills the silkworm pupae.

Textiles and their end products constitute the world's second largest industry, only ranking below food products. The textile production involves several wet processes that include scouring, bleaching, dyeing and finishing of textile fibres. Because the largest use of textiles is in the retail apparel market, most textile fibres (both natural and synthetic) undergo a dyeing process to obtain coloured fabric. Dyeing is the application of colour, mostly with aqueous solutions of synthetic organic dye, to fibre, yarn or fabric. Dyeing remains one of the most polluting chemical processes because it produces large volumes of toxic wastewater as a by product, which needs efficient and cost effective effluent treatment before the water can be safely released back to the nature (Moore and Ausley, 2004). Hence the new 'green' dyeing methods have to be developed to solve this enormous problem.

Researchers have recently developed a green technique to produce colour silk in which the silkworm directly spin a coloured silk cocoon (Tansil *et al*., 2011). The present study was conducted with the aim to study about the effect of different azo dyes in the production of coloured cocoons and their yield.

METHODOLOGY

Collection of silkworm eggs: The eggs of silkworm were collected from serifeid office, Palakkad. The collected eggs were kept in a black box for incubation to prevent the entry of light. The eggs were hatched within 2 days. Rearing of silkworms was done in a well aerated room in the college campus.

Feeding and rearing of larvae: To start feeding first glossy leaves of mulberry were selected. Brushing net is spread over the hatched eggs. The leaves were chopped to small sizes and sprinkled over the brushing net to attract the newly hatched larvae to crawl over brushing net. After 3-4 hours, when all the newly hatched larvae crawled over the net, the net along with mulberry leaves and worms are lifted gently and transferred to the raring tray. As they grow and needed more space, they were been transferred to big trays. Feeding the leaves provided more frequently and in small quantities.

During 2nd instar bed was cleaned twice. When the larva is going to moult, their appetite is reduced, they stop feeding and body becomes shining. Moulting larvae is identified by the feature of head raising and pointed mouth portion. For uniform moulting, lime powder is dusted on the larval bed. After the 4th moult, matured larvae show translucent body, slightly decreased body size and starts climbing up vertically. A net is placed over the rearing tray and the larvae which are ready for spinning move upwards to the netrika and it started spinning. After 4 days cocoons were harvested from netrika. Silkworm need 2-3 days for spinning and 3 more days for larvae changing to pupae. Fresh cocoons with alive pupa will become moth and penetrate the cocoon to get out.

Production of coloured cocoon: The silkworm larva undergoes four moulting that determine the 5th larval instars. These larvae were selected for modified feeding.

Chemicals used:Acid Red 33, Acid Orange II and Mordant black 17

Modified feeding: The silkworm larvae in their fifth instar stage were fed with fresh mulberry leaves. On third, fourth and fifth days of the fifth instar, the larvae were fed with modified feed. For each dye 30 larvae were taken in separate trays. This feed was prepared by dissolving a measured amount of dye in water and dipping the mulberry leaves in this dye solution. The air dried fresh leaves are then fed to the silkworm.Five different concentrations of dye solutions were prepared. They are 1mg/ml, 5mg/ml, 10mg/ml, 15mg/ml and 20mg/ml.

Statistical analysis of data: The experiment was conducted within the campus of Alphonsa College, Pala. The data on the growth of silkworm and rearing performance as single shell weight, shell ratio, silk gland somatic index, silk conversion index and yield of larvae were calculated. These data were analysed as per the statistical procedure of Gomez and Gomez (1984).

$$\text{Shell ratio (\%)} = \frac{\text{Single cocoon shell weight (g)}}{\text{Single cocoon weight (g)}} \times 100$$

$$\text{Silk gland somatic index} = \frac{\text{Silk gland weight (g)}}{\text{Mature larvae weight (g)}} \times 100$$

$$\text{Silk conversion index (\%)} = \frac{\text{Shell weight (g)}}{\text{Silk gland weight (g)}} \times 100$$

$$\text{Yield larvae (kg)} = \frac{\text{Weight of cocoons harvested}}{\text{No. of worms retained after } 3^{rd} \text{ moult}} \times 10000$$

Control experiment: A control experiment was conducted using 30 fifth instar larvae fed with normal mulberry leaves (without dipping in any dye) and similar statistical procedures were followed for the comparison.

RESULT AND DISCUSSION

Life cycle of mulberry silkworm represented a complete metamorphosis including all four stages; egg, larva, pupa and moth. Larval stage includes 5 instars in between the 4 moultings. The total days took for the completion of silkworm life cycle was found to be about 40 – 45 days. According to Ravindran *et al* (1997) life cycle of *Bombyx mori* was completed in around 43 – 47 days. Under ideal conditions it has been reported that the total larval duration is 23-27 days (Anita *et al*., 2014). In our study on third day the first instar larvae moulted. Second instar lasted for 5 days and third instar for 6 days. After 6 days of fourth instar life the larvae moulted and enters into fifth instar stage. At the end of the larval life they stop feeding and are ready for pupation. Larva reveals progressive growth during these moulting stages (Table 1). The first instar larve measured 4mm in length and 40mg in weight. Pupa attained 69mm in length and 5000mg in weight.

Commercial silk fiber produced by the mulberry silkworm is generally white. In the present study 3 azo dyes were used and they produced coloured cocoons having pink, yellow and light violet colours. The azo dyes were given to the silk worms by dipping the mulberry leaves in dye solution and air drying it. Modified feed was given to the mulberry silkworm from the third day of fifth instar until they started spinning cocoons. Up to that they were fed with fresh mulberry leaves. On feeding with dye dipped leaves the body of the silkworm showed staining on the external tissue. The larvae fed with Acid Red 33 showed higher staining on the external body surface. The dye fed silkworm showed the coloured silk glands as the dye colour was taken up by the glands.

The experiments using different concentration for each dye revealed differences in pupation (Table 2). Acid Orange II showed highest pupation rate at the lowest concentration (1 mg/ml) ie., about 96.60%. As the concentration of dye increases there is decrease in the number of larvae which undergo pupation. The control experiment revealed 100% pupation. Similar modified feeding experiment was conducted by Nisal*et al.* (2013). In their work they got 100% of pupation in the case of Acid Red, Acid orange II and Mordant black at 1mg/ml.

ISSN 0975-8941

Table 1: Growth measurements of silkworm larvae in control experiment

Days	Average length (mm)	Average weight (mg)
1	4	40
2	5	50
3	6	60
4	7	80
5	8	90
6	9	100
7	10	300
8	12	500
9	15	700
10	20	900
11	22	1000
12	25	1510
13	27	2000
14	30	2300
15	35	2560
16	40	3000
17	43	3500
18	45	3900
19	50	4000
20	57.5	4150
21	60	4250
22	62	4350
23	64	4400
24	66	4450
25	69	5000

Table 2: Percentage of cocoons produced by modified feeding with different concentrations of dye.

Dye used	% of Pupation				
	1 mg/ml	5 mg/ml	10 mg/ml	15 mg/ml	20 mg/ml
Acid red 33	90.00	73.30	50.00	33.30	26.60
Acid orange II	96.60	86.60	70.00	56.60	53.30
Mordant black17	93.30	83.30	70.00	53.30	50.00

Table 3: Statistical analysis of rearing performance at 10mg/ml concentration

Dye	Shell ratio (%)	Silk gland somatic index	Silk conversion index (%)	Yield larvae (kg)
Acid red 33	18.15	23.88	44.98	7560.60
Acid orange II	18.62	20.08	49.26	13355.30
Mordant black 17	17.84	21.44	42.14	12425.00

Coloured cocoons were produced by modified feeding supplemented with Acid Red 33 and Acid orange II at a concentration of 1mg/ml. But Mordant Black 17 produced coloured cocoons at 10mg/ml concentration. The silkworm has an open circulatory system, i.e. the haemolymph surrounds all the tissues. Thus, the dye must have diffused out of the alimentary canal into silkworm's haemolymph and then from haemolymph into silk glands and other tissues. The solubility of the dye in haemolymph and differential permeation through the linings of various tissues are likely to control the transfer of the dye to the silk glands (Nisal *et al.,* 2013).

Table 4: Statistical analysis of rearing performance at 20mg/ml concentration

Dye	Shell ratio (%)	Silk gland somatic index	Silk conversion index (%)	Yield larvae (kg)
Acid red 33	16.27	23.01	45.74	5130.00
Acid orange II	18.12	16.76	43.12	8183.00
Mordant black 17	16.37	16.46	29.13	6874.00

Table 5: Statistical analysis of rearing performance at 20mg/ml concentration

Dye	Shell ratio (%)	Silk gland somatic index	Silk conversion index (%)	Yield larvae (kg)
Acid red 33	9.83	18.53	29.20	3445.33
Acid orange ii	16.64	10.59	31.23	2784.00
Mordant black 17	16.37	16.46	29.13	3815.00

Table 6: Statistical analysis of rearing performance of control experiment

Shell ratio (%)	Silk gland somatic index	Silk conversion index (%)	Yield larvae (kg)
26.42	27.47	55.64	19107.00

Dyes were given at five different concentrations of which lower concentration showed higher pupation rate, shell ratio, silk gland somatic index, silk conversion index and yield.Results of the statistical analysis is given in the Table 3 to 6. Shell ratio remained higher in spring than summer season irrespective of races (Bashir *et al*., 2014). They reported that shell ratio of different mulberry silk worms were varied between 16.36 to 24.60 %. In the present study highest shell ratio was observed in the control experiment. Acid orange II at 10mg/ml concentration have shell ratio of 18.62%. Bashir *et al*. (2014) reported that silk gland somatic index of different genotypes of *Bombyx mori* were varied from 24.43 to 33.15.In the present study among the different dyes used Acid red 33 at 10mg/ml of concentration showed highest silk gland somatic index. Silk conversion index of different mulberry silkworms were reported to be varied between 24.43% to 33.15 % (Bashir *et al*., 2014). But in the present study control experiment revealed 55.64% of silk conversion index. Of all the three dyes used Acid Orange II showed highest performance in each concentration in the case of shell ratio, silk conversion ratio and yield larva. In the case of silk gland somatic index highest performance was shown by larvae fed with Acid Red 33.

Modified feeding method of Nisal *et al* (2013) with 7 different azo dyes of which Acid Red, Acid orange II and Mordant Black 17 showed good results and other 4 dyes showed no results.They also reported that colour produced in cocoons was not lost in degumming. They concluded that the molecules with the balance of hydrophobic and hydrophilic characters are necessary for the diffusion of the dye from the alimentary canal of the silk worm larvae into the haemolymph and later into the silk glands.

From the present study it was found that Acid Red 33, Acid Orange II and Mordant Black 17 can impart their characteristic colours to cocoons. Also Acid Orange II dye at 1 mg/ml concentration is found to be very efficient since it has highest pupation rate (96.60%), shell ratio (19.57%), silk conversion rate (52.01%) and yield larvae (10536.60).

CONCLUSION

Silkworm is one of the most important domesticated insects, which produces luxuriant silk thread in the form of cocoon by consuming mulberry leaves during larval period.The silkworm has been extensively utilized as model organism in biological studies as well as for economic gains. Natural silk fibres are used in textile applications for centuries. These silk fibres are typically dyed to increase their appeal in the retail apparel market. Dyeing of fibres involves use of hazardous chemicals and it leads to environmental pollution. A promising technology that can potentially cleanup textile application and reduce pollution would involve generation of intrinsically coloured silk cocoons. This process significantly reduces the need for treating toxic dye effluents and water use. The development of inexpensive novel dye molecules that can successfully diffuse into silk gland help in producing intrinsically coloured silk of various colours and shades.

REFERENCES

1. Anita, Tripathi N.K., Bhatti A.A and Poonam. 2014. Comparative analysis of developmental stages in six different bivoltine races of *Bombyxmori*. International Journal of Recent Scientific Research. 5 (11): 1969-1972.

2. Bashir M., Kamili A.S. and Sharma R.K. 2014. Assessment of variability between growth and yield

ISSN 0975-8941

attributes of bivoltine silkworm *Bombyxmori*L. under temperate climatic conditions. International Journal of Advanced Biological Research. 4 (3): 374-379.

3. Gomez and Gomez. 1984. Statistical procedures for Agricultural Research. John Wiley and Sons, New York. Pp: vii + 68 Netherland.
4. Moore S.B. and Ausley L.W. 2004. Systems thinking and green chemistry in the textile industry: concepts, technologies and benefits. Journal of cleaner products. 12: 585-601.
5. Nagaraju, J. and Goldsmith M.R. 2002. Silkworm Genomics—Progress and Prospects. Current Science. 83: 411-425.
6. Nisal A., Trivedy K., Mohammad H., Panneri S., Gupta S.S., Lele A., Manchala R., Kumar N.S., Gadgil M., Khandelwal H., More S. and Laxman R.S. 2013. Uptake of Azo Dyes into silk glands for production of colored silk cocoons using a Green Feeding Approach. ACS Sustainable Chemistry & Engineering. pubs.acs.org/journal/ascecg.
7. Ravindran S., Rao A.A., Naik V.G., Tikader A., Mukherjee P., Thangavelu K. 1997. Distribution and variation in mulberry germplasm. Indian Journal of Plant Genetic Resources. 10: 233-242.
8. Tansil N.C., Li Y., Tenq C.P., Zhang S., Win K.Y., Chen X., Liu X.Y. and Han M.Y. 2011. Intrinsically colored and luminescent silk. Advanced Materials. 23: 1463"6.

ISSN 0975-8941

Sublethal toxicity of Organophosphate pesticide, Quinalphos on Haematological parameters of *Anabas testudineus.*

Arunima Sebastian*and Joe Prasad Mathew**

**Department of Zoology,Deva Matha College, Kuravilangad*

***Department of Zoology, St.Berchmans College, Changanacherry*

ABSTRACT

The present study aims at investigating the impact of sublethal concentration of organophosphate pesticide, Quinalphos on haematological parameters of *Anabas testudineus* during various periods of exposure. Sublethal concentration of 1/5 and 1/10 LC_{50} concentration bring significant changes on total erythrocyte and white blood cell count. Alternation of haematological parameters clearly indicates toxicity of organophosphate pesticides on nontarget animal groups.

Keywords:*Anabas testudineus*, Quinalphos, toxicity, RBC, WBC.

INTRODUCTION

The pattern of productivity,efficiency and sustainability of agroecosystem which had been achieved over centuries through traditional pattern of cropping changed with the onset of Green revolution. The modernization of agriculture and environmental degradation are closely linked and found in many parts of the world. The ground water in Hariyana and Punjab shows toxic levels as a result of accumulation pesticides used in agriculture (singh, 2000). Because of thecontinous entry into soil, pesticides forms the major anthropogenic factor to produce soil contamination (Sahu *et al*.,2014).

Insecticides are classified into Organochlorine, Organophosphate, Pyrethroids&Carbamates depending on the chemical class. Organophosphate pesticides are hydrophilic, polar and derivative of mineral and phosphoric acid and are preferred to the organochlorine pesticides due to its low persistence in nature. But this property demands repeated application during crop period (Pandey *et al* ., 2009).

Pollution of ecosystem accounts for population decline and biodiversity loss (Buric et al., 2013). Blood tissue factors are very sensitive to surrounding medium and produce the physiological and pathological changes in its parameters in accordance with the external factors (Deka & Dutta, 2012). Haematological changes affect the fitness of fish and which in turn affects its population health

MATERIALS AND METHODS

Anabas testudineus were collected from the local fishermen in Kaduthuruthy, Kottayam, India. They were transported with proper oxygenation to the laboratory of the S.B College, Changanacherry. They were given a prophylactic dip in salt solution for 1 min and stocked for 30 days for acclimation. They were fed fish feed. Feeding was stopped 24 h before starting of the experiment. The LC_{50} calculation started with range finding test (Ndimele et al. 2015) to acute toxicity test or definitive test for 96 hour in the laboratory. Finally the LC_{50}value was calculated with the help of probit analysis.1/5th and 1/10th concentration of calculated LC_{50} was selected for sublethal studies. Acclimated fish were divided into control and treatment. Treatment group were treated with sublethal concentration of Quinalphos.At the end of stipulated exposure periods blood were collected into heparinised syringe and WBC and RBC enumerated using haemocytometer.

RESULTS AND DISCUSSION

In fish Haematological parameter gives quick response to stress and environmental conditions than other commonly measured parameters. So they are widely used as biomarkers in assessing adaptive response, stress conditions and health status of organisms (Sayeed *et al*,2003).

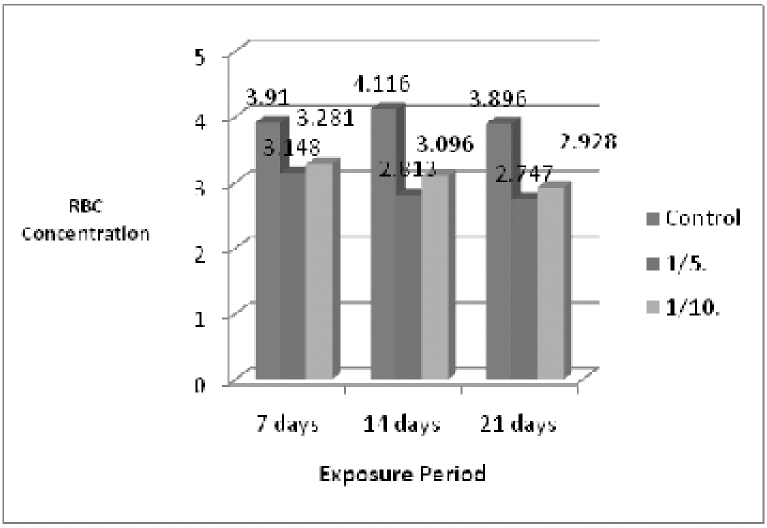


Figure 1: Graph showing changes in RBC concentration after Exposure to Quinalphos

Results as indicated in Figure 1 shows alternation in total erythrocyte count at both concentration of pesticide during the exposure period. With the sub lethal concentration of Quinalphos erythrocyte shows decreasing trend during initial exposure period.Maximum reduction to 2.7 million cells and 2.9 million cells was noted during 21 day of exposure in 1/5 and 1/10 concentration respectively.Tamizhazhagan (2015) observed decrease in erythrocyte count in *Labeo rohita* exposed to sublethal concentration of Monocrotophos. Fall in RBC count indicate the impact of Quinalphos on erythropoeitic organs leading to decreased production (Devi *et al*, 2015)

The results of WBC showed specific alternationwith concentration and exposure period. Maximum count of white blood cells was recorded in 7 day exposure in both 1/5 and 1/10 concentration of Quinalphos. This trend reversed with 14thday and decreased significantly towards 21stday of exposure (Figure 2).

According to Riaz et al, 2017 the exposure to Malathion and Cypermetrin enhanced white blood cell number within 7 days of exposure. Increase in WBC may results from activation of immune system due to intoxication of pesticide.In *Cyprinus carpio,* Chlorpyrifos toxicity develop significant decrease in erythrocyte count (Ramesh and Saravanan, 2008). According to Svobova *et al*. (2001) Pesticide exposure in fish diminishes nonspecific immunity and this may be the reason to decrease in haematological parameters in the present study. Inhibition of erythropoiesis and degeneration of erthropoietic tissues by organophosphate pesticide may account for the reduction of RBC level in the present study.

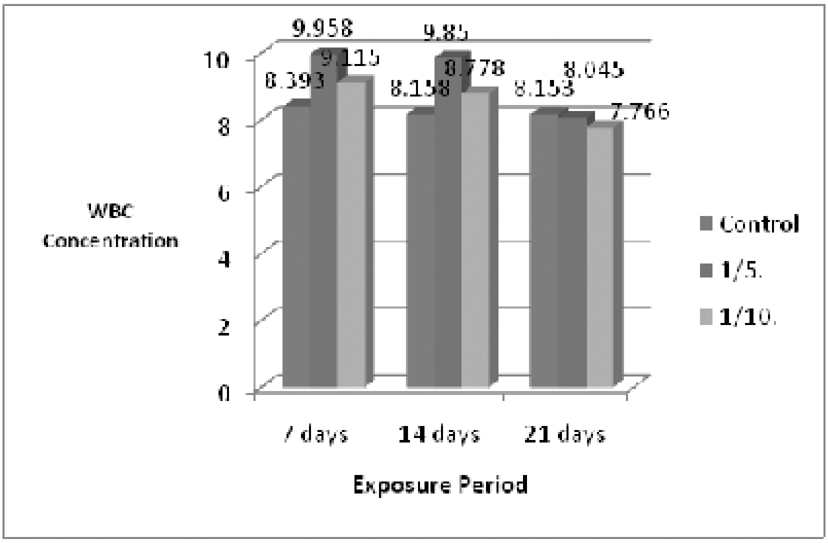


Figure 2: Graph showing changes in WBC concentration after Exposure to Quinalphos

CONCLUSION

Anabas testudineus found commonly in fresh water resources and rice fields in Kerala is largely under threat from heavy pesticide application in rice fields and surface runoff from agricultural land areas. This study in such stressed experimental condition revealed the induced alternation of haematological parameters which indicate the impact of pesticides to non target organisms and need careful usage of pesticides under strict monitoring.

REFERENCES

1. Buric, M., Kouba, A., Machova, J., Mahovska, I., &Kozak, P. (2013). Toxicity of the organophosphate pesticide diazinon to crayfish of differing age. *International Journal of Environmental Science and Technology*, *10*(3), 607–610. https://doi.org/10.1007/s13762-013-0185-4
2. Deka, C., &Dutta, A. K. (2012). Effects of cypermethrin on some haematological parameters in *Heteropneustesfossilis* (bloch). *N Save Nature to Survive*, *7*(2), 221–223.
3. Devi, A., Binukumari, K., &Vasanthi, J. (2015). Effects of monocrotophos on haematological analysis of blood in an indian freshwater fish, *Labeorohita*. International Journal of Recent Advances in Multidisciplinary Research,2,(10), pp.0870-0874.
4. Ramesh, M., Saravanan, M., 2008. Haematological and biochemical response in a fresh water fish Cyprinuscarpio exposed to chlorpyrifos. Int. J. Integral Bio. 3 (1), 80–83.
5. Riaz, M., Yousafzai, A. M., &Riaz, C. M. (2017). Toxic effects of insecticides malathion and cypermethrin on hematological parameters in blood of male rabbits (*Oryctolaguscuniculus*). *Journal of Entomology and Zoology Studies JEZS*, *5*(53), 154–158.
6. Sabiha, K. and Neelam, S. (2013). Histopathological alterations in the kidney of *Gambusiaaffinis* after exposure to chlorpyrifos. International Journal of Chemistry and Pharmceutical Sciences 1: 122-127

ISSN 0975-8941

7. Sahu,N., Raha,P., Sahu,A., and Singh, U.D. (2014). The effect of organophosphorous pesticide on enzyme activites in Alluvial Soil, Nature Envt. And Pollution Technology, 13(4) 775-780

8. Sayeed, I., Parvez, S., Pandey, S., Bin-Hafeez, B., Haque, R., &Raisuddin, S. (2003). Oxidative stress biomarkers of exposure to deltamethrin in freshwater fish, *Channapunctatus* Bloch. *Ecotoxicology and Environmental Safety*, *56*(2), 295–301. https://doi.org/10.1016/S0147-6513(03)00009-5

9. Singh, R., 2000. Environmental consequences of agricultural development: a case study from the Green Revolution state of Haryana, India. Agric. Ecosyst. Environ. 82, 97–103.

10. Svobodova M, Luskova V, Drastichova J, Zlabek V (2001) The effect of diazinon on hematological indices of common carp Cyprinuscarpio. Acta Vet Brno 70:457–465 Tamizhazhagan, V. (2015). The Toxicity Effect OfMonocrotophos 36% E. C On The Haematology, *LabeoRohita* (Hamilton, 1882). *International Journal of Current Pharmaceutical Research*, *7*(4), 92–95.

ISSN 0975-8941

A Comparative Study on Direct Benefit Transfer Scheme with Conventional Method in Scholarship Distribution

George Sebastian* and Divya Joseph**
**Department of Commerce,Good Shepherd College, Nattakom, Kottayam*
***Post Graduate Department of Commerce, Kuriakose Elias College, Mannanam*

ABSTRACT

The Government of India has now started the Direct Benefit Transfer scheme (DBTS) as an anti-povertyprogramme. DBTS aims to transfer subsidies directly to the people. With this scheme the beneficiaries get the amount directly in their bank accounts. The primary aim of DBTS is to bring transparency in distribution of funds sponsored by central Government of India. The programme covers entire nation and is useful for millions. Significance of DBTS system can be identified only on comparing the system with conventional system. The study covers various aspects relating to educational scholarships distributed through Direct Benefit Transfer System (DBTS), benefits and limitations of the system, awareness about the system among students, satisfaction level of beneficiaries and comparison of DBTS with conventional system.

Keywords: DBTS, Conventional method, scholarships, satisfaction

INTRODUCTION

To meet the socio-developmental objectives, such as poverty elimination and inclusive growth, a number of Government sponsored programmes and schemes have been introduced. There are many schemes and programmes of the Government of India under which many benefits are provided to the people such as subsidies, scholarship to students, feeding children, and micro credit to poor women. As a poverty alleviation programme, DBTS was launched on 1st January 2013. The Direct Benefits Transfer (DBT) simply involves transferring the subsidy amount and other benefits (called transfers) directly to the beneficiaries' bank accounts instead of providing it through government offices. The purpose of Direct Benefit Transfer is to ensure that benefits go to individuals bank accounts electronically, minimizing tiers involved in fund flow thereby reducing delay in payment, ensuring accurate targeting of the beneficiary and curbing pilferage and duplication. Several programmes were added into the DBT platform including Scholarships to students and the NREGS wages. A total of 74 schemes and 17 ministries are made under DBT as on March 2016. Linking DBT with Aadhaar information and ID platform is a major achievement. Government has linked the Aadhaar ID of the beneficiary with the DBT and is aiming to make this link applicable for all payments. Efficient targeting, using the Aadhaar-linked data ensures that the right beneficiary receives the money in his account, thereby ensuring transfer to the deserving persons. As on June 2016, around Rs 1.2 lakh crore were disbursed through the DBT platform to nearly 30 crore beneficiaries.Convenient banking facility must be provided to each and every citizen of the country. Studying the benefits of the DBT system along with its limitations enables the Government to make necessary changes in the system.

STATEMENT OF PROBLEM

DBTS programme is of recent origin. Many of the marginalized and weaker sections are potential beneficiaries of DBTS. Awareness of the schemes, willingness to operate through banks and compliance to procedures are issues to deal with while looking at benefits from DBTS. The Direct Benefit Transfer is the reform that revolutionized the delivery of government's transfers including subsidies to the people. There are numerous transfers from the government to the different sections of the people especially to the weaker sections including: wage payments, fuel subsidies, food grain subsidies, pensions etc.Transfer from the Government to the people especially the poor ones and that involving millions of people as beneficiaries are made through the platform of DBT over the last few years. Here the study propose to analyse the satisfaction of Direct Benefit Transfer System beneficiaries and to compare DBTS with conventional method, the problem is titled as "A comparative study on direct benefit transfer scheme with conventional method in scholarship distribution; with special reference to students of KE College, Mannanam".

REVIEW OF LITERATURE

Jairam Ramesh and Varad Pande, (2013) The Direct benefit transfer program aims that entitlements and benefits to people can be transferred directly to them through biometric based Aadhaar-linked bank accounts, thus reducing several layers of intermediaries and delays in the system. The DBT initiative is not a silver bullet for the malaise that plagues our public delivery system. It is more realistically, a first step in re-engineering its very foundations. We are neither evangelical nor dogmatic about DBT. Instead we believe that rather than having endless ideological discussions "for" or "against" DBT, it is better to be pragmatic and try it out seriously and systematically, albeit in a cautious and phased manner.

Pravakar Sahoo (2013), Direct Benefit transfer is considered as a panacea (solution) to remove poverty from the country and to bring financial equality in India. The scheme includes subsidy distribution on fertilizers, food, solar equipments, water conservation, LPG gas subsidies and scholarship benefits to students at higher and matriculation level etc. It covers the entire country. The scheme has shown great performance in the introduction stage and we need the graph to rise.

Vinayak Kaushal (2018), Direct benefit Transfer (DBT) is an ambitious scheme, launched by the Union Government which aims to eliminate poverty from the country and improve the economic standard of individuals and their families. As per this scheme, money is transferred directly into bank accounts of the beneficiaries in the form of subsidies on LPG and Kerosene, pension payments, scholarships and employment guarantee scheme payments etc. Basic idea behind DBT is to cut down wastage, duplication and leakages and to enhance efficiency.

Maureen A. Pirog, Craig L. Johnson (2008), This article examines how electronic funds transfers and electronic benefit transfers have become integral components of digital government. The greater efficiency and cost savings for the federal and most state governments have not been achieved without encountering and dealing with serious matters related to customer service, contracting, collaboration, management, and implementation.

Suyash Rai (2013), analyzed that as long as implementation is adequate, the basic direct cash transfer scheme that has started, and the direct non-cash transfer of welfares based on Aadhaar-based verification, are good ideas. An important thing to realize is the interesting interplay between direct cash transfer and financial inclusion. The banking channels, especially in rural areas, could become more viable.

Partha and Mukhopadhyay (2013), studied that the real potential lies in shifting thinking from targeting to traceability and mitigating transactional instrumentalism in market transactions. Direct benefit Transfer trace down the poor sections of the society and convert them into beneficiaries of the scheme.

OBJECTIVES

1) To evaluate the satisfaction level of beneficiaries who are under DBTS.
2) To understand the basis on which students receive Scholarships under DBTS.
3) To compare the scheme with the conventional distribution method.
4) To point out the limitations of the DBTS programme.

METHODOLOGY

All the beneficiaries of various schemes of scholarship distributed through Direct Benefit Transfer System in Kuriakose Elias College, Mannanam constitute the universe of the study. 109 students are getting different scholarships from this college under DBTS system. A census study is conducted among all the beneficiaries and data was collected through a structured questionnaire.

HYPOTHESES

1. H_0 – There is no significant difference between satisfactions of Degree and Post Graduate students

   H_1 - There is significant difference between satisfactions of Degree and Post Graduate students.

2. H_0 – There is no significant difference between satisfactions of students under various scholarship schemes.

   H_1 - There is significant difference between satisfactions of students under various scholarship schemes.

ANALYSIS AND INTERPRETATION

Evaluation of satisfaction level of beneficiaries

Satisfaction of beneficiaries on DBTS was evaluated on a Five point Likert scale. Satisfaction was evaluated at five levels i.e., highly satisfied, satisfied, neutral, dissatisfied and highly dissatisfied. The scores assigned are 5 for highly satisfied, 4 for satisfied, 3 for neutral, 2 for dissatisfied and 1 for highly dissatisfied. It is clear from table 4.2.8, that majority of respondents are highly satisfied with the promptness of DBTS with mean score of 4.36. Beneficiaries are highly satisfied with the evaluation method with a mean score of 4.22. Regarding support from college, beneficiaries are highly satisfied with a mean score of 4.29. Beneficiaries are satisfied about the bank's response and mean score is 3.45. For survey results see Table No. 1

Table 1. Satisfaction level of beneficiaries

Satisfaction Level	Highly Satisfied	Weighted value	Satisfied	Weighted value	Neutral	Weighted value	dissatisfied	Weighted value	Highly dissatisfied	Total	Weighted Total	Mean Score
Promptnessof DBTS	42	210	64	256	3	9	0	0	0	109	475	4.36
Evaluation method	31	155	73	292	3	9	2	4	0	109	460	4.22
Support from college	48	240	45	180	16	48	0	0	0	109	468	4.29
Bank's response	14	70	32	128	52	156	11	22	0	109	376	3.45

(Source: Primary data)

Basis for Scholarship

Classifications of respondents were made on the basis of which scholarship is granted.Among the 109 respondents 13(11.92%) get scholarship on the basis of their merit in studies, 16(14.68%) get scholarship on the basis of their financial backwardness, and 80 (73.40%) on the basis of both of these. For survey results see Table 2.

Table 2 Basis for Scholarship

Basis for Scholarship	No. of respondents	Percentage
Merit in studies	13	11.92
Financially Backward	16	14.68
Both of these	80	73.40
Total	**109**	**100**

(Source: Primary data)

Preference of Conventional system over DBTS

A study was conducted to evaluate the preference of conventional system over Direct Benefit Transfer System. Out of the total of 109 respondents 104(95.42%) prefer DBTS and balance 5(4.58%) prefer conventional system. Survey results are given in Table No. 3

Table 3 Preference of Conventional system over DBTS

Preference of conventional system	No. of respondents	Percentage
Yes	0	0
No	109	100
Total	**109**	**100**

(Source: Primary data)

Limitations of DBTS

DBTS is not free from limitations. Limitations of direct Benefit Transfer System were analysed. Among the 109 respondents 38(34.87%) face difficulty in applying, 21(19.26%) face limitation of paying bank charges, 2(1.83%) face delay in getting scholarship, and 48(44.04%) face difficulty in submitting evidence. Survey results are given in Table No. 4

Table 4 Limitations of DBTS

Limitation of DBTS	**No. of respondents**	**Percentage**
Difficulty in applying	38	34.87
Bank charges	21	19.26
Opening a bank account	0	0
Delay in getting scholarship	2	1.83
Submission for evidence	48	44.04
Other	0	0
Total	**109**	**100**

(Source: Primary data)

TESTING OF HYPOTHESES

Hypothesis I

H_0 – There is no significant difference between satisfactions of Degree and Post Graduate students

H_1 - There is significant difference between satisfactions of Degree and Post Graduate students.

Table 5 Calculation of Ranks based on satisfaction for degree and post graduate students

Satisfaction	Rank	Degree	Total Rank	PG	Total Rank
4.5	1	3	3	0	0
4.25	2	55	110	3	6
4.00	3	16	48	9	27
3.75	4	4	16	17	68
3.50	5	0	0	1	5
3.25	6	0	0	1	6
		n_1 =78	R_1=177	n_2=	R_2=112

Using Mann – Whitney – Wilcoxon U – test

$\mu = \frac{n1*n2}{2}$ $\mu = \frac{78*31}{2}$ = 1209

U = $n1 * n2 + \frac{n1(n1+1)}{2} - R1$ U = $78 * 31 + \frac{78(78+1)}{2} - 177$ U = 5322

Standard Error = $\sqrt{\frac{n1*n2(n1+n2+1)}{12}}$ = $\sqrt{\frac{78*31(78+31+1)}{12}}$

ISSN 0975-8941

Standard Error $=\sqrt{22165}$ $=\underline{148.88}$

Test Statistic $=\frac{\mu-U}{S.E}$ $=\frac{1209-5322}{148.88}$ $=\underline{27.63}$

Level of significance – 5%, Degree of Freedom – infinity

Table value $=\underline{1.960}$

Calculated value of the test statistic is greater than table value. Therefore we reject the hypothesis that there is no significant difference between satisfactions of Degree and Post Graduate students.

Hypothesis II

H_0 – There is no significant difference between satisfactions of students under various scholarship schemes.

H_1 - There is significant difference between satisfactions of students under various scholarship schemes.

Table 6 Calculation of ranks based on satisfaction for various scholarships

Post metric	Total Rank	Central sector	Total Rank	Higher education	Total Rank	Samunnathi	Total Rank	Golden jubilee	Total Rank	Others	Total Rank
0	0	0	0	3	3	0	0	0	0	0	0
19	38	6	12	5	10	10	20	16	32	2	4
11	33	4	12	2	6	6	18	0	0	2	6
7	28	3	12	2	8	9	36	0	0	0	0
1	5	0	0	0	0	0	0	0	0	0	0
1	6	0	0	0	0	0	0	0	0	0	0
n_1=39	R_1=110	n_2=13	R_1=36	n_3=12	R_1=27	n_4= 25	R_1=74	n_5= 16	R_1=32	n_6=4	R_1=10

Using Kruskal – Wallis or H test

Test statistic $= \frac{12}{n(n+1)} * \varepsilon \frac{Ri^2}{ni} - 3(n+1)$

Test statistic $=\frac{12}{109(109+1)} * [\frac{110^2}{39} + \frac{36^2}{13} + \frac{27^2}{12} + \frac{74^2}{25} + \frac{32^2}{16} + \frac{10^2}{4}] - 3(109+1)$

Test statistic $= (.001 * 778.75) - 330$ $=\underline{329.22}$

Degree of Freedom = K-1 $= \underline{5}$

Level of significance = 5%

Table value $=\underline{11.070}$

ISSN 0975-8941

Calculated value of the test statistic is greater than table value and therefore we reject the null hypothesis (H_0). There is significant difference between satisfactions of students under various scholarship schemes.

FINDINGS

1. The beneficiaries of Direct Benefit Transfer System (DBTS) are highly satisfied by the promptness of the system , evaluation method and support they get from the college
2. The response from the part of bank is satisfactory to the beneficiaries.
3. Majority of the students get scholarships through Direct Benefit Transfer System on the basis of both their merit in studies as well as their financial backwardness.
4. None of the respondents prefer conventional method over Direct Benefit Transfer System.
5. Majority of the beneficiaries of Direct Benefit Transfer System find submission of evidence as the main limitation of the system. Difficulty in applying,charging bank charges and delay in getting scholarship are other limitations faced by the beneficiaries.
6. There is significant difference between satisfactions of Degree and Post Graduate students.
7. There is significant difference between satisfactions of students under various students' scholarship schemes.

CONCLUSION

Achieving the objectives of DBT scheme would require it to be supplemented by public provision of essential goods and services. A micro level survey on one DBTS revealed that services were beneficial to the end user however infrastructure support and related services need to be viewed in a broad perspective. We are served better through online transfer as it is effective in terms of time saving, transparency, correctness and fairness. As financial product or service becomes effective only when it serves the larger interest of customers, DBT has no exception. Direct Benefit Transfer scheme proved to be more useful than conventional method and satisfaction level of DBTS scheme is high.

REFERENCES

1. Jairam Ramesh and VaradPande, (2013), "The Direct Benefits Transfer: No Need for Hype but Certainly a Hope", Yojana, Vol.17, pp.8-10, http://www.yojana.gov.in
2. Maureen A. Pirog,Craig L. Johnson (2008)- How electronic benefit transfers have become integral?
3. Partha and Mukhopadhyay, (2013), "What Can We Expect from Direct Benefit Transfers?" Yojana, Vol.17, pp.23-30, http://www.yojana.gov.in
4. Pravakar Sahoo(2013), "Direct Benefit Transfer: Panacea to Remove Poverty and Inequality in India? Yojana, Vol.17, pp.45-50, http://www.yojana.gov.in
5. Suyash Rai, (2013), "Direct Transfer of Benefits: What Lies Ahead", Yojana, Vol.17, pp.51-55, http://www.yojana.gov.in
6. Vinayak Kaushal (2018)-Direct Benefit Transfer, accessed Apr 06, 2018 https://www.researchgate.net/publication/279206725_Direct_Benefit_Transfer

ISSN 0975-8941

7. http://www.yojana.gov.in

8. http://www.economicsdailyIndia.com

9. https://www.researchgate.net/publication/279206725

10. http://www.moneylife.in/article/will-the-direct-cash-transfer-scheme-benefit-the-common-man/30575.html

11. http://theindianeconomist.com/direct-cash-transfer-scheme-part-1/

12. en.wikipedia.org/wiki/Direct_Benefit_Transferý

ISSN 0975-8941

Financial Literacy among College Students

Jithin Joy
P.G Dept of Commerce.
Deva Matha College Kuravilangad

ABSTRACT

Financial literacy is increasingly important as it has become essential that individuals acquire the skills to be able to survive in modern society and cope with the increasing diversity and complexity of financial products and services available. Financial literacy is the ability to make informed judgments and to take effective decisions regarding the use and management of money. It enables individuals to improve their overall wellbeing and to plan for their future security.

INTRODUCTION

Ever since India's independence in 1947, the biggest priority for the nation has been its economic growth, education for all and financial inclusion for the vast population of the country. India has made some noteworthy progress in the past decade in the financial inclusion process.The developments in financial markets, demographic, economic and policy changes have necessitated the creation of awareness with regard to innovative and diversified banking products, services and systems in order to take prudent financial decisions, and to attract the marginalized mass.

Financial literacy stands for the financial knowledge and the ability to use it for taking sound financial decisions.

The main objective of the study is to analyse the level of financial literacy among the college students and to determine the need for financial literacy programmes on college campus. Both the primary and secondary data has been used in this study. Convenience sampling method is used in collecting the data and this study surveys 30 college students to examine their personal financial literacy.

OBJECTIVES OF THE STUDY

1.Primary objective

- To identify the Financial Literacy of college students.

2. Secondary objectives are:-

- To study the Financial Knowledge of college students
- To study the Financial Behaviour of college students
- To study the Financial Attitude of college students

Literature Review

In literature the term Financial Literacy is interchangeably used with financial capability and economic literacy (Lusardi, and Mitchell, 2014). Some researchers consider it as a necessary skill which is regarded as ability to get and use financial information, which can be measured through understanding of financial concepts and through financial performance (Mason and Wilson, 2000). According to Murray (2010), it is a set of capabilities such as general literacy, problem solving ability, numerical ability applied to personal finance.

Atkinson and Messy (2011), define Financial literacy as "a combination of awareness, knowledge, skills, attitude and behaviors necessary to make sound financial decisions and ultimately achieve individual financial wellbeing" However, levels of Financial Literacy can be considered as basic and beyond. Once a person attains basic level, he requires ability, skills, and attitude along with access to financial services for making sound decisions. National Council on Economic Education (NCEE, 2005) mentions Financial Literacy as "familiarity with basic economic principles, knowledge about the U.S. economy, and understanding of some key economic terms."

OECD (2005) defines Financial Literacy "as a combination of financial awareness, knowledge, skills, attitude and behavior necessary to make sound financial decisions and ultimately achieve individual financial well-being." People achieve financial literacy through a process of financial education. The organization defines Financial education as "the process by which financial consumers/investors improve their understanding of financial products, concepts and risks and, through information, instruction and/or objective advice, develop the skills and confidence to become more aware of financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being". Lusardi and Tufano (2009) mentions debt literacy with reference to financial illiteracy meaning lack of knowledge in respect of risk mitigation, about financial instruments such as shares and bonds and inability for numerical calculations. The President's Advisory Council on Financial Literacy (PACFL, 2008) defined it, as "the ability to use knowledge and skills to manage financial resources effectively for a lifetime of financial well-being". This definition appears to be inadequate as literature reveals the following as its essential features of financial literacy. 1. Knowledge, 2. Skills for application of that knowledge, 3.Perceived knowledge, 4. Financial behavior, and 5. Financial experiences. Moreover financial behavior is influenced, not only by knowledge and skills but also by financial experiences and perceived knowledge. Financial experiences in turn impact knowledge, skills and perceived knowledge. Draft of National Strategy on Financial Education (2012), by Indian Government mentions that "The main components of financial education are understanding the key financial products one may need throughout one's life; understanding basic financial concepts; developing skills and confidence to be aware of financial risks and opportunities and to benefit from them; making sound financial choices about saving, spending, insurance, investing; and managing debt throughout one's life."

RESEARCH METHODOLOGY

The study follows the questionnaire developed by the Organisation for Economic Cooperation and Devel-opment (OECD) for the preparation of questionnaire. OECS's 21 scale is used for data analysis. The financial literacy score is obtained by adding the scores of the three different dimensions – financial knowledge, financial attitude, and financial behaviour. The maximum possible score for the finan-cial literacy measure is 21 (8 for financial behaviour, 8 for financial knowledge, and 5 for financial attitude). The average score of 13.23 observed in the OECD survey across the set of 13 countries is used the bench-mark to compare with the average score of college students. Primary data is collected from 30 students of Deva Matha College, Kuravilangad through questionnaire method and secondary data from websites, books, journals etc…

LIMITATIONS OF THE STUDY

1. The study is limited to the students of Deva Matha College, Kuravilangad
2. Since the sample size is small, scope for generalization is limited.

ISSN 0975-8941
Research Lines (Vol. XI No. 1&2) December 2018

3. Since the students are from different disciplines the financial literacy may vary according to their curriculum.

DATA ANALYSIS AND INTERPRETATION

i. Financial Knowledge of People

Questions related to the Financial Knowledge are analysed as per the OECD standards, where 8 questions are used to rate financial knowledge at 8 scales.

Table 1. Financial Knowledge

Elements	Known	Unknown
Interest	.87	.13
Compound Interest	.87	.13
Inflation and Return	.38	.62
Positive relation between Inflation and Return	.38	.62
Inflation and Price	.56	.44
Positive relation between inflation & return	.56	.44
Risk & Investment	.68	.32
Risk & Share Diversification	.50	.50
Total	4.8	3.2

Sources of data: Primary data

The analysis of the table reveals that 60 percent of the respondents have basic financial knowledge which is above average. Among the elements of financial knowledge, interest calculation is the most known element and the inflation- return relation element is the least known. The table shows that the elements of financial knowledge are fairly known by the respondents.

i. Financial Behaviour

In the section B, Questions related to the Financial Knowledge there where 8 questions which was carrying 1 mark for each questions the total sum out of 8 is given in below table.

Table 2. Financial Behaviour

Elements	Always	Never
Payment Capacity	.87	.13
Timely Payment	1.00	0
Household Financial Planning	.55	.45
Saving Habit	.55	.45
Borrowing Habit	.33	.67
Capacity to take Risk on Investment	.39	.61
Financial Monitoring	.72	.28
Payment on Default	.12	.88

Sources of data: primary data

The analysis shows that 56 percent of the respondents are having a decent financial behavior. 87 percent of the respondents buy things only if they can afford it. 55 percent of respondents believes in budgeting and are interested in saving rather than spending. Every respondent are making their payments on time and only a few have incurred a fine or penalty for their financial behavior misconduct. Most of the respondents are risk aversers, so that they are not interested in investing in risky investment avenues as well as not ready to borrow money. Since the final score is 4.5 the financial behaviour is above average.

ii. Financial Attitude

In the section D. Questions related to the Financial Attitude, there are3 questions carrying 5 mark for each question. The total mean out of 5 is given in below table.

To understand the financial attitude of people, they were asked to rate various options given. A five point scale was used for measure the attitude. Values (weight) assigned were 1, 2, 3, 4 and 5. A mean score of 3 is considered as an average level. The obtained values were multiplied with the weight assigned and the sum of the given score was divided by the number of respondents (30).

Table 3 Financial Attitude

	1	2	3	4	5	Weighted Score	Mean score
Extend of belief in planning	3	2	16	1	1	111	3.7
Propensity to save	1	5	10	8	8	107	3.57
Propensity to consume	2	2	16	9	9	95	3.17
Total							3.48

Source: Primary data

The table shows that, the respondents' belief in planning, propensity to save and propensity to save shows score 3.7, 3.57 and 3.17 respectively. This means, financial attitude shows a high percentage than the average. Students are having a positive attitude towards financial discipline.

iv. Financial Literacy

Table 4. Financial Literacy

Elements	Score
Financial Knowledge(8)	4.8
Financial Behaviour(8)	4.5
Financial Attitude (5)	3.48
Financial Literacy (21)	12.78

The financial literacy of students of Deva Matha College Kuravilangad is 12.78.

ISSN 0975-8941

FINDINGS

- The individual scores of each attributes, namely: financial knowledge, financial behaviour and financial attitude, are above average.
- Tendency among students to save money is more and to invest is low.
- The literacy rate of students of Deva Matha College Kuravilangad (12.78) is below the OECD score (13.23) the financial literacy of the college students are below average.
- The gap between the average scores of the college students and OECD are low.

SUGGESTIONS

- Colleges should undertake necessary steps to enhance financial literacy by various Financial Literacy Programmes.
- Students should be trained to make systematic investments in different avenues than merely depositing in bank.
- Along with the elementary education itself, financial education should also be given importance to improve financial literacy.

CONCLUSION

The growth of every economy is largely depended upon the financial system. Peoples' involvement in the financial activities encourages the growth of financial sector in every economy. As our country is a developing nation, the financial services have to be grown even into the rural areas in order to achieve global standards. Financial literacy among people has to be given more stress, in order to promote financial inclusion..

REFERENCES

1. Closing the Gender Gap: Act Now- OECD Executive Summary. (2012). Retrieved December 5, 2013, from https://stats.oecd.org/
2. Financial Literacy. (n.d) Retrieved may 5, 2014, from http://en.wikipedia.org/wiki/Financial Literacy
3. The Organisation For Economic Co-Operation And Development (Oecd) Annual Report 2005 from https://www.oecd.org/about/34711139.pdf
4. Financial Literacy and credit Counselling Centres. (n.d). Retrieved may 5, 2014, from http://www.rbi.org.in/scripts/Publication Draft Reports.aspx
5. AnnamariaLusardi& Olivia S. Mitchell, 2014. "The Economic Importance of Financial Literacy: Theory and Evidence," Journal of Economic Literature, American Economic Association, vol. 52(1), pages 5-44, March.
6. Mason, C., & Wilson, R. (2000). Conceptualizing financial literacy. Research Series Paper 2000:7. Business School, Laughborough University, London.
7. Murray, T. S. (2010). Financial Literacy: a Conceptual Review. DataAngel Policy Research. Research paper prepared for the Task Force on Financial Literacy.
8. Atkinson, A., & Messy, F. (2012). Measuring financial literacy: results of the OECD / International Network on Financial Education (INFE) Pilot Study [Working Paper n. 15].
9. Lusardi, Annamaria and Peter Tufano (2009), "Debt Literacy, Financial Experiences and Overindebtedness," NBER Working Paper n 14808.
10. President's Advisory Council on Financial Literacy (PACFL) (2008). 2008 Annual Report to the President. Accessed March 11, 2009 at http://www.treas.gov/offices/domestic-finance/financial-institution/fineducation/council/index.shtml.

ISSN 0975-8941

A STUDY ON THE INVESTMENT PATTERN OF GOVERNMENT EMPLOYEES IN MEENACHIL TALUK

Minnu Jaison* and Soumya Sebastian
**Department of Commerce, Deva Matha College,Kuravilangad*
**Email: minnujaison28@gmail.com*

ABSTRACT

Investment is the employment of funds with the aim of achieving additional income or growth in value. It is the process of saving money from the current consumption for the purpose of earning benefits in future. A variety of investment options are available such as bank, gold, real estate, mutual funds and so on. This study is an attempt to find the investment pattern of government employees. For the purpose of study government employees from four sectors are selected. The result of the study illustrated that bank fixed deposit is the highly preferred investment avenue by government employees.

INTRODUCTION

In the present world everyone wants to make money quickly. People need safety for their future life. To make their life safe and prosperous they need money. Money does not increase without any savings and investment. Savings is the part of human life. Savings from a portion of earnings will give financial security to individuals. Without keep the savings as an idle fund they invest it in various assets. Investment helps in increasing the savings of the people. Investments and savings helps in the economic development of a country. Investment helps in capital formation. Capital formation is one of the element which helps in realising the dream of India as a developed nation. Investment is the process of putting savings in various assets with the purpose of earning income or capital appreciation. Wise investment paves way for capital appreciation. The investment of hard earned money is a crucial activity for everyone. Investment is the process of exercising wise decision for future return. Investment is the sacrifice of certain present value for future value. Investment involves money which has been saved from current consumption with the aim of getting benefits in future. Thus, it is a reward for waiting.

All people are engaged in some kind of activity with their available knowledge for earning income. After meeting their expenses the amount left is kept as savings. Without keeping the savings as an idle fund they invest it in various investment avenues to get return. Thus, investment is made by people who have surplus money. Government employees are those who have regular inflow of cash. After meeting their requirements they want to invest their savings. Thus, government employees could be regular savers. They invest their savings with the objective of earning higher return in future and also for getting tax exemptions. At present various investment avenues are available in the financial market for an investor. The investment avenues are stock market, bank deposits, gold and silver, real estate, insurance, postal savings, mutual fund, public provident fund and so on. Investors make investment with various purposes such as profit, capital appreciation, safety, regular return and tax benefit. The investment pattern of government employees varies with their age, occupation, income and so on. Even if there are various investment avenues with attractive features are available, but most of them fails to select profitable investment avenues. Thus, the study is an attempt to find out the investment pattern of government employees in Meenachil Taluk.

REVIEW OF LITERATURE

There are number of studies related to the topic are conducted on various dimensions. It gives an idea about various studies that had been already conducted in the area.

Ganapathi (2014) points out that demographic variables and investment objectives of government employees are directly related to each other. Insurance is the most preferred investment avenues and debentures are the least preferred investment avenue.Thulasipriya (2014) reveals that government employees belongs to higher age group found that bank deposits are the safest method of investment. Majority of the employees shows more preference towards provident fund and private chit to get short term profit.

Bindu (2017) remarks that there is no difference in the investment habit of employees based on their gender. The study reveals that all the employees are aware about the different investment avenues. The annual income and percentage of investment is also related. S. Umamaheswari (2014)states that the main factors influence the salaried investors are awareness, attitude, expectation and satisfaction. This study is based on random sampling. The demographic factors of salaried class affects the investment criteria namely, investment attitude and investment return.

Only limited studies had focused on the investment pattern of government employees. Thus through the review of literature a research gap could be find. No studies relating to the investment pattern of government employees in rural area is conducted. The present study focused on the investment pattern of government employees in Meenachil Taluk. Meenachil Taluk is a rural area.

SIGNIFICANCE OF THE STUDY

In India large number of investment options is available. Growth of new investment avenues with variety of features attract and influence people towards such investment. In the present scenario, it is important to check the investment pattern of government employees who have considerable amount of savings and investments. The return and safety given by the investment may attract them towards such investment. But sometimes the attractive features of the investment may also confuse them where to invest. Thus, it is relevant to study where they invest their savings and what are the factors considered by them before investing. There are large numbers of investment avenues are available but most of them are not aware about the investments. So here the significance of making a study on the investment pattern arises. The study will help the government employees to take wise investment decisions which maximise the return and minimise the risk. Thus, the study has rationale of studying about the investment pattern of government employees in Meenachil Taluk.

SCOPE OF THE STUDY

The present study is limited to investment pattern of government employees, their level of awareness towards different investment avenues, the type of investment preferred by them and factors considered by them before investing. The study covers the government employees only in education, health, agriculture and administrative sector in Meenachil Taluk.

STATEMENT OF THE PROBLEM

At present a number of investment avenues are available. Most of the investment avenues offer a wide variety of benefits to the investors. Thorough and up-to-date knowledge of investment avenues is necessary to avail benefits from it. The complete understanding on the opportunities available and investing in profitable avenues is crucial for government employees. Nowadays government offers better salary to the government employees. So they have considerable amount of savings. The major problem faced by government employees is the selection of right investment avenue to park their savings. The study focuses on how the government employees invest their hard earned money. The study will explore the pattern and preference shown by government employees on various investment avenues. The investment pattern of government employees is different from that of others. Thus, it is necessary to study the investment pattern of government employees. The present study is focusing on the investment pattern of government employees in MeenachilTaluk.

OBJECTIVES OF THE STUDY

1. To examine the influence of demographic details of the respondents on the investment pattern.
2. To study the level of awareness of government employees towards different investment avenues.
3. To understand the type of investments government employees would prefer to invest.
4. To examine the factors considered by government employees before investing.

HYPOTHESES OF THE STUDY

- H0 1: The amount of monthly investment of government employees and their income are independent.
- H0 2: There is no significant relationship between the amount of monthly investment of government employees and their gender.
- H0 3: The amount of monthly investment of government employees and their number of years of service are independent.

METHODOLOGY OF THE STUDY

Research Design

The study is descriptive which the data were collected from the government employees. The research is designed to find the investment pattern of government employees, their awareness towards various investment avenues, type of investment preferred by them and factors considered by them before investing.

Data Sources

Primary as well as secondary data were used for the study. Primary data was the major data for analysis and interpretation. Primary data were collected from 80 respondents in MeenachilTaluk. Secondary data were collected from books, journals etc.

Method of Sampling

The sample design includes the government employees in MeenachilTaluk. It is difficult to collect data from all government employees. Convenience sampling method was used for finding the respondents and collecting the data. Data was collected from 80 government employees that were 20 from each sector such as education, health, agriculture and administrative.

Data Collection Tools

Questionnaire was used as tool for collecting primary source of data. The tools which used to collect secondary data include journals, publications, books etc.

ISSN 0975-8941

Tools for Analysis

SPSS was the software used in the analysis and interpretation of data. Tables, bar diagrams and cross tabs were used to analyse and present the data. For analysing the data statistical tools like simple percentages, mean, standard deviation, Friedman Rank Test etc were used. Chi-Square test had been used for testing the hypotheses.

Findings

1. Most of the government employees have monthly investment of 10000-20000.
2. Majority of the government employees plan before making investment.
3. Government employees prefer to invest their money for long term i.e. above 5 years.
4. Majority of the government employees make investment regularly.
5. Most of the government employees make investment through systematic investment plan.
6. Government employees were monitoring their investment occasionally.
7. The main investment objective of government employees is meeting family needs like children's education, marriage, purchase of house etc.
8. All the respondents have investment in bank fixed deposit, recurring deposit, provident fund, pension fund, insurance and gold and silver. It is clear that these are the common investment alternatives in which the government employees invest.
9. Age, place of residence, nature of work, number of years of service and monthly income of the government employees influence their monthly investment.
10. Age, marital status, sector of employment, nature of work, number of years of service and monthly income of the government employees influence investment planning.
11. Age, marital status, place of residence, nature of work, number of years of service and monthly income of the government employees influence their period of investment.
12. Age, nature of work, number of years of service and monthly income of the government employees influence their frequency of investment, method of investment and frequency of monitoring the investment.
13. The demographic details like age, nature of work, number of years of service and monthly income of the respondents influence all the variables of investment pattern. So these demographic details influence the investment pattern of government employees.
14. Based on hypothesis testing the amount of monthly investment of government employees and their monthly income are not independent.
15. Based on hypothesis testing there is no significant relationship between the amount of monthly investment of government employees and their gender.
16. Based on hypothesis testing the amount of monthly investment of government employees and their number of years of service are not independent.
17. Majority of government employees have awareness about investment avenues such as bank fixed deposit, savings bank account, current account, recurring deposit, mutual fund, insurance policies, provident fund, pension fund, gold and post office savings.

ISSN 0975-8941

18. Bank fixed deposit is the highly preferred investment avenue by government employees.
19. The main factor considered by government employees before making investment is tax exemption

CONCLUSION

The study was conducted with a view to know the investment pattern of government employees in Meenachil Taluk. After analysing and interpreting the collected data, it can be concluded that the investment pattern of the government employees is influenced by their demographic details like age, nature of work, number of years of service and monthly income. Majority of the government employees have awareness about various investment avenues. Most of the government employees prefer long term investments and they invest their money for meeting family needs like children's education, marriage, purchase of house etc. Though different investment options are available, it is evident that bank fixed deposit is the highly preferred investment avenue by government employees. Bank fixed deposit, recurring deposit, provident fund, pension fund, insurance and gold are the common investment avenues of government employees. The study shows that tax exemption is the main factor considered by government employees before making investments.

REFRENCES

BOOKS

1. Bhalla, V. K. (2004). *Investment Management Security Analysis and Portfolio Management.* New Delhi: S. Chand & Company Ltd.

2. Gupta, S. K., & Joshi, R. (2014). *Security Analysis and Portfolio Mangement.* New Delhi: Kalyani Publishers.

3. Singh, P. (2006). *Investment Management Security Analysis and Portfolio Management.* Mumbai: Himalaya Publishing House.

JOURNALS

1. A, S. (2015). A Study on the Investment Pattern of Selected Financial Products. *International Journal of Economic and Business Review, 3* (7), PP 99-105.

2. Bhushan, P. (2014). Relationship between Financial Literacy and Investment Behaviour Salaried Individuals. *Journal of Businesss Management and Social Science Research, 3* (5), PP 82-87

3. Ganapathi, R. (2014). Investment Pattern of Government Employees in Madurai City. *Journal of Management and Research Analysis, 1* (1), PP 66-76.

4. Kanniammal, K., & A, J. (2016). A Study on Investment Pattern of Government Employees and Private Employees in Coimbatore City. *International Journal of Research in Computer Application and Management, 6* (11), PP 37-40.

5. Sathiyamoorthy, C., & Krishnamurthy, K. (2015). Investment Pattern and Awareness of Salaried Class Investors in Tiruvannamalai District of Tamilnadu. *Asia Pacific Journal of Research, 1* (XXVI), PP 75-83.

6. Shukla, N. S. (2016). Investors' Prefernce towards Investment Avenues with Special Reference to Salaried Personnel in North Gujarat Region. *International Journal for Science and Advance Research in Technology, 2* (1), PP 43-46..

7. T,B. (2017). Savings and Investment Pattern of Salaried Employees in Palakkad District.

ISSN 0975-8941

Intercontinental Journal of Finance Research Review, 5 (6), PP 111-116.

8. Thulasipriya, B. (2014). Investent Pattern of Government Employees-An Empirical Study. *International Journal on Global Business Management and Research, 3* (1), PP 35-41.

9. Umamaheswari, D., & Suganthi, K. (2015). Investment Pattern and Savings of Teachers at Sirkali Town in Tamilnadu. *International Journal of Managerial Studies and research (IJMSR), 3* (2), PP 72-75.

10. Umamaheswari, S., & Kumar, M. A. (2014). A Special Study On Coimbatore Based Salaried Investors' Awareness,Attitude,Expectation And Satisfaction Over Their Investments. *International Journal of Research in Business Management, 2* (8), PP 49-58.

ISSN 0975-8941
46 December 2018 (Vol. XI No. 1&2) Research Lines

COMPARATIVE STUDY ON DIGITAL MARKETING EFFICIENCY OF SOUTH INDIAN BANK AND FEDERAL BANK

Marvin Sabu and Soumya Sebastian
Department of Commerce, Deva Matha College, Kuravilangad
Email: mrvnsabu7@gmail.com

ABSTRACT

In this digital era the use of digital marketing tools has become an indispensable thing for all marketers in all industries. This study is an attempt to evaluate the digital marketing practices of banking industry. For that the digital marketing practices of South Indian Bank (SIB) and Federal Bank are analysed. This study can prove the fact that the digital marketing practices in SIB and Federal Bank are different in their implementation way, but the practices are similar.

Keywords:

AD/ADS	Advertisement/s
FB	Federal Bank
FY	Financial Year
GIF	Graphic Interchange Format
Mobile APP	Mobile Application
PC	Personal computer
ROI	Return on Investment
SEM	Search Engine Marketing
SEO	Search Engine Optimisation
SIB	South Indian Bank
SMS	Short Message Service
TV	Television

INTRODUCTION

According to Philip Kotler "Marketing is a human activity directed at satisfying needs and wants through an exchange process" (Philip Kotler, 2013). It is clear from this definition that customer is the center of marketing which begins with identification of customer needs and wants and ends with his satisfaction. With the advent of digital technology everything in our society has transformed and marketing too. Digital marketing is the new generation marketing player in every segment. The Digital marketing refers to using digital channels, devices, and platforms (regardless of whether they are online or not) to build or promote the marketing message ("What is the Difference Between Digital and Online Marketing?" n.d.). The key objective is to promote brands through various forms of digital media (lexicon.com). It comprises of different marketing tools like Search Engine Marketing (SEM), Search Engine Optimization (SEO), Social Media Marketing, Influential Marketing, Affiliate Marketing, Display Marketing, Content Marketing etc. The main feature of digital marketing is that it can be used as a method for customer interaction, real time measurement of effectiveness of promotion, market research, cost effective promotion etc.

According to a report from the Internet and Mobile Association of India (IMAI) and market research organisation IMRB (Indian Market Research Bureau) there are about 432 million internet users in India of which about 90% are mobile internet users (December2016). And about 33% of total internet users are active in social media. This proves the scope for digital marketing. Presently many marketers effectively use digital marketing as a tool to earn revenue.

Banking sector is not out of the play, they are also using digital marketing techniques. Customer needs and wants can be analysed and ensure satisfaction through digital marketing techniques. Digital marketing is essential for banks because their customers that is, common people are extensively using digital medias like computers, mobile phones, tablets etc. Apart from this aspect digital marketing is the cheapest way to reach their customers and one cannot turn off the face as digital marketing is the key to open new avenues of promotion of products. Digital marketing enables the marketer to break geographical boundaries and hence it can reach customers anywhere in the globe.

IMPORTANCE OF THE STUDY

Banking sector of India is well flourished one. Commercial banks have a big role to play to provide financial products to customers. By the arrival of foreign and private sector commercial banks competition in this sector has reached at its peak level. Now in case of providing banking services there are no much differences between banks. This lead banks to think about practising digital marketing for providing customers an additional value. The statistics from Semrush.com provides us the fact that an average Indian marketer set apart about 19% of total marketing budget for digital marketing in the year 2016. The statistics also figure out that digital marketing is promising one in India because India is the number one market for Facebook and second best for you tube.

So, a study is required to understand the effectiveness and level of usage digital marketing practices in private sector in India. So, Federal Bank and South Indian bank have selected for the study as they are leading private sector banks in Kerala.

STATEMENT OF THE PROBLEM

The digital marketing is a relatively new concept for marketers in banking sector. The strategies required for digital marketing may be different for different banks. There is a concept in marketing called marketing myopia. This concept was introduced by Theodore Levitt. It is a concept that the firm emphasis more on product and forget the existence of customers and fact is that product is just a factor of satisfying needs of customers (Ramaswamy, 2015). This concept reminds us that marketers should consider other elements of marketing like place, promotion, price etc. The changing environment in banking sector made banks to adopt digital marketing. So, this study is an overlook on digital marketing practices of banks and its effectiveness.

OBJECTIVES OF THE STUDY

1. To understand different digital marketing practices of SIB and Federal Bank.
2. To evaluate and compare major digital marketing techniques used by SIB and Federal Bank.
3. To analysethe efficiency of usage of different digital marketing techniques in both banks.

SCOPE OF THE STUDY

The scope of study is limited to only to private sector banks in India. The study is conducted among two leading Private Sector Banks in India head quartered in Kerala. That is, Federal Bank and South Indian Bank (SIB).

ISSN 0975-8941

METHODOLOGY OF THE STUDY

Research design: Analytical and descriptive research design

Data sources: Both primary data and secondary data has collected for the study. Primary data had been collected from bank officials of Federal Bank and South Indian Bank.

Data collection tools: Unstructured interview method and structured questionnaire is used for collection of data from banking officials of South Indian Bank (SIB) and Federal Bank.

Tools for analysis: Charts, tables, percentages and web analytic tools (like alexa.com, similarweb.com) were used for analysis. Likert's five-point scale was used to analyse the opinion of respondents(bank officials of both banks).

REVIEW OF THE LITERATURE

A study conducted on Kenya commercial Banks performance on digital marketing shows that the average cost spends on digital advertising accounted for 20% in overall advertising budget. The study further states the reason behind successful digital marketing in Kenya's commercial Banks was due to certain merits of digital marketing over other mediums. Reduced cost of communication, 24*7 availability, improved information, customized promotion, improved customer interaction is some of the reason behind it. The study concludes that the increased competition made commercial banks to automatically adopt digital advertising. A regular advertising through digital platforms provided an impetus to customer action and helping banks to reach them out. But, this study leaves the question to us whether the digital marketing practices are effective or not (Jalang'O).

Eetu Kuneinen identified that in case of banner advertisements static square advertisements outsmarts all other forms of banners in terms of Click Through Rate (CTR). The researcher used Google display network to dig out the result. The main finding made by researcher is that irrespective of shape, static banner outperformed in all areas CTR (Click Through Rate), Conversion Rate (CR), Total Conversion Rate (CTR).

Mobile banking must grow more and is in its initial stage in many banks of developing countries. At present social media is the mainstream digital marketing technique for banks overall the world. But in case of developed nation banks digital marketing is much utilised effectively unlike the banks in developing countries (Pearson & Sundarrajan, 2013).

Findings

1. Both banks rely upon outside agencies/ free lancers for performing digital marketing campaign.
2. Both banks exercise digital marketing techniques like SEO, Social media marketing, display advertising, Content Marketing, SMS marketing, mobile app marketing as part of digital marketing campaign but in addition to that Federal Bank use SEM, Affiliate marketing techniques.
3. Both banks use traditional advertising platforms like TV, radio, print up to a moderate extent.
4. Both banks strongly agree that higher growth rates of internet and social media users and ability to provide improved product information are the main reason for adopting digital marketing.
5. SIB (South Indian Bank) opines that among Search Marketing SEM is the most effective technique. While Federal Bank consider SEO as the effective technique.
6. Quality of web architecture including faster loading speed, mobile friendly design is the main factor considered by Federal Bank for improving search engine ranking while it is the number links and sub

links in web pages considered by SIB.

7. SIB's future and present strategy to improve search engine ranking is to frequently update content especially on keywords. Federal Bank is adopting new strategies with the help of various agencies who are experts in this area to improve search engine ranking.

8. Google AdWords is the common platform for SIB and Federal Bank for SEM.

9. Contextual targeting, topic targeting are strategies followed by both the banks in placement of display advertisements but apart from that strategy target by interest is exercised by Federal Bank.

10. Even though Federal Bank have not started remarketing they felt it is the best strategy for display advertising. SIB's officials follow and consider targeting based on demography, geography as the best method in display advertising.

11. Apart from common models of display advertising SIB use expandables and gif banners in display advertising campaign while in case of Federal Bank they use video banner and intestitials apart from common models.

12. Difficulty in evaluating the ROI from content marketing is problem for both banks.

13. In mobile app marketing static ads are widely used by both banks.

14. The prime goal of digital marketing for SIB is customer acquisition and cross selling. While Federal Bank aims at providing information to stakeholders and creation of brand loyalty.

15. The major challenge faced in digital marketing campaign for both banks are increased cost of digital marketing techniques. They also admit complexity of digital marketing as a challenge.

16. In case of Federal Bank there there was 50 percent increase in digital marketing budget compared to FY 2016-17 to FY 2017-18 but in case of SIB there is only 10 percent increase in same time span. But as SIB had started digital marketing campaign before Federal Bank, compared to FY 2015-16 to FY 2016-17 SIB had an increase of 100 percent in digital marketing budget and in FY 2015-16 the Federal Bank had not started digital marketing campaign.

17. Federal Bank estimates 10-15 percent of increase in digital marketing budget in FY 2018-19 while SIB estimated more than 25 percent of increase in same FY. This shows the aggressive campaign of SIB in FY 2018-19.

18. SIB has least bounce rate of 19.2 percent when compared to Federal Bank which has a bounce rate of 52.7 percent.

19. The loading speed of website of SIB is slow (2.918 secs) while Federal Bank has an average loading speed (i.e. 2.231 secs).

20. In the evaluation of traffic source on website it is understood that both banks have less traffic from social medias, mails and display ads. The three major sources of traffic for both the banks are direct, search and referral traffic. And in case of Federal Bank 47.07 percent of web traffic came from search traffic and this shows the effectiveness of Search Marketing. But SIB attracts only 38.53 percent of web traffic via search traffic and 37.53 percent of traffic came from direct traffic and its a sign of ineffective Search Marketing.

21. Both banks agree that they use Social Media Marketing to increase traffic online. While cost factor is a challenge in Social Media Marketing for the two banks.

ISSN 0975-8941

22. Even though Federal Bank has invested 30 percent of their budget in Social Media Marketing it is able to generate only less than 1 percent of traffic towards website through social Medias and this shows the inefficiency in Social Media Marketing of Federal Bank in traffic generation to website. While in case of search traffic Federal Bank is able generate more traffic than SIB through search engines. Federal Bank has a search traffic of 47.07 percent mean time SIB's search traffic is 38.53percent. This result is due to inefficiency in Search Marketing and non-practise of SEM by SIB.

23. In FYs 2015-16, 2016-18, 2017-18 SIB is investing more than 50 percent of its digital marketing budget in SMS Marketing. While Federal Bank is investing about 30 percent of its digital marketing budget in SMS marketing and 30 percent in Social media marketing. We can find that both banks invested in major portion of their digital Marketing budget in SMS marketing.

24. For both banks the increasing cost of digital marketing is a major challenge in digital marketing campaign.

25. SIB expects a 10-15percentages increase in digital marketing budget in FY 2018-19 while for Federal Bank they expect more than 25percentages increase. These figures prove that Federal Bank's increase in digital marketing budget is more than that of SIB.

26. Customer acquisition and cross selling is their prime goal intended to achieve through digital marketing. While digital marketing goal of Federal Bank is to provide information to stakeholders and creation of brand loyalty.

CONCLUSION

Banking sector in India is facing acute competition. The study can show the fact that it is not different in the case of top private sector banks headquartered in Kerala i.e. SIB and Federal Bank. That is why the digital marketing practices of both the banks have little variations in their operation. The study proves that in many segments of digital marketing techniques both banks have its comparative strength over the other. For instance, Federal Bank has got good traffic from search marketing when compared to SIB while in case active participation of customers in social media platforms, SIB is in an advantageous position over Federal Bank. In sum and substance here is no much difference in digital marketing efficiency of both banks. This less difference itself shows the acute completion among both banks regarding their digital marketing campaign. It is interesting that both banks have different objectives for their digital marketing campaign. Even though both banks have different intentions in digital marketing campaign there are certain areas of similarities. Like use of static ads as a major banner ad format for both banks and major investment in SMS Marketing by both banks etc. These all instances prove that the digital marketers of SIB and Federal Bank are well versed with newer digital marketing techniques in the market. In my opinion it is only some small changes in their strategies are going to decider of win or loss in attracting customers through digital marketing.

REFERENCES

1. Dave Chaffey, F. E.-C. (2011). Internet Marketing (3rd ed.). Pearson.

2. Philip Kotler, K. L. (2013). Marketing Management (14th ed.). Pearson.

3. Digital marketing - Wikipedia. (n.d.). Retrieved October 6, 2017, from https://en.wikipedia.org/wiki/Digital_marketing

4. Digital Marketing VS Internet Marketing – What is the latest trend? (2016, December 20). Retrieved

October 5, 2017, from https://www.reliablesoft.net/digital-marketing-vs-internet-marketing-what-is-the-latest-trend/

5. Digital Transformation in the Retail Sector: challenges & opportunities. (2016, March 7). Retrieved October 6, 2017, from https://www.econsultancy.com/blog/67596-digital-transformation-in-the-retail-sector-challenges-opportunities
6. Digital-marketing-in-banking-evolution-and-revolution-codex1920.pdf. (n.d.). Retrieved from https://www.cognizant.com/whitepapers/digital-marketing-in-banking-evolution-and-revolution-codex1920.pdf
7. Jurèiæ, I., &Radoš, I. (2017, September). Digital marketing: marketing for the new era.
8. Digital Marketing Made Simple: A Step-by-Step Guide. (n.d.). Retrieved October 13, 2017, from https://neilpatel.com/what-is-digital-marketing/ Digital Marketing Training | Digital Marketing Course Online. (n.d.). Retrieved October 13, 2017, from https://acadgild.com/online-marketing/digital-marketing-training-certification
9. The REAL Difference Between Marketing & Advertising. (n.d.). Retrieved October 11, 2017, from http://www.marketingprofs.com/2/mccall5.asp What is digital marketing? (n.d.). Retrieved October 13, 2017, from https://www.sas.com/en_us/insights/marketing/digital-marketing.html
10. Neil Patel. (n.d.). How Long Does Content Marketing Take to Work? Here Are My Digital Marketing STATS. Retrieved from https://www.youtube.com/watch?time_continue=118&v=P9LJlrCNZyY
11. Facebook users by country | Statistic. Retrieved October 16, 2017, from https://www.statista.com/statistics/268136/top-15-countries-based-on-number-of-facebook-users/
12. Active social media users in India grow by 15 % from 2015 to become 136 million :Yral Report 2016. (n.d.). Retrieved October 16, 2017, from http://www.exchange4media.com/Digital/Active-social-media-users-in-India-grow-by-15—from-2015-to-become-136-million-Yral-Report-2016_67225.html
13. Kuneinen, E. (2013). Study on banner advertisement type and shape effect on clickthrough-rate and conversion. Journal of Management and Marketing Research, 13,

ISSN 0975-8941

Application of ERP Solutions in Eco Tourism with Reference to Kerala

Mathew C D
MES Golden Jubilee College,Kottayam

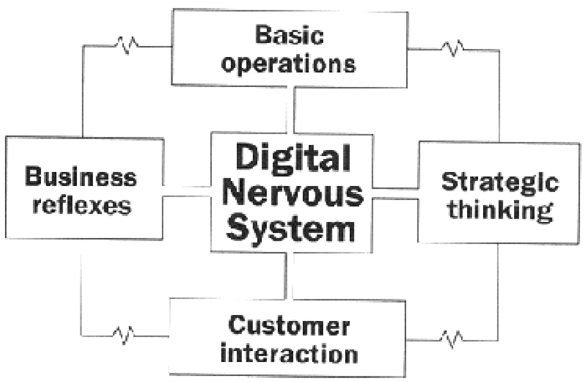
ABSTRACT

Mass tourism can be rated as one that enjoys nature and leave it depleted while eco-tourism strive for admiration of natural places and existing cultures. When mass tourism strives for pleasure, eco-tourism strives for satisfaction. In today's burgeoning globalization and liberalization scenario, corporate executes and middle class people want to have an escape from concrete jungles and like to be in harmony with nature and local people. Visiting protected wild life sanctuaries and find fulfillment in the company of flora and fauna is a novel concept. As Western Ghats are rich in biodiversity, Kerala has got great untapped potential in eco-tourism. Here the author takes an honest effort for the optimum utilisation of eco-tourism destinations while integrating one of the latest tools of Information Technology.

Keywords: Eco-tourism, ERP,Digital Nervous System, Biodiversity

Enterprise Resource Planning(ERP)

Enterprise Resource Planning (ERP) covers the techniques and concepts employed for the integrated management of a business as a whole, from the view point of the effective use of management resources, to improve the efficiency of an enterprise. ERP packages are integrated packages that support the above ERP concepts. When one of the hotel chains in Noida enters a customer order, for example,the data flows automatically to others in the company who need to see it-to the finance department in Mumbai and to the corporate HR & Administrative office in Chennai. It helps a lot in formulating corporate strategic level planning.



Source: Business@speed of Thought, Bill Gates

A digital nervous system comprises the digital processes that closely link every aspect of an organizations thoughts and actions. Basic operations such as finance and rend services, plus feedback from customers are electronically accessible to the organizations.ERP enhances an organisation's ability to accurately schedule service delivery, fully utilise capacity, reduce no occupancy and meet booking dates.

Eco-Tourism

Eco-tourism in simple words means management of tourism and conservation of nature in a way so as to maintain a fine balance between the requirements of tourism and ecology on the one hand and the needs of the local communities for jobs, new skills, income generating employment and a better status for women on the other. The global importance of eco-tourism, its benefits as well as its impact was recognised with the launching of the year 2002 as the International Year of Eco-Tourism (IYE) by the United Nations General Assembly. The IYE offers an opportunity to review eco-tourism experiences worldwide, in order to consolidate tools and institutional frameworks that ensure its sustainable development in the future. This means maximizing the economic, environmental and social benefits from eco-tourism, while avoiding its shortcomings and negative impacts.

Setting the Context : ERP in Eco Tourism

There are 52 Eco-tourism destinations identified by Eco-Tourism Directorate. Out of these destinations fourteen of them have been rated as Eco-Tourism hotspots.Among foreign tourists, Periyar Tiger Reserve, Thekkady and Munnar are the most popular ones. At the same time places like Chinnar Wildlife Sanctuary, Konni, Peppara are not much popularised. As a result overcrowding in the former trio leads to exceed the carrying capacity of the ecologically sensitive destinations and it is in sharp contrast to the conservation and preservation concept. Moreover other destinations are in a struggling stage for survival.At the same time, model Eco-tourism destinations like Costa Rica (Central America) have implemented smart scheduling and planning in tie up with Air Canada. This leads to optimum occupancy of destinations and reduces no occupancy, ultimately deriving maximum economic, social and environmental benefits to the local people while upholding conservation and preservation agenda.

For instance Eco Tourism Counters can be made functioning in Kochi, Kozhikode and Thiruvananthapuram International Airports. These counters have to be functioned in such a way that all the destinations are digitally connected and electronic booking is available through the counters and through internet. To develop this kind of corporate reflex, existing Electronic Data Interchange (EDI) systems has to be integrated to the internet using protocols and standards. Where the complexity of the EDI system limits response to a weekly interval, an internet based e-commerce solution offers the Eco-Tourism Directorate the ability to develop an event based, real–time response with partners. When a booking comes in, the service provider at the destination can see the new demand on the extranet at the same time as the planner in Eco-Tourism Directorate.

CONCLUSION

ERP is a planning system for service delivery that consolidates supply, demand and carrying capacity into one data warehouse centrally coordinated from Eco-Tourism Directorate. It facilitates optimum occupancy in destinations.It reduces no occupancy.Corporate HR, Finance, Administration policies can be formulated and uniformity can be maintained in all the destinations and ERP reduces planning time.Service Quality in concurrence with ecology and environment can be improved after incorporating reflexes from tourists and employees.New Corporate strategy can be adopted in the light of climate change and global warming. Overall ERP is a Re-engineering mechanism that facilitates the operational efficiency as well as the employee well-being in Eco-tourism.

ISSN 0975-8941

REFERENCES

1. Bill Gates. (1999) Business @ The Speed of Thought-Using a Digital Nervous System.Grand Central Publishing, 1: 217–to 227
2. Camison. C. (1996) Total Quality Management in Hospitality:An Application of the EFQM model. Tourism Management 17 (3):196-197.
3. Ceballos-Lascuain, H.(1987) The Future of Ecotourism, Maxico Journal January12: 36-48.
4. Common wealth of Australia (1994) National Ecotourism Strategy, Australian Government Printing Service Canberra Act.7th Edition

ISSN 0975-8941

Juxtaposition of Traumatic Childhood and Resilient Adulthood in MarjaneSatrapi's *Persepolis*

Roshan Chacko
Department of English (SF)
Deva Matha College, Kuravilangad

ABSTRACT

Marganesatrapi's *Persepolis* series is an unconventional autobiography juxtaposed with narratives of revolution, identity, nationalism, and fundamentalism. It is unconventional because the autobiography is in the form of a comic book with graphic illustrations. Being written in Europe and published in France, it contains multitude of questions regarding political and religious hegemony and fundamentalism. It is a trauma memoir which narrates the traumatic events dismantles the attachments between self and others. In the Persepolis through graphics MarjaneSatrapi speaks of the self, fragmented by religious and political ideologies. This article speaks of the traumatic childhood of the protagonist and her retrieval by absorbing a resilient and rebellious nature.

Keywords: Trauma, Identity crisis, Resilience, Revolution, Graphic novel

Marjanesatrapi was born in Rasht, Iran and now lives in Paris where she is a prolific contributor to magazines and newspapers throughout the world. Through her memoirs; *Persepolis I: the story of a childhood and Persepolis 2: the story of a return*, she delineates all the cultural, religious, political and extremist atrocities that meted out to the people of Iran during the revolution. By revisiting the past she tries to realize the traumatic childhood that shaped her adulthood aswellas the nation itself. Herdiasporic experiences in the host land and the traumatic experiences in the homeland made her in an identity crisis.Satrapi'smemoirs predominantly focus on the tragic after-effects of Religious revolution in Iran.

This article focuses on the traumatic childhood of MarjaneSatrapi which made her to transform herself to address the problems arose in the adulthood. Her resilient adulthood is the answer to her traumatic childhood which is plagued by political upheavals. Her identity was in question because of the traumatic ruptures that stormed her life in Iran. It negatively affected her life as a child and adult. The devastating effects of war between Iran and Iraq made indelible stigmata of horror and frustration in her life. She was traumatised by violence, religious intolerance, nasty politics and sex.

In *Persepolis: The Story of a Childhood* she commences the narration with the unexpected event of introduction of Veil in the Islamic Republic of Iran after the Shah's dethronement and during Ayatollah Khomeini's regime.The first traumatic experience of the author is through the symbol of Veil. She names the first chapter of the work as 'The Veil' in order to show how tragic was this for a child of ten years of old whose dreams were always colourful and modern. The novel starts in the year 1980 a year after Islamic Revolution. It became obligatory to wear the veil in public. It became a burden for her because she didn't really understand the need for it.

ISSN 0975-8941

Figure 1

Forceful implementation of veil was followed by series of revolutionary changes which they termed as "cultural revolution" (*Persepolis1*, 4). The new fundamental religious regime closed all the bilingual schools in Iran. They found it decadent and the girls were asked to cover their heads. The segregation between male and female students implemented in the schools. There were demonstrations in the streets against these changes but all went in vain.Even though Satrapi's family had strong religious affinity, they were happy with the modern styles of the world. So they found it hard to follow these rules. "As a family they were modern and avant- garde"(*Persepolis1*, 6). Being noticed by the guardians of the law the family had to live a desperate life without being able to expose the real self.

These dramatic and traumaticeventsperplexed her mind and she began to think herself as a Prophet as the last of series of prophets like Jesus, Mohammad etc. The class distinctions in the society made her to think of to take the role of the prophets. She believed that only prophets could dismantle the distinctions and change the world. The stigma of harsh events around her could make a psychological imbalance which blurred her life. Demonstrations against the Shaw's regime were responded by ruthless massacre by the authority. Bleeding Iran became a traumatic experience for Satrapi.

After the revolution, which uprooted the rule of Shaw, Iran witnessed a paradigmshift in the academic, social, culture and religious life. There was a sudden and drastic change in the curriculum. Teachers, who once taught Shaw as a great man chosen by God, asked them to tear off the pictures of Shaw from the texts (*Persepolis1*, 44). When satrapi had questioned this double mindedness, she was threatened by the teachers. Even the children's minds were tuned up to the political situations of that time. Satrapi and her friends started to play games stipulating torturing as the result if someone fails.

In Persepolis 2 she speaks of the trauma she had through her body. "My mental transformation was followed by my physical metamorphosis....I was in an ugly stage seemingly without end" (*Persepolis2,* 39). The natural deformity of her body made her to think of experimenting with western styles of beauty.She says "I want to forget everything, to make my past disappear, but my unconscious caught up with me" (*Persepolis 2*, 40).

ISSN 0975-8941

Figure 2

Through graphics she illustrates her mental anguish and seeks for remedy. Even in the Austria she was tortured mentally for no reason by the authorities. She was often verbally abusedby thecolleagues. However, the suppressing past started to overpower her. She felt alone because the trauma and rupture kept her to herself. She felt isolated in Iran and Austria because she was unable to disclose her emotions to anyone. In Vienna, Satrapi is rapidly exposed to sex, drugs and parties. Her struggle to fit in whilst standing out was marked by her new punk haircut and her efforts to make her as French. Feeling guilty by lying to her parents about her drug use and being rejected by her friends in Austria, she started to use her body to inflict self-punishment for the overwhelming shame. After living on the streets for three months, living off scraps of food and cigarettes, Marjane becomes seriously ill and lands herself in the hospital. Isolated from everyone, Marjane's secrets weigh on her. Instead, Marjane resorts to self-punishment by inflicting pain upon her through isolation, drug use, and ultimately, the decision to commit suicide in order torectify her shame.She explains, "I think that I preferred to put myself in serious danger rather than confront my shame, my shame at not having become someone, the shame of not having made my parents proud after all the sacrifices they had made for me. The shame of having become a mediocre nihilist" (*Persepolis 2*, 90)

In Graphic Women: Life Narrative & Contemporary Comics, Hillary Chute states,

Persepolis narrates the trials and tribulations of precocious Marji and her upper class leftist

parents; their protests against the Mohammad Reza Shah, later against the Islamic regime; Marji growing classconsciousness; the torture and killing of family and friends; the havoc wreaked by Iran-IraqWar; and Marji's fierce and dangerous outspokenness which eventually leads her fearful parentsto send her out of the country at age fourteen, after she hits one school Principal and disputes politics with another" (Chapter 4). But at the same time in the second part of Persepolis we have MarjaneSatrapi as a bold woman recovered from all ruptures. We find a rebellious and responsible adulthood in Satrapi in her social, cultural, political and academic interventions.

ISSN 0975-8941

The rebellious attitude enabled her to create her own identity and to grow to her own self. She was rebellious towards the societal, governmental and religious atmosphere of Iran. When she was scolded by her mother for ditching grammar class she suddenly got upset and called her mom 'the guardian of Revolution'. The manipulation by Government made her strong to question the system. Government's policy of eradicating all who are against the system invited strong protest from the people. All these hegemonic atrocities led her to think of being self confident and resilient. After a long period of severe depression and failed suicides, she used her body as a medium for personal transformation. She underwent a thorough change as a girl. She applied everyday technologies to remove the unwanted body hair and to apply makeup which were alien to Iranian culture. She literally created a new persona which empowered her to withstand the problems of the society.

The first instance of resilience is seen in questioning of her lecturer in the moral class convoked by the university. Girls were prohibited to wear modern dresses and to have a modern hair cut. She blindly asked "you don't hesitate to comment on us, but our brothers present here have all shapes and sizes of haircuts and clothes. Sometimes they wear clothes so tight that we can see everything. Why is that I, as a woman, am expected to feel nothingwhen watching these men with their clothes sculpted on but they, as men , get excitedby two inches less of my head-scarf"(*Persepolis2*,143). Her explosive intervention in the class made her to confront the Islamic commission in order to prove her position. Being a student of art she had to select models for drawing. But girls were prohibited from having a male person as a model. It made her insane and she deliberately violated the moral code by selecting a male as her model. She was empowered by the past experiences and pain which helped her to recapture her life. Once she was caught by guardians of morality for running inside the campus which they found as obscene. "When you run, your behind makes movements, that are....how do you say....obscene. She answered...well then don't look at my ass....I yelled so loudly that they couldn't even arrest me" (*Persepolis2*, 147).Recollecting the old traumatic memories and events she became more powerful in her attitude towards her identity.

As a whole, MarjaneSatrapi's*Persepolis* series is a unique one in many aspects of it's purpose. Being a graphical novel and a rare memoir of a revolutionary, it furnishes the original purpose of the author as to disclose the political and religious hegemony that led to the traumatic situation to the author and the nation. The political turmoil and religious extremism which were the key phenomenon of Iran of that time set her mind to write this memoir. Satrapi's writing is in many ways socio-politically; religiously motivated. It is a coming of age story which ranges from her childhood in Iran to her adulthood in Austria and in Iran.

As a child, Marjanehad to face the trauma of catastrophe of war between Iran and Iraq. The trauma of cultural and religious revolution made her uprooted from her own motherland and family. When she was in Austria she had to accommodate with an alien culture, language, and people who were unwelcoming towards her. InSusan Stanford Friedman's analysis, female identity is constructed upon a basis of "identification, independence and community" (*ReadingAutobiography*, 75*)*. It is her search for identity and independence that made her powerful and outspoken.Satrapi'sjourney from traumatic childhood to resilient and rebellious adulthood starts with the recognition of her lost identity in her own land and abroad.

REFERENCES

1. Chute, Hillary L. Graphic Women: Life Narrative and Contemporary Comics. New York:Columbia University Press, 2010. Kindle. Web. 15 Sep. 2013.
2. Satrapi, Marjane. Persepolis. London: Vintage Books, 2008. Print
3. Smith and Watson, S. A. Reading Autobiography: A Guide to Interpreting Life Narratives.Minneapolis:University of Minnesota Press, 2002. Print.

ISSN 0975-8941

Building Blocks of Imagination: John Michael Greer's Prosthetic Society and the Toy Dilemma

Lakshmi P. Gopal
Department of English,
St. Aloysius College, Edathua, Allepey.
Email: lashaish@gmail.com

ABSTRACT

Despite mounting pressure to provide technologically sophisticated toys to children, recent studies confirm that simpler, more traditional toys such as building blocks are more beneficial to children's intellectual and psychological development than computer-based tablets and other gadgets are. I argue that one crucial distinction between computer-based gadgets and traditional building blocks is the difference in emphasis from objective use to subjective use. Following John Michael Greer's discussion of tools and prostheses, this paper examines the extent to which computer screens stifle creativity by placing children into a state of passive consumption, while building blocks force a child to creatively imagine a project, which is never explicitly given just from a bag of unused blocks. Martin Heidegger's notion of pluralistic interpretation as an alternative to scientific objectivity is also vital to grasping building blocks' access to the beauty of grappling with a number of different, yet equally viable, interpretations.

Keywords: Toys, Pollution, John Michael Greer, Martin Heidegger, Aristotle

INTRODUCTION

As recently as December 4, 2018, an article appeared in *The Hindu* newspaper titled, "Blocks Better than High-Tech Toys: Report." The article noted that although parents often feel "pressured by ads promoting tablet-based toys and games," under the mistaken assumption that a toy with more highly sophisticated technological components will function better as a medium for "education," recent research has confirmed that "there's not much science to back up these claims." The article went on to note that, quite contrary to expectation, better tools for children's education include simple toys like "blocks, puzzles, and even throwaway cardboard boxes that spark imagination and creativity." It seems safe to conclude, therefore, that the myth of "tablet-based education" being beneficial to young children's intellectual development is overwhelmingly based on marketing and advertisement ambitions of major corporations, no doubt fuelled by their own financial self-interest, rather than having any serious scientific basis.

While a discussion of the psychological or scientific reasons why any honest research into the matter seems to confirm this conclusion is beyond the scope of the present paper, I will appeal to the Philosophy of Technology, as fleshed out by figures like John Michael Greer and Martin Heidegger, to argue that tablet-based electronics and wooden building blocks differ in their deepest philosophy. The claim that simple toys that stimulate imagination are more beneficial to young children than technologically sophisticated gadgets which, in addition to costing far more money to obtain, also stifle creativity by providing a largely passivizing role to the child who does not need to do much more than stare at a screen and, occasionally, click a few buttons, is beyond dispute yet difficult to accept for most people caught up in the ideology that obsolete technologies cannot, simply *cannot*, be used in the modern era.Yet, in contrast with being absorbed in the comatose state of consuming online videos for hours on end, being provided a cardboard box opens up a potentially limitless number of possibilities for interaction. As the article notes, "A cardboard box can be drawn on, or made into a house," among countless other options. In fact, precisely because a cardboard box does not come with one single correct use stamped onto it, one does not have the option to be passive. One has no choice except to creatively imagine a game and then execute his or her own plan, often by recruiting other people to join in.Likewise, the social component must not be neglected. "Simpler toys that parents and children can play with together are preferable," concludes the article. Clearly, an honest analysis of the data, unbiased by the financial interests of selling overpriced gadgetry to boost the fortunes of a small handful of corporations, reveals what is actually quite obvious to common sense. Giving children simple materials with no readily-assigned use, such as building blocks of cardboard boxes, will force them to use their imaginations to invent a game rather than passively consume one that has already been programmed onto their tablet. Removing the tablet screen, which has a tendency to absorb a child's attention in its entirety for hours, will offer better opportunities for social interaction and bonding between child and parent, as well as with peers. In both cases, the difference is largely between a subjective use of a toy and an objective use of a toy. In this paper, I will explore this crucial distinction and argue that it is a more productive basis for evaluating the appropriateness of a toy than the currently accepted criteria of evaluating a toy based on its level of "technological innovation." Since subjective and objective uses of a toy are understandably ambiguous terms, I will largely draw on John Michael Greer's distinction between tool and prosthesis to clarify the difference between a toy that extends a child's natural creativity and one that merely stifles it and replaces imagination with passive consumption.

In a March, 2015 instalment of the *Archdruid Report* series, titled "The Prosthetic Imagination,"American druid and philosopher of technology John Michael Greer introduced a distinction between two types of technologies, a distinction often overlooked by using the same term "technology" to refer to two very different types of objects. However, because the word "technology" is so weighed down by ideological baggage and so often abused for political purposes, it is necessary to define what this ubiquitous yet thoroughly ambiguous term really means. As he explained in much greater depth in his essay "Transcending Plasticity: John Michael Greer's Retrotopia in Light of Sustainable Toy Manufacturing Practices", the word "technology" is not a naturally-occurring word inthe English Language but is instead an artificial term that was transliterated from Ancient Greek. Although useful as a technical (no pun intended) term, the Etymological significance of the term, as it functioned in its original Ancient Greek context, is completely lost in the process of transliteration. As a result, almost everyone throws around the term without having the slightest notion what it really means. The Ancient Greek term "ôÝ÷íç," from which the word "technology" is transliterated, has nothing intrinsically to do with the kinds of things we call technology today. It had no relation to supercomputers, nuclear reactor or airplanes, let alone the kind of Science Fiction fantasies from *Star Trek* that have yet to exist. Instead, it simply meant "craft" or "art," two terms in Modern English which approximate the notion of a skill that can produce an object such as a clay pot or a wooden chair (hardly the kinds of things that would come to mind in a discussion on "technology"). The main distinction of technology, in this original sense of the term, is that it is not natural. "Nature," though transliterated from Latin rather than Greek, is another term which is only halfway-understood in translation from the Ancient Greek concept of "öýóéòs," the word which we translate as Nature but which is etymologically related to our words "physical" and "Physics." For the Ancient Greeks, "Nature" did not refer to the untouched forest filled with wild animals and flowing streams, except indirectly. Nature simply meant the principle of change or growth which a thing had simply because it was its nature to develop in that way. The nature of a seed, for example, is to sprout and grow into a progressively larger and more developed plant, until it reaches the stage of fruition (Aristotle 251). In contrast with natural objects like plants and animals, objects of art can only exist in their proper form on the basis of the intervention of a skilled craftsperson. A clay pot, for example, has a particular shape due to the skill of the potter and also for the purpose of meeting a particular need which the potter has envisioned. A clay pot for cooking fish, for example, will likely hold a different shape than a clay vessel bound to store wine. Thus, "technology" is simply any object which exists because of human creation rather than by Nature.

Although technology is therefore an extraordinarily broad term which encompasses literally everything from a simple stone axe from the Stone Age to the latest particle accelerator project which cost nine billion U.S. dollars to develop, there are important distinctions even among certain subsets of technology. As John Michael Greer noted in "The Prosthetic Imagination," on one hand, there are tools, which extend a human capability by allowing a person to accomplish tasks which would be inaccessible to it without the aid of the tool. For example, an axe allows one to split wood that would be impossible to split with, say, one's bare hands. Although a tool does allow a person to accomplish a whole range of new tasks, the tool does not take away the need for the person to do the work to perform the task. An axe, for example, does not take away the work needed to split wood, as any person who uses an axe will still have to work very hard to do so. Further, if the person does not do the work, the tool will not accomplish anything at all. An unused axe simply sits on the space on which it was deposited. It can accomplish no work unless its user is also working.

In contrast with a tool, a prosthesisis an object which replaces a human capability rather than extends it. For example, an artificial leg replaces a natural leg by attaching to the area where the person's natural leg had been amputated. Though it has its own set of limitations, with some adjustmenta prosthesis can more or less approximate the piece it replaced.A prosthesis is a useful thing if a person has found, for one reason or another, thathe or she has lost access to the original feature which the prosthesis has come in to replace. A person who had lost a leg in an agricultural accident, for example, will surely appreciate the substitution which a wooden prosthetic leg can provide. But if some clever advertisement agency decided to start marketing prosthetic legs as much more convenient and "technologically innovative" than natural legs and convinced people to amputate their natural legs in order to be fitted with the latest release of prosthetic leg, there would be something perverse and unreasonable about this decision (83). At heart, it would stem from simply misunderstanding the difference between a prosthesis, which replaces a capability, and a tool, which extends a capability.

Although Greer's hypothetical example of an advertisement firm convincing people to give up their natural legs in order to buy the latest release of prosthetic leg may sound like hyperbole, in a very real sense this is an adequate description of the state of much of what the media praises as "technological innovation" in our era. For example, spending hours each day watching Netflix shows does not extend your ability to imagine; it merely replaces it by providing self-moving images on the screen which follow out a pre-determined set of actions and require nothing but passive consumption from the viewer. Driving a car does not extend your ability to walk; it merely replaces it. Using a bread-baking machine does not extend your ability to cook; it merely replaces it. This is harmful enough in the case of adults who have already had a chance to develop their thinking, walking, and cooking skills before the latest devices reached the market and convinced them to neglect these abilities. But it will be dangerous in ways that are still largely unclear in the case of children who are too young to have had the chance to try to develop these skills in the absence of highly-addictive electronic devices. A tablet is so engrossing that it does not even require the user to look up from the screen to examine his or her surroundings. In fact, doing so would cause the user to "miss out" on what is taking place on the screen. This attitude of disengaging from the surrounding world to stare at little coloured pixels on a screen will likely have catastrophic results on the intellectual development of a child who is too young to balance this activity with commitments to the surrounding world or family members, friends, and duties.

To return to the *Hindu* article "Blocks Better than High-Tech Toys: Report," it is clear that building blocks fit into the tools category outlined by Greer, while tablet devices fit into the prosthesis category.

ISSN 0975-8941

Building blocks extend the child's ability to imagine by providing crucial exercise in the faculty. A set of building blocks, like an axe for splitting wood, will not accomplish anything in the absence of the user being in active state. The user has to put in the work to construct the blocks into a meaningful shape. In contrast, a tablet screen requires no action on the part of the user. In fact, even if *no one* is watching it, it will still play whatever video etc. it was programmed to. A tablet accidentally left on will continue to carry out whatever task was assigned to it last. In addition, even if the user is currently watching, nothing more is required of that person than to fix his or her eyes on the screen and sit still. Even in cases where some interactive game is displayed, it would be hard to argue that tapping locations on a screen and waiting for a response is a serious competitor against building blocks for developing the child's intellect.

The difference between tapping a few locations on a touchscreen and assembling a new object out of a set of building blocks is crucial and will require a brief examination of the very concept of interpretation. The main problem with the argument that tablet-based games use the imagination just as much as building blocks lies in the following error: a tablet-based game always comes with a pre-programmed set of outcomes which determine what the right answer and wrong answer to any challenge are. For example, a tablet game teaching how to spell words in English will simply execute the instructions providing one "right answer" to each problem. While not entirely useless, executing a set of questions with only one right answer is a very poor competitor for the kind of innovation opened up by a set of building blocks. The blocks, as literally nothing more than a set of pieces of wood in a bag, have no single right answer programmed into them for how they should be used. The tablet game has only one correct use. The building blocks have infinite correct uses. In fact, the primary challenge to the child is to decide for himself or for herself what that proper use will be. Will it be, for example, to construct a house? Or will it be, perhaps, to construct an elephant? What about a tree, or a spaceship, or maybe another planet? The possibilities are limitless, because the child's imagination is too.

In his monumental 1927 philosophical text *Being and Time*, German philosopher Martin Heidegger noted that the tradition of Western Metaphysics has largely interpreted the world as a set of objects to be submitted to, say, the scientific analysis of their list of properties (61). For example, any object can be analysed for its weight, its size, its colour, and a number of other attributes. While not incorrect, this approach to the world as filled with objects "present at hand" and open to scientific investigation is a secondary deviation from how we ordinarily engage with the world. Most of the time, we are not analysing objects for their attributes. We are instead immersed in a set of involvements in which the world is not so much filled with objects, as it is characterized by events which unfold within the horizon of temporality (284). In many ways, a life simply is the unfolding of events, and only in the most abstract and derivative nature is it a concern with any one object in isolation. Although a full treatment of Heidegger's idiosyncratic notion of Dasein and temporality is far beyond the scope of the present paper, it is worthwhile to note that the logic of events is that they unfold within a horizon of interpretation, not analysis of their properties (134). Interpretation is the starting point for being able to document an object's properties because, without knowing *what* something is, one cannot begin to ask about its size, colour, or weight. Yet the question of what something is, is largely a matter of interpretation rather than objective observation. For example, a clay pottery jar for storing wine will not be encountered "objectively" the same by two users with radically different cultural backgrounds. To one person with experience in home winemaking, it may be interpreted as a vessel for making wine. To another person from a context that forbids the consumption of alcohol, it may be seen as storing oil or food. The question of who interpreted it correctly misses the entire meaning of the concept of interpretation. For the most striking thing about interpretation is that there can never be only one. Interpretations of a great poem by, say, William Shakespeare abound because it would not even make sense to ask which person, of the thousands who have written on a given poem, was "correct" in his or her interpretation, making all the other thousands of people "incorrect." The peculiar

ISSN 0975-8941

thing about interpretation is that it defies the binary logic of simple truth and falsity.

CONCLUSION

The difference between a game on a tablet screen and a set of building blocks in a bag is, most importantly, a difference in how they allow the child to develop the crucial skill of interpretation. A game on a tablet screen is by definition incapable of developing the child's skill of interpretation because it can only execute a set of questions with one single correct answer. Rather than immerse himself or herself in the beauty of encountering diverse interpretations on a given context in the world of lived experience, the child's interpretative faculty is stifled by learning that every situation, no matter how complex, can only have one correct answer. Debating any possible solution outside of that one is therefore categorically ruled out as a waste of time, since every option except the one that rewards the child with a "Correct" notification on the screen is simply false. In contrast with a pre-programmed game on a tablet, a set of building blocks cannot be engaged with *except* within the horizon of interpretation. A set of blocks in a bag has no one correct answer. It only begins to have any meaning whatsoever when the child brings them out of the bag, into the light of day, and begins to imagine a purpose for them to fulfil. In the ideal case of bringing in peers, parents, or siblings into the situation to act as collaborators, the child will experience the joy of encountering other horizons of interpretation, realizing that no matter how clearly he or she may see a situation, there will always be other perspectives with an equally legitimate claim to truth.

Yet there is an additional, crucial reason why a pre-programmed game will stifle the child's faculty of interpretation. It would be all too easy to argue that because, for example, mathematical truth is something objective, a plurality of interpretations is far less important than the skill of narrowing truth down to one correct answer arrived at through objective analysis. For example, teaching Mathematics to children is not really a matter of celebrating the plurality of interpretations. It is simply a matter of arriving at the objective correct answer to a problem. A simple problem like 2 + 3 = 5 will not gain very much from debating within the classroom if 6 or 4 or 100 are equally valid interpretations. Following this logic, one could argue that the tablet-based game simply teaches the child the same skill of objectivity and prepares him or her for a lifetime of approaching truth objectively.

The main problem with comparing a programmed game on a tablet to a lesson in Mathematics in a classroom is that the two allow remarkably different approaches to truth. While it is true that simple arithmetic problems have only one correct answer, what this logical fallacy misses is that the answer is always arrived at by the use of the child's own rational faculty and can only be double checked by another human using his or her intellect as well. The number of incorrect answers at the back of any mathematical textbook is a sign that truth is more than just whatever happens to be in the answers section. However, that is not at all what happens in the passive consumption of an electronic game. In this case, there is literally no way to overturn even an incorrect conclusion the game has been programmed to hold. Rather than engage in the collaborative process of using rationality to correct an error in the answer key, a child has no choice but to agree with the tablet's answer *even* when it is clearly incorrect, simply because there is no other option. One falls into the fully passive role of assimilating information and predicting what the machine will agree with, regardless of whether it is actually correct! This mentality of only caring about being in accord with a machine is highly damaging to the innate human ability to interpret the world and draw counter-intuitive conclusions about it even when the authorities disagree. This ability is automatically ruled out as impossible when following the model of learning from a computer game.

Likewise, to return to my original distinction between a subjective use and an objective use of a toy, I am now able to proper define these terms. A toy has a subjective use if it is impossible to use the toy without actively engaging in an act of interpretation to determine how it should be used. The kind of interpretation required to, for example, determine that a neutral stack of unsorted building blocks should

ISSN 0975-8941

be transformed into a model house requires an enormous amount of imagination. Imagination is also a subjective faculty. Because the toy has a subjective use that cannot be understood without the role of interpretation and imagination, there is no single correct answer. It therefore dissuades the child from adopting the reductive mentality of a strict binary division between truth and falsity. It also, by allowing the child to take on the responsibility of devising solutions subjectively, prevents the child from expecting truth to be one objective "correct answer" whichis passively given to him or her from the authorities.

In contrast, a toy has an objective use if the child has no freedom to determine how it should be used. A computer game with a pre-programmed set of instructions and no ability to deviate from those instructions is the classic example of a toy with an objective use. The child has no power to influence the toy to deviate from one of a set of contrived options it was engineered to hold. The child therefore has no need to engage in interpretation of what the toy's purpose might be. The purpose is simply to be executed by pushing a button or tapping an area of a touchscreen. Both of these activities place the child in a role of total passivity. Tapping on a screen to begin streaming a pre-recorded movie requires no action beyond the most trivial act of starting the process and then disengaging from surroundings. Further, a computer game has only one correct answer and teaches the child to interpret truth as a strict binary in which one correct answer is prioritized and every other option is devalued as worthless. This transfers over to a mentality that devalues enormous amounts of information in the world as irrelevant, damaging the child's ability to contextualize situations or listen to opinions different from his or her own.

Clearly, when phrase in the terminology of subjective use and objective use, it becomes very difficult to argue that a computer game on a tablet screen is more beneficial to a child's intellectual and psychological development than a set of building blocks. The reason why this is so little acknowledge, though, stems from the fact that the debate is rarely ever phrased in these terms. Rather than focus on the role of interpretation and imagination, the debates typically focus on catchwords like "technological innovation" and vague, highly abstract appeals to "progress" and "keeping pace with a changing world."While it is true that the world is quickly changing, it would be difficult to argue that the direction it is going will be an improvement if it means losing so many of the basic faculties that are required to engage with the world, and with other people's opinions, in a way that respects the diversity of interpretations as a sign of the beauty of the world's complexity, rather than simply a wrong answer to be ignored. We stand at a very important crossroads at this moment in history. It is remarkably fortunate that in our case, the more beneficial option also happens to be the less expensive of the two options, both in terms of cash price and in terms of natural resources, not to mention the metric of pollution that is largely unacknowledged cost of pursuing needless technological intermediation and plastic-based manufacturing. Although the environmental and financial cost to pursuing tablets is unjustifiable high, a set of building blocks can be constructed with the modest inputs of wood, hand tools, and human skill. Potentially, they generate no pollution and require no carbon footprint and their benefit to the psychological wellbeing of the child is priceless.

REFERENCES

1. Aristotle. *The Physics*. Trans. R.P. Hardie and R. K. Gaye. In *The Basic Works of Aristotle*. Ed. Richard McKeon. The Modern Library. New York. 2001.
2. Greer, John Michael. "The Prosthetic Imagination." *The Archdruid Report*. Vol. 9. Founders House Publishing. Chicago. 2018.
3. Greer, John Michael. *Retrotopia*. Founders House Publishing. Chicago. 2016.
4. Greer, John Michael. *The Retro Future: Looking to the Past to Reinvent the Future*. New Society Publishers. Gabriola Island. 2017.
5. Heidegger, Martin. *Being and Time*. Trans. Joan Stambaugh. State University of New York Press. Albany. 1996.
6. "Blocks Better than High-Tech Toys: Report." *The Hindu* [Trivandrum], 4 Dec. 2018, p. 16.

ISSN 0975-8941

വിമോചനസമര മുദ്രാവാക്യങ്ങൾ : നാടോടിവിജ്ഞാനീയവീക്ഷണത്തിൽ

അരുൺ വർഗീസ്
ഗവേഷകൻ, മലയാളവിഭാഗം
ദേവമാത കോളേജ്, കുറവിലങ്ങാട്

ബഹുസ്വരവും വിപുലവുമായ നാടോടിവിജ്ഞാനീയ പാരമ്പര്യം കേരളത്തിനുണ്ട്. വാമൊഴികളുടെ തലമുറകളിലേക്ക് സംവേദനം ചെയ്യപ്പെടുന്ന നാട്ടറിവുകളുടെ വിശാല ലോകത്തെക്കുറിച്ചുള്ള അക്കാദമികവും അക്കാദമികേതരവുമായ പഠനമേഖലകൾ മലയാളത്തിൽ സജീവമാണ്. കൂട്ടായ്മയുടെ ജീവിതത്തിൽ നിന്നുണ്ടാകുന്ന അറിവ് എന്ന വീക്ഷണകോണിലൂടെയാണ് ഫോക്‌ലോർ അഥവാ നാടോടിവിജ്ഞാനീയം എന്ന പദം സാമാന്യാർത്ഥത്തിൽ പ്രയോഗിക്കുന്നത്. പൂർവ്വികജനതയുടെ വിചാരരീതികളും, പ്രയോഗരീതികളും ആചാരാനുഷ്ഠാനങ്ങളും വർത്തമാനകാലത്ത് എങ്ങനെ ഉപയുക്തമാക്കാം എന്ന ചിന്താധാരയിലധിഷ്ഠിതമാണ് സമകാലീക നാടോടിവിജ്ഞാനീയശാഖ. ഫോക്‌ലോറിനെ സാമൂഹികതയുടെ അടിസ്ഥാനത്തിൽ വിശകലനവിധേയമാക്കുമ്പോൾ അറിവ് ഉൽപാദിപ്പിക്കുന്ന സമൂഹത്തേയും അറിവിന് തുല്യമായ് തന്നെ അംഗീകരിക്കുന്നു.

ഓരോ സമൂഹത്തിന്റെയും വികാസപരിണാമഘട്ടങ്ങളിലെന്ന പോലെ കേരളീയ ചരിത്രസാമൂഹിക നിർമ്മിതിയിൽ മുദ്രാവാക്യങ്ങൾക്കും സജീവമായ സ്ഥാനമുണ്ട്. സവിശേഷ രാഷ്ട്രീയസാഹചര്യങ്ങളിൽ പിറവിയെടുക്കുന്ന സാമൂഹിക ഉൽപന്നമായ മുദ്രാവാക്യങ്ങളിൽ നൂറ്റാണ്ടുകളിലൂടെ കൈമാറിവന്ന ഫോക്‌ലോർ സംസ്കൃതിയുടെ അനുരണനങ്ങൾ കാണാം. തദ്ദേശീയ സംസ്കാരികത്തനിമയും സത്തയും സാംസ്കാരികഭിന്നതയും ഉൾക്കൊള്ളുന്നതാണ് മുദ്രാവാക്യങ്ങൾ. കാര്യമായ പഠനം നടത്താതിരുന്ന ഈ ശാഖയെ സാഹിത്യത്തിലും നാടോടിവിജ്ഞാനീയത്തിലും ഉൾപ്പെടുത്താം. സമൂഹത്തേയും സാമൂഹികപ്രശ്നങ്ങളേയും ബന്ധിപ്പിക്കുന്ന ശക്തമായ ആശയവിനിമയോപാധി കൂടിയാണിവ. സാമൂഹിക പ്രശ്നങ്ങളോട് സംവദിക്കുന്ന ഇടപഴകുന്ന മാധ്യമമെന്ന നിലയിൽ മുദ്രാവാക്യങ്ങൾക്ക് പ്രസക്തിയുണ്ട്. (കെ.ടി. രാജീവ് 2009 :27)ദേശം, സമൂഹം, വ്യക്തിജീവിതം ഇവയുമായ് ബന്ധപ്പെട്ട സംസ്കാരം എന്നിവയുടെ സമഗ്രപഠനമാണ് നാടോടി വിജ്ഞാനീയം. മനുഷ്യവർഗത്തിന്റെ വികാസപരിണാമപ്രക്രിയയിൽ രൂപപ്പെട്ട വാമൊഴിവഴക്കം, ഭാഷ, ആചാരാനുഷ്ഠാനങ്ങൾ, നിത്യജീവിതവസ്തുക്കൾ മുതൽ ആധുനിക കാലഘട്ടത്തിലെ ഭാഷാവ്യവഹാരങ്ങൾ വരെ ഫോക്‌ലോറിന്റെ പരിഗണനയിൽ വരുന്നു. സമസ്തജനവിഭാഗങ്ങളുടേയും ബഹുമുഖ ജീവിതവ്യവഹാരങ്ങളെ കാലദേശ വ്യതിരക്തതയില്ലാതെ അപഗ്രഥിക്കുന്നതാണ് ഫോക്‌ലോർ പഠനത്തിന്റെ നവീനരീതിശാസ്ത്രം. ഈ പഠനരീതിയിലൂടെ വിമോചനസമര മുദ്രാവാക്യങ്ങളെ അപഗ്രഥിക്കുവാനാണ് പ്രബന്ധഭാഗത്ത് ശ്രമിക്കുന്നത്.

പരമ്പരാഗതം, അയുക്തിത ഗ്രാമീണത, സാർവ്വലൗകീകത, സാമുദായികത വാമൊഴിച്ചന്തം, അജ്ഞാതകർതൃത്വം എന്നിവയാണ് പൊതുവായ ഫോക്‌ലോറിന്റെ ലക്ഷണങ്ങൾ. ബെൻ ആമോസിനെപ്പോലെയുള്ള നാടോടിവിജ്ഞാനപഠിതാക്കൾ പാഠത്തെ മാത്രം വിശകലനം ചെയ്താൽ പോരെന്നും അവ ഉൽപാദിപ്പിക്കപ്പെടുന്ന സജീവവ്യവഹാരസന്ദർഭങ്ങളിലെ പാഠപരത അഥവാ പാഠാന്തരത്തെക്കൂടി (Context) പഠനവിധേയമാക്കണമെന്നും അഭിപ്രായപ്പെടുന്നു. ഏത് ഫോക്‌ലോർ രൂപമായാലും അവ സാമൂഹിക പ്രക്രിയയുടെ ഭാഗമായ് മാറുന്നതെങ്ങനെയെന്ന അന്വേഷണം സമകാലിക ഫോക്ക്‌ലോർ പഠനത്തിന്റെ മുഖ്യലക്ഷ്യമാണ്.

ISSN 0975-8941
66 December 2018 (Vol. XI No. 1&2) Research Lines

മുദ്രാവാക്യങ്ങൾ കാർഷികസംസ്കൃതി, ജന്മിത്വം, വർഗസംഘർഷം

വിമോചനസമരകാലത്ത് കമ്മ്യൂണിസ്റ്റ് പാർട്ടിയിലെ തൊഴിലാളി സംഘടനകൾ പാടിയിരുന്ന മുദ്രാവാക്യഗീതമാണിത്.

പാടത്തു പാടുന്നൊരു
മാടത്തപ്പെണ്ണാളുകൾ പാടി
ഈ നല്ലൊരു നാടു ഭരിക്കാൻ
കോൺഗ്രസുകാരു മുതിരേണ്ട
ഈ നല്ലൊരു നാടു ജയിക്കാൻ
കോൺഗ്രസ് കാള കൊതിക്കേണ്ട
പത്താണ്ടിവിടെ നാടു ഭരിച്ച്
പത്തായത്തിന് കാവൽ നിന്ന്
പറ്റുംതിന്ന് നടന്നവരെ
നിങ്ങൾക്കിവിടെ വോട്ടില്ല
പൂട്ടിയ കാളയ്ക്ക് വോട്ടില്ല
പത്താണ്ടിവിടെ പടയണി തുള്ളി
ചുറ്റുവിളക്കു തകർത്തവരേ
പുത്തൻതലമുറ ഇന്നു കൊളുത്തിയ
കൈത്തിരി ഊതാൻ പോരേണ്ട
കേരം തിങ്ങും കേരളനാട്ടിൽ
ചോരച്ചെങ്കൊടി വീണ്ടും ഉയരും
ഇ.എം.എസ്. നാടുഭരിക്കും

ഇത്തരം മുദ്രാവാക്യങ്ങളിൽ നാടൻപാട്ടിന്റെ സ്വഭാവം നമുക്ക് ദർശിക്കാം. വിമോചനസമരകാലത്ത് കോൺഗ്രസിന്റെ നേതൃത്വത്തിൽ കേരളത്തിലെ കമ്മ്യൂണിസ്റ്റ് മന്ത്രിസഭയെ പുറത്താക്കാൻ ശ്രമിച്ച സന്ദർഭത്തിൽ ഉയർന്ന മുദ്രാവാക്യമാണിത്. അജ്ഞാതകർത്തൃത്വങ്ങളായ ഈ മുദ്രാവാക്യഗീതത്തിൽ നാടൻപാട്ടിന്റെ പരമ്പരാഗത ശൈലി ദർശിക്കാൻ കഴിയും. കേരളീയ കാർഷികജീവിതത്തിന്റെ സൂചകങ്ങളായ പാടം, പത്തായം, പൂട്ടിയ കാളകൾ എന്നിവയെല്ലാം ഗ്രാമീണതയെ പ്രതിനിധാനം ചെയ്യുന്ന സൂചകങ്ങളാണ്. അഥവാ കാർഷികസംസ്കൃതിയുടെചിഹ്നങ്ങളാണ്. ഈ മുദ്രാവാക്യഗീതത്തിന്റെ ആദ്യവരി 'പാടത്തു പാടുന്നൊരു മാടത്ത പെണ്ണാളുകൾ പാടി' എന്നത് തന്നെ കൃഷിപ്പാട്ടിന്റെ സൂചനയാണ്. ഇവയോടൊപ്പം ജന്മി/കുടിയാൻ സംഘർഷത്തേക്കൂടി ഇവിടെ പ്രതിപാദിക്കുന്നു. 1950 കളിൽ നടന്ന കേരളത്തിൽ കമ്മ്യൂണിസ്റ്റ് പാർട്ടിയുടെ നേതൃത്വത്തിൽ നടന്ന തൊഴിലാളി സമരങ്ങളും ഭൂപരിഷ്കരണശ്രമങ്ങളുമെല്ലാം വർഗവൈരുദ്ധ്യത്തിന്റെ, സാമൂഹികതയുടെ സൂചനകളാണ്.

കേരളത്തിലെ അന്നത്തെ സുപ്രധാന കാർഷികവിളകളായ നെൽകൃഷി, തെങ്ങുകൃഷി എന്നിവയെക്കുറിച്ചും ഈ മുദ്രാവാക്യഗീതത്തിൽ പരാമർശിക്കുന്നുണ്ട്. കാർഷികസംസ്കൃതിയുടെ, നാട്ടുകൂട്ടത്തിന്റെ ആഘോഷപരതയെ പ്രതിനിധീകരിക്കുന്ന പടയണിയെ സൂചിപ്പിക്കുന്നതും കേരളീയ ഗ്രാമീണതയുടെ നേർകാഴ്ചയാണ്. 'കൈവിളക്ക് ഊതാൻ നോക്കേണ്ട' എന്ന വരിയിലൂടെ അക്കാലത്തെ ജന്മി/അടിയാൻ, മുതലാളി/തൊഴിലാളി വർഗ വൈരുദ്ധ്യത്തേക്കൂടി പ്രശ്നവൽക്കരിക്കുന്നു. 1950 കളിൽ കേരളീയ പൊതുമണ്ഡലത്തിലുണ്ടായ സുപ്രധാനമാറ്റം ജന്മി/അടിയാൻ ബന്ധത്തിൽ നിന്നും മുതലാളി/തൊഴിലാളി വർഗവൈരുദ്ധ്യത്തിലേക്കുള്ള സമൂഹത്തിന്റെ പരിവർത്തനമായിരുന്നു. ഇത്തരം വർഗസംഘർഷാത്മകത ഈ മുദ്രാവാക്യത്തിൽ നിലീനമാണ്.

കേരളത്തിന്റെ സാംസ്കാരികചരിത്രം സവർണ്ണർ-അവർണ്ണർ എന്നിങ്ങനെ വംശീയമായി വേർതി

ISSN 0975-8941

രിച്ചാണ് നാടൻപാട്ടുകളിൽ രേഖപ്പെടുത്തിയിരിക്കുന്നത്. ആഢ്യസംസ്കാരത്തിന്റെ (ജൻമിത്വം) മൂല്യങ്ങളും രീതികളും ആര്യസംസ്കാരത്തെ പ്രതിനിധീകരിക്കുമ്പോൾ അടിസ്ഥാനവർഗത്തിന്റെ സംസ്കൃതി ദ്രാവിഡകേന്ദ്രിതമാണ്. ഈ വൈരുദ്ധ്യമാകട്ടെ കേരളീയസംസ്കാരത്തിന്റെ പൊതുമണ്ഡലത്തിൽ തന്നെ വളരെ പ്രകടമാണ്. ദ്രാവിഡമായ കേരളീയസംസ്കാരത്തെ സവർണ്ണവൽക്കരിക്കാനുള്ള ബോധപൂർവ്വമായ ശ്രമത്തെ പ്രതിരോധിക്കാൻ ഫോക് സംസ്കൃതി നടത്തുന്ന ചെറുത്തുനിൽപ്പ് നമ്മുടെ നാടോടിവിജ്ഞാനീയത്തിന്റെ സവിശേഷതയാണ്.

രാഷ്ട്രീയവും സാമൂഹികവും സാംസ്കാരികവുമായ നിരവധി ഇടപെടലുകളും നവോത്ഥാനമൂല്യങ്ങൾ പകർന്നുനൽകിയ മാനവിക ബോധവും അമ്പതുകളിലെ കേരളീയ പൊതുമണ്ഡലത്തിന്റെ മാറ്റത്തിന് കാരണമായി. ആര്യം/ആര്യേതരം (ദ്രാവിഡം) എന്ന ഫോക്ക് വൈരുദ്ധ്യത്തിന് തന്നെ അക്കാലത്ത് മാറ്റമുണ്ടാകുന്നതായി കാണാം. ജന്മി/അടിയാൻ സങ്കൽപത്തിലേക്ക് അത് പിന്നീട് പരിവർത്തനവിധേയമായി. രാഷ്ട്രീയ വ്യവഹാരരൂപങ്ങളായ മുദ്രാവാക്യങ്ങളിൽ അവ വളരെ സ്പഷ്ടവുമാണ്. ഭാഷാപരമായി ആഢ്യസംസ്കാരം/ ഫോക്ക് സംസ്കാരം എന്ന വേർതിരിവ് പ്രതിഫലിക്കുമ്പോഴും സാമൂഹികമായി വർഗവൈരുദ്ധ്യത്തിലധിഷ്ഠിതമായ ജന്മി-അടിയാൻ സങ്കൽപത്തിലേക്കും പിന്നീട് തൊഴിലാളി-മുതലാളി വൈരുദ്ധ്യത്തിലേക്കും മാറുന്നു. കേരളീയ സാമൂഹികതയ്ക്ക് ബഹുമുഖത്വവും ചലനാത്മകതയും സങ്കീർണ്ണതയും നൽകുന്നത് ഈ ആന്തരിക വർഗസംഘർഷമാണ്.

മുദ്രാവാക്യങ്ങളിലെ ആൾക്കൂട്ട മനശാസ്ത്രം

ഓരോ സമൂഹവും നിലനിൽക്കുന്നത് ചില പാരമ്പര്യചിഹ്നങ്ങളിലൂടെയാണ്. കേരളീയസമൂഹവും ഇതിൽനിന്നും ഭിന്നമല്ല. ഒരു സംസ്കാരത്തിൽനിന്ന് മറ്റ് സംസ്കാരത്തെ വ്യതിരിക്തമാക്കുന്നത്. ആ സമൂഹത്തിന്റെ അറിവ്, വിശ്വാസം, കലകൾ, ആചാരങ്ങൾ, നിയമങ്ങൾ, സാമൂഹിക ഘടന തുടങ്ങി ആ സമൂഹം അതുവരെ സ്വായത്തമാക്കിയ സകലവ്യവഹാരങ്ങളുടേയും ആകെത്തുകയാണ്. കാലഘട്ടത്തിനുണ്ടാകുന്ന പരിണാമം ഈ സംസ്കാരത്തിലും ചില വ്യത്യാസങ്ങളുണ്ടാക്കും. ഈ മാറ്റത്തിലും പൂർവ്വകാലസംസ്കൃതിയുടെ ശകലിതസ്മൃതികളും ചിഹ്നങ്ങളും ഗൃഹാതുരത്വത്തോടെ അക്കാലത്ത് നിലനിൽക്കും. ഇത്തരം സൂചകങ്ങളെ ഉപയോഗിച്ച് പൊതുസമൂഹത്തിനെ സ്വാധീനിക്കുവാനും പരിവർത്തിപ്പിക്കുവാനും സാമൂഹിക അധീശത്വം നേടുവാനും ഓരോ കാലത്തും ആധിപത്യശക്തികൾ നിരന്തരം ശ്രമിച്ചുകൊണ്ടിരിക്കും.

ശക്തമായ ബഹുജനരാഷ്ട്രീയമാധ്യമമായ മുദ്രാവാക്യങ്ങളിലൂടെ പൊതു സമൂഹത്തിൽ ആധിപത്യം നേടാൻ രാഷ്ട്രീയകക്ഷികൾ തന്ത്രപരമായ സമീപനം നടത്തും. അത്തരം ചില വിമോചന സമരകാല മുദ്രാവാക്യങ്ങളെ ചുവടെ ചേർക്കുന്നു.

"തൊപ്പിപ്പാള ധരിപ്പിക്കും
പാളേൽ കഞ്ഞി കുടിപ്പിക്കും
തമ്പ്രാനെന്നു വിളിപ്പിക്കും
ചാത്തൻ പൂട്ടാൻ പോകട്ടെ
ചാക്കോ നാടു ഭരിക്കട്ടെ"

"പാളേൽ കഞ്ഞി കുടിക്കില്ല
തൊപ്പിപ്പാള ധരിക്കില്ല
തമ്പ്രാനെന്നു വിളിക്കില്ലാ
ചാത്തൻ നാടു ഭരിക്കട്ടെ
ചാക്കോ പൂട്ടാൻ പോകട്ടെ"

"അരിവാളെന്തിന് തലകൊയ്യാനോ
ചുറ്റികയെന്തിന് തലക്കടിക്കാനോ

ISSN 0975-8941

പറയൂ പറയൂ കമ്മ്യൂണിസ്റ്റേ
പറയൂ പറയൂ ഇ.എം.എസേ''
''ചാക്കോ നാടു ഭരിക്കട്ടേ
ചാത്തൻ പുല്ലു പറിക്കട്ടേ
ഗൗരിചോത്തി പെണ്ണല്ലേ
പുല്ലുപറിക്കാൻ പോയിക്കൂടെ''
''അരിയെവിടെ തുണിയെവിടെ
പറയൂ പറയൂ നമ്പൂരീ
തൂങ്ങിച്ചാവാൻ കയറില്ലെങ്കിൽ
പൂണൂലില്ലേ നമ്പൂരീ''

രാഷ്ട്രീയപ്രവർത്തനോപാധിയായ മുദ്രാവാക്യങ്ങൾക്ക് വേണ്ട അടിസ്ഥാനഗുണങ്ങളിലൊന്ന് അവ സംവേദനം ചെയ്യുന്ന പൊതുസമൂഹത്തിലെ നാട്ടുജീവിതത്തിന്റെ അനുരണനങ്ങളെ അഥവാ ഫോക്‌ലോർ അംശങ്ങളെ കണ്ടെത്തുകയും അവ പ്രചാരണത്തിനായി ഉപയോഗിക്കുന്നതിലുള്ള പ്രായോഗികപരിജ്ഞാനവുമാണ്. കേരളീയപൊതുസമൂഹത്തിൽ അന്തർലീനമായ ജാതിവർഗസൂചനകളെ അവ പ്രതിനിധാനം ചെയ്യുന്നു. ഈ മുദ്രാവാക്യങ്ങൾ കാർഷികസംസ്കാരത്തിന്റെ ചിഹ്നങ്ങളെയും നിത്യജീവിത വ്യവഹാരങ്ങളേയും രാഷ്ട്രീയ ആയുധമാക്കുന്നതിന് മികച്ച ഉദാഹരണങ്ങളാണ്.

ഈ മുദ്രാവാക്യങ്ങളിൽ ഉപയോഗിച്ചിരിക്കുന്ന വ്യക്തിനാമങ്ങൾ അക്കാലത്തെ പ്രതിപക്ഷനേതാവായിരുന്ന പി.ടി. ചാക്കോയുടെയും ഹരിജനക്ഷേമവകുപ്പ് കൈകാര്യം ചെയ്തിരുന്ന ടി.കെ. ചാത്തൻമാസ്റ്ററുടെയും പേരുകളാണ്. ഉയർന്നനേതാക്കളെ തന്നെ ഗ്രാമീണ കാർഷികസംസ്കൃതിയിലെ തൊഴിലാളികളാക്കുന്നത് ഈ മുദ്രാവാക്യങ്ങളെ ജനപ്രിയമാക്കുന്നു. അതോടൊപ്പം ഈ മുദ്രാവാക്യങ്ങൾ ജാതികേന്ദ്രിതമായ ജീവിതസങ്കൽപങ്ങളെ പ്രശ്നവൽക്കരിക്കുന്നു. ചാത്തൻ പൂട്ടാൻ പോവുക, ചാത്തൻ പുല്ലുപറിക്കുക എന്നിവയും ഗൗരിചോത്തി പെണ്ണല്ലേ, പുല്ലുപറിക്കാൻ പോയിക്കൂടെ എന്ന പ്രയോഗങ്ങൾ മന്ത്രിയായാലും ഉയർന്ന പദവിയായാലും കാർഷികസംസ്കൃതിയിലൂടെ രൂപപ്പെട്ട ജാതികേന്ദ്രിത തൊഴിലുകൾ ചെയ്യണമെന്ന ആഹ്വാനമാണ് നൽകുന്നത്. ജാതികേന്ദ്രിതമായ ജീവിതസങ്കൽപം ഫോക്ക്‌ലോറുകളുടെ പ്രധാന സവിശേഷതയാണ്. ഓരോ ജാതിയും നിയതമായ ഒരു തൊഴിലിനെ ആശ്രയിച്ചു നിൽക്കുന്നുവെന്നതും പ്രത്യേകമായി പഠിക്കപ്പെട്ടിട്ടുണ്ട്. ആംഗലഫോക്കിൽ ബാർബർ, ബക്കറ്റ് ടെയ്‌ലർ, കാർപെന്റർ തുടങ്ങി വ്യക്തിനാമങ്ങൾക്കനുബന്ധമായി വരുന്ന പ്രയോഗങ്ങൾ പൂർവ്വകാല ജാതിബന്ധത്തെയാണ് സൂചിപ്പിക്കുന്നത്. (എൻ. അജിത്കുമാർ : ഫോക്ക്‌ലോർ പാരമ്പര്യവും പരിണാമവും 91 : 2009)

അരിവാൾ, ചുറ്റിക എന്നിവ കാർഷികസംസ്കൃതിയുടെ പണിയായുധങ്ങളായിരിക്കുമ്പോൾ തന്നെ അവ കമ്മ്യൂണിസ്റ്റ് പാർട്ടിയുടെ ചിഹ്നം കൂടിയാണ്. ഈ ചിഹ്നങ്ങളെ കാർഷികസംസ്കൃതിയുടെ വ്യവഹാരത്തിൽ നിന്നും അടർത്തിമാറ്റി കൊലപാതകത്തിനുള്ള ചിഹ്നമാക്കുന്നതിലൂടെ ഒരു വ്യവഹാരത്തിന്റെ ബഹുമുഖ വ്യവഹാരസാധ്യതകൂടി ഈ മുദ്രാവാക്യത്തിൽ തെളിഞ്ഞുകാണാം.

മുദ്രാവാക്യങ്ങൾ: ഗോത്രസംസ്കൃതിയുടെ ചരിത്രപാഠങ്ങൾ

കേരളീയപൊതുമണ്ഡലത്തിൽ ഏറ്റവും പ്രകടനാത്മകമായ രാഷ്ട്രീയവ്യവഹാരരൂപമാണ് പ്രകടനങ്ങൾ. യോഗങ്ങൾ, സമ്മേളനങ്ങൾ, നിരാഹാരം, ധർണ്ണ മുതലായവയിൽ നിന്നും പ്രകടനങ്ങളെ വ്യത്യസ്തമാക്കുന്നത് അതിന്റെ പൊതുപങ്കാളിത്തമാണ്. മനുഷ്യരുടെ കൂട്ടായ ജീവിതം രൂപപ്പെടുത്തുന്ന പൊതുവായ ജീവിതവ്യവഹാരങ്ങളാണ് ഫോക്ക്‌ലോറിന്റെ ആത്മാവ്. ഓരോ വ്യത്യസ്തവ്യവഹാരങ്ങളേയും പ്രതിനിധീകരിക്കുന്ന പൊതുഇടങ്ങളും അത്തരം ജീവിതാവസ്ഥകളിൽ രൂപപ്പെടേണ്ടതാണ്. പങ്കാളിത്തം, സംഭാഷണാത്മകത എന്നിവ ഫോക്ക്‌ലോർ വിശകലനമാതൃകയുടെ അടി

ISSN 0975-8941

സ്ഥാനങ്ങൾ കൂടിയാണ്. ഇവ രണ്ടും ഒരുപോലെ പ്രകടമാക്കുന്ന രാഷ്ട്രീയവ്യവഹാരമാണ് മുദ്രാവാക്യങ്ങൾ.

ഗോത്രവ്യവസ്ഥയിൽനിന്നും രാജ്യാധികാരത്തിലേക്കും പിന്നീട് ജനാധിപത്യ, സോഷ്യലിസ്റ്റ് കമ്മ്യൂണിസ്റ്റ് ഭരണക്രമത്തിലേക്കുമുള്ള മനുഷ്യവർഗത്തിന്റെ പരിവർത്തനം അവനിൽ അവകാശബോധവും വ്യക്തിസ്വാതന്ത്ര്യവും രാഷ്ട്രീയാവബോധവും രൂപപ്പെടുത്തി. ജനാധിപത്യവും തെരഞ്ഞെടുപ്പും രൂപപ്പെടുത്തിയ ഭരണവ്യവസ്ഥയും ദേശരാഷ്ട്രസങ്കൽപവും രാഷ്ട്രീയപാർട്ടികളുടെ അടിസ്ഥാനത്തിൽ സംഘടിക്കുന്നതിന് കാരണമായിത്തീർന്നു. ട്രൈബൽ സംസ്കൃതിയിൽ നിന്നും ജനാധിപത്യവ്യവസ്ഥയിലേക്ക് മാറിയെങ്കിലും അതിന്റെ അനുരണനങ്ങൾ നമ്മുടെ ജീവിതാവസ്ഥകളിൽ പ്രകടമാണ്.

രാഷ്ട്രീയപ്രകടനങ്ങളിലെ മുദ്രാവാക്യവിളികളിൽ ട്രൈബൽ സംസ്കാരത്തിന്റെ സൂചനകൾ കാണാം. ജീവിതത്തിന്റെ പരിണാമപ്രക്രിയകളിൽ ഗോത്രസംസ്കൃതിയിൽ നിന്നും സ്വാംശീകരിച്ച ലോകബോധം ഈ വ്യവഹാരങ്ങളിൽ പ്രകടമാണ്. ശബ്ദഘോഷങ്ങൾ ഗോത്രസംസ്കൃതിയുടെ പ്രധാന ആകർഷണങ്ങളാണ്. ഗോത്രവർഗങ്ങളുടെ ആഘോഷങ്ങളിലും അനുഷ്ഠാനങ്ങളിലും പ്രകടമായ ഉത്സവീകരണവും (carnivalisation) ആർപ്പുവിളികളും താളമേളവാദ്യങ്ങളും വായ്ത്താരിയും ഏറ്റുപറച്ചിലും കൈകൊട്ടലുമെല്ലാം രാഷ്ട്രീയപ്രകടനങ്ങളിലും അവയിലുയർന്നു കേൾക്കുന്ന മുദ്രാവാക്യങ്ങളിലും പ്രകടമാണ്.

അമ്പലങ്ങളിലെ പറ എഴുന്നള്ളിപ്പുകൾ, പള്ളിവേട്ട, പള്ളികളിലെ പെരുന്നാളുകൾ ഇവയുമായ വയെല്ലാം പ്രകടനങ്ങൾക്കും അവയിലുയർന്ന മുദ്രാവാക്യങ്ങൾക്കും സാമ്യമുണ്ട്. ജന്മികളുടെ പല്ലക്ക് യാത്ര, രാജാക്കന്മാരുടെ വിളംബരം, ജപ്തിനടപടികൾ, ഇവയിലെല്ലാം ഇത്തരം പ്രകടന പ്രതിനിധാനങ്ങൾ കാണാം. ഗോത്രസംസ്കൃതിയുടെ ആഘോഷപരത നമ്മുടെ അനുഷ്ഠാനങ്ങളിലേക്കും അവയിൽനിന്ന് രാഷ്ട്രീയവ്യവഹാരങ്ങളിലേക്കും സംക്രമിച്ചതാകാം. കാവ് സംസ്കാരത്തിൽനിന്ന് ക്ഷേത്രസംസ്കൃതിയിലേക്കും പിന്നീടതിനെ രാഷ്ട്രീയപാർട്ടികൾ ഏറ്റെടുത്തതുമാകാം.

നിയമസഭയിലായാലും പാർലിമെന്റിലായാലും ഭരണപക്ഷങ്ങളുടെ വാക്കൗട്ടുകളും മുദ്രാവാക്യം വിളികളും പ്രത്യേകമേഖലകളുമായി ബന്ധപ്പെട്ട അനുഷ്ഠാനങ്ങൾ തന്നെ വിവിധ നേതാക്കളുടെ ജന്മ മരണ ദിനാചരണത്തേയും ട്രൈബൽ വില്ലേജുകളുടെ യോഗേശ്വര മന്ത്രമൂർത്തി പ്രതിഷ്ഠാദിനാഘോഷത്തേയും സാമ്യവ്യവഹാരമായി പരിഗണിക്കാം. മുദ്രാവാക്യം വിളിയിൽ ശബ്ദഘോഷങ്ങൾ ഇഷ്ടപ്പെടുന്ന ട്രൈബൽലോർ സംസ്കൃതി പ്രകടമായി തന്നെയുണ്ട്. മുദ്രാവാക്യത്തിന്റെ ഈണവും ശരണം വിളിയുടെ ഈണവും ചേർത്തുവായിക്കുമ്പോൾ മുദ്രാവാക്യം നിയതമായൊരു സംഘത്തിന്റെ അനുഷ്ഠാനവാക്യമായ് മാറുന്നു. ഉൻമൂലനാശനപ്രത്യയശാസ്ത്രങ്ങൾ ട്രൈബൽ സംസ്കൃതിയിൽ നിന്നൊരിക്കലും അകലുന്നില്ല. അതിന്റെ പ്രതിസ്പന്ദനങ്ങൾ രാഷ്ട്രീയപകപോക്കലുകളായും കൊലപാതകങ്ങളായും ഇന്നും സജീവമായുണ്ട്. അവയും വർഗസംസ്കൃതിയുടെ പ്രതിചലനങ്ങളായി വേണം പഠിക്കപ്പെടേണ്ടത്. ആ വഴിക്ക് ചിന്തിക്കുമ്പോൾ ഫോക്ക്ലോറുകളിൽ പ്രകടമാകുന്ന പല അംശങ്ങളും സമാനത മാത്രമല്ല, കാലാതീതമായ നിലയുമുണ്ടെന്നു വരുന്നു. (ഡോ. എൻ. അജിത്കുമാർ 90: 2009)

"സി.പി.യെ വെട്ടിയ നാടാണേ
പട്ടം പൊട്ടിയ നാടാണേ
ഓർത്തുകളിച്ചോ നമ്പൂരിച്ചാ
ഓർത്തുകളിച്ചോ സൂക്ഷിച്ചോ"

"പുന്നപ്രയിൽ വയലാറിൽ
കയ്യൂരിൽ കരിവള്ളൂരിൽ
ചോരചീന്തിയവർ കൊളുത്തിയ
ദീപശിഖ കെടാതെ ഞങ്ങൾ സൂക്ഷിക്കും."

"കണ്ടോടാ കണ്ടോടാ
അങ്കമാലി കണ്ടോടാ"

ഉൻമൂലനാശന പ്രത്യയശാസ്ത്രത്തെ പ്രതിനിധാനം ചെയ്യുന്ന സംഭവങ്ങളാണ് ഈ മുദ്രാവാക്യങ്ങളിൽ നിഴലിക്കുന്നത്. ഒന്നാമത്തെ മുദ്രാവാക്യത്തിൽ പുന്നപ്രവയലാർ സമരത്തിൽ വെടിവെയ്പ്പ് നടത്തിയ സി.പി. രാമസ്വാമി അയ്യരെ വെട്ടിയ സംഭവത്തെ സൂചിപ്പിക്കുന്നു. രണ്ടാമത്തെ മുദ്രാവാക്യങ്ങളിലാകട്ടെ കമ്മ്യൂണിസ്റ്റ് പാർട്ടിയുടെ നേതൃത്വത്തിൽ നടന്ന പുന്നപ്രവയലാർ, കയ്യൂർ, കരിവെള്ളൂർ മുതലായ രക്തസാക്ഷിത്വങ്ങളെ പ്രതിനിധീകരിക്കുന്നു. മൂന്നാമത്തെ മുദ്രാവാക്യം താക്കീത് സ്വരത്തിലുള്ളതാണ്. ഇതിലാകട്ടെ അങ്കമാലി വെടിവെയ്പ്പിനെയാണ് പ്രശ്നവൽക്കരിക്കുന്നത്. ഒന്നും മൂന്നും മുദ്രാവാക്യങ്ങളിൽ ഇനിയും അതാവർത്തിക്കാൻ മടിയില്ല എന്ന രാഷ്ട്രീയപകപോക്കലിന്റെ താക്കീതും കാണാം. ട്രൈബൽ സംസ്കൃതിയിൽ കാണുന്ന ഉൻമൂലനാശന പ്രത്യയശാസ്ത്രത്തിന്റെ സ്വഭാവസവിശേഷതകൾ ഈ മുദ്രാവാക്യങ്ങളിൽ പ്രകടമാണ്.

ആധുനികതാവിമർശനം, നാടകസങ്കൽപവിമർശനം എന്നിവയിൽ നിന്നും രൂപമെടുത്ത ജ്ഞാനമേഖലയാണ് പ്രകടനപഠനം. ഏതൊരു പ്രക്രിയയും പ്രകടനങ്ങളായി മനസ്സിലാക്കാനും അവയുടെ പ്രകടനപരതയിൽ അവയെ പഠനവിധേയമാക്കുകയും ചെയ്യുന്നതാണ് പ്രകടനപാഠനത്തിന്റെ രീതിശാസ്ത്രം. പ്രകടനമെന്നത് ഒരു സംവേദനസംഭവമാണ് അഥവാ സംവേദനപെരുമാറ്റമാണ്. പ്രകടനം വ്യാഖ്യാനാത്മകനിർമ്മിതികൂടിയാണ്. പ്രകടനത്തിന്റെ വ്യാഖ്യാനാപഗ്രഥനങ്ങൾ സംവേദനപ്രക്രിയയുടെ സാമൂഹിക സാംസ്കാരിക മുഖങ്ങൾ വെളിപ്പെടുത്തുന്നു. (അജു. സി. നാരായണൻ 108: 2008)

മുദ്രാവാക്യങ്ങളെ പ്രകടനസിദ്ധാന്തം മുൻനിർത്തി പഠനവിധേയമാക്കുമ്പോൾ ഭാഷാപ്രകടനങ്ങളെ മാത്രം അപഗ്രഥിച്ചാൽ പോരാ ഇതര വ്യവഹാരങ്ങളെക്കൂടി വിശകലനം ചെയ്യണം. വിളിച്ചുകൊടുക്കുന്നവൻ (വക്താവ്), ഏറ്റുവിളിക്കുന്നവർ, അവരുടെ അംഗചലനങ്ങൾ, ശ്രോതാക്കൾ, പ്രതിയോഗികളുടെ ഭാവപ്രകടനങ്ങൾ അവയിൽ പങ്കെടുക്കുന്ന വാദ്യമേളക്കാർ, ഇവരുടെയെല്ലാം പ്രകടനങ്ങളേക്കൂടി വിശകലനം ചെയ്യേണ്ടതുണ്ട്. കൊടികൾ, ബോർഡുകൾ, ബാനറുകൾ, ഇതര പ്രകടനോപാധികൾ എന്നിവയുടെ ഉപയോഗങ്ങളും ഉപയോഗിക്കുന്നവരുടെ പ്രകടനങ്ങളും സാധാരണമാണ്.

ആര്, ആർക്കുവേണ്ടി, എപ്പോൾ, എവിടെ, എങ്ങനെ വിളിച്ചു എന്നീ ഘടകങ്ങൾ കൂടി പരിശോധിച്ചാൽ മാത്രമേ മുദ്രാവാക്യങ്ങളെ ഫോക്ക്ലോറിന്റെ രീതിശാസ്ത്രം ഉപയോഗിച്ച് പഠിക്കുന്നത് പൂർണ്ണമാവൂ. ഓരോ രാഷ്ട്രീയപ്രകടനങ്ങളേയും വിശകലനം ചെയ്യുമ്പോൾ അവയുടെ പൊതുസ്വഭാവം തിരിച്ചറിയാൻ കഴിയുന്ന സൂചകങ്ങൾ അഥവാ ചിഹ്നങ്ങൾ അവയിൽ പ്രകടമാണ്. രാഷ്ട്രീയപാർട്ടികളുടെ പ്രകടനങ്ങൾ തിരിച്ചറിയാൻ കഴിയുന്ന മുഖ്യ ഉപദാനങ്ങൾ അവയിൽ ഉപയോഗിക്കുന്ന കൊടിയുടെ നിറം, ചിഹ്നങ്ങൾ എന്നിവയാണ്. പ്രകടനങ്ങളിൽ ഉപയോഗിക്കുന്ന ബോർഡുകൾ, ബാനറുകൾ, പ്ലകാർഡുകൾ എന്നീ വരമൊഴിരൂപങ്ങളിലൂടെയും പ്രസ്ഥാനങ്ങളെ തിരിച്ചറിയാൻ സാധിക്കും. പ്രസ്ഥാനപ്പേരുകൾ, പ്രകടനങ്ങളിൽ ഉപയോഗിക്കുന്ന പ്ലകാർഡുകളിൽ എഴുതിയ മുദ്രാവാക്യങ്ങൾ ഇവയെല്ലാം തന്നെ വരമൊഴി സൂചകങ്ങളാണ്. രാഷ്ട്രീയപാർട്ടികളുടെ വസ്ത്രധാരണരീതിപോലും രാഷ്ട്രീയസ്വത്വത്തെ തിരിച്ചറിയുന്നതിന് സഹായകമാകുന്നു.

രാഷ്ട്രീയ പ്രകടനങ്ങൾ മുൻകൂട്ടി തയ്യാറാക്കുന്നവയും അല്ലാത്തവയുമുണ്ട്. ഇവയ്ക്ക് ആത്മദർശനാപരമായ സ്വഭാവമുണ്ട്. മുദ്രാവാക്യം വിളിയിലും ഇത്തരം സ്വഭാവസവിശേഷതകൾ കാണാൻ കഴിയും. വൈയക്തികമായ അംഗചലനങ്ങളും ഭാഷാപരമായ പ്രത്യേകതകളുമെല്ലാം ഓരോ പ്രകടനത്തിന്റേയും മുദ്രാവാക്യത്തിന്റേയും ഘടനയിൽ നിലീനമാണ്. മുദ്രാവാക്യവിളികളിൽ ഓരോരുത്തർക്കും വ്യത്യസ്തമായ കർതൃത്വങ്ങളാണുള്ളത്. വിളിച്ചുകൊടുക്കുന്നവൻ ശ്രോതാവോ ഏറ്റുവിളിക്കുന്നവനോ ആയി മാറാം. തിരിച്ചും സംഭവിക്കാം. ഇത്തരത്തിൽ സ്വതന്ത്രവും അചാന്യവുമായ കർത്തൃത്വമല്ല മുദ്രാവാക്യങ്ങൾക്കും അതേറ്റുവിളിക്കുന്നവർക്കും ഉള്ളത്. സാഹചര്യങ്ങൾക്കനുസ

ISSN 0975-8941

രിച്ച് അവരോരോരുത്തരും കർത്തൃത്വപരിണാമം നടത്തുന്നുമുണ്ട്.

ഉപസംഹാരം

പണ്ഡിതന്റേയും പാമരന്റേയും മനസിൽ ഒരാശയം സംപ്രേക്ഷണം ചെയ്യാൻ മുദ്രാവാക്യങ്ങളിലൂടെ കഴിയും. ചിരിപ്പിക്കാനും ചിന്തിപ്പിക്കാനും പൊതുജനങ്ങളെ സജീവമാക്കാനും പ്രതികരിപ്പിക്കുവാനും മുദ്രാവാക്യങ്ങളിലൂടെ സാധിക്കുന്നു.വിജ്ഞാനസംപ്രേക്ഷണത്തിന്റെ ഉദാത്തമാതൃകയായ മുദ്രാവാക്യങ്ങൾക്ക് പ്രാദേശിക-ദേശീയ സാർവ്വദേശീയ കാഴ്ചപ്പാടുകളുണ്ട്. ഓരോ ഗ്രാമപശ്ചാത്തലത്തിലും രൂപംകൊണ്ട ഈ മുദ്രാവാക്യങ്ങൾ ആരാണ് രൂപപ്പെടുത്തിയതെന്ന് അജ്ഞാതമാണ്. ഓരോ പ്രാദേശികസംഭവങ്ങളേയും പ്രതിനിധീകരിക്കുന്ന രസകരവും സവിശേഷവുമായ മുദ്രാവാക്യങ്ങൾ എല്ലാക്കാലത്തും ഉണ്ടായിട്ടുണ്ട്. വർത്തമാനകാലത്തെ രാഷ്ട്രീയമുദ്രാവാക്യങ്ങൾ ജനകീയമല്ലാത്തതിന്റെ പ്രധാനകാരണങ്ങളിലൊന്ന് ഗ്രാമീണജീവിതത്തിന്റെ നേർകാഴ്ചകളായ ഫോക് അംശങ്ങളെ മുദ്രാവാക്യങ്ങളിൽ ഉപയോഗിക്കാത്തതാണ്. ബഹുമുഖ ജീവിതവ്യവഹാരങ്ങളെ പ്രതിനിധാനം ചെയ്യാൻ കഴിയാതെ രാഷ്ട്രീയവ്യവഹാരങ്ങളെ മാത്രം പ്രതിനിധീകരിക്കുന്ന മുദ്രാവാക്യങ്ങളാണ് ഇന്ന് പൊതുവെ കണ്ടുവരുന്നത്.

ഗ്രന്ഥസൂചി

1. ഡോ. അജു കെ. നാരായണൻ 2009 **ഫോക്‌ലോർ മാതൃകകൾ പഠനങ്ങൾ** മഹാത്മാഗാന്ധി സർവ്വകലാശാല: കോട്ടയം
2. ഉഷാ നമ്പൂതിരിപ്പാട് 1994 **സാമൂഹികഭാഷാ വിജ്ഞാനീയം** കേരളഭാഷാ ഇൻസ്റ്റിറ്റ്യൂട്ട് : തിരുവനന്തപുരം
3. ഗിരീഷ് പി.എം. 2018 **ഭാഷാശാസ്ത്രം ചോംസ്കിക്കുമപ്പുറം** കേരളഭാഷാ ഇൻസ്റ്റിറ്റ്യൂട്ട് : തിരുവനന്തപുരം
4. ജോർജ് പുളിക്കൻ 2017 **തോറ്റ ചരിത്രം കേട്ടിട്ടില്ല** ഡി.സി. ബുക്സ് : കോട്ടയം.
5. രാജീവ്, കെ.ടി. 2010 **കാലം സാക്ഷി** ചിന്ത പബ്ലിക്കേഷൻസ്: തിരുവനന്തപുരം

ലേഖനം

1. അജിത്കുമാർ എൻ. 2009 **ഫോക്‌ലോർ പാരമ്പര്യവും പരിണാമവും :** (ഫോക്‌ലോർ മാതൃകകൾ പഠനങ്ങൾ)

ISSN 0975-8941

മറ്റൊരു പ്രേമത്തിന്റെ ബാക്കി - തകഴി ഒരു പഠനം

രൂപകല പ്രസാദ്
ഗവേഷക, മലയാളവിഭാഗം
ദേവമാത കോളേജ്, കുറവിലങ്ങാട്
ഇ-മെയിൽ: roopakala90@gmail.com

മലയാള നോവലിന് രാജ്യാന്തര പ്രശസ്തി നേടികൊടുത്ത തകഴി ശിവശങ്കരപിള്ള ജീവിതത്തിലും രചനയിലും കുട്ടനാടൻ കർഷകന്റെ ഗ്രാമ്യമായ ലാളിത്യം നിലനിർത്തിപ്പോന്നിരുന്ന ആളാണ്. കുറെ നാടൻ മനുഷ്യരുടേയും അവരുടെ സ്വപ്നങ്ങൾ വിളയുന്ന മണ്ണിന്റെയും കഥയാണ് തകഴിക്ക് പറയാനുള്ളത്. തന്റെ കാലഘട്ടത്തിലെ അഭിജാത വിഭാഗം അവഗണിച്ചിരുന്നവരുടെ കഥയാണ് തകഴി പറയുന്നത്. കർഷകത്തൊഴിലാളികളുടെ കഥ പറയുന്ന നോവലാണ് മറ്റൊരു പ്രേമത്തിന്റെ ബാക്കി!

കൃഷിക്കാർ നേരിടുന്ന ബുദ്ധിമുട്ടുകളും കൃഷി ചെയ്യാൻ വായ്പയെടുക്കുന്നതും അത് തിരിച്ചടയ്ക്കാൻ കഴിയാതെ ബുദ്ധിമുട്ടുന്നതും അതിനിടയിൽ വായ്പ തിരിച്ചടയ്ക്കാൻ നോട്ടീസു വരുന്നതും ജപ്തി ചെയ്യുന്നമൊക്കെ തകഴി ഈ നോവലിൽ അവതരിപ്പിക്കുന്നു. അതിനോടൊപ്പം തന്നെ മേലേക്കുന്നിൽ കല്യാണിക്കുട്ടിയും മാധവനും തമ്മിലുള്ള നിഷ്കളങ്കമായ പ്രണയവും കോർത്തിണക്കിയിട്ടുണ്ട്. കല്യാണിക്കുട്ടിക്കും മാധവനും വിവാഹിതരാകാൻ കഴിഞ്ഞില്ല. കല്യാണിക്കുട്ടിയുടെ വിവാഹ നിശ്ചയ ദിവസം മാധവൻ നാടു വിട്ടുപോയി. ശിവരാമൻ നായർ എന്ന തടിയൻ പൊട്ടൻ കല്യാണിക്കുട്ടിയുടെ ഭർത്താവായി. അയാൾ മേലേടത്തു കാലെടുത്തു വച്ചതു മുതൽ കുടുംബത്തിന്റെ അധോഗതിയും തുടങ്ങി. എന്നാലും കല്യാണിക്കുട്ടി തളർന്നില്ല. കൃഷി അടിക്കടി മോശമായിക്കൊണ്ടിരുന്നു. പന്തീരായിരം ഉറുപ്പിക കടമെടുത്ത് തിരിച്ചടയ്ക്കാനാകാത്തതു കാരണം വീട്ടുപകരണങ്ങളെല്ലാം ജപ്തി ചെയ്തു. നാടു വിട്ടുപോയ മാധവൻ ധനവാനായി നാട്ടിൽ തിരിച്ചെത്തി. കല്യാണിക്കുട്ടി തന്നെ സ്വീകരിക്കുമെന്ന് മാധവൻ വിശ്വസിച്ചിരുന്നു. കടം വീട്ടാൻ സഹായിക്കാമെന്നൊക്കെ പറഞ്ഞ് മാധവൻ കല്യാണിക്കുട്ടിയെ പ്രലോഭിപ്പിച്ചെങ്കിലും അവൾ മാധവന്റെ സഹായത്തെ നിരസിക്കുകയാണ് ചെയ്തത്. അവൾ ഭാര്യയും മാതാവുമാണ്. ഭർത്താവിനെ വഞ്ചിക്കുവാൻ തയ്യാറല്ല.

കല്യാണിക്കുട്ടിയുടെ കഥയാണ് ഇതിന്റെ മുഖ്യ പ്രമേയം. അതിലൂടെ കർഷകർ നേരിടുന്ന വിഷമതകൾ തകഴി അവതരിപ്പിക്കുന്നു ആ കൊല്ലത്തെ കൃഷി പൊതുവെ നശിക്കുന്നു. അതിനു കാരണം കണ്ടത്തിലെ വെള്ളത്തിൽ എന്തോ രാസമാലിന്യം കലർന്നിരിക്കുന്നു എന്നാണെന്ന് കർഷകർ മനസ്സിലാക്കുന്നു. ഇതിനെതിരെ ഒരു യോഗം സംഘടിപ്പിക്കുവാൻ കർഷകത്തൊഴിലാളികളും ഭൂവുടമകളായ ചെറുകർഷകരും തീരുമാനിക്കുന്നു. ശങ്കരമ്മാവൻ എന്നയാളുടെ നേതൃത്വത്തിൽ കലക്ടറെ പോയിക്കാണാൻ തീരുമാനിക്കുന്നു. കല്യാണിക്കുട്ടിയും അതിൽ പങ്കുചേരുന്നു.

മാധവനും കല്യാണിക്കുട്ടിയും പല സ്ഥലങ്ങളിലും വച്ച് കണ്ടുമുട്ടുന്നു. അവർ തമ്മിൽ പ്രേമമാണെന്ന് നാട്ടുകാരിൽ പലരും തിരിച്ചറിയുന്നു. അവർ തമ്മിൽ നല്ല ചേർച്ചയാണെന്ന് പലരും അഭിപ്രായപ്പെടുന്നു. ഇതിനിടയിൽ കല്യാണിക്കുട്ടിക്ക് മറ്റൊരു വിവാഹം ശരിയാകുന്നു. ശിവരാമൻ എന്നൊരാൾ കല്യാണിക്കുട്ടിയെ വിവാഹം ചെയ്യുന്നു. കൃഷി നശിച്ച പാടം മുഴുവൻ ഏതോ വിഷച്ചെടി വളർന്ന് കാടുപിടിച്ച് കിടക്കുന്നു. അതിലെ കടന്നു പോയവർക്കൊക്കെ ദേഹം മുഴുവൻ നീരുവന്ന്

ISSN 0975-8941

ആശുപത്രിയിലായിരിക്കുന്ന അവസ്ഥ വരുന്നു. കൃഷി നശിച്ച് പട്ടിണിയും നാടുമുഴുവൻ നിറഞ്ഞു. സർക്കാരിൽ നിന്നോ കൃഷി വകുപ്പിൽ നിന്നോ ഒരു സഹായവും കർഷകർക്ക് ലഭിക്കുന്നില്ല. എന്നു മാത്രമല്ല പല വർഷങ്ങളിലായി സർക്കാരിൽ നിന്ന് കൃഷി വായ്പയെടുത്തവർ പലരും ഇപ്പോൾ വലിയ കടക്കാരായിത്തീർന്നിക്കുന്നു. വായ്പ കുടിശ്ശിഖ തിരിച്ചുപിടിക്കാനുള്ള നോട്ടീസുമായി പൊന്നപ്പൻ എല്ലാ വീടുകളും കയറിയിറങ്ങുന്നു. പൊന്നപ്പനും കൃഷ്ണൻ നായർ എന്ന കർഷകനും തമ്മിലുള്ള സംഭാഷണത്തിൽ നിന്ന് കർഷകരുടെ പ്രതികരണം നമുക്ക് മനസ്സിലാകും.

''നിന്റെ കൈയ്യിലെന്തോന്നാ വലിയ ഒരു കടലാസ്.

പൊന്നപ്പനു യാതൊരു സങ്കോചവുമുണ്ടായിരുന്നില്ല.

അയാൾ പറഞ്ഞു.

ബ്ലോക്കീന്നു തന്നയച്ച കുറേ നോട്ടീസാ. കൃഷ്ണൻ നായർ കിള നിർത്തി തൂമ്പയിൽ ചാരി നിന്നുകൊണ്ട് ചോദിച്ചു.

ങ്, ആ... അതെ

കടലാസു കെട്ടഴിച്ച് നോക്കി. ഏറ്റവും ഉള്ളിൽ കൃഷ്ണൻ നായർക്കുള്ള നോട്ടീസാണ്. അതിൽ കണ്ണോടിച്ചു കൊണ്ട് പൊന്നപ്പൻ പറഞ്ഞു. കൃഷ്ണമ്മാവൻ

നമ്മുടെ പാടത്ത് വെഷവെള്ളം കേറുന്നതിന് മുമ്പ് രണ്ടു കൊല്ലത്തെ കൃഷി വായ്പയെടുത്തു. അത് കുടിശ്ശികയാണ്. പിന്നെ നാലു പ്രാവശ്യം കൃഷി വായ്പ എടുത്തിട്ടുണ്ട്. അത് തിരിച്ചടയ്ക്കണം ഇല്ലെങ്കിൽ നടപടിയുണ്ടാകും. ഒന്നൊപ്പിട്ട് ഇങ്ങ് തന്നേച്ചാൽ മതി. കൃഷ്ണൻ നായരുടെ സമനില തെറ്റി. കൃഷ്ണൻ നായർ മുന്നോട്ടൊരു കുതികുതിച്ചു. തുമ്പയും കൊണ്ടല്ല. പൊന്നപ്പൻ, പൊന്നപ്പൻ പാവമാണ്, പൊന്നപ്പൻ പുറകോട്ട് ചാടി. അയ്യയ്യോ എന്നെ തല്ലല്ലേ, കൃഷ്ണമ്മാവാ, ഞാനെന്തോ വേണം? കൃഷ്ണമ്മാവനാ വായ്പയെടുത്തത്. വായ്പ തിരിച്ചടയ്ക്കണ്ടായോ? ബ്ലോക്കുകാര് പറഞ്ഞു ഒപ്പിടീച്ചോണ്ടു വരാൻ. ഞാൻ അതു കൊണ്ടു വന്നതാ. എടാ നിന്റെ ബ്ലോക്കിൽ ചെന്ന് പറയെടാ ആ പാടശേഖരത്തിലെ എനിക്കുള്ള വസ്തു മുഴുവൻ കടവായ്പയാണ് ബ്ലോക്കുകാരോട് എടുത്തു കൊള്ളാൻ. എനിക്കിനി അതു വേണ്ട. അതു കൃഷി ചെയ്യാനാ. ഞാൻ വായ്പയെടുത്തത്. മറ്റൊരു കാര്യത്തിനും ഒറ്റക്കാശ് അതീന്നെടുത്തിട്ടില്ല.''

ബ്ലോക്കിൽ നിന്ന് കൃഷി വായ്പയെടുത്ത മിക്ക കർഷകരുടെയും സ്ഥിതി ഇതുതന്നെയായിരുന്നു. കൃഷി നാശം വന്നതു കാരണം വായ്പ തിരിച്ചടയ്ക്കാനാകാതെ വിഷമാവസ്ഥയിലായിരുന്നു ഭൂരി ഭാഗം കർഷകരും. കല്യാണിക്കുട്ടിയും പൊന്നപ്പനും തമ്മിലുള്ള സംഭാഷണത്തിൽ നിന്ന് അത് വ്യക്തമാകും.

''മേലേക്കുന്നിൽ ശിവരാമൻ നായരുണ്ടായിരുന്നു. പൊന്നപ്പൻ ചെന്നപ്പോൾ കല്യാണിക്കുട്ടിയും ഇറങ്ങി വന്നു. പൊന്നപ്പൻ വിസ്തരിച്ചു കാര്യങ്ങളെല്ലാം ശിവരാമൻ നായരോടു പറഞ്ഞു. എല്ലാം കേട്ടു നിന്ന കല്യാണിക്കുട്ടി സമ്മതിച്ചു.

വെഷവെള്ളം കേറുന്നതിനു മുമ്പ് എണ്ണായിരം രൂപ കൊടുക്കാനുണ്ടായിരുന്നു.

പിന്നെ നാലു പ്രാവശ്യമായിട്ട്... ശിവരാമൻ നായരാണ് അത് പൂരിപ്പിച്ചത്. പന്തീരായിരം രൂപ അതു ഞാൻ വന്നതിനുശേഷം വാങ്ങിച്ചതാ.

ഒരു നോട്ടീസെങ്കിലും നടത്തിക്കൊണ്ടുപോകാമെന്ന് പൊന്നപ്പനു തോന്നി. കല്യാണിക്കുട്ടിയോട് അയാൾ പറഞ്ഞു.

എന്നാൽ ഇതിന്റെ പുറത്തൊന്ന ഒപ്പിട്ടു തന്നെ.

കല്യാണിക്കുട്ടി ശിവരാമൻ നായരുടെ മുഖത്തു നോക്കി അവിടെ നിന്ന് യാതൊരു സൂചനയും കിട്ടുന്നില്ല. സ്വല്പനേരം കഴിഞ്ഞ് അവൾ ചോദിച്ചു.

ഒപ്പിട്ടു കൊടുക്കണോ?

ഉത്തരമുണ്ടായില്ല. ആ മുഖത്തു യാതൊരു ഭാവഭേദവുമില്ല. ഒപ്പിട്ടു കൊടുക്കണോ വേണ്ടയോ എന്ന് ആലോചിക്കുന്നതായിപ്പോലും തോന്നിയില്ല. ശിവരാമൻ നായർ ഒരു ശിലാപ്രതിമ പോലെ ഇരിക്കുകയാണ്. കുറേശ്ശേയായി കടം വീട്ടിക്കൊള്ളാം. ഇങ്ങിനെ പൊന്നപ്പൻ ബ്ലോക്കിൽ ചെന്നു പറ.''

ജപ്തി ഭീഷണിയുായിട്ടു പോലും കല്യാണിക്കുട്ടി എന്ന കർഷക സ്ത്രീ തളരുന്നില്ല. നിലം നന്നാക്കി വീണ്ടും വിളവുണ്ടാക്കി കുറച്ച് കുറച്ചായി കടം വീട്ടിക്കൊള്ളാം എന്നാണവർ പറയുന്നത്. ജപ്തി ഭീഷണിയിലായ കൃഷിക്കാരെല്ലാം യോഗം ചേരുന്നു. അവരുടെ കാർഷിക കടങ്ങൾ എഴുതി തള്ളുക, കർഷകരുടെ

ഋണബാധ്യതയ്ക്കു വേണ്ടി കനാൽ പാടശേഖരം ഏറ്റെടുക്കുക എന്നിവയായിരുന്നു ഗവൺമെന്റിനോടുള്ള അവരുടെ ആവശ്യങ്ങൾ. ആ ആവശ്യങ്ങൾ നേടിയെടുക്കുവാൻ വേണ്ടി സമരം ചെയ്യുക എന്നതായിരുന്നു അവരുടെ തീരുമാനം. അനേകം നിവേദനങ്ങൾ ഗവൺമെന്റിനു മുമ്പിൽ സമർപ്പിച്ചു. ഒരു ഫലവുമുണ്ടായില്ല. ഓരോ വീടുകളിലായി ജപ്തി നടപടികൾ തുടങ്ങി. ഒരോ കർഷകർക്കും തങ്ങളുടെ കിടപ്പാടം പോലും നഷ്ടപ്പെടുമെന്ന സ്ഥിതിയായി. ആ സന്ദർഭത്തിലാണ് നാടുവിട്ടുപോയ മാധവൻ തിരികെയെത്തുന്നത്. കല്യാണിക്കുട്ടിയുടെ വീടിന്റെ അവസ്ഥ നാട്ടുകാരിൽ നിന്നറിഞ്ഞ മാധവൻ കല്യാണിക്കുട്ടിയുടെ കടങ്ങൾ വീട്ടാൻ സഹായിക്കാമെന്നും ഭർത്താവിനെയുപേക്ഷിച്ച് തന്നെ സ്വീകരിക്കണമെന്നും അഭ്യർത്ഥിക്കുന്നു. കല്യാണിക്കുട്ടി ആ അഭ്യർത്ഥന നിരസിക്കുകയാണ് ചെയ്യുന്നത്. താൻ ഒരു ഭാര്യയും മാതാവുമാണ്. ഭർത്താവിനെ ഉപേക്ഷിക്കാൻ സാധിക്കുകയില്ല എന്നതായിരുന്നു അവളുടെ മറുപടി.

'രണ്ടിടങ്ങഴി 'യി ലെ ചിരുതയെപ്പോലെ പ്രലോഭനങ്ങളുണ്ടായിട്ടും അതിലൊന്നും അകപ്പെടാതെ ചാരിത്ര്യം കാത്തു സൂക്ഷിക്കുന്ന ശക്തയായ സ്ത്രീ കഥാപാത്രമാണ് കല്യാണിക്കുട്ടി. ഇന്നത്തെ കർഷകരുടെ അവസ്ഥയിലേക്കാണ് ഈ നോവൽ വിരൽ ചൂണ്ടുന്നത്. കുട്ടനാട്ടിൽ മാത്രമല്ല കേരളത്തിന്റെ പല ഭാഗങ്ങളിലും ജപ്തി ഭീഷണി മൂലം ആത്മഹത്യ ചെയ്യുന്ന കർഷകരുടെ ഇന്നത്തെ അവസ്ഥയാണ് ഈ നോവലിലെ പ്രമേയം. അതിന്റെ പ്രസക്തി ഈ കാലഘട്ടത്തിലും വളരെ വലുതാണ്.

'അവളൊരു ഭാര്യയാണ്. അമ്മയുമാണ്. അവൾക്കൊരു ഭർത്താവുമുണ്ട്. അനാവശ്യമൊന്നും പറയരുത്.' കല്യാണിക്കുട്ടി മാധവനോടു പറഞ്ഞ വാചകങ്ങളാണ്. ഈ നോവലിലെ ശക്തമായ വാക്യങ്ങൾ. ഈ വാക്യങ്ങളിൽ കല്യാണിക്കുട്ടി എന്ന സ്ത്രീയുടെ സ്വഭാവത്തിന്റെ എല്ലാ സവിശേഷതകളും നമുക്ക് മുമ്പിൽ തെളിയുന്നു. 'ഒരു പ്രേമത്തിന്റെ ബാക്കി' എന്ന ശീർഷകം നോവലിന് തികച്ചും യോജിക്കുന്നു. കർഷകരുടെ പ്രശ്നങ്ങളോടൊപ്പം തന്നെ ഒരു നിഴലെന്ന പോലെ കല്ല്യാണിക്കുട്ടിയും മാധവനും തമ്മിലുള്ള പ്രണയം ഈ നോവലിനെ മറ്റൊരു തലത്തിലെത്തിക്കുന്നു.

സഹായക ഗ്രന്ഥങ്ങൾ

1. ഡോ. വി. എസ്. ശർമ്മ സമ്പാ: തകഴിയും മലയാള നോവലും പബ്ലിക്കേഷൻസ് ഓഫ് ദ ഡിപ്പാർട്ട്മെന്റ് ഓഫ് മലയാളം, കേരള സർവ്വകലാശാല- 1991
2. ഡോ. എം. എ കരിം, പ്രേംചന്തും തകഴിയും (പഠനം). കറന്റ് ബുക്സ് 1985, കോട്ടയം
3. തകഴി ശിവശങ്കപിള്ള, ഒരു പ്രേമത്തിന്റെ ബാക്കി, സഹിത്യ പ്രവർത്തക സഹകരണ സംഘം, കോട്ടയം 1988

ISSN 0975-8941
Research Lines *(Vol. XI No. 1&2)* **December 2018** 75

प्रीतम अरोड़ा की कहानियों में नारी अस्मिता की अभिव्यक्ति

Dr. Santy Joseph
Department of Hindi, St. Aloysius College, Edathua
email: drsantyjoseph@gmail.com

प्रीतम अरोड़ा का जन्म 22 मार्च 1929 को शहर कोटकपूरा रियासत फरीदकोट पंजाब में हुआ। प्रीतम अरोड़ा की कहानियों के बारे में प्रसिद्ध कथाकार महेश दर्पण की राय है कि "प्रीतम अरोड़ा अपनी कहानियों में समाज की ओर से कुछ प्रश्न और जिज्ञासाएं उठाकर एक सार्थक हस्तक्षेप करने की कोशिश करती है।"[१] उनका यह कहना गलत नहीं कि इतिहास में वही लिखा जाएगा जो सुविधाजनक होगा। भावुक होते हुए भी यहाँ चुपके से वह कह जाती है कि भावना से कर्तव्य ऊँचा होता है।

बिंदिया

नारी का नैसर्गिक रुप है माता रुप। माता बनने में सारी स्त्रियाँ जीवन की सार्थकता मानती है। गरीब हो या अमीर सभी स्त्री की यही इच्छा होती है।

प्रीतम अरोड़ा द्वारा लिखित 'बिंदिया' की १५ वर्ष की युवती बिंदिया, सबेरे में कालोनी के ५० घरों के सामने झाड़ू लगानेवाली है। उसके बदले में उसे प्रत्येक घर से ५ रुपये प्रति महीना तथा १२ बजे के बाद प्रत्येक घर से २ रोटियाँ मिलती हैं। वह एक साधारण सी विरुप जमादारिन है। उसके अन्दर भी चूड़ियाँ पहनने की, चांदी की पायल खरीदने की, जी भरकर सोने की प्रबल इच्छा है। पर उसकी मेहनत से बिंदिया से नीचे के ५ बच्चों का पेट माँ भरती है।

एक बार काम करने के बाद गली में से आते वक्त बिंदिया सहसा देखती है कि दो तीन गउएं आपस में लड़ रही हैं और एक बच्चा रो रोकर गली के बीचों बीच खड़ा कांपते स्वर में मम्मी को सहायता के लिए पुकार रहा है। बिंदिया झट से जातीय - विभेद को भूलकर टोकरी फेंककर उस बच्चे की ओर दौडती है और उसे गोद में उठा लेती है। स्वीटी की मम्मी स्तब्ध हो जाती है और मुन्ना को उठाकर बार-बार चूमती रहती है। इतने में बाहर आनेवाले पति से वह घटना के बारे में कहती है। यह सुनकर स्वीटी के पप्पा जेब से एक रुपये का सिक्का निकालकर उसके सामने फेंक देता है। पर यह ईनाम स्वीकारने के लिए बिंदिया तैयार नहीं हो जाती है। 'नहीं रैहने दो जी, कह कर रुपया वहीं छोड़कर चल पड़ी'[२] पति पति-पत्नी का जमादारिन से बच्चे को छूना पसंद नहीं आता है।

बिंदिया के मन में स्वीटी के बारे में मधुर याद कभी कभी आती है। वह स्वीटी जैसा प्यारा, सुन्दर, गोल सा बच्चा चाहती है। एक बार स्वीटी को देखकर वह जातीय-विभेद को और अपने अस्तित्व को भी भूलकर, झट से उसे गोद में उठाती है। उससे बातें करती है तो स्वीटी की मां आकर दस-पन्द्रह गालियां एक ही सांस में कहती है। बिंदिया खबराकर उसे गोद से उतार देती है। यह क्षुद्र भाषा सुनकर 'चीख उठा उसका अन्तर्मन, हा-हाकर कर उठी चेतना।'[३]

कुरुप और गरीब होने के कारण बिंदिया दुःखी है। स्वीटी जैसी गोल-मटोल, सुन्दर बच्चे की मां बनने के लिए वह आतुर है। बच्चे को पशु से बचाने के बदले एक रुपया स्वीकारना वह पसंद नहीं करती है। बड़ा रकम होने पर भी वहीं छोडकर चलने की मनःस्थिति रखती है।

'अधूरा स्वप्न'

प्रेम मानव जीवन को रंगीन बनाता है। प्राचीन काल से ही नर-नारी आपस में प्रेम करते आये हैं। प्राचीन काल में प्रेमी-प्रेमिका

का संबन्ध दृढ़ था। पर आज प्रस्तुत संकल्प केवल प्रहसन या खेल बन जाता है।

'अधूरा स्वप्न' कहानी का नायक कंवल कालिज में बी.ए अन्तिम वर्ष का विद्यार्थी है। वह प्रोफेसरों तथा अन्य विद्यार्थियों की दृष्टि में एक प्रतिभाशाली युवक है। वह हर परीक्षा में अच्छे अंक प्राप्त करके प्रथम वर्ग में पास होता है। गप्पें हांकना और प्रेम में पड़ना आदि सब बातों को वह व्यर्थ सा समझता है कुछ दिन बाद विद्युत नामक एक सीधी सादी और संकोच रहित युवती उसकी कक्षा में ज्वायन करती है। कंवल उसी की ओर आकर्षित हो जाता है। विद्युत से बातें करते समय उसका हृदय प्रेम का धक् धक् शब्द प्रकट करता है। अंत में अन्तिम विषय की परीक्षा समाप्त होने के बाद संवल विद्युत के सामने हृदय खोलकर प्रेम की बात कहता है तो विद्युत कहती है कि "कल्पना की दुनिया में बहकर हम वास्तविकता से आंखें नहीं मूंद सकते। प्रेम करने से पहले हृदय की दृढ़ता, शुद्धता, धैर्य और बलिदान भावना का होना आवश्यक है।'[४] यह सुनकर कंवल, विद्युत के लिए सर्वस्व समर्पित करने की क्षमता प्रकट करता है तो वह कहती है कि "तो सबसे बड़ा बलिदान यही है कि आप मेरा ख्याल छोड़ दीजिए, अपनी पढ़ाई में मन लगाइए अपना कैरियर बनाइए वरन् आपके जीवन के सपने लुट जाएंगे और देखना मुझे पत्र आदि लिखने की कोशिश मत करना - वैसे कोई काम हो तो मुझे मिलना। एक क्लास फैलो के नाते आपकी अवश्य सहायता करूँगी अच्छा तो अब बस का टईम हो चुका है?"[५] इसके अलावा अगले हफ्ते में होनेवाली उसकी शादी के लिए वह कंवल को आमंत्रित करती है। हल्के प्रेम-संबन्धों में फंसकर अपना भविष्य नष्ट न करनेवाली चिंतनशील नारी के रूप में विद्युत सामने आती है। आधुनिक नारी की दृढ़ता एवं विवेक उसमें देखने को मिलते हैं।

'विदा की बेला'

कहते हैं, शादी स्वर्ग में चलती है। पर दहेज के नाम पर होनेवाले अन्याय नारियों को दुखी बनाते हैं। नारी को एक वस्तु के रूप में देखने की, बिकने की, खरीदने की प्रवृत्ति परिष्कृत समाज में भी देखने को मिलती है।

प्रीतम अरोड़ा द्वारा लिखित 'विदा की बेला' कहानी की नायिका है निशि। निशि का परिवार सामान्य परिवार है। उसके पिता बेटी की शादी के लिए अपनी क्षमता से अधिक दहेज और सामान देता है। पर दूल्हे के पिता के चेहरे पर प्रसन्नता का आभास नहीं दीख पडता है। अपना इंजीनियर लड़के के लिए वह ज्यादा दहेज मांगता है। निशी के विवश पिता अपनी बेटी को सुखी देखने के लिए कुछ भी देने के लिए तैयार है। पर इतने में अस्मिता पर चोट खाकर निशि कहती है कि "क्या मैं पूछ सकती हूँ कि आप सोने चाँदी के टुकडों को अपनी इज्जत क्यों समझे बैठे हो? क्या? एक बहू का जिसने जीवन भर आपके घर की मान-मर्यादाओं का पालन करना है, जीवन भर आपके परिवार की सेवा में अपने को मिटा देना है इसी बात से स्वागत किया जाएगा कि वह कितने वर्षों के लिए अपने खाने-पीने-पहनने का सामान साथ लाई है?"[६] पिताजी, भाई और परिवारवाले निशि को शांत करने का श्रम करते हैं। लेकिन वह शांत होने केलिए तैयार न होकर कहती है। "नहीं नहीं छोडों। मुझे कह लेने दो मन की बात। नाक कटने का बहाना बनाकर समाज के यह ठेकेदार दिन-ब-दिन अपनी भूख को बढ़ाते जा रहे हैं। और यह भूख बढ़ते-बढ़ते एक छूत बनती जा रही है - जिसकी भेंट आए दिन गरीब माता-पिता और उनकी निरपराध-कन्याओं की चढ़ना पड़ता है - यह तो जीवित नर-बलि है - ससुराल में घुसते ही बेचारी कन्याओं की वह व्यंग्य और ताने सुनने पड़ते हैं कि हृदय में जिस नए - जीवन के सपने संजोकर वह नए घर में प्रवेश करती है - छिन्न-भिन्न होकर बिखर जाते हैं। टूटे हुए दिल आयू भर मिल नहीं पाते। इस पाश्विक भूख को शान्त करने के असफल प्रयास हमारे समाज को नर्क बनाए हुए हैं और करोड़ों बालिकाएं सिसक रही हैं - क्योंकि वह अपने चिर-संचित स्वप्नों की पूर्ती दहेज़ के अभाव में नहीं कर पाती और आयू-पर्यन्त तपस्विनी सा जीवन व्यतीत करने को बाधित हो जाती है और कुछ मन-चाहे साथी न पाकर अन्दर ही अन्दर सिसकती रहती हैं। उन करोड़ों कन्याओं का शाप इन लंबी नाक वालों को मिटाकर छोडेंगा और अन्याय और झूठे ढकोसलों की दीवार टूट कर रहेगी अच्छा। भैया, यह सब सामान उठाकर अन्दर रखो और जाने दो इन लोगों को। निशि इनकी भूख के अग्नि-कुण्ड में अपनी आहूति नहीं देगी।[७]

लड़की के लिए पति के घर रहना ही शोभा देता है, ऐसे कहकर माताजी निशि को समझाने की कोशिश करती है तो निशि कहती है कि "देखो मां। मुझे मजबूर नहीं करो। जो घर में घुसने से पहले ही इस तरह स्वागत कर रहे हैं, व आगे जाकर क्य गुल खिलाएंगे, यह मैं भली भांति जानती हूँ। तुम मुझे मेरे पथ से विचलित मत करो - मैं तुम पर बोझ नहीं बनूँगी - आपने मुझे इस लायक तो बना ही दीया है कि अपनी रोटी के लिए कमा सकूं।"[८] पिता भी सांत्वना देने का श्रम करते है तो निशि सधैर्य कहती है कि "नही पिताजी। मैं अपना मान-सम्मान इन ठीकरों के बल पर नहीं बनाऊंगी। लोगों को वापिस भेज दो। कह दो। अपने लाड़ले का सौदा कहीं और कर लें।"[९] और निशि लज्जित ससुर से कहती हैं कि "दहेज की मांग एक कलंक है और उस कलंक का ढिंढोरा पीटने में मुझे कोई संकोच नहीं। आप लोग जा सकते हैं।"[१०] यह कहकर क्रोध से जलती निशि, अपना कंगन तोड़कर फेंक देती है।

ISSN 0975-8941

'पोर्शिया'

'सादा जीवन; उच्च विचार' करनेवाली नारियाँ प्राचीन काल से ही भारत में रहती है। पर पारिवारिक जीवन में, वह प्रायः चुपचाप जीवन बताती है। सही समय आने पर, अन्याय के विरुद्ध वह आक्रोश करती हैं।

'पोर्शिया' कहानी की नायिका है वीणा। उसने बी.ए. पास करने के बाद लॉ किया है। वह न्याय की रक्षक है और अपराधियों के लिए पोर्शिया का अवतार भी है। इसके अलावा सशक्त स्त्रीवादी भी है। 'नारी जाति के लिए उसने नवीन पथ प्रशस्त किया था। सदियों के दासत्व से मुक्त होने की आकांक्षा से कितनी ही गौरवमयी ललनाओं को प्रेरणा मिली थी। नारी पुरुष की दासी नहीं, सहधर्मिणी है कंधे से कंधा मिलाकर चलने का साहस रखती हैं।'[११] सन् १९४६ में जब वह २२ वर्ष की है यह विचार एक बहूत बड़ा साहस है। बाद में वह राकेश की सहधर्मिणी बन जाती है और बेबी की मां भी बनती है। सुख-दुःख सम्मिलित वैवाहिक जीवन, बेबी की शादी होने पर बिल्कुल सूना सा हो जाता है। अब ५० वर्ष की उम्र में दबी हुई चिनगारी उबलने लगती है। अब उसे फिर लगाता है कि वह वीणा नहीं, पोर्शिया है। ठीक समय आने पर वीणा के सुन्दर संचित उच्च विचारों की चिनगारी उबलती है। अन्याय और असमता के विरुद्ध आवाज़ उठाने के लिए तैयार भी हो जाती है। इसप्रकार प्रीत अरोड़ा की कहानियों की नारियाँ विभिन्न प्रकार से अपनी अस्मिता व्यक्त करती हैं।

संदर्भ ग्रन्थ सूचिः

१. परछाईयाँ संकलन पर एक टिप्पणी - आमुख से

२. परछाइयां - प्रीतम अरोड़ा, पृ. ७२

३. वही, पृ. ७४

४. वही, पृ. ६९

५. वही, पृ. ६८-६९

६. वही, पृ. ३५

७. वही, पृ. ३५-३६

८. वही, पृ. ३६

९. वही, पृ. ३६

१०. वही, पृ. ३६

११. वही, पृ. २२

ISSN 0975-8941

Call For Papers

Next Issue	:	Research Lines Vol.12 No:1 June 2019
Last date for submission of Research Papers	:	May 10, 2019
Address for Communication	:	**Dr. Priya Joseph** Chief Editor Research Lines Deva Matha College, Kuravilangad Kottayam Dist, Kerala-686 633 e.mail: drpriyajoe@gmail.com Mobile: 9446889751

ISSN 0975-8941

Information for Contributors

1. Original Research papers for publication should be submitted in duplicate in hard copy along with soft copy in CD, typed in page Maker/ Word97 – 2003
2. Use single Colum layout with both left and right margins justified.
3. All mathematical/ scientific symbol may be typed and named in margin of paper to avoid ambiguities.
4. Font: Main body -12 point, Times New Roman or the closest comparable font available.
5. Tables& figures to the extent possible should appear in the document near/after where they are referred in the text.
6. The first page of the research paper should contain the following information:

   i)the title (ii)the name(s) and address(es) of the authors, (iii)official and residential phone/email address of the authors (iv) an abstract of not more than 50 words.
7. The paper should start with an introduction and end with a conclusion summarizing the findings of the paper.
8. The length of the paper should be limited to a maximum of 8 pages.
9. Contributor’s assurance that the paper has not been sent elsewhere for publication.
10. The editor/publisher will not have any responsibility for the errors in the results/ claims. The author should have full responsibility with regard to the authenticity of the statements and claims in the paper.
11. The journal is published bi-annually in June and December every year.
12. Papers for publication should be sent by registered post to –

Dr. Priya Joseph
Chief Editor
Research Lines
Deva Matha College
Kuravilangad, Kerala, Pin – 686 633

ISSN 0975-8941

DECLARATION

Form 1 (See Rule – 3)

STATEMENT ABOUT OWNERSHIP AND OTHER PARTICULARS OF THE JOURNAL

1. Title of the Newspaper	:	Research Lines
2. Language in which it is published	:	English, Malayalam& Hindi
3. Place of Publication	:	Deva Matha College, Kuravilangad Kottayam District
4. Periodicity of the Publication	:	Half yearly
5. Retail Selling price of the Journal	:	Rs. 1000/- Annual subscription
6. Printer and Publisher Name	:	Dr. Jojo K Joseph
7. Whether citizen of India?	:	Yes
8. Address of Publishers	:	Principal Deva Matha College, Kuravilangad Kottayam District
9. Chief Editor	:	Dr. Priya Joseph Department of Zoology Deva Matha College, Kuravilangad
10. Name and address of individuals Who own the Newspaper and Share holders holding more than one percent of the total Capital	:	Deva Matha College Kuravilangad Kottayam District

I Dr. Jojo K Joseph, hereby declare that the particulars given above are true.

(Sd)
Dr. Jojo K Joseph

Kuravilangad
14.12.2018

Volume XI No.1&2 December 2018 ISSN 0975-8941

Published by Dr. Jojo K. Joseph, Principal, Deva Matha College, Kuravilangad
Printed at Goodshepherd Press, Ktm., # 2569180