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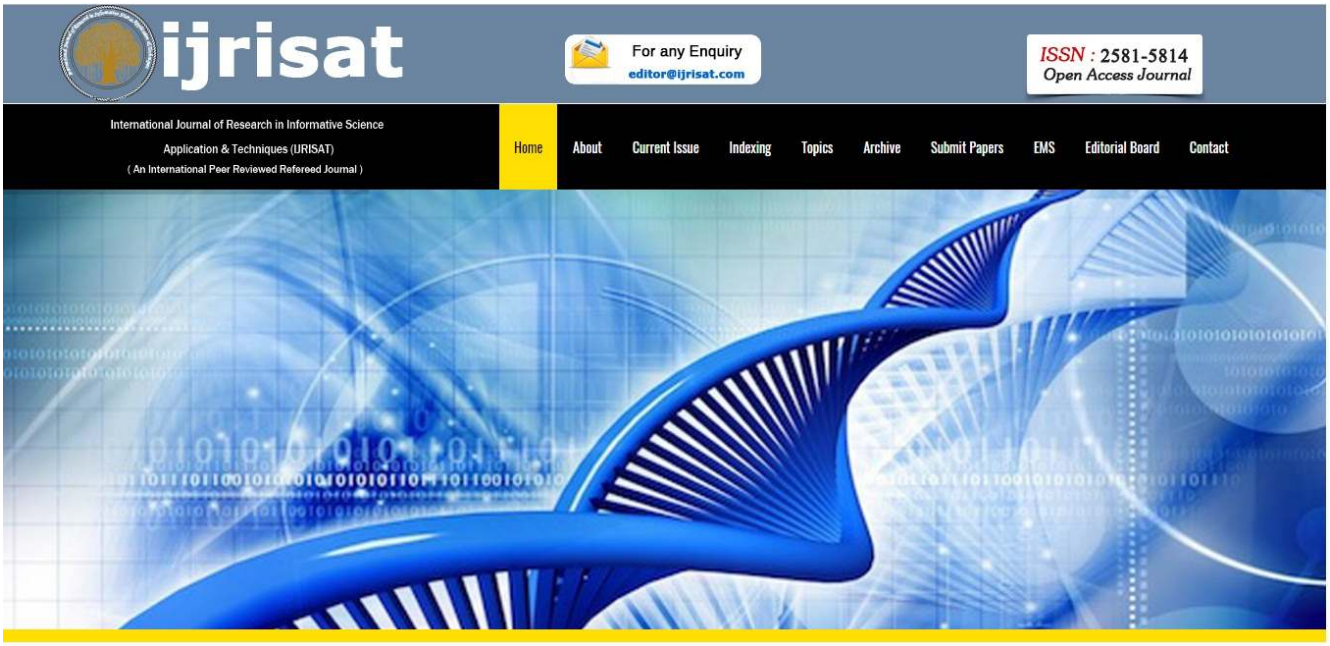

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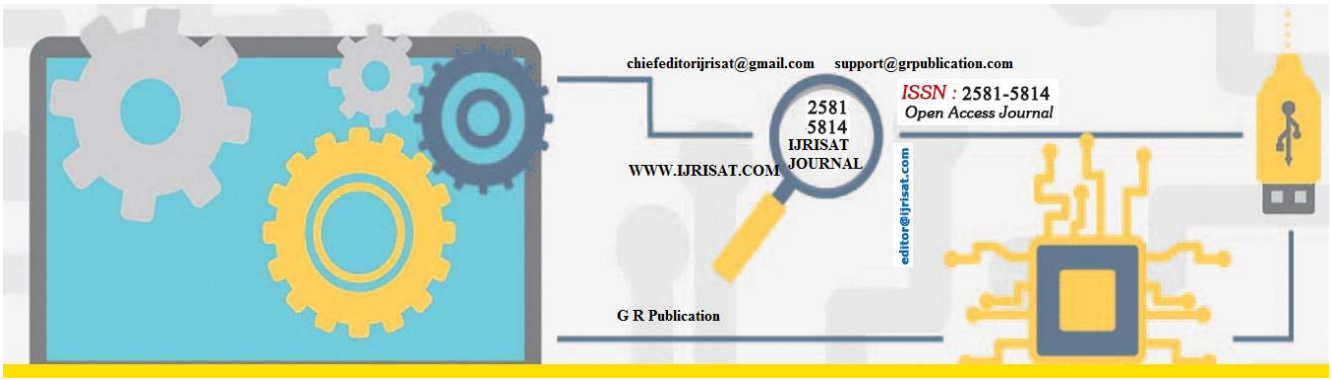

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Relationship of Heavy Metal levels (Pb and Cd) on Leachate Jatibarang Waste and Water River end Disposal place raw materials Municipal Waterworks Semarang City

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Abstract

Jatibarang Waste Disposal Site (abbreviated as landfill Jatibarang) is the final waste collection site in Semarang City, which is sourced from the fields of household, service, industrial, etc with various types of garbage, so that it can potentially cause pollution of the surrounding environment. One of them that might be affected is the River around landfill Jatibarang. Pollution to river water can occur because of the process of decomposition of waste by rain water resulting in water leachate containing heavy metals such as lead (Pb) and cadmium (Cd). landfill Jatibarang is in hilly and bumpy area which in the lowest part flow the Kreo River connected to the Kaligarang River, where the water contained in the river is the raw water of the Tirta Moedal Drinking Water Company in Semarang City. This studyaimed to determine the relation of leachate to heavy metal (Pb and Cd) contamination of landfill Jatibarang in raw material river water of Local water company in Semarang City. This study was an observational analytic study with cross sectional study design. Leachate sampling was carried out at leachate outlets, while river water samples were carried out at 29 points along the Kreo River to the Garang River. The results of the research with the AAS method provided the Pb level in leachate water was 0.15 mg/lt, while the Cd content was 0.040 mg/lt. The results of the Rank-Spearman relationship test provided the relationship between the distance of the water leachate outlet and the Pb level in Kreo River water flow ($p = 0.007$), but there was no correlation between the distance of the water leachate outlet and the Cd level in the Kreo River water flow ($p = 0.304$). Furthermore, the Mann-Whitney test revealed that there

was no difference between the type of river flow and Pb and Cd levels of the Kreo River flow with a significance value = 0.100 for Pb levels and 0.160 for Cd levels.

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Impact of depression on the academic achievement of higher secondary school students

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ABSTRACT

Psychological disorders significantly exacerbate the pressure on students to score better. The factors collectively hamper their performance leadng to low academic achievement. This study aimed to find out the relationship between Depression and Academic Achievement. For this purpose 500 (250 boys and 250 girls) students of 12th standard studying in urban area of Durg district of Chhattisgarh state taken randomly. The ADSS (anxiety, depression and sress scale) was used to measure the depression among the students. To analyse data 't-test' will be used. Furthermore depression and academic achievement was found to be significant negative association with each other.

Keywords: Depression, academic achievement, student's, performance, classroom environment

1. INTRODUCTION

School students have been found to have high prevalence of mental health problems across the country. Our state C.G. has limited resources to cure or to deal with mental health problems. Counselling to a great extent help the students to manage their level of Depression. There are very few studies found in region about the context; so to bridge the gap and to find out the impact of depression on academic achievement, the present study is undertaken. Literature have documented a number of inputs that have impact on student's academic performance. These include classroom environment(Sharma, Mitra and Jha, 2014), teacher support(Sharma, 2014, parent's education(Sharma and Jha, 2016), locale

Determination of Alkali and Alkaline-earth Metal Content of Bio-diesel Produced from Palm Oil, Palm Kernel Oil and Neem Seed Oil Feed stocks

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ABSTRACT

Standards are prescribed for fatty acid methyl esters (FAME) used as biodiesel fuels. For its adequate use, biodiesel must conform to these strict standards. The determination of Na, K, Mg and Ca is part of biodiesel characterization of pure biodiesel B100 or blends with petroleum diesel (B2, B5 and B10). Regulations by means of standard methods such as EN 14108, EN 14109, EN 14538 and ASTM D6751 establish a limit of 5 mg/kg as the maximum allowed concentration for Na plus K or Ca plus Mg. Alkali (Na + K) and alkaline earth (Ca + Mg) metal content of biodiesel samples produced from different feed stocks such as palm, palm kernel and neem seed oils was determined using the direct solvent method and a Buck 210VGP Atomic Absorption Spectrophotometer. The mean concentrations of Na, K, Mg and Ca are 19.1, 5.17, 1.8 and 0.00 mg/kg for palm biodiesel, 49.15, 73.2, 1.56 and 0.24 mg/kg for palm kernel biodiesel and 0.26, 111.3, 1.49 and 0.2 mg/kg for neem seed biodiesel respectively. The concentration for Ca plus Mg in all the biodiesel samples was within the maximum limit of 5 mg/kg. This however is not so for Na plus K as its concentration in all the samples exceeded this limit. Analysis of the fuel properties of the biodiesel produced from these feed stocks agreed closely with ASTM D 6751 .

Keywords: *Biodiesel characterization, Alkali and Alkaline earth metals, AAS, direct solvent method.*

1. INTRODUCTION

The fluctuating price and environmental impacts associated with petroleum-based fuels has led to the exploration of a renewable alternative fuel – Biodiesel. It is considered a renewable energy source because it is obtained from biomass feedstock. It can be substituted for petroleum-based diesel fuel (petro-diesel) in virtually any

Efficacy of Teaching Recovery Techniques (TRT) on Psychological Functioning of Flood Affected Girls in Pakistan

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ABSTRACT

The current experimental study investigated the efficacy of Teaching Recovery Techniques (TRT) on the psychological functioning of the adolescent girls who witnessed September 2014 flood in Central Punjab (Hafizabad and Jhang districts), Pakistan. The adolescent girls (M= 14.27, SD= .98) were selected from government schools of flood affected areas and assigned randomly to the experimental and wait control groups. The measures included Urdu translated scales of Children's Revised Impact of Event Scale-13, Depression Self Rating Scale, Post-trauma Cognitions Inventory-Children, Trauma Memory Quality Questionnaire. The experimental and wait control groups were pre-assessed on the mentioned scales. The groups which met criteria of posttraumatic stress symptoms severity (cut off=>30), were subsequently randomly assigned to experimental and control groups. Then experimental groups in both districts were given TRT separately by trained professional and a facilitator, however, control group was kept waiting till the treatments ended and post assessment was done. Independent sample t-test and paired sample t-test revealed significant differences existed across the groups for pre and post measures of the study variables. Experimental group had reduced post-trauma memory, decreased negative cognitions and PTSS severity as compared to wait control group after TRT. Findings are implicated for counseling and psychological rehabilitation of the flood affected adolescents.

Key words: Teaching Recovery Techniques, Trauma Memory, Trauma Cognitions, Post-traumatic Stress Symptoms.

The Influence of Orally Given Lead Acetate on the Expression of TNF-α and IL-6 of Fallopian Tube Epithel Cell of the Wistar Female Rat (Rattus Norvegicus)

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ABSTRACT

Objective: *This research aims at proving the influence of orally give lead acetate on TNF-a and IL-6 of fallopian tube epithel cell of The Wistar Female Rat (Rattus Norvegicus).*

Method: *Using true experimental post only control group method, there were 24 Wistar female rat (Rattus Norvegicus) with age of 10-12 weeks and body weight of 100-200 grams. The 24 rats were divided into 4 groups consisting of 1 control grup and 3 d groups with lead dosage of 30, 100, and 300 ppm. The lead was given with sonde for 30 days.The body weight and the fallopian tube weight of the rat were weighed, and expression of TNF-a and IL-6 with immune histochemistry.*

Result: *There were significant decrease of body weight difference of the treated groups compared with the control group, significant increase of TNF-a expression on the dosage of 30 ppm and 100 ppm and statistically insignificant increase of IL-6 with dosage of 300 ppm.*

Conclusion: *The lead given orally can increase the expression of TNF-a and IL-6 of the fallopian tube epithel.*

Key words*: lead actate, TNF- a and IL-6.*

1. INTRODUCTION

Lead (Pb) is heavy metal which can be found around us. It has naturally existed, but its level keeps increasing at this time due to the human activities. The high lead (Pb) level, both in atmosphere, water, and land is alerted because this metal heavy becomes toxic when it is in the body of an organism (Patrick, 2006). The main source of lead oxidation comes from gasoline and vegetables (from land or dash attached on the vegetables when consumed).

One of the mainly accumulated way of lead to human beings is through the digest system. The lead entering into the human body through the digestive system can pass through such consumed food and drink as meat, fruit, and vegetables