DETERMINATION OF THE PRESENCE OF 'E.coli'IN DIFFERENT WATER SAMPLES :- TANKER WATER, TAP WATER AND WELL WATER IN ERNAKULAM DISTRICT

35
A project report submitted in

partial fulfillment of the requirements for the award of the Degree

MASTER OF SCIENCE IN ZOOLOGY

BY

JAICY GEORGE

REG NO:130011012799



90]

Department of Zoology

SACRED HEART COLLEGE, THEVARA

KOCHI-682013

2013 - 2015

SACRED HEART COLLEGE, THEVARA

DEPARTMENT OF ZOOLOGY





This is to certify that this project work entitled 'DETERMINATION OF THE PRESENCE OF 'E.coli'IN DIFFERENT WATER SAMPLES:- TANKEP WATER, TAP WATER AND WELL WATER IN ERNAKULAM DISTRICT' is an authentic record of the work carried out by Miss. Jaicy George, Reg No. 130011012799in partial fulfillment of the requirements for the award of the degree, Master of Science of Mahatma Gandhi University during 2013-2015.

DR.M.K.RAJU

HEAD OF THE DEPARTMENT

PLACE: THEVARA

DATE: 20/08/2015

EXAMINERS 1:

2:

21 CERTIFICATE BY THE GUIDE

This is to certify that the content of this project entitled 'DETERMINATION OF THE PRESENCE OF 'E.coli' IN DIFFERENT WATER SAMPLES: TANKER WATER, TAP WATER AND WELL WATER IN ERNAKULAM DISTRICT' is the original research work of Miss. Jaicy George, Reg No: 130011012799 carried out under my supervision.

I further certify that the work has not been submitted either partly or fully to any other university for the award of any degree.

Mr. JobinTharian

Department of Zoology

Sacred Heart College

Thevara

JAICY Zoology

JAICT Z0010(Jy		
ORIGINALITY REPORT			
%46 SIMILARITY INDEX	%44 INTERNET SOURCES	%19 PUBLICATIONS	%32 STUDENT PAPERS
PRIMARY SOURCES			
en.wikip Internet Sour			%4
2 thewate Internet Sour	rproject.org		%3
himedia Internet Sour	labs.com		%3
Submitte Student Paper	ed to CVC Nigeri	a Consortium	%3
5 WWW.UN Internet Sour	•		%2
6 www.me	edicalnewstoday.o	com	%2
7 extranet			%2
8 Submitte	ed to Cairns State	e High School	%1
9 thisdayii	nwaterhistory.wo	rdpress.com	% 1

10	www.ehow.com Internet Source	%1
11	www.periyaruniversity.ac.in Internet Source	%1
12	Submitted to Bharati Vidyapeeth Deemed University College Of Engineering Student Paper	% 1
13	www.himedialabs.com Internet Source	%1
14	www.scribd.com Internet Source	%1
15	ijseas.com Internet Source	% 1
16	www.ernakulamonline.in Internet Source	%1
17	Submitted to University of Sheffield Student Paper	%1
18	www.foodpoisonjournal.com Internet Source	%1
19	ncof.dacnet.nic.in Internet Source	%1
20	Submitted to Higher Education Commission Pakistan Student Paper	% 1

21	Submitted to Indian Institute of Technology Student Paper	% 1
22	aem.asm.org Internet Source	% 1
23	www.tutornext.com Internet Source	%1
24	etheses.saurashtrauniversity.edu Internet Source	<%1
25	documents.mx Internet Source	<%1
26	www.academicjournals.org Internet Source	<%1
27	www.saddleback.edu Internet Source	<%1
28	Submitted to October University for Modern Sciences and Arts (MSA) Student Paper	<%1
29	Submitted to Youngstown State University Student Paper	<%1
30	www.dtic.mil Internet Source	<%1
31	Submitted to Cape Peninsula University of Technology Student Paper	<%1

32	www.wbbpe.org Internet Source	<%1
33	Submitted to University of Auckland Student Paper	<%1
34	www.ijpba.info Internet Source	<%1
35	eprints.utm.my Internet Source	<%1
36	Aleksandra Malgorzata Urbanska. "Estimation of the Potential Antitumor Activity of Microencapsulated Lactobacillus acidophilus Yogurt Formulation in the Attenuation of Tumorigenesis in Apc(Min/+) Mice", Digestive Diseases and Sciences, 02/2009 Publication	<%1
37	ijp.mums.ac.ir Internet Source	<%1
38	Submitted to Massey University Student Paper	<%1
39	www.coloradodot.info Internet Source	<%1
40	www.myanmar-education.edu.mm Internet Source	<%1
41	dyuthi.cusat.ac.in Internet Source	<%1

42	www.trisanita.org Internet Source	<%1
43	jeq.scijournals.org Internet Source	<%1
44	Submitted to Federal University of Technology Student Paper	<%1
45	Submitted to Jawaharlal Nehru Technological University Student Paper	<%1
46	cms.doe.gov Internet Source	<%1
47	Marc C. Lavoie. "Identification of strains isolated as total and fecal coliforms and comparison of both groups as indicators of fecal pollution in tropical climates", Canadian Journal of Microbiology, 06/1983	<%1
48	fluoridealert.org Internet Source	<%1
49	www.pyiephyomaung.yolasite.com Internet Source	<%1
50	Sabahi, . "Assessment of Groundwater and Surface Water Pollution at Mitm Area, lbb City, Yemen", American Journal of Applied Sciences, 2009.	<%1

51	A. D. Tennant. "COLIFORM BACTERIA IN SEA WATER AND SHELLFISH: I. LACTOSE FERMENTATION AT 35.5° AND 44 °C", Canadian Journal of Microbiology, 10/1961 Publication	<%1
52	Submitted to St. Francis High School Student Paper	<%1
53	P. Dhasarathan. "Microbial diversity in firework	<%1
	chemical exposed soil and water samples collected in Virudhunagar district, Tamil Nadu, India", Indian Journal of Microbiology, 04/15/2009 Publication	~ %
54	Submitted to Texas A & M University, Kingville Student Paper	<%1
55	Grigg, . "References", Infrastructure Finance The Business of Infrastructure for a Sustainable Future, 2011. Publication	<%1
56	Submitted to University of Westminster	1
	Student Paper	<%1
57	www.marietta.edu Internet Source	<%1
58	ijns.net Internet Source	<%1

59	Esmail Al Sabahi, S. Abdul Rahim, W.Y. Wan Zuhairi, Fadhl Al Nozaily, Fares Alshaebi. "The Characteristics of Leachate and Groundwater Pollution at Municipal Solid Waste Landfill of Ibb City, Yemen", American Journal of Environmental Sciences, 2009 Publication	<%1
60	earth.boisestate.edu Internet Source	<%1
61	S. B. THOMAS. "THE CLASSIFICATION OF COLI-AEROGENES BACTERIA ISOLATED FROM FARM WATER SUPPLIES", Journal of Applied Microbiology, 4/1951 Publication	<%1
62	Lo, K.V "High-rate anaerobic digestion of screened dairy manure", Journal of Agricultural Engineering Research, 198512	<%1
63	Submitted to University of Strathclyde Student Paper	<%1
64	www.ncbi.nlm.nih.gov Internet Source	<%1
65	ethesis.nitrkl.ac.in Internet Source	<%1
66	www.utexas.edu Internet Source	<%1

67	Pfafflin, Sheila. "Statistical Methods for Environmental Science", Encyclopedia of Environmental Science and Engineering Fifth Edition Volumes One and Two, 2006. Publication	<%1
68	cevre.beun.edu.tr Internet Source	<%1
69	everythingatoneclick.blogspot.fr Internet Source	<%1
70	C A Sorber. "Health and hygiene aspects of spray irrigation.", American Journal of Public Health, 01/1975 Publication	<%1
71	Submitted to Tufts University Student Paper	<%1
72	Submitted to Waljat College of Applied Sciences Student Paper	<%1
73	T. David Chinn. "Water Treatment", Environmental Engineering, 01/07/2009	<%1
74	Submitted to University of Aberdeen Student Paper	<%1
75	J. E. Hose. "Effects of benzo(a)pyrene on early development of flatfish", Archives of	<%1

Environmental Contamination and Toxicology, 1982

Publication

76	HİMİ, Homaira Anzum, PARVEJ, Md Shafiullah, RAHMAN, M Bahanur, NASİRUDDİN, KM, ANSARİ, Wahedul Karim and AHAMED, Md Mostakin. "PCR Based Detection of Shiga Toxin Producing E. coli in Commercial Poultry and Related Environments", TST, 2015. Publication	<%1
77	Brock/Springer Series in Contemporary Bioscience, 1990. Publication	<%1
78	www.swrcb.ca.gov Internet Source	<%1
79	intl-jeq.scijournals.org Internet Source	<%1
80	Submitted to Marist College Student Paper	<%1
81	Herbert Allen. "Chemical Composition of	1
	Bottled Mineral Water", Archives of Environmental Health An International Journal, 04/01/1989 Publication	<%1
82	texasheart.org	

Spellman, . "Related Reading", Stream Ecology 83 and Self Purification An Introduction Second Edition, 2001.

Publication

edoc.hu-berlin.de 84 Internet Source

<%1

- George Teitelbaum. "Environmental Regulation 85 and Its Effect on the Glass Industry", Ceramic Engineering and Science Proceedings, 01/01/1981

Publication

www.banglajol.info 86 Internet Source

<%1

<%1

Zimmer, J. Lange, B. Frick, J.S Sauer, H. "A 87 vegan or vegetarian diet substantially alters the human colonic faecal microbiota.(ORIGINAL ARTICL", European Journal of Clinical Nutrition, Jan 2012 Issue

<%1

shodhganga.inflibnet.ac.in 88 Internet Source

89

Publication

T Brown Jr, B Bruch, R Buchanan, L Canter, and C Caswell. "Removing Specific Water

Abrams, I, D Aulenbach, E Bingham, L Bollyky,

Contaminants", Environmental Engineers Handbook Second Edition, 1997.

90 www.zoology.bas.bg Internet Source	<%1
91 tr.scribd.com Internet Source	<%1
Submitted to Texas A&M University, College Station Student Paper	<%1
93 www.alamo.edu Internet Source	<%1
Atlas, . "Z", Handbook of Media for Environmental Microbiology Second Edition, 2005. Publication	<%1
aijbnet.com Internet Source	<%1
journals.tubitak.gov.tr Internet Source	<%1
M. El-Gasseir. "Energy and Water", Science, 02/10/1978	<%1

EXCLUDE QUOTES

OFF

EXCLUDE MATCHES OFF

EXCLUDE BIBLIOGRAPHY

OFF