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MEDICAL LABORATORY SCIENCE

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Your Pathway to a Brighter Future

COLLEGE OF MEDICAL LABORATORY SCIENCE RESEARCH TECHNICAL PANEL

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LORMA COLLEGES, College of Medical Laboratory Science Research Journal is an annual publication of the best researches conducted by the students and faculty members of the College of Medical Laboratory Science.

Authors and/or contributors are responsible for the contents of their abstracts or write-ups.

LORMA COLLEGES

VISION STATEMENT:

An Educational institution with a global perspective emphasizing quality, Christian values, and leadership skills relevant to national development.

MISSION STATEMENT:

To empower students for service anywhere in the world through Christian-inspired, a quality-driven, and service-oriented education and training.

CORE VALUES

Christian Leadership

Academic and Work Excellence

Teamwork, Solidarity and Unity

Social Concern for employees and others

Integrity

COLLEGE OF MEDICAL LABORATORY SCIENCE

VISION/MISSION:

The Lorma Colleges – College of Medical Technology/College of Medical Laboratory Science aims to produce global Medical Technologists/Medical Laboratory Scientists equipped with scientific and technological knowledge, skills and attitudes in the delivery of modern medical technology health care services.

OBJECTIVES:

To help the students acquire and develop relevant knowledge, skills, and attitudes in the field of Medical Technology/Medical Laboratory Science, which contribute to the holistic development of the learners, the community and the country as a whole.

To provide students with skill in scientific research methods and processes.

To train and develop the students' proficiency in instrumentation, laboratory diagnostic procedures and quality control that will aid the physician in the diagnosis and treatment of a disease.

To inculcate among the students the values of honor, honesty, integrity, service, dignity of labor, patriotism, and faith in God.

SPECIFIC OBJECTIVES

The program aims to:

Enhance the knowledge, skills and attitudes vital for a member of the healthcare delivery team in performing clinical laboratory procedures to help the physician in the proper diagnosis, treatment and prevention of diseases.

Instill among the students proper value system and a systematic application of scientific knowledge to actual life situations in the hospital and in the community.

Develop competent Medical Technologists/Medical Laboratory Scientists who are globally competitive, and committed to serve the health needs of the communities.

FOREWORD

We are very pleased that the College of Medical Laboratory Science Research Journal is presenting its 2nd volume. This journal contains research outputs conducted by the students for the school year 2018-2019.

The aim of this research journal is to provide a platform for the researchers to impart and share knowledge in the form of high quality research papers in the field of Medical Laboratory Science.

A profound and sincere gratitude and appreciation to the following which, in one way or another, have helped the researchers in the completion and realization of their research study.

To their family and friends for the unconditional love and support – financially and emotionally.

To Ms. Josephine C. Milan, the Dean of the College of Medical Laboratory Science, for showering the researchers with her unflinching love and support.

To their research advisers for their tireless and incomparable efforts

To Ms. Jenny Rose P. Supsup, the Laboratory Custodian of the Department, for patiently managing and providing the equipment needed by the researchers

To the Oral Examination Committee for the final defense: Ms. Josephine C. Milan, the Chairman, for her fathomless knowledge and intelligence for the betterment of the study; Dr. Catherine C. Guerrero, Dr. Jovencio T. Balino, Mrs. Joylyn Banaga and Mrs. Armida B. Reyes, members of the panel for their equal scholarly suggestions and evaluations

Lastly, to our Almighty God for the continuous guidance and protection that kept the researchers safe and sound throughout their study.

It is therefore our earnest desire to share with you this journal.

RYAN JAY G. MOSTOLES
Research Instructor and Coordinator
College of Medical Laboratory Science

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**“The Degree of *Staphylococcus aureus* in the Keyboards and Mice
of the Computers used in the Digital Library of
Lorma Colleges”**

*by: Angelica R. Amigo, Maria Concepcion G. Dy,
Yasser Vill B. Escurel, Alyssa V. Gabriel,
Yves Caesar S. Gacod, Pauline G. Peter, Cristine Jenz C. Tilos*
Adviser: Ms. Arthema Quennie I. Ciriaco

Keywords: *Staphylococcus aureus, Keyboards, Mice, Digital library*

ABSTRACT

This study aimed to determine the presence of *Staphylococcus aureus* in the keyboards and mice of the computers used in the digital library of Lorma Colleges. Specifically, the degree of *Staphylococcus aureus* contamination was identified by colony counting using Mannitol Salt Agar (MSA) on which swab samples from the keyboards and mice were inoculated. Furthermore, the degree of contamination was compared between the results obtained from keyboards and that of the mice using unpaired, two-tailed T-test of unequal variances.

The results of the study revealed that *Staphylococcus aureus* was present on all the tested keyboards and mice. Growth of golden colonies of *S. aureus* were observed on all the media used in the cultural study. Moreover, it was also found out that there is a significant difference in the degree of *Staphylococcus aureus* contamination between the keyboards and mice, with the mice showing more colony growth than the keyboards.

Based on the findings, the researchers conclude that the keyboards were relatively clean, while the mice were very contaminated.

Furthermore, the researchers recommend that more effective method of cleaning should be employed on the keyboards and mice, particularly on the mice, which showed higher degree of contamination.

“The Occurrence of *Salmonella* in the Flush Handles and Faucet Knobs of Comfort Rooms in Lorma Colleges”

*by: James Khari L. Villadolid, Jelly Joy E. Balancio,
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Carmelin I. Marquez, Phinette B. Ramos, Iris Yvonne C. Ventura
Adviser: Ms. Artemae Quennie I. Ciriaco*

Keywords: *Salmonella, Flush Handles and Faucet Knobs*

ABSTRACT

The study determined the occurrence of *Salmonella* in the flush handles and faucet knobs of comfort rooms in Lorma Colleges Carlatan Campus, City of San Fernando La Union. Results revealed that some of the comfort rooms yielded a positive result for the presence of *Salmonella* as well as Gram Negative Enteric Bacilli.

The salient findings of the study are as follows: (1) Gram negative enteric bacilli are present in some of the flush handles and faucet knobs tested. Based on Triple Sugar Iron (TSI) Agar tests, bacterial growth of other species such as *Escherichia coli*, *Proteus spp.*, and *Shigella spp.* are also seen. (2) There is varying degree of *Salmonella* contamination in each comfort rooms. (3) The relation of the comfort room status and sanitation to the occurrence of *Salmonella* infection.

The study concluded that, in terms of flush knob contamination, both male and female comfort rooms (FK1 and FK2) located at the Annex Building's first floor, Female comfort room of Nursing Building second floor (FK8), and male comfort room of North Building first floor (FK11), a total of four comfort rooms yielded positive growth on EMB agar. On the other hand, only the male comfort room of North Building (FK11) first floor yielded positive result on TSI. In terms of flush handle contamination, Female comfort room on Annex Building first floor and (FH2) male comfort room in third floor (FH3), male comfort room on North Building second floor (FH13) and male comfort room on the parking area (FH15) yielded a positive result on EMB. While both male comfort room on North Building second floor (FH13) and parking area (FH15) yielded positive result on TSI.

Based on the findings of the study, the main motive is the concern for the students of the said institution who might be exposed to *Salmonella* as well as other Gram Negative Enteric Bacilli which can cause infections.

**“Knowledge and Practices in the Control of Rabies in
Catbangan, San Fernando City, La Union”**

*by: Gerald Paul C. Racho, Ma. Via Mae V. Aquino,
Precious Anne Marie G. Borja, Crystal Ann S. Catungal,
Ellaine Joy C. Ragmac, Crislyn Jhoy R. Sabado*

Adviser: Ms. Christine Marie B. Gonzales

Keywords: Knowledge , Practices, Rabies, Occurrence, Transmission

ABSTRACT

This study identified the extent of the knowledge and practices in the control of rabies in Catbangan, San Fernando city, La Union. Specifically, it determined the residents' knowledge in the occurrences and transmissions of rabies virus as well as their preferred intervention to animal bite cases.

This study made use of descriptive- correlational method, the most appropriate method for this study, as it examines the knowledge and awareness of the people in rabies control. This study was conducted among the residents of Barangay Catbangan, San Fernando City, La Union with population of 8, 537 with the sample size of 361 determined by the aid of Lynch formula. Incidental sampling was employed and data gathering tool used was a researcher-made questionnaires. The data gathered were statistically treated using frequencies, percentages, and weighted means and analysed with the use of statistical approach and computer- aided statistical tool.

From the data gathered, it was found that a high percentage of respondents are knowledgeable in the occurrence of rabies virus compared to the transmission of it. And most people in Barangay Catbangan preferred medical alternatives over non- medical alternatives in handling animal bite cases. It can be gleamed from the results that there is a high level of awareness in the control of rabies in Barangay Catbangan.

**“Basil (*Ocimum basilicum*) Leaves Oil Extract as an
Organic Mosquito Repellent Lotion”**

*by: Lycell Joy B. Ballasiw, Biya Mar S. Ban-o,
Francheska Maria A. Joven, Mary Francis M. Marcos,
Loreal C. Salvador, Glorie Anne Mae P. Segundo, Nicole H. Villanueva
Adviser: Ms. Maureen Joy C. Yusi*

Keywords: *Basil Leaves, Mosquito Repellent*

ABSTRACT

The study determined the degree of efficacy of Basil (*Ocimum basilicum*) leaves oil extract as an organic mosquito repellent lotion. The salient findings of the study are as follows: (1) the most effective in terms of the level of efficacy among the 30%, 60%, and 90% concentrations. (2) the degree of repelling effect in Basil Leaves Oil Extract in terms of time of effectiveness using the following concentrations: 30%, 60%, and 90%. (3) the degree of efficacy of Basil with 30%, 60%, and 90% concentrations compared to commercial mosquito repellent lotion. (4) the significant difference between commercial mosquito repellent lotion and the extract from basil.

The study concluded that the level of efficacy using 30% concentration exhibits very poor repellency, while 60% concentration exhibits poor repellency. The 90% concentration exhibits good repellency. To determine the level of efficacy, the percentage repellency formula given by the World Health Organization (WHO) is used. This is described as the number of mosquito landing and dodging counted during the allotted time. The treatment with 90% concentration confirm to the guideline of the National Capital Poison Center, in having at least a 50% repellency rate. In terms of the time of effectiveness, the following results were gathered: 30% concentration shows a very poor degree of repellency, 60% concentration with poor degree of repellency, and the 90% concentration a fair degree of repellency. The end-point of the repellency test for the time of effectiveness as depicted by the first landing of mosquito, reflects the loss of efficacy of the concentration.

The level of efficacy of Basil Extract with 30%, 60% and 90% concentrations are NOT effective compared to commercial mosquito repellent lotion. There is also a significant difference between the commercial mosquito repellent lotion and the extract from Basil in terms of the time of effectiveness.

Based on the findings of the study, the main motive is to assess the potential use of basil leaves oil extract in repelling mosquitos as a substitute for commercial mosquito repellents lotions.

“The Availability of Hand Washing Facilities of Private Tertiary Schools Offering Paramedical Programs in the City of San Fernando, La Union”

by: Ephraim Rhyne Y. Delos Santos, John Kenneth G. Mabanta, Chiarra Mae T. Blanco, Alyssa Marie L. Javier, Karizza Cyrien C. Milo, Charmae R. Sarmiento
Adviser: Ms. Sandi Normi L. Baagen

Keywords: *Hand washing, Facility, Accessibility, Availability*

ABSTRACT

The study determined the availability of handwashing facilities of private colleges in the City of San Fernando, La Union.

The researchers used a descriptive survey research design. The checklist served as important research instrument in tallying and gathering the required data needed for the study. The draft for the checklist was presented to three validators for the validity of the checklist.

It was found out that the schools were able to provide adequate insight and educational materials in good hygiene and proper hand washing. This will help students develop the attitude and discipline towards maintaining one's healthy lifestyle. Also schools were able to comply with the 1:200 of group hand washing facility to student ratio. But on the other hand, schools barely maintain the cleanliness of their hand washing facilities and was barely providing a little to none of the amount of supplies like water, soap, and tissue papers for the practice of proper hand washing.

The researchers recommend that the future researcher must broaden and widen the group of respondents, that the administrations to strictly implement better management of the facilities, the teachers and students alike to understand and provide better understanding about handwashing facilities and its uses.

“Presence of *Vibrio parahaemolyticus* Contamination in Seashells Sold at the City Public Market of the City of San Fernando, La Union”

by: Zedryk Lawrence Dacumos, Kristiana T. Bascao,
Crizney Romelyn Anne B. Dulay, Alaica Claire L. Hufano,
Rielle Enjelli A. Linggayo, Grashela May A. Manzano
Adviser: Ms. Maureen Joy C. Yusi

Keywords: *Vibrio parahaemolyticus*, Contamination, Seashells

ABSTRACT

This study determined the presence of *Vibrio parahaemolyticus* contamination in seashells sold at the City Public Market of the City of San Fernando, La Union.

This study made use of the experimental method. Samples were gathered from the City Public Market of the City of San Fernando, La Union and sent to the Department of Science and Technology (DOST) for testing. Three samples were collected, these are Oysters “tirem”, Clams “tumbaboy” and Mussels “tahong”. 50 grams was weighed on each of the samples for the enrichment and isolation of the bacteria. Screening and confirmation were also made. Thiosulfate citrate bile salt sucrose (TCBS) was used for the selective isolation of *Vibrio parahaemolyticus* in seashells tested.

The findings of the study are as follows: (1) presence of *Vibrio parahaemolyticus* contamination in seashells such as oyster “tirem”, clams “tumbaboy” and mussel “tahong” sold at the City Public Market of the City of San Fernando, La Union. (2) presence of *Vibrio parahaemolyticus* contamination among the different stalls of seashells in the market of City of San Fernando, La Union.

From the data gathered, it was found that the seashells sold in the City Public Market of the City of San Fernando, La Union such as oyster “tirem” which is from Sto. Tomas, La Union, clam “tumbaboy” from Pangasinan and mussel “tahong” from Aringay, La Union were resulted to be positive for *Vibrio parahaemolyticus* contamination.

**“Prevalence of *Escherichia coli* in Water Sources in Barangay
Nagyubuyuban, City of San Fernando, La Union”**

*by: Raymart L. Cortez, Aira Nicole U. Dela Cruz,
Johaira A. Macapundag, Ceshka N. Nones,
Maricris A. Panelo, Amanda Gayle C. Rivera*
Adviser: Mr. Raniel Jhay L. Sandaga

Keywords: *Prevalence, Escherichia coli, Water Sources*

ABSTRACT

This study determined the prevalence of *Escherichia coli* on the water sources in Barangay Nagyubuyuban, City of San Fernando, La Union. Investigation shows that some of the areas of Barangay Nagyubuyuban yielded a positive result for the presence of *E. coli*.

The survey method type of descriptive design was used to obtain information concerning the current status of water source in the Barangay Nagyubuyuban, City of San Fernando, La Union.

Specimens used for this study was acquired in Barangay Nagyubuyuban, City of San Fernando, La Union. Prior to collection, the researchers facilitated a survey with questionnaires distributed to the residents. In Barangay Nagyubuyuban, seven sitios are installed with individual public water reservoir tank for public consumption. From these tanks, collected water samples of 20 ml quantity will be the subject for testing. The samples were processed and tested within 5 hours prior to collection by the researchers in the MedTech Lab, LB-101, Lorma Colleges

The data gathered pass through 3 phases. The experimental phase in which the questionnaires are distributed to 35 residents and water sample is collected from the 7 sitio. Second, the experimental phase, is performed using lactose broth enrichment medium, eosin methylene blue selective agar and triple iron sugar. Lastly, the post-experimental phase simply the determination of the degree of *Escherichia coli* contamination. The statistical used to treat the obtained data is Oneway Analysis of Variance (ANOVA).

The important results of the study are as follows: (1) 100% of the households use spring as the source of water supply (2) there is a presence of *E. coli* contamination on springs. (3) there is no significant difference on the contamination of *E. coli* among water sources in Barangay Nagyubuyuban, City of San Fernando, La Union.

“Study on the Knowledge and Practices of Tetanus Among the Farmers of Bucao, San Gabriel, La Union”

*by: Lanz Patrick B. Palacay, Carmela Louise D. Balcita,
Nichole Ashley R. Jalandoni, Camille O. Manalo,
Ella Mae R. Ojenar, Arianne Faith M. Padiwan
Adviser: Mr. Raniel Jhay L. Sandaga*

Keywords: *Tetanus, Knowledge, Practices, Farmers*

ABSTRACT

The study aims to determine the knowledge and practices of tetanus among farmers of Bucao, San Gabriel, La Union. This was conducted to identify the root cause of the presence of cases of tetanus in the Municipality of San Gabriel despite of their annual vaccination programs.

The Likert scale questionnaire and close ended question type of descriptive design was used to acquire data regarding the current status of the knowledge and practices of tetanus among farmers of Bucao, San Gabriel, La Union. The questionnaires are distributed to 150 farmer respondents using simple random sampling.

The research suggests a very high percentage in their knowledge and practices in relation to tetanus. The data shows that the level knowledge of farmers of Bucao, San Gabriel, La Union about tetanus is at 86.8% and the level practice of farmers about tetanus is at 82.67%. This shows that they have a good practice about preventing tetanus.

“Effectivity of *Tamarindus indica* Leaves as a Mordant in Gram’s Staining”

by: Arbe Bryne Q. Aquino, Enwelani Boneventure, Oluwatosin Barnabas, Jemima S. Catbagan, Danelene N. Estacio, Arah Mae C. Padilla
Adviser: Ms. Arthema Quennie I. Ciriaco

Best Poster Paper Presentation
Institutional Students’ Research Forum 2019
April 30, 2019 College Audio Visual Room

Keywords: *Tamarindus indica*, Gram Staining, Mordant

ABSTRACT

This study aimed to determine the effectivity of *Tamarindus indica* leaves as a mordant in Gram staining using the dilution 1:1, 1:5, and 1:10.

Specifically, the experiment assessed the mordanting capability of *Tamarindus indica* leaves in terms of the color end result. The study was conducted by obtaining leaf extract through percolation method and was tested on both gram positive bacteria *Staphylococcus aureus* and gram negative bacteria *Klebsiella pneumoniae* against the control, Gram’s iodine. The effectivity was statistically determined at 0.01 level of significance with t-test (getting the mean of two samples). The experimental method was employed to gather, analyse and interpret data.

Findings revealed that the 1:10 dilution of *Tamarindus indica* leaves is an effective mordant in terms of the end color result on both gram-negative and gram-positive bacteria, exhibiting the end color of light violet and dark red respectively.

“The Potential Use of *Dioscorea alata* (Ube Kinampay) as a Simple Stain for Squamous Epithelial Cells in Urinalysis”

by: Russell Ryan V. Dumo, Jasmin S. Conde,
Noreen B. Culbengan, Honeylyn V. Ramos,
Clynie Mae Rapanut, Irish Jade A. Tianga
Adviser: Mrs. Mary Jane H. Aum

Keywords: *Dioscorea alata*, Simple Stain, Squamous Epithelial Cells, Urinalysis

ABSTRACT

This study aimed to determine the staining capability of the *Dioscorea alata* (Ube) extract as a simple stain for squamous epithelial cells in urinalysis in different concentrations: 25%, 50%, 75%, and 100% provided the best staining property in terms of intensity of color, clarity and visibility of squamous epithelial cells in urinalysis. Furthermore, the effectivity was statistically determined at a 0.01 level of significance with the t-test: paired two sample for means.

The findings of the study revealed that: (1) the 100% concentration provided the best staining capabilities in terms of intensity of color, which exhibits brown as the end color, clarity and visibility of squamous epithelial cells in urine (2) there is no significant difference between the *Dioscorea alata* (Ube) extract and methylene blue in terms of intensity of color, clarity and visibility in staining squamous epithelial cells in urine.

Based on the findings, it is concluded that the ethanolic extract of *Dioscorea alata* (Ube) is capable of staining squamous epithelial cells in urine. The more concentrated the extract, the more effective in the staining quality and the lesser the diluent used, the better the staining quality. The staining capability of the ube extract is comparable to that of methylene blue in terms of intensity of color and visibility of squamous epithelial cells in urine.

**“The Current Status of Water Quality in Barangay Cadaclan,
City of San Fernando, La Union: Its Physical and
Microbiological Characteristics”**

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Keywords: *Water Quality, Physical and Microbiological Characteristics*

ABSTRACT

The core of the study is to determine the current status of water quality in Barangay Cadaclan, San Fernando City, La Union through its physical and microbiological characteristics. The collection of water samples was done with the aid of Department of Science and Technology criteria on how to collect water samples for physical and microbiological testing.

As to physical property particularly on *pH*, the dug and artesian water sources were able to generate similar means of 7.87. According to the Philippine National Standards for Drinking Water (PNSDW) of 2017, the normal range for *pH* in drinking water is 6.5-8.5, hence the states of water in these sources were drinkable and in acceptable state. Another property is the total hardness. The overall hardness of water in the area is high which implies that the water may contain some heavy metals in the water such as iron, arsenic, and other significant metals.

Moreover, total dissolve solids (TDS) is also part of the physical properties. The shallow well has a TDS mean value of 241mg/L; mountain water has a TDS mean value of 457 mg/L and; artesian well (jetmatic) has 233 mg/L TDS mean value. All of the three water sources were able to generate acceptable values based on PNSDW of 2017. The Maximum Allowable Level (MAL) for TDS is 600 mg/L.

The microbial property is also presented. The total coliforms (TC) and thermotolerant coliforms (Th.C.) were able to generate a value that is in the actual acceptable range required for drinking water. However, despite of the fact that for TC is still on the ideal range value and it is in the border, that explains that any increase on its range would mean something negative for having high “most probable number” or the MPN implies presence of fecal coliforms or *E.coli* in the water samples.

**“A Comparative Study of the Surfactant Property of Dried Rambutan
(*Nephelium Lappaceum*) Peels and Leaves Extract”**

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Keywords: *Rambutan, Surfactant property, Oil-water surface tension*

ABSTRACT

This study sought to compare the surfactant property of Rambutan (*Nephelium lappaceum* L.) peels extract and leaves extract using the different concentrations (100%, 75%, and 50%) prepared.

Specifically, the experiment tried to find out which extract and what percentage concentration exhibits the greatest surfactant property and ideal in reducing oil-water surface tension. The hypothesis of the study statistically tested 0.05% level of significance with two-way univariate analysis of variance used as a statistical tool. The experimental method used was employed in this study.

The findings of the study revealed that the 100% concentration of the rambutan (*Nephelium lappaceum* L.) fruit peel extract exhibited greatest surfactant property in terms of its ability to displace oil. Furthermore, there is a significant difference between the surfactant concentration and the source (peel extract, leaf extract, and dishwashing liquid), but there is no significant difference between the surfactant concentration and the percentage of concentration (100%, 75%, 50%).

Based on the findings, it is concluded that the extract of rambutan peels may be used as a surface-active agent.

“*Leucaena leucocephala* (Ipil-Ipil) and *Chrysophyllum cainito* (Caimito) as a Potential Ingredient for Anti-microbial Hand Soap”

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Keywords: *Antimicrobial Property, Ipil-Ipil, Caimito, Antimicrobial Liquid Hand Soap*

ABSTRACT

This study is determined the effectiveness of the *Leucaena leucocephala* and *Chrysophyllum cainito* leaves extract by comparing different concentrations (100% , 75% , 50% and 25 %) of the Ipil- ipil and Caimito extract with the control as a potential ingredient for antimicrobial liquid hand soap.

The researchers aimed to know the effect of varying concentrations of *Leucaena leucocephala* and *Chrysophyllum cainito* extract as an anti-microbial agent and to know the significant differences in the effect of varying concentrations of *Leucaena leucocephala* and *Chrysophyllum cainito* in terms of its ability to kill microorganisms.

The researchers tested the susceptibility of *Staphylococcus aureus* against different concentrations of Ipil-ipil (*Leucaena leucocephala*) and Caimito (*Chrysophyllum cainito*) leaves extracts.

Paired t-test and ANOVA statistical tools were used to determine the significance between the treatments with a 0.01 margin of error. For Ipil-ipil (*Leucaena leucocephala*) leaves extract: 25% concentration obtained a t Stat value of 17.09, 50% concentration has a t Stat value of 21.51, 75% concentration with a t Stat value of 12.77 and 100% concentration has a t Stat value of 34.73.

For Caimito (*Chrysophyllum cainito*) leaves extracts: 25% concentration obtained a t Stat value of 10.14, 50% concentration has a t Stat value of 13.16, 75% concentration with a t Stat value of 13.17 and 100% concentration has a t Stat value of 8.87.

For the combination of Ipil-ipil (*Leucaena leucocephala*) and Caimito (*Chrysophyllum cainito*) leaves extracts: 25% concentration obtained a t Stat value of 206.11, 50% concentration has a t Stat value of 40.13, 75% concentration with a t Stat value of 11.29 and 100% concentration has a t Stat

value of 22.69.

The susceptibility testing of *Staphylococcus aureus* showed that the 100% concentration of the combined *Leucaena leucocephala* and *Chrysophyllum cainito* leaves extract is the most effective in terms of antimicrobial property.

]Based on the statistical analysis, there is a significant difference between the results obtained from testing the susceptibility using *Leucaena leucocephala*, *Chrysophyllum cainito* and the combined *Leucaena leucocephala*, *Chrysophyllum cainito* leaves extract. This means that the antimicrobial soap control is more effective than the leaves extract.

“The Potential Bacteriostatic Property of Karmay (*Phyllanthus Acidus*) Leaf Extract as an Organic Component for Hand Sanitizer”

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Keywords: *Antibacterial, Hand Sanitizer, Karmay*

ABSTRACT

The study determined the potential antibacterial property of Karmay leaf extract as an organic component of hand sanitizer using the different concentrations (100%, 75% and 50%) prepared.

Specifically, the experiment tried to ascertain which phytochemical constituents of *Phyllanthus acidus* exhibit antibacterial property. It also sought which extract and what percentage concentration exhibits the minimum zone of inhibition against *Staphylococcus aureus*.

The findings of the study revealed that the (1) *Phyllanthus acidus* contains phenols and tannins which are phytochemical that exhibit antibacterial activity. (2) the minimum zone of inhibition (5.06 mm) was exhibited on the 100% concentration. (3) there is no significant difference among the 50%, 75% and 100% concentration with and without preservatives of extracts in terms of their effectiveness against *S. aureus*. (4) there is a significant difference between the control and three extracts 50%, 75%, 100%.

Based on the findings, the karmay leaf extract does not possess the potential to be an organic component of hand sanitizer

“Vegetable Glycerin Effect on the Blood Sugar Level of Lorma Colleges Students Using Vape”

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Keywords: *Vape, Blood glucose level, Vegetable glycerin*

ABSTRACT

This study seeks to determine the effect of vegetable glycerin on the blood sugar level of Lorma Colleges students using vape. This was conducted in order to see if the highest concentration of vegetable glycerin available in the market can lead to hyperglycemia.

The study employed the experimental type of research. The participants were selected thru purposive sampling method.

It was found out that 7 out of 20 participants rendered an increase in their blood sugar level while 13 participants rendered a decrease on blood sugar level. The results from the test and the statistical analysis showed that there is no significant difference between the blood sugar levels of the vape users before and after usage of vegetable glycerine.

Based on the findings of the study, the highest concentration of vegetable glycerin available in the market does not produce hyperglycemic effect. The increase of the blood sugar level of the vaper might be a cause of other factors from the vape juice.

This study can be improved by studying also the effect of other vape ingredients such as 30% propylene glycol and flavors and the effect of high nicotine level contained in vape juice.

“The Perception of Medical Laboratory Science Students on Food Sanitation of Canteens Within Lorma Colleges”

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Keywords: *Food sanitation, Canteen, Medical Laboratory Science students*

ABSTRACT

The study aimed to determine the perception of Medical Laboratory Science students on food sanitation of canteens within Lorma Colleges. Specifically, it sought to determine the perception of Medical Laboratory Science students and looked into which canteen have the best and most preferred in terms of sanitation.

Furthermore, it sought to determine the perception of Medical Laboratory Science students on food sanitation in canteens within Lorma Colleges in terms of food product quality and facility, equipment and utensils, service quality.

This study utilized the descriptive method of research to detect the level of perception of Medical Laboratory Science students on food sanitation of canteens within Lorma Colleges. A survey questionnaire was used to obtain the most sanitized canteen, it also shows how concerned the students are in terms of sanitation. The three food establishments in Lorma Colleges, namely Canteen A, B and C, served as site for the collection of data.

In conclusion, the analysis of the gathered data yielded the following findings that Canteen C and A garnered the lowest score which means that it is not the most preferred canteen in terms of sanitation, in terms of food product quality and facility, equipment and utensils and service quality.

On the other hand, Canteen A and C showed low scores this time concluding that recommendation might not be a good idea for students. Between food quality and food service, the students chose food quality, which only means that no matter how the food was made or how bad the service is, as long as the food is good, the students would still eat there. First year students' mean score were interpreted as strongly agree which means that they are more attentive to the cleanliness of the canteens.

“Adaption and Coping Mechanism of International Students in Lorma Colleges”

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Keywords: *Adaptation, Coping mechanism, International students*

ABSTRACT

The study determined the adaptation and coping mechanism of international students in Lorma Colleges.

The salient findings of the study are as follows: the profile of international students in Lorma Colleges in terms of their nationality, majority were Africans. In terms of course, most of them from the College of Nursing. Half of them were Christians, most were in the age group of 21 to 30 years old and female respondents outnumber the males. In terms of the year of entry point, majority enrolled when they were in their freshmen year and most are currently in their fourth year. The degree of seriousness of the problem of international students in Lorma Colleges based on language is high; international students have a hard time understanding instructors that uses the Filipino language in class and doesn't translate it.

They also find it hard to mingle with Filipino students because of the language barrier. Although it is commended that the international students are trying their best to understand the Filipino language. The degree of seriousness based on religion is moderate, the Christian international students, which are the majority of the population, do not have a problem with regards to this. However, Muslim international students indicated that they are having a hard time practicing their religious beliefs in school. For gender equality, they do not mind seeing the Lesbian, Gay, Bisexual, Transgender and Queer (LGBTQ) people around the school campus and associating with them, so the degree of seriousness for this is low.

The coping mechanisms of international students when it comes to the language barrier are asking friends and the use of Google translate. It is also noted that the international students are quite adapting in terms of the academic set up of Lorma Colleges, though they are somewhat not contented with the personal and support concerns provided to them by the school.

**“The Influence of Social Media to the Study Habits of
Fourth Year Medical Laboratory Science
Students in Lorma Colleges”**

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Keywords: *Social media, Study habits, Influence*

ABSTRACT

Social media are web-based services that give individual the opportunity to create either a public or semi-public profile within a bounded system, add a list of others with whom they share a connection and view and transverse their list of connections and those made by others within the system and study habits contribute significantly in the development of knowledge and perceptual capacities. Study habits tell a how much a person will learn, how far he wants to go, and how much he wants to earn. All of these could be decided with the help of one’s study habits, throughout life.

Therefore, this study was carried out with the aim of examining the influence of social media to the study habits of Fourth Year Medical Laboratory Science students in Lorma Colleges. The independent variable was the degree of influence of social media while the dependent variable was the extent of study habits of fourth year medical laboratory science students.

This research adopted descriptive and explanatory research design. It also employed the use of cross sectional survey method using survey questionnaires that contains 25 items (15 items for Study Habits; 15 items for Social Media). The sample of 100 medical laboratory science students of Lorma Colleges was selected using convenient sampling method.

According to the results, there is a significant relationship between the influence of social media to the study habits of fourth year medical laboratory science students. Both of the variables are increasing at the same time and it indicates that despite the frequent usage of social media, the study habits of the students are maintained.

Based on the findings of the study of the following conclusions are drawn. The researchers conclude that the influence of social media to Medical Laboratory Science students is not a hindrance in the extent of formulation in their academic friendly study habits and the Fourth year Medical Laboratory Science students' degree of influence is interpreted as sometimes, indicating that their usage of social media is still under control.

“The Potency of Used Ground Coffee Residue as an Alternative Prevention to Malodorous Shoes”

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Keywords: *Ground coffee residue, Malodorous shoes*

ABSTRACT

The study aims to determine the potency of used ground coffee residue as an alternative prevention to malodorous shoes. This was conducted in order to see the effectivity of ground coffee residue in neutralizing the odor of malodorous shoes.

The salient findings of the study are as follows: (1) the concentration of ground coffee residue determines the extent to which the odor is absorbed and neutralizes through the following time exposures (15 min., 30 min., 45 min., and 60 min.) and 60 min. time of exposure is the most effective among the four. (2) ground coffee residue contains organic components to which its action, in terms of absorbing of odor, can last only a period of time.

The result from the test and the statistical analysis showed that there is a significant difference between the 50g and 100g concentration of used ground coffee residue and there is also a significant difference between the experiment and the baking soda which is the control.

Based on the findings, the used ground coffee residue is an effective odor-neutralizer when exposed to short-term exposure.

“Prevalence of *Escherichia coli* in Swimming Pool Water from Selected Resorts in San Fernando City, La Union”

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Keywords: *Escherichia coli, Fecal coliform, Water analysis*

ABSTRACT

This study aimed to determine the presence of *Escherichia coli* (E. coli) in swimming pool water from selected resorts in San Fernando City, La Union. Specifically, it sought to determine the prevalence of the bacterium in the swimming pools in the said resorts and looked into which resort would have the highest count in MPN. Furthermore, it sought to determine whether there is a significant difference among the swimming pools in terms of E. coli count, population of swimmers, and entrance fee of the resort.

This study utilized the experimental method to detect the presence of *Escherichia coli* in swimming pool water from selected resorts in San Fernando City, La Union. Swimming pools in three selected resorts in San Fernando City, La Union, namely Resort A, Resort B, and Resort C, served as site for collection of water samples. Microbial water analysis of water samples was done at the Department of Science and Technology, Region I to detect the presence of *Escherichia coli*.

It was found that in the first replicate, Resort A had a Fecal Coliform/*Escherichia coli* count of 4.5 MPN / 100 mL, while Resort B and Resort C tested negative. In the second replicate, all resorts tested positive with 4.0, 4.5, and 280 MPN/ 100 mL, respectively. In Analysis of Variance using Single Factor, it was found that there was a significant difference among the three resorts in terms of the count of *Escherichia coli*, and the difference lies on Resort A to Resort C and Resort B to Resort C. It was also found that the population of swimmers and rates of entrance fee of the resorts are factors to the prevalence of E. Coli. The more the population of swimmers and the lower the cost of entrance fee, the higher is the E. coli count.

In conclusion, *Escherichia coli* are prevalent in swimming pool water from the selected resorts in San Fernando, La Union with Resort C having the highest count. Finally, there is a significant difference among the resorts in terms of *Escherichia coli* count, population of swimmers, and entrance fees.

“Prevalence of Microcytic Hypochromic Anemia with Positive Parasite Infection in Fecalalysis Result among Garbage Collectors in San Fernando City, La Union”

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Keywords: Anemia, Fecalalysis, Microcytic, Hypochromic, Parasite infection

ABSTRACT

Parasitic infection continues to be a common issue with the garbage collectors. Previous researches show that hookworm infection and other parasite that may cause blood loss (*Trichuris trichiura*, *Ascaris lumbricoides*) were prevalent. Moreover, studies revealed that practices, like proper usage of personal protective equipments and hygienic practices typically determined the extent of acquiring parasitic infection.

Recognizing the issue, the study was conducted to determine the prevalence of microcytic, hypochromic anemia among garbage collectors in San Fernando City, La Union. Purposive sampling was done among the garbage collector and 21 of them. Barangay-based collectors participated completely. Questionnaires were distributed and stool samples were collected and blood samples were also taken from those who had positive result in fecalalysis, 4 out of 21 respondents (19.05%).

Based on the findings of the study, all of the respondents have normal hemoglobin and hematocrit levels, and also had a normal mean corpuscular volume and mean corpuscular hemoglobin concentration levels. The result showed that microcytic, hypochromic is not prevalent.

“Ipil – ipil (*Leucaena Leucocephala*) Leaf Extract as Hand Sanitizer”

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Keywords: *Ipil – ipil, Leaf extract, Hand sanitizer*

ABSTRACT

Plants have been long used as source of medicine to treat different ailments such as *Leucaena leucocephala* which is commonly known as Ipil–ipil. The study aimed to determine the effectiveness of Ipil-ipil leaf extract against *Staphylococcus aureus*.

The extract of the leaf was subjected to phytochemical screening test indicates that the plant sample contains consist of tannins and polyphenols, as well as carbohydrates, reducing sugars, flavonoids, glycosides and lipids.

The formulation of the hand sanitizer was formed simultaneously to see the comparison of antibacterial activity of Ipil – ipil extract on different concentrations placed in Mueller-Hinton Agar by the use of Vernierier caliper to measure the zone of inhibition. Among the four concentrations (100%, 75%, 50%, 25%), 100% Ipil – ipil concentration has the greatest susceptibility and the lowest were 25% and 50% Ipil – ipil concentrations. Patch test was performed using albino rats to assess if the formulation can cause allergic reactions and it resulted to zero score of patch test grading, indicating that the leaf extract is safe when applied on the skin.

Based from the findings, the researchers concluded that Ipil-ipil leaf extract as hand sanitizer has tannins and polyphenol that owes to its anti-microbial property. It also has a potential killing bacteria such as *Staphylococcus aureus*. In addition, all of the 25%, 50%, 75% and 100% concentrations of Ipil-ipil leaf extract are dermatologically safe based on scores and primary irritation index obtained on patch test. And statistically, there is a significant difference in the anti-microbial activity between the concentrations of Ipil-ipil leaf extract and commercially available organic hand sanitizer.

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