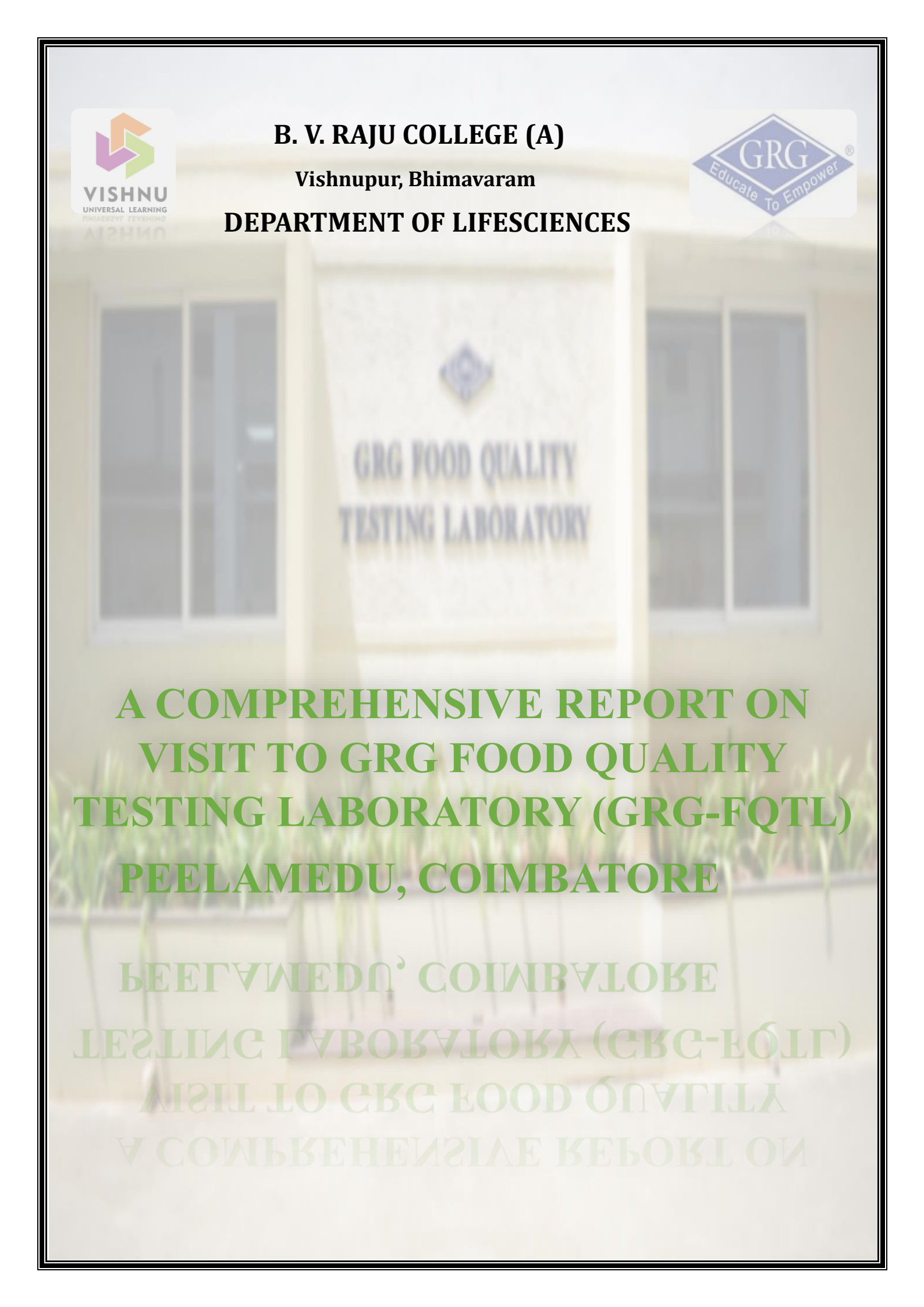


B. V. RAJU COLLEGE (A)

Vishnupur, Bhimavaram

DEPARTMENT OF LIFESCIENCES

A COMPREHENSIVE REPORT ON VISIT TO GRG FOOD QUALITY TESTING LABORATORY (GRG-FQTL) PEELAMEDU, COIMBATORE

INTERNSHIP TRAINING PROGRAMME ON CHEMICAL AND MICROBIAL ANALYSIS OF FOOD AND WATER

Two faculty members along with 10 final year students from Department of Lifesciences visited GRG Food Quality Testing Laboratory in Peelamedu, Coimbatore for Internship Training Programme for 6 days.

Faculty, **V.D.S.S. Varshini** and **G. Satish** with 10 students**, P. Sri Lakshmi Durga, R. Neelima, M. Nihanyamani, B. Mounisha, K. Charishma, R. Madhu Shalini, G. Hema Venkata Jayalakshmi, M. Anitha Jasmin, T. Ganga Bhavani, S. Vaghdevi** attended the Training programme on **"CHEMICAL AND MICROBIAL ANALYSIS OF FOOD AND WATER"** from **20th February, 2025 to 27th February, 2025.**

Marketing Executive**, Mr. Prasanna** along with **Mrs. Revathi** (Sr. Chemist), **Ms. Mythili** & **Ms. Sujana** (Jr. Chemists) and finally **Ms. Ramya** (Microbiologist) guided us throughout the training programme.

All of them trained the students and gave them hands on practical sessions everyday by performing various parameters in food and water through chemical and microbial analysis.

It took three days for Chemical analysis in Food & Water and Three more days for Microbial analysis in Food & Water.

DAY - 1

INSTRUMENTATION & CHEMICAL ANALYSIS OF WATER:

On the **first day** of the internship training programme, i.e., **20th Feb., 2025** (Thursday), Marketing Executive, **Mr. Prasanna** introduced about the details of the training programme thereby Registered for the programme which took almost an hour.

Later **Ms. Sujana** and **Ms. Mythili**, Jr. chemists continued the session by their Self Introduction and of the students and faculty.

They started the session by demonstration of various **equipments/ instruments** required for Chemical Analysis of Water and Food.

They explained in detail about the instruments like weighing balance, pH meter, electrical conductivity, furnace hood, desiccator, HPLC, Soxhlet extraction, Jehl-dhal apparatus, etc

After completion of Instrumentation, they elaborated about the **INTERNATIONAL ORGANISATION FOR STANDARDIZATION (ISO)**, which will be referred by them to perform the experiments related to Chemical analysis of Food and Water.

Finally on this day, **Total alkalinity** and **pH** of both drinking water and Tap water was tested by using Titration methods and pH meter and Calibrated.

DAY - 2

On the **second day** of the internship training programme, i.e., **21st Feb., 2025** (Friday), **Mrs. Revathi**, Sr. Chemist took over the session by introducing herself. She clarified about the tests that were performed for water analysis

She continued the chemical analysis from the previous session by starting with Total Hardness, Total calcium and Total Magnesium.

CHEMICAL ANALYSIS OF FOOD:

After completion of water analysis, she continued with the food analysis by taking goodday biscuit packet from the students.

From the biscuit packet, they analysed the chemical parameters in food like Total amount of Moisture, Total ash, Carbohydrates, Proteins and Fats. Before performing all the experiment, they first took the dry weights of the sample along with the sample holders in which the samples were placed.

They used the instrument dessicator for total moisture, Muffle Furnace for Total Ash, Soxhlet Extraction for Fats and Jhel Dhal Apparatus for Protein. As all of these parameters will take nearly 8 hours, the results were observed in the next session. After placing the samples, all the results of water analysis were calibrated.

DAY - 3

On the **third day** of the internship training programme, i.e., **24th Feb., 2025** (Monday), **Ms. Sujana** continued the last session of chemical analysis in food. She showed the results of the sample.

Students weighted the final weights of the sample. Protein extraction was continued in the meanwhile students calibrated the final values of the food.

From all of the parameters, they finally calibrated Total Energy for consuming the Biscuit packet. With this, Chemical parameters of water and Food was Finished.

DAY - 4

MICROBIAL ANALYSIS OF FOOD AND WATER:

On the **fourth day** of the internship training programme, i.e., **25th Feb., 2025** (Tuesday), **Ms. Ramya**, Microbiologist introduced the Microbiology laboratory to the students.

She described about the overview of the parameters to be learned in Microbiology lab and the rules to be followed in the lab.

She took the students to the Microbiology lab starting from passing through a cabinet where the person entering the lab should be sterilized. She took to the rooms where they were specified for each task that is done like Media Preparation room, Sample Preparation and inoculation room, Incubation room and Finally Discarding room through which they were connected with dynamic pass box from which all the equipment used is passed.

The instruments that were in the laboratory were advanced which include Stomacher, Incubator, Hor Air Iven, Water bath, Laminar Air Flow, Colony Counter, Chromatography, Spectroscopy.

After completion of the instrumentation, students were taught with the procedures of Total Plate Count, E. coli and Coliforms in Water, Yeast and Moulds, MPN method for water.

DAY - 5

On the **fifth day** of the internship training programme, i.e., **26th Feb., 2025** (Wednesday), the session was continued with the small recap of the last session.

On this day, the practical session was started with media preparation required for the specific organism to be isolated in the media preparation room. After media preparation, the media containers were passed through the dynamic pass box to the sample preparation room.

In the sample preparation room, the media is kept in Laminar Air Flow and sample (Protein Powder) preparation was done. After sample preparation, the media were plated and sample was spreaded onto the media. Water sample was also analysed for Coliforms.

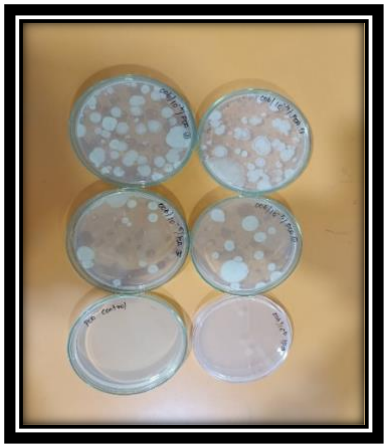
All the Media Plates which were plated are passed through the dynamic pass box to the Incubation room. In the Incubation room, plates with Specific Microorganisms are kept in Incubators of specific Temperatures and incubated for 24hours.

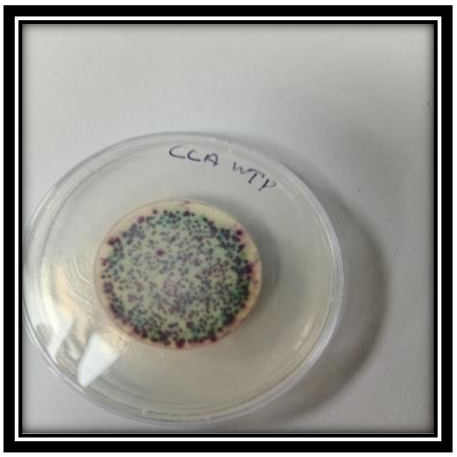
DAY - 6

On the **last day** of the session, i.e., on **27th Feb., 2025** (Thursday), the incubated plates were observed for the colony growth for the specific microorganisms that were tested.

After observation of the results, the plates are finally passed to the Discarding room through the dynamic pass box for the last time.

The results were calibrated and **Ms. Ramya** discussed more information about other tests to be performed in continuation to the experiments they had done like IMViC Tests for identification of Specific Microorganisms and the Selective Media to be used for Specific Microorganisms.





CONCLUSION

Finally, after completion of all the analysis, **Mr. Prasanna** addressed the students and took feedback from each of them.

Students felt very happy to be a part of this training programme where they gained a plenty of knowledge about the Chemical and Microbial Analysis of Food And Water and wanted to be a part of this institute if there was a chance for them.

CERTIFICATE

GRG Food Quality Testing Laboratory

(A unit of PSGR Krishnammal College for Women, GRG Trust)

Date:27.02.2025

Certificate

This is to certify that **Ms.Kondaveti Charishma** studying **B.SC (Microbiology, Biotechnology, Biochemistry)** at **B.V.Raju College , Bhimavaram** has undergone internship training in the **Qualitative and Quantitative analysis of Food & Agricultural products and Water in Biological and Chemical** disciplines at the **GRG Food Quality Testing Laboratory**, Peelamedu and Coimbatore for a period of **7 Days** from **February 20, 2025**, to **February 27 ,2025**.

We wish her all the best for her future endeavors.

Secretary

N. Yesodha Devi

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