

UGC Sponsored Two-day Workshop on Molecular Biology Techniques

The PG and Research Department of Zoology organized a two day Workshop on Molecular Biology Techniques on 08.08.19 and 09.08.2019. The Chief Guest **Dr. M. Akbarsha, Research Co-coordinator of our College** inaugurated the Workshop and delivered the inaugural address. Initially he stated that anything connected to gene was called Molecular Biology. He said that the discovery of Mendal and Darwin laid the foundation for the evolution of molecular biology in the 18th century. He recollected the history of DNA discovery and the experiments conducted by Frederick Griffith regarding bacterial transformation, Avery, McCarty, & MacLeod's transforming principle and Hershey & Chase's transmission principle of genetic information in T2 bacteriophage, which used E. coli as its host bacterium. He also referred to Rosalind Franklin's X-ray crystallography DNA image which helped James Watson and Francis Crick to create their double-helix model and the Nobel laureate Marshall Nirenberg who found the key to the genetic code by deciphering different combinations of three nucleotide bases. He highlighted the fact that our modern understanding of DNA's role in heredity had led to a variety of practical applications, including forensic analysis, paternity testing, and genetic screening for various diseases.

Regarding the molecular techniques he started with Recombinant DNA (rDNA) technology and further explained the different steps involved in the process of joining DNA molecules from two different sources and inserting them into a host organism, to generate products for human use. He further described Polymerase Chain reaction carried out in a thermo cycler which *is a fast and inexpensive technique used to amplify small segments of DNA. Finally he concluded with latest microarray technique which is a laboratory tool used to detect the expression of thousands of genes at the same time. This technique is used to study the expression levels of genes in the cancer cells by which doctors can better diagnose and treat cancer. However, this technique is now replaced by simple Green fluorescent protein (GFP) widely used to tag proteins and to study the dynamic changes of cellular processes in living cells.*

After the inaugural session, participants were given hands on training in molecular techniques by Dr.S.Muhil vannan of PAR Life sciences and Research private ltd. Trichy-3. Thirty student participants were given training in various aspects like Sample/Tissue

extraction, incubation of sample/tissue, centrifugation of sample, DNA extraction, DNA isolation and run the GEL. In between, Dr. G. Nagarjan, Senior Scientist, SRRC, ICAR-CSWRI, Kodaikanal, delivered a talk on recent trends in biotechnology. He rendered a detailed explanation about the importance of biotechnology in the field of animal breeding. The valedictory function was held on 9th August 2019. Dr.S.Muhil vannan delivered the valedictory address and distributed the certificates to the student participants.