

Biotechnology assignment

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Biotechnology BY sepal-Aria Biotechnology and its Prospects: Past and Present situation in Nepal The word ' biotechnology itself sounds whimsical and it does have some research glamour on It but in the simplest way biotechnology Is the research oriented subject where people can do research from zero level to gene level. Science and Innovation has taken a great leap, have deciphered thousands of human life related riddles that were unanswered two decades ago. In quest of discoveries, biotechnology has emerged as a new field with a wide and deep scope which is why, biotechnology is one of the eating areas in life sciences research.

Many experts label biotechnology as a new arena of science but rather than being a completely novel subject, it is an advancement of some of the ancient techniques. Though the term ' biotechnology seems new, the fact is, our ancestors used to practice it since ancient times way before the emergence of the term itself. For instance, fermentation technology is a vital area of biotechnology and it is used all around the world in brewing industry, dairy industry and many others, but it is also true that It has been ongoing from entries ago.

Some people would like to define biotechnology as an area of study where we can play In molecular and gene levels. In context of Nepal, this area Is still In nascent stage not because of lack of qualified researchers but because of lack of vital Infrastructure, research and development (R&D) section and also due to the dearth of proper law, policies and regulations. Nevertheless, there are very few institutions that offer undergraduate and post graduate degree in biotechnology in Nepal.

In case of undergraduate study, some institutions offer Bachelor of Science (BBS) in Biotechnology such as in SCAN International College and Lord Buddha Education Foundation (LUBE), while Bachelor of Technology (Batch) in Biotechnology program is offered in Katmandu University, Whitehorse Institute of Science and Technology (being refrained as Asian Institute of Technology and Management) and Kantian Valley College. The main difference in BBS and tech programs is the courses that are incorporated in each program.

Batch program comprises more engineering portions than in BBS however both of these programs incorporate all the essential core courses of biotechnology. The major courses being offered with biotechnology programs are basic physics, chemistry, mathematics, computer programming and core courses such as microbiology, immunology, cell biology, biochemistry, molecular biology, genetic engineering, statistics, developmental biology, enzyme technology, plant and animal tissue culture, plant and animal biotechnology, food and environmental biotechnology and bioinformatics.

The courses such as biochemical engineering, processes engineering, downstream processing, chemical engineering, electrical engineering etc. are also included within Batch program. As for the post graduate degree, we have M.S. Biotechnology in Central Department of Biotechnology (Tribhuvan University), Lord Buddha Education Foundation (LUBE) and National College under NIST Education Foundation. It is really unfortunate that biotechnology is still not being formally recognized as a vital research area here in Nepal.

To be blunt, we are compelled to practice the same are almost no substantial discoveries and innovation from Naples researchers. We have renowned experts and the dedicated scientists but their full potentials are not Ewing explored due to negligible funding provided by the government and the forever burning issue of load shedding. However, biotechnologist from Nepal are determined to take it to the next level.

Establishment of organizations such as Nepal Academy of Science and Technology, Nepal Agriculture Research Council, Centre for Molecular Dynamics- Nepal, Research Institute for Bioscience and Biotechnology, Great Nepal etc. Are fueling up the scope and importance of biotechnology. Young biotechnologist are now evolving even more competent as entrepreneurs and this is he positive sign for young people who are determined to change the economy of country by establishing biotech companies.

We need more research institutes but we need even more biotech industries to apply the research outcomes to produce cost effective products. Biotech products such as tissue cultured disease free plants and seeds, befouls, vaccines, antibodies, drugs from medicinal plants, antibiotics etc. Must be manufactured in a commercial scale by biotech industries. This approach not only generates employment opportunities and assist in uplifting economy but also contribute towards human welfare and society.

However, improvements so far are not ample enough. In global scenario, foundation and prospects of this area are much more robust and it's mounting day by day. Naples researchers need more state of art education, cutting edge technology and quality research exposure in order to be

competent for the global market. But it is a matter of great relief that despite of the slow improvement of this field in Nepal, we can proudly say that we are in a better status in comparison to the condition that this field had 6 years earlier.

Each individual must be aware about the plethora of opportunities that biotechnology sector provides to the scientific community and the society. What we need to focus is on quality rather quantity of researches. Naples young biotechnologist are doing good Job on research fields and they are capable of conducting high quality research works. To be a refined scientist, a biotechnologist needs to possess three basic qualities: knowledge on core subjects, passion for research work, and the patience to conduct research works. Biotechnology, itself a multidisciplinary subject and offers various research areas.

For instance, biotechnologist can pursue careers in biomedical sciences such as in disease diagnosis and therapeutics ranging from infection to cancer or agriculture, pharmaceuticals and drug discovery, food and intracellular, environment, clean energy and renewable energy etc. It would not be wrong to say that biotechnology is a highway with lots of sub roads. It depends on which way an individual desires to explore. Nowadays young students are captivated towards this subject for their higher study because of the global prospects it holds.