

News Details

A statutory body essential to stem lowering standards in BT education

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Dr Krishna M. Ella, the Chairman and Managing Director of Bharat Biotech International Ltd. (BBIL) and Co-Chair of Working Committee of National Biotech Policy (HR and Innovation), says the rate at which the Biotechnology Industry in India is progressing is heart-warming. But the same cannot be said in the area of human resource in biotechnology. There are several issues that need to be tackled to ensure the progress that has been made in this sector, says Dr Ella in an exclusive interview with YV Phani Raj of Pharmabiz. Excerpts:

Do you think the existing biotech curricula in India is sufficient enough to serve its purpose?

The course content of biotechnology as a subject in India needs an immediate re-look. Unlike pharma education, which is historically well established with organized syllabus, adequate lab exposure and training, biotechnology curricula is still evolving. Due to lack of exposure, many colleges and universities in the country offering biotech courses are not providing a standardized content material. The course content seems to swing between being either too academic or too general without any specific, well-planned practical training or lab exposure.

The faculty, too seem unaware of the revolutionary changes taking place in industrial biotechnology in the areas of production, R&D, GMP guidelines among others.

India has about 1,50,000 M Scs and 3,50,000 B Scs but fewer post-doctorals compared to the US and majority of them have no exposure to industrial research. This puts biotechnology students at a disadvantage when they set out to carve their career path in the industrial sector.

To fulfil the above requirements, it is important to create a learning programme in the area of biotechnology and its ancillary fields. The need of the hour is to envisage a multidisciplinary curriculum that will cover all aspects of biotechnology including understanding process principles, experimentation, animal and plant technologies, bioinformatics, basics of project management, IPR issues, business values and finances in BT.

Separate modules for students and corporates need to be created, which will focus on different themes. The student course will emphasize on practical hands-on training, teaching the ethics of GLP and a fundamental know-how of BT management.

Courses on biotech equipment & technology, short-term & long-term courses on bio-safety, specific specialisations on patents & IPR, increased course content on regulatory frameworks, inclusion of biotech in marketing and allied subjects, can make the difference.

Does India have efficient training facilities to train candidates to match the industry needs?

Unlike IT courses where lab exposure is minimal, it is imperative that we understand the significance of providing hands-on experience for biotechnology students.

The B Sc course in biotechnology was started in few colleges in the country, about a decade ago, as a vocational programme of the UGC, with UGC's syllabus, guidelines and financial support. But subsequently, several colleges in the country were given affiliation for B Sc biotechnology, ignoring UGC norms regarding sanctioning vocational courses, with the same regulations and syllabus. This needs to be addressed immediately.

M Sc students should be given six month short-term scientific projects at CSIR Laboratories, students should

be encouraged to take up specializations in GMP, GLP, DCP, Validation and Quality Analysis.

Creating vocational courses will ensure a steady stream of HR for biotech industry. This sparks off another essential aspect - entrepreneurship. In this aspect, women can play a vital role in changing the dynamics of industrial biotech. This would encourage women entrepreneurship in creating ancillary industries that support and nurture biotech industry in India.

I propose that the State Governments and the Department of Biotechnology, in collaboration with the industry should establish instrumentation and training centres in a few key locations in different states, where students can get trained and research workers can get instrumentation services, on payment of prescribed charges, so that expensive facilities required for most of education and training in biotechnology need not be duplicated.

Taking one step further, it is imperative to create educational opportunities for professionals from related fields such as pharma to hone the necessary skills for creating their career path with biotechnology industry. Creation of educational resources, self-training modules, information about advanced courses, research and fellowship opportunities, and links to various conferences and meetings around the world are essential.

What is the scenario on industry-academia collaboration in India? Does this need to be improved?

In the last two decades a new entity has emerged on the campuses of America's research universities. This entity is known as the University-Industry Research Center or UIRC. Such centers are composed of research groups whose focus is on problems that have relevance to a particular sector of industry; often the centres receive support from that industry. In 1990, more than 1,000 centres existed and involved more than 35,000 faculty and researchers and 17,000 Ph D students. Many more exist today.

Do you feel the time has come to create a policy framework to address HR issues in BT?

Biotechnology plays an important role in the economic development of the country in all the sectors like medical, human health, animal health, pharmaceutical / new drugs, agriculture and environment and it is indeed laudable that the Department of Biotechnology has identified human resource development as an area of high priority during the 10th five year plan in order to generate trained / skilled human resource in this critical and high tech area of biotechnology.

But creating a specific framework is the need of the hour. Let me quote this example:

Currently there are four categories of M Sc course in biotechnology in the country supported by the UGC, Department of Biotechnology, AICTE (in engineering colleges) and the University system. This has resulted in the lack of uniformity in requirements, the quantum of financial support and the consequent lowering standards of education.

In view of this distressing situation, which threatens to soon seriously defeat the national effort to derive benefits from biotechnology, I stress the need to put in place a Biotechnology Council of India (BCI), an independent statutory national body, on the lines of the Medical Council of India, Dental Council of India, Pharmacy Council of India and the All India Council for Technical Education.

The chief role of such a statutory body would be to ensure standardization in biotechnology education and training in the country. The BCI should be empowered to grant recognition for those institutions that meet such standards, set with reference to qualified and trained teaching staff, infrastructure, adequately equipped laboratories, etc., that are essential for a focused education in biotechnology. I would like to quote the recent de-recognition of several institutions that did not meet with the minimum requirements, by the Dental, Pharmacy and Bar Councils of India.