

Significant Strides



R. S. Paroda

Having been associated with DBT over two decades, R.S. Paroda has helped both shape and implement DBT's programmes in the field of agri-biotechnology. Here, he takes a close look at the same.

It gives me immense pleasure to note that the Department of Biotechnology (DBT) has completed 25 years of its eventful service to the nation. I have had the opportunity to be associated with DBT from its formative years in mid-eighties when it was under the Department of Science and Technology (DST). Thanks to the support of policy makers and special efforts of Dr. S. Ramachandran that it became an independent Department under the Ministry of Science and Technology. Over the years, DBT has made great strides under the dynamic leadership of Dr Chittranjan Bhatia, Dr Manju Sharma and Dr M.K. Bhan.

DBT, from its very inception, had laid considerable emphasis on agricultural biotechnology and provided liberal support to various projects at the ICAR Institutes and the State Agricultural Universities (SAUs). During my tenure as Secretary, DARE and Director General, ICAR, Dr. Manju Sharma and I had established a joint panel of senior officers to coordinate programs between the two organizations to

support research and education in the field of agriculture biotechnology. It indeed proved to be an extremely fruitful partnership, which laid solid foundations for harnessing the fruits of this new science for agricultural development in India.

One of the earliest such projects was the National Facility for Plant Tissue Culture (NFPTCR), established in 1986, at the National Bureau of Plant Genetic Resources, New Delhi where I served as Director at that time. The NFPTCR had been mandated to undertake in vitro conservation of economic plants; cryo-preservation of seeds, pollen and in vitro cultures, and studies on genetic stability; biosystematics and evolutionary pattern of economic plants of Indian origin. NFPTCR pioneered the establishment of in vitro and cryopreservation infrastructure for plant genetic resources in the country. Its scientists developed new protocols of in vitro conservation and cryo-preservation of a number of horticultural, spice and medicinal plants. Molecular marker studies initiated at the centre resulted

in unraveling the diversity and evolution of several indigenous crops. This unit was later elevated as the National Research Centre on DNA Fingerprinting and has made significant research contributions through biotechnological approaches for plant germplasm conservation, and also helped in capacity building through various training programs organized at the national and international levels.

In 1999, the National Facility for Virus Diagnosis and Quality Control of Tissue Culture Raised Plants was established as a multi-institutional network project at 6 centers including IARI, New Delhi and IIHR, Bangalore. As a result, the PCR based techniques were developed for virus detection in potato and citrus and several new viruses were discovered at IARI. At the Indian Institute of Horticultural Research (IIHR), diagnostic services for detection of viruses in several horticultural crops were established.

In the same year, DBT supported the establishment of National Containment-cum-Quarantine Facility for Transgenic Planting Material at NBPGR which, ►►

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25 YEARS OF DBT



► besides creating an excellent P4 level facility, had the mandate to develop molecular probes/markers for the detection of transgenics and quarantine processing of transgenic planting material in containment. Along with the regular quarantine services provided by NBPGR, this unique facility enabled an operation of a single window system for the introduction and quarantine certification of planting materials meant exclusively for research.

The credit of building partnership in the Global Rice Genome Project should also go jointly to DBT and ICAR. The scientists at the National Research Centre on Plant Biotechnology (NRCPB), being a part of Indian Agricultural Research Institute (IARI), New Delhi completed its share of rice genome sequencing much ahead of the original schedule, thus bringing considerable credit to Indian science.

ICAR was also privileged to be associated with DBT for the establishment of the country's regulatory framework for testing and release of genetically modified

crops. This was a period of intense cross-sectoral interaction which led to framing of Recombinant DNA Safety Guidelines, Revised Guidelines for Research on Transgenic Plants, Guidelines for Toxicity and Allergenicity, and the Evaluation of Transgenic Seeds, Plants and Plant Parts.

I am also very pleased to acknowledge the support that DBT has been lending to public-private partnership to ensure out scaling of innovation for the benefit of end users. Establishment of Biotechnology Consortium of India was one such effort with which I was closely associated. It is my firm belief that the fruits of agricultural biotechnology can only be harnessed by our farmers when we have strong Public-Private- Partnership. This is an area where much is yet to be achieved through provision of an enabling environment.

One of the best successes of agricultural biotechnology in India had been through a conscious and rather very bold decision of releasing Bt cotton. Eventually, this led to "Fiber Revolution" in India

in less than a decade. The area coverage from almost nil in 2000 has now touched more than 9.4 m ha and cotton production has doubled. Beside, the pesticide use has gone down by almost 40 per cent and our cotton export earnings have touched more than 1.5 billion US dollars per year. As a result, the poorest of the poor farmers have been greatly benefited. I wish we harness similar fruits in case of other GM food crops like maize, soybean, rice and rapeseed-mustard.

To enable us to achieve this dream, both DBT and ICAR will have to strive hard and accelerate their efforts in the area of Policy Advocacy and Public Awareness while improving further on existing regulatory measures.

Let me conclude by saying that the initiatives and support of DBT for an all round development of biotechnology in India have indeed been commendable. I feel privileged in congratulating DBT on its Silver Jubilee and wish many more successes in the years to come. ■

STAR COLLEGE SCHEME

PROPOSALS FROM UG COLLEGES OF INDIA

Department of Biotechnology, invites applications from colleges offering undergraduate education in Life Sciences under 'Star College' Scheme to offer young scholars at UG level an opportunity to excel in a career in life sciences & biotechnology. The initiative provides support for (i) Improving knowledge and skills of teachers in basic life sciences and specialized techniques, (ii) Access to specialized infrastructure to students, (iii) Assurance of consumables, reagents and chemicals for students, (iv) and substantial hands-on experience in designing and conducting practical biotechnologies and critical thinking, (v) Access to knowledge banks with strong support of books and journals including e-journal facilities. The program does not envisage initiating new UG courses in Biotechnology but improving practical training in existing Life Science courses.

To apply, you must be among the top three life science undergraduate programmes

in your city based on (i) Cut of percentae for admission to undergraduate courses in life sciences, (ii) Result of undergraduate course - pass percentage, percentage of Ist division candidates and (iii) No. of faculty with Ph.D. Private colleges are not eligible to apply.

To obtain details to apply, please visit DBT website : www.dbtindia.nic.in Duly filled proforma (15 copies) may please be sent to : **Dr. Padma Singh**, Scientist 'C' Department of Biotechnology, Ministry of Science & Technology, Block-2, CGO Complex, Lodhi Road, New Delhi - 110003 E-mail : padma.singh@nic.in

**Last date for Submission of Proposals :
31st October, 2011**