

IMPORTANT ACTIVITIES AND ACHIEVEMENTS OF THE DEPARTMENT OF BIOTECHNOLOGY DURING 2009-2010

The objective of the Government of West Bengal is to undertake a major initiative for biotech-based products, processes and technologies in order to enhance the cost-effectiveness and productivity of agriculture, modern medicine, healthcare, pollution control, bio-diversity conservation and bio-industrial development with the view to ensure scientific and technological empowerment of the people of this state and societal development.

Towards this end the Biotechnology Department has taken up multifarious activities in the field of generation of alternative income and poverty alleviation, nutrition, food security and ecological balance. This Department has thus formulated a composite scheme in a scientific way of fostering rural and sustainable development. This is totally dedicated to the poorest of the poor and covers the field of *i) Tissue Culture, ii) Cultivation and Popularization of Medicinal and Aromatic Plants, iii) Mushroom, iv) Lac, v) Food Preservation, vi) Vermi-composting, vii) Biofertilizers, viii) Biopesticides, ix) Biofuels etc.*

Presently, more than thirteen scientific research and promotional projects are running with full financial assistance and support of this Department. These are mainly in the realm of bioinformatics, biofuels and overall societal development.

These fourteen R & D projects are :

1. Performance and emission test along with durability test for different Tree Borne Oils (TBOs) in agricultural diesel generator set.
2. Study of anemia among rural women in some districts of West Bengal with a view to identify biotechnological remedies.
3. Upgradation of infrastructure for DOEACC (earlier named as Department of Electronic Accredited Course) bioinformatics O/A/B level scheme.
4. Promotion of Lac Cultivation – an Income Alternative for the Forest Fringe Dwellers of Ayodhya Hill, Purulia, West Bengal.
5. Collection and Identification of Mycorrhizal Edible Macro fungi from the Forest of South Bankura District (Block Raipur and Ranibandh) and Development of their in situ Propagation System.
6. Establishment of a Resource Centre for Hardening of Tissue Cultured Plantlets at the Women's Technology Park, Sagar, Sundarban, West Bengal.
7. Biotechnological studies in Tea Demonstration & Field trials for new tea plant genotypes at Nagar Berubari, Jalpaiguri, West Bengal.
8. Generating Awareness and Lac Cultivation by IMAP (International Mass Awareness Programme) in Paschim Medinipur.
9. Bio-sensor for Uric Acid Estimation.
10. Optimizing Petal Yield and process standardization of Extraction, purification and precise Estimation of Marigold Lutein & Lutein-

esters for technology transfer to Entrepreneures of the Floriculture-based Industry in West Bengal.

11. Developing specific biotech strategies for identifying long lasting, economical and eco-friendly measures for controlling major fungal diseases of some widely cultivated horticultural crops of West Bengal.
12. Developing a new software as an improvement over the Existing System of Colposcopy in Cervical Cancer Screening and Treatment of pre-cancerous Lesions of Cervix (Colposure).
13. Using mutation and domain swap to investigate function of two metallothionein genes from the Typha angustigolia in heavy metal tolerance, detoxification and ROS scavenging.

With regard to physical achievements of this Department about 100 acres of land has been acquired near Kharagpur in West Midnapore district in order to set up a Biotech Park in association Indian Institute of Technology, Kharagpur. This Department is eager to develop this Park on Public-Private Partnership (PPP) model. Recently one consulting Agency has been recruited and they visited the spot with Departmental Officers to assess the potential of the place. They have already found some potential investors. Another Biotech Park at Salt Lake is on the anvil. Besides a Seed Activity Facility in collaboration with the Department of Information Technology is being developed in Salt Lake.

A Departmental Technical Committee has been constituted in order to study and examine the overall feasibility of the various proposed schemes and projects on research and development of biotechnology that are submitted by individuals / institutions / organizations for government grant in aid.

The Department of Biotechnology in association with the Department of Health and Family Welfare, Government of West Bengal have been extending all possible help for establishing the National Institute of Bio-Medical Genomics (NIBMG), an autonomous institute of Department of Biotechnology, Government of India at Kalyani, West Bengal. The Department has also provided financial help to NIBMG in its social outreach programme in the locality.

It is also stated that the “West Bengal Biotech Development Corporation Limited” has recently been set up in order to handle the commercial and promotional aspects of Biotech Parks, different projects, schemes etc. The WBDCL is now fully functional.

Efforts are on for setting up a bio-incubator which is essential for attracting any biotech based industry to the state. For this purpose after formation of West Bengal Biotech Development Corporation Ltd., 2 modules (1000 sq. ft. each) were taken on rent from WBEIDCL (Webel) at SDF Building, Sector-V, Salt Lake. The basic infrastructure has already been developed. The Corporation will arrange for bio-incubation facility and DNA sequencing machine as “Common Instrumentation Facility”, which will be provided to various companies on “pay per use” basis. Four Companies have already confirmed their participation, one of which will start

functioning within a couple of weeks. The whole thing is being done under the technical supervision of B.C. Guha Centre for Genetic Engineering and Biotechnology under University of Calcutta with whom the Corporation has already signed a MoU in this regard. Three more modules will also be taken in SDF building soon for similar use.

Meanwhile, on a piece of land in Sector-V, measuring about 1.5 acres, it has been planned to develop 2 (two) G + 15 buildings, one for IT and the other for biotech activities. The total built up area available for state of the art biotech activities will be 16,000 sq. m. The work will be done by WBEIDCL (Webel). But as it will take some time to develop; all-out stress is being given for optimum use the modules in SDF building in the meanwhile.

The website of the Department, [http:// www.biotechbengal.gov.in](http://www.biotechbengal.gov.in) has been thoroughly revamped. Now it provides the information database of research projects funded by the Department. Regular updating of the website is also being done.

It is also our pleasure to state that this Department has published a comprehensive booklet in Bengali on various initiatives of rural biotechnology that can be taken up by the individuals, co-operative societies, NGOs to promote the same in remote areas.

On the promotional side this Department has been actively participating in various seminars, fairs and conferences. In June 2009, this Department participated in a 3 day-long International Seminar “Bangalore Bio-2009” in Bangalore, Karnataka.

The Department of Biotechnology, Government of West Bengal has chalked out various plans for 2010-2011 :

1. *Promotion of Biotechnology :*
 - a) Development of awareness among the rural populace about biotechnology.
 - b) Meetings, trainings, demonstrations, dissemination programmes, exhibitions etc. with Panchayats, Panchayat Samities, Zilla Parishad and district level officials etc.
 - c) Distribution of published materials among people.
 - d) Development of State of the Art Common Instrumentation Facility for promotion of high-end biotechnology.
2. *Scientific Research in Biotechnology :*
 - a) Assistance to scientific bodies in West Bengal.
 - b) Financial support towards : *i)* Human Resource Development, *ii)* infrastructural facilities, centre of excellence etc., *iii)* Research and Development, *iv)* Bioinformatics, *v)* Rural Biotechnology for Social Development.
3. *Support to Scientific Institution / Professional Bodies :*

The Department is always ready to extend help to a conducive research atmosphere and contribute towards societal development through continuous development of newer techniques of Biotechnology.
4. *Mission for biodiversity conservation and Bio-industrial Development in West Bengal :*

- a) Improve the quality of life through the application of appropriate method of biotechnology.
- b) To optimally focus on resources for Research & Development in biotechnology.
- c) To encourage and facilitate introduction of biotechnology at the grass-root level to generate employment and strengthen the economy of the state.
- d) To encourage agro-based biotechnological activities for the promotion of village level industries in the state.
- e) To develop competent human resources at different levels in the field of biotechnology.
- f) To support employment generating schemes in the field of biotechnology and the allied sectors.
- g) To focus on employment generation potential of all biotechnological schemes forwarded by the districts.