IITA
Transforming African Agriculture
CGIAR
Bioscience Center

Bioscience Center

In pursuit of innovation and discovery!

The Bioscience Center of IITA was established in 1990, at the beginning of the genomic revolution and spread of DNA technology. In subsequent years, we have expanded and evolved to keep abreast of the rapidly growing scientific technology.

Being one of the leading biotech laboratories in sub-Saharan Africa, the Bioscience Center has served as a pioneer center of excellence for harnessing molecular biology technologies for the improvement of African crops including maize, cassava, and yam, among others. Given Africa's myriad of problems – population growth, climate change, poverty, education - Agricultural-Innovation is vital to enhance productivity and ensure food security.

Our research has been featured in more than 150 national and international media outlets including Nature News, Discovery News, Nature Biotech., CNN Earth's Frontiers, Guardian, The Standard, SciDev Net, Crop Biotech Update, Science Times Magazine, Science News, and American Scientist to name a few.

The main activities of the Center are:

1. Genetic Characterization

Aims at discovering desirable traits and describes the germplasm collection of the Genetic Resouces Center for crop improvement – high yielding, disease resistant, quality varieties.

2. Molecular Plant Breeding

Of importance here is the development of genomics tools to accelerate the development of superior varieties of maize, cassava, yam, plantain, and other crops. Varieties with high nutritional quality that give high yield under disease and pest pressure or when there is shortage of rainfall caused by climate change.

3. Plant Disease Diagnostics

Development of user-friendly and affordable tools for disease diagnostics. Determining the causal agent of a disease is a key to designing appropriate control measure. Furthermore, diagnostic tools help us to preempt emerging threats – new plant diseases.

4. Plant Genetic Engineering

Genetic engineering (transgenics) is the introduction and stable integration of genes into the genome and their expression in a transgenic plant that offers a better alternative for the genetic improvement of crops not amenable to conventional cross breeding. Despite technical difficulties of transforming a monocot species, transformation protocols are available at IITA for many banana cultivars and several cassava landraces while the protocol for yam is under development.

5. Capacity Building

Our world-class training in biotechnology has attracted numerous young scientists and sparked the interest of many. The Bioscience Center has served as Africa's gateway to modern technologies and a platform for innovation and discovery for over two decades. Research institutes in Africa tend to lack adequate infrastructure and expertise to realize the full benefits of this technology. The laboratory has research facilities and equipment that have been widely used by researchers from national programs, postgraduate students, youth corpers, and industrial trainees. We have also trained students and researchers from various countries around the world. We are proud to have former trainees who hold high government positions, work in CGIAR centers, and other advanced laboratories across the world.

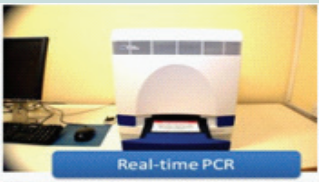
Services

The following services are provided to our partners

- Nucleic acid isolation and analysis
- Genotyping of various types
- Bioinformatics
- Cytogenetics (ploidy analysis)
- Tissue culture and in vitro propagation
- Pathogen diagnostics and characterization
- Training in laboratory techniques

Bench space

IITA scientists working on diverse molecular laboratory techniques as well as scientists from AfricaRice and JIRCAS, Japan constitute a critical mass of biotech experts working on a range of crops and biological questions with resultant synergetic effect. With the current capacity of at least 36 technicians, we also provide access to laboratory facilities to collaborators and partners. Space is available to NARS partners and other users.



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