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DNA Bar-coding: New perception for Bio-resource management

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Biodiversity in agricultural systems is under pressure worldwide. The loss of genetic resources due to their declining use in modern agriculture has resulted in major concerns about the future vulnerability of agricultural production and related pest and disease risks and food security. Climate change and increasingly dramatic shifts in land use threaten to exacerbate the existing biodiversity crisis. Various international conventions have addressed this topic; this has moved the conservation and sustainable use of genetic resources issue to the top of the international development agenda. Over the past decade, a series of important steps have been taken to protect agro biodiversity in particular, which mainly includes the plant genetic resources on which agriculture depends. These and further efforts are vital for enabling countries and communities to meet their food needs, for improving rural livelihoods, and ultimately for protecting the well-being of all people now and in the future. A prerequisite for conserving biodiversity is proper identification and establishment of identity of a particular entity. Taxonomical characterization is a tedious and time consuming task, especially for plant species with long life cycle. DNA bar-coding is emerging as a preferred global standard in molecular taxonomy, which promises to bring a significant level of automation, standardization and high-throughput data analysis for identification of biological entity. The need for a rapid, accurate, identification of closely related genotypes can be achieved by DNA based identification system .Assessment of diversity by using molecular markers has recently been proposed and demonstrated on a large scale through the use of a short DNA sequence. DNA bar-coding has already proved useful for identification of animal species. In plants it is only beginning to attract the attention of the DNA bar-coding community.

Biography

Sharmila Dutta Deka has completed Ph.D. from Indian Agricultural Research Institute New Delhi and presently working as Associate Professor in the department of Agricultural Biotechnology, Assam Agricultural University Jorhat. She obtained merit scholarships at various stages during her studies and two international fellowships for capacity building in the professional career. She is a fellow of Indian Society for Applied Biotechnology and published 15 research articles in different reputed journals and one book chapter in a text book. She has published many extension bulletin also offered many radio talks for benefit of farming community. Presently she is involved in molecular breeding and DNA bar-coding of different crop species in North Eastern States of India.

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