

Bioresource Prospecting in the Post-Genomic Era: New Challenges and Opportunities for Culture Collections in Developing Countries

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While the subject of biodiversity prospecting is gaining increasing recognition in both developed and developing countries, it is undeniable that in practical terms this recognition poses much greater challenges for developing countries, in general, and for culture collection managers in particular. The Convention on Biological Diversity has critically changed the conditions regarding "regulations" relating to access to *in situ* bioresources as well as *ex situ* bioresources, traditionally known as culture collections.

Several microorganisms, including mushroom cultures, have been found not only to produce valuable bioactive compounds and serve as the source of genes with specific genetic traits of potential value, but also to provide a chemical blueprint that provides lead information for developing useful synthetic compounds, through combinatorial chemistry. Furthermore, increasing public concern regarding genetically modified organisms necessitates the setting up of a more rigid regulatory framework to ensure safety.

Consequently, the exchange of biological materials, including mushroom cultures, is subject to an increasingly larger number of regulatory systems, both at the national and international levels. Several developing countries with rich genetic resources have begun to issue or draft

rules and regulations regarding access to bioresources and sharing of potential benefits. While governments undertake most of these new initiatives, it is in fact the private sectors that seem to play a more active and leading role in bioprospecting, including generation of valuable genetic and molecular information and databases.

Therefore, there is a need for stronger networking that is flexible enough to weather these new challenges, in order to make maximum use of new opportunities for greater collaboration between developing and developed countries and between the public and private sectors. Specifically, the most important and urgent issue that needs serious consideration is the development of a process or mechanism for harmonization of various national and global regulatory frameworks for effective and smooth exchange of bioresource materials between culture collections, including private collections. In so doing, due consideration should be given to the development of innovations for distributing potential benefits to bioresource providers when considering the issues of intellectual property rights. In the end, culture collections, or as they are increasingly referred to, bioresource centers, can truly and rightfully serve as intermediaries between bioresource providers and bioresource users.