香港中文大學 THE CHINESE UNIVERSITY OF HONG KONG





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CHINESE UNIVERSITY TO HEAD UNITED NATIONS-DESIGNATED CENTRE FOR MUSHROOM RESEARCH

The Chinese University of Hong Kong has been designated by the United Nations Industrial Development Organization (UNIDO) to set up at its Shatin campus an international centre — which will help developing countries improve and expand their mushroom industries and raise their economic status.

The Centre for International Services to Mushroom Biotechnology will be headed by Prof. Chang Shu-ting — Chairman of the University's Department of Biology and an internationally-recognized authority, who has pursued mushroom studies for 30 years. Dr. J.A. Buswell, Senior Lecturer of the same department, will serve as Deputy Director.

The move has put Hong Kong firmly on the world map as the leading centre for the development of mushroom biotechnology, and at the same time underlines the importance of such technology.

In September, UNIDO approved the allocation of HK\$380,000 to fund Phase One of its programme in preparation for the Centre's formation. Further funding is expected as details of the Centre are mapped out.

"With the formation of the Centre, there will be a home base where mushroom scientists can concentrate on research for the benefit of mankind, especially people from the developing countries," said Prof. Chang.

"Our first task will be to develop a Mushroom Biotechnology Database and Information Network (MUSHNET). Information relating to mushroom production and biotechnology in different countries will be systematically collected and disseminated," said Prof. Chang.

Although mushrooms have been used as food and for medicinal purposes for centuries, and cultivation started as early as 600 A.D. in China, industrial-scale production did not occur until after the Second World War, he said.

Of the 2,000 known species of edible mushrooms, only a few have been investigated thoroughly as to their commercial potential. White button mushrooms are, for example, more common in the Western World and accounted for 38% of world production in 1991. Shiitake/oak mushrooms are, on the other hand, produced in large quantities in Asia, but account for only 12% of world production.

"We foresee a huge leap in popularity of mushrooms as the public become increasingly aware of their highly desirable nutritional, tonic and medicinal qualities and their contribution to environmental preservation," he added.

There had, for instance, been a 96.4% increase between 1986 and 1991 in total world production to 4.27 million metric tons, valued at HK\$66 billion. The leading producers are, however, still in the developed countries including the U.S., Japan, France, Holland — with China being the only exception.

Although mushroom growing has a potential to become a flourishing cottage industry or even large-scale commercial enterprise in developing countries because of the ease of cultivation and the abundant supply of waste materials suitable for cultivation — like cereal straws, banana leaves, sawdust and cotton waste — such development has been hampered by the lack of access to proper technology and training.

"Mushroom-growing technology is a closely-guarded secret in many places simply because it is the growers' cash crop. If you have the mushroom, you'll have the money," said Prof. Chang.

To help developing countries such as Nepal, Bangladesh, the Philippines and India overcome the barriers, the Centre will organize training courses, workshops and offer consultant services.

Other urgent tasks include:

- * setting up a Mushroom Depository and Genebank for the conservation of mushroom genetic resources;
- * undertake research into cultivation technology; genetics and molecular biology of mushrooms; bioconversion of agricultural and industrial waste; mushroom products, processing and marketing.

The Centre will interact with regional and national nodes/resource centres worldwide in providing necessary technological back-up for regional and national development of mushroom-growing and related industries.

Although mushroom-growing is unlikely to flourish in Hong Kong due to the lack of waste materials for cultivation, high labour cost and other limitations, Prof. Chang believes Hong Kong's fledgling biotechnology industry will stand to gain from the first-hand information on mushroom bio-technology available from the Centre.

"Mushrooms have traditionally been used in China and Japan for medicinal purposes, and there has been a recent upsurge of interest in this aspect — leading to the development of pharmaceutical and cosmetic products as well as healthy beverages from mushrooms. This is something that we in Hong Kong can also develop," he said.

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