

**2ND INTERNATIONAL SYMPOSIUM ON TRENDS IN PLANT CELL CULTURE AND
BIOTECHNOLOGY FOR PLANT PRODUCTION AND CROP IMPROVEMENT,
OCTOBER 3-4, 2000**

AND

**ASEAN REGIONAL WORKSHOP ON PLANT BIOTECHNOLOGY, OCTOBER
5, 2000, BIOTEC, BANGKOK (THAILAND)**

PARTICIPATING COUNTRIES : 6 (INCLUDING 3 MEMBER COUNTRIES OF THE CENTRE)

Over the past few decades, there has been an impressive progress in the areas of plant cell culture and plant biotechnology. At the same time, the application of these technologies towards the benefit and well being of mankind has become prominent, particularly on the improvement of agricultural productivity to meet the increasing global demand on food and products. Plant cell and tissue culture technology has played an important role in supporting research and development in the areas of the micropropagation of economic varieties, study and production of herbal medicine, and plant improvement via genetic modification techniques.

As part of its Biotechnology programme, the NAM S&T Centre had organized in association with the Commonwealth Science Council (CSC) a workshop on Tissue Culture of Economic Plants at the National Chemical Laboratory (NCL), Pune (India) during April 1994 (reported at Item III.5 above). As follow up of its recommendations the Centre, apart from bringing out an important publication entitled 'Tissue Culture of Economic Plants including Gene Transfer Techniques', had also organized the 2nd Workshop on Tissue Culture of Economic Plants in October 1999 at Dhaka (Bangladesh) with the active support of APCTT, Government of Bangladesh and Bangladesh Council of Scientific & Industrial Research (BCSIR), as reported at Item III.22 above. The Dhaka workshop came out with several recommendations to promote development and utilization of biotechnology with the active involvement of participating countries, which were circulated to the member countries. In pursuance of these recommendations, the NAM S&T Centre and the United Nations Asian and Pacific Centre for Transfer of Technology (APCTT) jointly organized an ASEAN regional workshop on Plant Biotechnology in Bangkok on 5th October 2000 with the support of the National Center for Genetic Engineering and Biotechnology (BIOTEC) and Mahidol University of Thailand. The event was preceded by the organization of the 2nd International Symposium on Trends in Plant Cell Culture and Biotechnology for Plant Production and Crop Improvement held at BIOTEC, Thailand on October 3-4, 2000.

The ASEAN countries comprising Indonesia (Dr. Koesnandar of the Centre for the Assessment and Application of Industrial and Agricultural Biotechnology in Tangerang), PDR Laos (Mr. Viengkong Sihalath of the

Research Institute of Science of the Science, Technology and Environment Agency, Vientiane), Malaysia (Dr. Marzukhi Hashim of the Malaysian Agricultural Research and Development Institute MARDI in Kuala Lumpur), Philippines (Dr. Lourdes B. Cardenas of the University of Philippines Los Baños), Thailand (Dr. Satal Sriwatanapongse, Director, Thailand Biodeversity Centre, Bangkok) and Vietnam (Dr. Tran Van Minh of the Institute of Tropical Biology, Ho Chi Minh City) attended the ASEAN workshop. In addition, more than 100 scholars from Mahidol University and BIOTEC, Thailand participated in the 2nd International Symposium.

There were 14 guests and international speakers from Australia, Belgium, India, Jamaica, Japan and Thailand. The invited lecture on 'Intellectual Property Rights and Biotechnology' by Dr. P. Pushpangadan, Director, National Botanical Research Institute (NBRI), Lucknow of the Indian Council of Scientific & Industrial Research was circulated, as he could not attend the event. Some of the other presentations included 'A Closed system for Mass Production of Transplants with Minimum Resources and Environmental Pollution' by Prof. Toyoki Kozai of Japan, 'Environmental Engineering for Transplant Production' by Dr. Chalermopol Kirdmanee of BIOTEC, 'The New Agriculture: Genetics and Biotechnology' by Dr. Philip Larkin of Australia, 'From Phenotypes to Genes' by Dr. Theerayut Toojinda of Kaset Sart University, 'Application of Cell Technology for Plantation and Clone Improvement in Thai Tropical Fruits' by Dr. Sompong Te-chato of Prince Songkla University of Thailand, 'Generation of Transgenic Papaya for Resistance to Papaya Ringspot Virus in Thailand' by Dr Thomas Bums of Kasetsart University, and '*In Vitro* Micropropagation of Ginger (*Zingiber officinale* Roscoe) using the Temporary Immersion System' by Dr. Charlene Richards of Jamaica. Besides scientific presentations, the participants presented the respective country reports.

A set of recommendations was adopted at the concluding session as below.

- Modern biotechnology has the potential to provide food and environmental security to the participating countries. Application of modern biotechnology in these countries requires certain resources and policy framework. Institutions such as APCTT, NAM S&T Centre and BIOTEC in cooperation with the participating countries must organize national and sub-regional programmes to enable them utilize modern biotechnology.
- Biotechnology is a knowledge-intensive industry. TRIPS is a global mechanism to protect these intellectual property. The participating countries must put in place the policies and monitoring mechanisms to protect their national intellectual properties. In this endeavour, APCTT and NAM S&T Centre must assist the participating countries to develop suitable national policies and monitoring mechanisms.
- Farmers being a major beneficiary of agricultural biotechnology, participating countries must focus on such biotechnologies suitable to

rural areas and small farmers.

- Transfer of biotechnology is a complex and challenging activity for R&D institutions. Some of the participating countries have experiences to share with others. APCTT and NAM Centre could assist participating countries to develop suitable technology delivery mechanisms based on such experiences.
- Plant biotechnology has been recognized by less developed countries of the Southeast Asian region also as a priority area for their social economic development. Institutions like APCTT, NAM S&T Centre and BIOTEC could organize / facilitate programs for sub-regional cooperation and organize specific national programs to promote capabilities of these countries to develop and utilize plant biotechnology.
- There are apprehensions regarding transgenic plants and genetically modified food products. To address these apprehensions national institutions must disseminate scientific rationale behind transgenic plants and genetically modified food products using mass media.