COMMUNICATION STRATEGIES IN TISSUE CULTURE AND SEED RESEARCH IN THAILAND

Y. YUTHAVONG, 1 K. PHORNSADJA, 2 A. CHUNGCHAROEN, 3 T. O. EISEMON, 4 C. H. DAVIS

1 National Science and Technology Development Agency, 6th floor, Jaran Insurance Building, 401 Rachadapisek Rd., Bangkok 10310 (Thailand), and Department of Biochemistry, Faculty of Science, Mahidol University, Rama 6 Rd., Bangkok 10400 (Thailand)
2 Faculty of Education, Kasetsart University, Bangkok 10900 (Thailand)
3 Institute of Nutrition, Mahidol University, Bangkok 10400 (Thailand)
4 Centre for Cognitive and Ethnographic Studies, McGill University, Montreal (Canada)
5 Program on Innovation Systems Management, International Development Research Centre, Ottawa, KIG 3H9 (Canada)

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Thailand has a growing demand for improved science-based technologies in the agricultural sector. Traditionally strong in agricultural research, Thailand is encouraging agricultural applications of biotechnology through focused research funding. This article provides a brief account of the status of scientific research in the Thai orchid and seed industries, and examines communication behavior of researchers and innovators in Thai universities, research institutions and firms. Researchers produce relatively few written communications in tissue culture and seed technologies, and technology diffusion relies mainly on personal interactions between the researchers, intermediaries, and users of innovations.

Introduction

Effective diffusion of improved technology is an important ingredient in the economic success of a developing country. Thailand has an open, developing economy in which most innovations are imported from abroad. At present, R & D in Thailand is mostly conducted in universities or other public institutions. The proportion of national wealth invested in R & D is still rather low (about 0.2–0.3% of the Gross National Product), and the proportion of research manpower in the population is low also: about 1.4 per 10,000 (MOSTEa, 1988).*

However, a small but significant and growing fraction of advanced technology is generated indigenously. Thailand has potential strength in some areas which, after appropriate nurturing, promise to make major contributions to the country’s socio-

* On the emergence and characteristics of Thailand’s national science and technology policy see Davis, Gaillard and Eisemon (1993).
biotechnology is one such area. It has been given one of the highest priorities for research support by the government over the past few years. Agricultural applications of biotechnology are of central importance in Thailand, both because of the traditional importance of agriculture in the economy, and because about 40% of the total national research and development budget is devoted to agricultural research (MOSTE 1988a).

In spite of significant investment of financial and human resources in agricultural biotechnology in Thailand, little is known about how output from R & D in this area is disseminated to the potential users within the country. This information is of crucial importance, since scarce resources would not be well utilised if the output were of little interest to the users, or if no effective means of diffusion were available. It is necessary to better understand the features of the Thai national system of innovation that increase the likelihood of application by users.

This article reports the results of research on patterns of production and communication of scientific information on tissue culture and seed technology in local and international literature. It reflects a concern to identify indicators of communication within the scientific and technical community as well as from primary producers to intermediaries and endusers.

Status of tissue culture and seed technology in Thailand

Tissue culture and seed technologies play important roles in the modern sector of the Thai economy (Chamchong and Tammin, 1988; Setboonsarng, 1988). The two technologies provide the end users, mainly gardeners and farmers, with crucial inputs: plantlets and new seed varieties. The end users gain access to these inputs from tissue culture and seed companies, which are the main intermediaries, linking the users with the sources of innovations. While the tissue culture industry in Thailand belongs mostly to the private sector, the seed industry has both public and private sector components. The public seed sector has as its focus the National Seed Programme with the objectives of production and distribution of high-quality seeds, mostly rice, corn and legumes, generally for the benefit of small farmers, and has a number of seed production centres throughout the country. The private sector places emphasis on vegetable, corn, sorghum and oil seeds. It is switching from marketing competition to quality-based competition, signifying increased importance of technology-based improvement of seeds. Table 1 provides selected information on tissue culture and seed technology activities in Thailand. Table 1 shows that Thailand