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Unexploited Indian orchids

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If Thai orchids can make big, why not India's!

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On 7 January 2000 my colleague, Chandana Chakrabarti and I visited Bangkok, Thailand. The purpose was to understand how export of orchids, grown through tissue culture, had become the second largest foreign exchange earner, after tourism, for Thailand in a short span of a decade or so. Thailand exports, perhaps, Rs 7,000 crore worth of orchids every year.

And India? None to my knowledge and this is in spite of two glaring advantages India has had over Thailand. We have a far greater variety of extremely beautiful orchids, especially in the Himalayan region. Arunachal Pradesh itself has some 500 of them. Besides, we have had over five decades of experience in plant issue culture, while the origin of plant tissue culture technology is a relatively recent development in Thailand. Why is it then that Thailand has captured the world market for orchids and not India? It is the academia-farmers-Government partnership that has led to the orchid revolution in Thailand. The fruits of the revolution are there for everyone to see. In fact, the highways, the campuses of the academic, private and Government institutions and even the Bangkok airport, in a way, are the exhibition grounds for Thai orchids.

In our quest for tracing the origins of the orchid revolution in Thailand, we met Dr Oradee Sahawacharin, a scientist at the Kasetsart University of Agriculture, who has since then retired (the Thailand Institute of scientific and Technological Research helped us zero on her). She told us how she and her teacher developed a low-cost technology for growing orchids and a system of quick training of the farmers for doing so; the farmers could visit her any time without any appointment. In fact

during our visit with her, she politely left us twice for her lab to advise unannounced visiting farmers. Her office was a 10 feet by 10 feet cubicle in which she even showed us her collection of photographs and material on Himalayan orchids. She said they offered immense potential of commercial exploitation, particularly as the world market was saturated for Thai orchids.

We, later, persuaded one of our large industries, which has some interest in floriculture too, to invite her to India. We were surprised that outside of Myanmar, India was the first country that she was visiting. She offered to help our country if we decided to go in for commercial tissue culture of orchids.

India surprise

In April 2001, Arunachal Pradesh invited me to visit the state and suggest some programs for development in the State. I persuaded two industrialists interested in floriculture to accompany me. In Itanagar, first, and in Zero later, we all were in for three surprises. The first was when we visited the State Forest Research Laboratory, where we learnt that one of their scientists, Dr SN Hegde, had developed a low-cost method of tissue culture for a large number of beautiful orchids that were unique to Arunachal Pradesh. We soon realized that he was, in fact the country's leading expert on Indian orchids and their multiplication by tissue culture. He is the author of a book, "Orchids of Arunachal Pradesh" published by the Government of Arunachal Pradesh in 1984, with a lovely foreword by the late Prime Minister Indira Gandhi. Today, Dr Hegde is the director of the above laboratory, which is one of the country's best, if not the best, forest research laboratories. To find such a lab in a far-flung corner of the country and in a state that has no railway line and no airport was surely a surprise.

Our second surprise was an enterprising farmer, Tilling Dolly, at a place called Zero in Arunachal Pradesh, to which the only approach was through a road that was, for a major part of the way, unmotorable at that time, unless you drive at walking speed, which we did. (You need to look at the map of India and locate Zero in Arunachal Pradesh on it to appreciate what I am going to say in the next sentence.) Dolly had an exquisite farm for growing orchids through tissue culture in Zero. It had state-of-the-art facilities, including a sterile lab, media preparation facility, a laminar flow hood, and an excellent guesthouse. We saw the most exquisite orchids growing on a couple of acres of his farmland. Our third surprise was the excellent links that the State Forest Research Institute had with non-official individuals like Tilling Dolly and private organizations such as a Women's cooperative in Zero that was growing orchids.

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It was, therefore, clear to us that there was enormous potential of commercializing Arunachal Pradesh's orchids grown through tissue culture. The technology had been developed and tried, and there were people both in the Government and in the private sector who were devoted to it and were, above all, willing to cooperate and share. What was required was an additional partner: an entrepreneur from outside of Arunachal Pradesh, who had resources.

In July 2001, Nabam Tuki, the then minister for forests and environment, Government of Arunachal Pradesh, visited us in Hyderabad along with the chief conservator of forests of Arunachal Pradesh and Dr Hegde, by then director of the State Forest Research Institute in Itanagar. The purpose of this visit was to work out further details of the orchid and other projects we had suggested that would lead to generation of revenue for the Government of Arunachal Pradesh and its citizens on a substantial scale. There was no ambiguity in our suggestions and they were agreed to by our visitors from Arunachal Pradesh.

After that, I got a call from Tuki on 29 August 2002 asking for some more information, which I sent through my letter dated 30 August 2002. However, nothing has happened since then and it is unlikely to happen as the Government of which Tuki was a member, has now fallen.

Here lies an enormous untapped resource that is only waiting to be exploited through the non-polluting environmentâ€”friendly technology of plant tissue culture. We have everything we need to do so, except the will and the ability to put it all together.

PM Bhargava

Pushpa M Bhargava is one of India's most brilliant scientists. He founded and directed the Centre for Cellular and Molecular Biology (CCMB), Hyderabad.