

Beckoning Indo-Canadian partnerships

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Dr. [Name], Chemistry, Department of Agricultural, Food and Nutritional Science, University of Alberta, Canada, outlines the relationship between India and Canada, and its future prospects.

Canadian and Indian Governments have recognized the need for a closer collaboration between the two countries and the signing of a Memorandum of Understanding (MOU) between the University of Alberta, Edmonton, Canada, and the Indian Institute of Technology (IIT), Mumbai, is yet another example of institutions in both Canada and India forging ahead on collaborative ventures. Other recently signed agreements include the one between the National Research Council (NRC) of Canada and the Department of Biotechnology (DBT), India; and between the Agriculture and Agri-Food Canada (AAFC) and The Energy Research Institute (TERI).

An area of obvious choice for collaboration between India and Canada would be in the field of agricultural biotechnology. It is needless to point out that India faces significant challenges in ensuring that its population has access to sufficient food of high quality with minimal adverse effects on the environment. Canada and India (as well as all other countries of the world) are faced with changing global climate, which of course, has significant effects on crop productivity. Many of the crop varieties that are cultivated today have reached an yield plateau, necessitating the development of novel varieties capable of maintaining increased levels of productivity despite increased environmental stresses and changing disease patterns.

India and Canada have sufficient and highly complementary core strengths in the areas that are related to the development of novel crop varieties. In fact agricultural biotechnology and food science and technology should join hands to develop novel crops with beneficial health properties and find ways to deliver them as pre-packaged convenience foods. For example, compounds with beneficial health properties can be identified from Indian plants through this collaboration, Canadian and Indian scientists can elucidate their modes of action using the state-of-the-art techniques in genomics and proteomics. Subsequently, metabolic pathways producing such compounds can be characterized and engineered into the crops of

interest, resulting in “functional foods” or, alternatively, provided in the form of nutraceuticals.

There are already a few areas of collaborations between Canada and India, and there is more scope to grow such collaborations. The interest of researchers in both the countries has to be stimulated to materialize such partnerships. In fact, International Science and Technology Partnerships (ISTP) Canada, a non-governmental organization selected by the Government of Canada, encourages partnerships and collaborations such as the above. In India, Global Innovation and Technology Alliance (GITA) has been entrusted with the task of fostering linkages under the auspices of the Department of Biotechnology as well as the Department of Science and Technology, Government of India. In addition, the Shastri Indo-Canadian Institute is another agency that supports partnerships and collaboration between India and Canada.

It is up to individual researchers to identify areas of cooperation, pursue collaborative research that supports the training of Highly Qualified Personnel (HQP) such as graduate students and post-doctoral fellows to jointly overcome the challenges of this and forthcoming centuries, one at a time. HQP are our investments for the future and, therefore, it is important for both the Canadian and the Indian Governments to commit to the establishment of an Indo-Canadian scholarship program to allow the exchange of the brightest minds without hindrance.

Students ahoy

An important aspect of any collaboration between the Indian and Canadian institutions will, undoubtedly, be an exchange of graduates or post-graduate students, post-doctoral fellows (PDFs) and faculty members. Canada has several universities that have successfully developed food science and technology programs, including a program at the University of Alberta that is in high demand. The post secondary education and research environment in Canada is top of the line and comparable to excellent institutions worldwide. The training, a graduate student receives from research-intensive universities such as the University of Alberta, is of high caliber, many PhD holders from Canadian institutions obtain research or other positions in prestigious institutions in various parts of the world.

In addition to top-class universities, Federal and Provincial governments are also conducting world-class research in various fields and, very often, researchers from the universities and these government research institutes enter into collaborative ventures and offer graduate students with unique opportunities pertaining to the application of their research findings. Canadian scientists can therefore provide invaluable guidance towards the development of strategic research in areas pertaining to food science and technology. Furthermore, they can provide guidance with respect to the development of curriculum for successful undergraduate and graduate programs.

Dr Nataraj Kav is a Professor of Biochemistry in the Department of Agricultural, Food and Nutritional Science (AFNS) at the University of Alberta, Edmonton, Canada. Dr Kav has launched a successful proteomics-based research program at the University of Alberta to investigate plant responses to both abiotic and biotic stresses. The proteins and, consequently, genes are manipulated using transgenic technology in order to improve plant performance under stress conditions. Dr Kav's research team is composed of graduate (MSc and PhD) students, post-doctoral fellows and research associates, some of whom are from India and/or the Indian sub-continent.