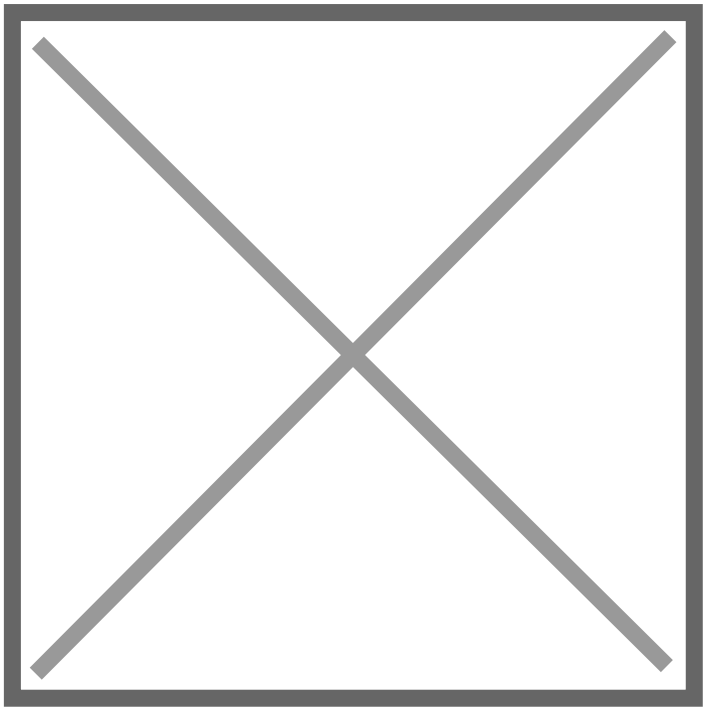
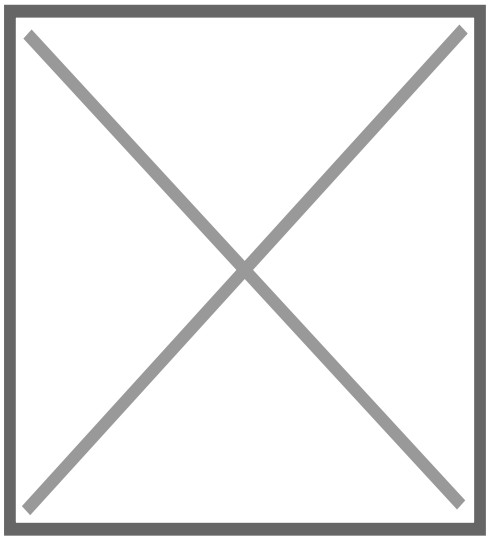
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BioShaker - Dr C Kameswar Rao

11 February 2005 | News



Bush's Indian Bioterror Advisor



Dr C Kameswar Rao needs little introduction to the biotech community. An eminent botanist, he is currently the executive secretary of the Foundation for Biotechnology Awareness and Education (FBAE), a non-profit organization that works to spread biotechnology awareness and to promote sustainable development through safe biotechnologies. Dr Rao is also a member of a US-based committee of the National Academies, which is dedicated to the furtherance of science and technology and to their use for the general welfare.

It is this role which has brought him global prominence now. He is a core member of a committee that keeps a hawk's eye on potential bioterrorism development around the world. Every one knows the passion of US President George Bush in fighting global terror. US fears bio weapons and Rao is probably the only asian to help Bush spot future troublemakers.

A product of Andhra University, Dr Rao started off his teaching career at the Department of Botany, Andhra University, Waltair. He then moved on to join the Bangalore University in 1967 where he served as lecturer, reader, professor and chairman in the departments of botany and sericulture for 31 years until his retirement in 1998.

Dr Rao has published about 60 research papers, two monographs, one book, six booklets in Kannada, and co-authored a text book on Biology for Pre-University. His book, "Database of Medicinal Plants", was published by the Government of Karnataka (2000) and was distributed free of cost and is accessible on the Internet at www.indmedplants-kr.org.

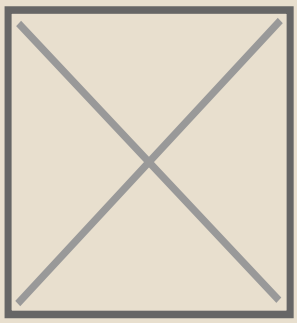
During his career, Dr Rao has received several international academic grants including the Commonwealth Academic Staff Fellow (1980-81); the Royal Society and Nuffield Foundation Bursar (1983-84); the Canadian Institute of Biotechnology grant for an international conference on Biorecognition at Montreal, June 1992; and the European Commission grant for an international conference on Sustainable Agriculture for Developing Countries, January 2003, at Brussels, Belgium.

Dr Rao's research interests are applications of computers and phytochemistry in plant systematics and databases of medicinal plants. He has worked at the Natural History Museum, London and the Royal Botanic Gardens, Kew, UK, on computer applications in Plant Systematics, and developed online packages for the identification of the south Indian dicot

families and the world monocot families.

"India needs transgenic varieties of oil seeds and millets" - Dr C Kameswar Rao

You are a member of the US-based Technology Futures Committee. Can you tell us more about it?
Well, I am a member of a committee of the National Academies called Advances in Technology and Prevention of their Application to Next Generation Biowarfare Threats. The committee examines the current research in life sciences in biotechnology.



Biotechnology is a potential means to combat the danger of bioterrorism, through production of diagnostics, drugs and vaccines against bioweapons and their source organisms. Nevertheless, it can also be a source of bioweapons. Now we have what is known as dual-purpose technologies i.e., those that can be used for beneficial purposes and also for ulterior purposes. See it is not difficult to obtain or to redistribute strains of pathogenic bacteria and viruses from the repositories, under the pretext of research and drug development. The techniques, reagents and information that could be used for offensive purposes are readily available and accessible. The expertise and know-how to use or misuse them is distributed across the globe. So the committee examines the research going on in life sciences in biotechnology and the possible impact of using them in bioterrorism and biowarfare. It recommends to the government changes in practices that could improve the capacity to prevent the destructive application of biotechnology research while still enabling legitimate research to be conducted. Thus the committee helps to minimize threats from biological warfare and bioterrorism without hindering the progress of biotechnology.

How does the general public perceive agricultural biotechnology?
If you talk to people on the streets of India, it becomes apparent that few people are against biotechnology per se. Medical biotechnology, for example, is broadly accepted: there seems to be no reservations about biotechnology if the end result is believed to be improvements in medicine. Agricultural biotechnology is another matter. Although more than 100 generic products have been made available in India in recent years, we have had enormous difficulties in introducing Bt cotton and genetically modified mustard. And we face similar difficulties now with regard to the introduction of 'golden rice'.

The public perception of genetically engineered agricultural products in India is largely one based on suspicion and doubt. This is mainly due to misinformation and ignorance about what agricultural biotechnology is, and what it can do for us.

What do you think is the reason behind the fear and suspicion in public mind?
The anti-technology activists are responsible for all misinformation. Information is taken out of context, blown up out of proportion and disseminated widely through the media. For example, cotton plant contains a polyphenol that is used in medicine as an abortive agent and to induce menstruation, in effect it is an antifertility factor. A representative of a farmers' organization once cautioned that Bt cotton contains this antifertility factor, and this led to a major scare-women refused to pick Bt cotton in the field and as a result, farmers faced delays in picking. But the point is that if Bt cotton has an antifertility factor, it is because it is a cotton plant and not because it is Bt cotton. Hence there is a need for more industry sponsored action to bridge the information gap.

These activists hardly have any scientific background. They seamlessly mix up scientific, ethical, economic, societal and political issues. If you talk about 'golden rice', they will say that it will not reach the poor. Why will it not reach the poor? The agreement between the government and the patent owners is that at any time, if the cost of 'golden rice' is higher than that of a comparable variety of rice sold in the market, the government will have to pay the technology costs, otherwise the technology transfer of 'golden rice' to developing countries is free of cost.

Talking of 'golden rice', I would like to clarify something here. It is a misconception that 'golden rice' contains vitamin A. It actually is rich in beta carotene, which is converted into Vitamin A in our body.

Your comments on the agricultural biotechnology scenario in the country ...
India principally needs transgenic varieties of oil seeds and millets. The cultivation of these crops fell drastically in the past