



# PlantBio

National Innovation Centre for Plant Biotechnology

PlantBio Trust Newsletter

Volume 6 November 2006

## Professor Anupam Varma

### Visits South Africa at the invitation of PlantBio



PlantBio Trust have invited Prof. Anupam Varma to visit South Africa as part of their Distinguished Speaker Programme. Prof. Varma a National Professor of Eminence at the Advanced Centre for Plant Virology, Department of Plant Pathology at the Indian Agricultural Research Institute, New Delhi, will give a series of talks during his visit in November.

Prof Varma has also worked with FAO (UN) to develop the Horticultural Research Institute at Ibadan, Nigeria. He has made significant contributions to fundamental and applied aspects of plant virology. He has developed technologies for sensitive diagnosis of the virus and virus-like diseases of crop plants and has been closely associated with several national and international scientific Academies and societies in various capacities. Prof Varma has published more than 150 research papers and has a special interest in the application of biotechnology for sustainable development and issues related to biosafety of GM crops and Sanitary and Phytosanitary Measures (SPS) measures of the World Trade Organisation (WTO).

Prof Varma will be giving a presentation titled **“Biosafety and Risk Assessment Capacities: Lessons from India”** at the following venues:-

Pietermaritzburg: Monday 20th November at 10h00

Venue: Main Theater, John Bews Centre, Life Sciences Campus, University of KwaZulu-Natal,  
RSVP Helen@plantbio.co.za by Wednesday 15th November

Cape Town: Tuesday 21st November at 12h00

Venue: Lecture Theatre 2, Department of Molecular and Cellular Biology, University of Cape Town  
RSVP Pamela Maseko Pamela.maseko@capebiotech.co.za by Friday 17th November

Gauteng: Thursday 23rd November at 16h00

Venue: FABI Seminar Room, Pretoria University  
RSVP Masego@plantbio.co.za by Friday 17th November

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REPUBLIC OF SOUTH AFRICA



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## SA's Biotech Initiatives host Bio2Biz SA 2006

This year's Bio2Biz SA 2006 Conference, was held over two and a half days in September, hosting 11 International speakers from USA, Brazil, Cuba, Japan, the United Kingdom, and Switzerland as well as 34 Local speakers. The International Conference Centre in Durban proved to be a splendid venue for this successful event which was attended by some 407 delegates.



The Minister of Science and Technology, Mr Mosibudi Mangena declared Bio2Biz SA 2006 open at the cocktail party on the Wednesday evening. The function, held on the Wednesday evening in the Bio2Biz SA 2007 exhibition hall, was attended by the Hon. Mayor of Durban Obed Mlaba, our VIP Guests, sponsors, delegates and exhibitors. The Deputy Mayor of Durban, Mr Logie Naidoo attended the plenary session on Wednesday.



The President of India gave the Phillip Tobias Lecture which was screened live via satellite from India to the INSITE Exhibition which was being held in Sandton, and to Bio2Biz SA 2006 in Durban.

The conference covered a number of topics, ranging from Infectious diseases; Vaccines; Biosafety, Bioethics and Civil Society; Food Security; Diagnostics; Biopartnering; Bioinformatics, functional Genomics and Proteomics; Environmental Biotech; Fermentation, Industrial Biotech and Biocatalysis; and Biofuels.



The Technology Top 100 Life Sciences Gala Dinner, was held at the ICC on the Thursday. This prestigious event showcased some of South Africa's innovations, allowing the entrants to benchmark themselves against their competitors and to launch their products into the national arena. The Guests of honour were the Deputy Minister of DST, Mr Derek Hanekom and the Deputy Mayor of Durban, Mr Logie Naidoo.



The Surialanga Dancer Company gave a performance of intercultural dance, and after a superb dinner, guests were entertained by the Fusion Jazz band.

Bio2Biz SA 2006 also hosted a successful exhibition where 28 companies and institutions from the Biotechnology Industry had the opportunity of showcasing their products and services and to network with stakeholders from this growing industry.

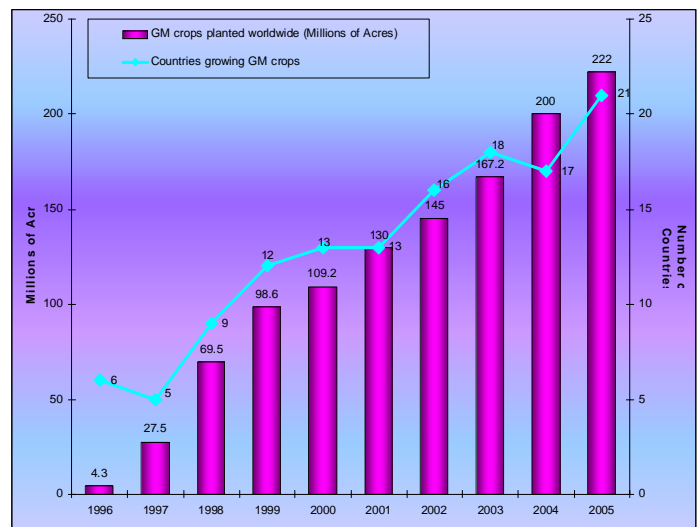


## The ever expanding universe of Biotech products (an excerpt from Nature Biotechnology, Volume 24, Number 3, March 2006)

Over the past ten years, the universe of biotech products has expanded greatly. We have witnessed growth both in the number and type of biopharmaceutical products approved and in the worldwide application of transgenic crops. The acreage of transgenic crops has increased worldwide from ~4 million acres to 222 million acres in just ten years. Approvals that have occurred over the last ten years in the agricultural biotech sector of products with some novel traits include:

- In 1996, transgenic InVigor maize with plant male sterility developed by Bayer AG
- In 1997, transgenic high oleic oil soybean with reduced saturated fat content in the plants developed by DuPont/ Pioneer
- In 1998, uniquely pigmented transgenic carnations was approved in the European Union developed by Nufarm Ltd./ Florigene
- In 1999, herbicide resistant (through sulfonylurea tolerance) transgenic flax developed by Crop Development Centre, University of Saskatchewan
- In 2000, herbicide resistant (through phosphinotricin tolerance) transgenic rice developed by Bayer AG/ Aventis CropsScience
- In 2002, low-nicotine (through antisense technology) transgenic tobacco developed by Vector Group Ltd./ Vector Tobacco
- In 2003, herbicide resistant (through glyphosate tolerance) transgenic bentgrass for golf courses developed by Scotts Company/ Scotts Seed
- In 2004, TrypZean; a recombinant bovine trypsin which is the first commercial plant-produced recombinant protein developed by Prodigene

Other key milestones that have impacted on the agricultural biotech sector include, in 1999, Monsanto, Aventis, Novartis and Astra-Zeneca unloading their agbiotech holdings after a series of scandals rocked the GM crop industry; in 2001, OECD, Bio, the US and EU began promoting eco-friendly, plant-based biomaterials as alternatives to petrochemicals for fuels, plastics and textiles; in 2002 US Farm Bill provided the first substantive R&D grants for the advancement of biofuels and biomaterials and Cargill Dow opened PLA plant to manufacture NatureWorks line of bioplastics; in 2003 Canada's Iogen became the first to use enzyme technology to produce ethanol from wheat straw in the world's first biofuels refinery; in 2004 DuPont joined forces with a British sugar producer (Tate & Lyle) to make a synthetic polymer for textiles called Serono using corn instead of petroleum; in 2005 DuPont announced a major bio-based materials initiative stating that by 2010, 25% of its revenues will come from renewable resources.



**Growth in the Uptake of GM crops Worldwide since 1996 (Source: Nature Biotechnology, Vol 24, No 3, March 2006)**

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## Biosafety Platform in South Africa

### BACKGROUND

South Africa has been involved with genetically modified products since 1990 and it is the only country in Africa where genetically engineered crops have been commercialised. South Africa has a strong biotechnology potential to develop its own genetically modified products that can increase the income of small and commercial farmers reducing, at the same time, health and environment risks of agricultural practices.

The country has also developed a sound regulatory framework for the approval of GM crops. However, the capacities to evaluate the safety of new GM varieties in South Africa need to be built to generate the risk assessment data required by the regulatory system to approve the research and commercialisation of GM crops.

### PLANTBIO'S ROLE

PlantBio has taken the leadership in driving and supporting the development of a feasibility study for the establishment of a Biosafety Platform in South Africa. Recently PlantBio organized a Biosafety Workshop under the India-Brazil-SA (IBSA) Trilateral Agreement that brought together experts from the three countries and has established a strong base for collaboration.

### TECHNOLOGY AND PRODUCTS

Once the feasibility study is finalised, a full business plan will be developed and implemented using existing and newly created infrastructure and capacities in South Africa. As a result, an independent

operational structure with the capacity to co-ordinate, facilitate and conduct risk assessments within South Africa will be established. Information gathering will be facilitated and human health, environmental and socio-economic impact assessments of genetically modified products will be performed. These capacities will be offered to the research community and private companies in South Africa and internationally.

### KEY ROLE PLAYERS

Ms Mamati Tembe, who has worked for four years in the GM crop private sector, has been identified and appointed as the consultant to develop a business plan in order to implement a Biosafety Platform in South Africa.

Key players that have declared an interest in the project are the Innovation Fund (IF) and the National Department of Agriculture (NDA). Other organisations like the Department of Environmental Affairs and Tourism (DEAT), Department of Health (DOH) as well as several research and tertiary institutions will also be invited to participate in the project. International contacts have been established with USAID and AgBIOS as well as collaborations within the India-Brazil-SA Trilateral Agreement network.



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