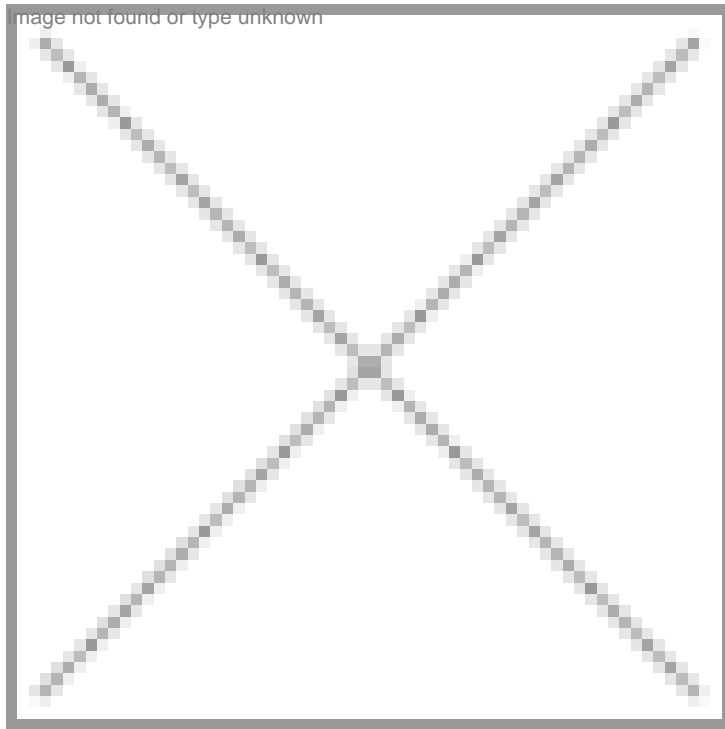


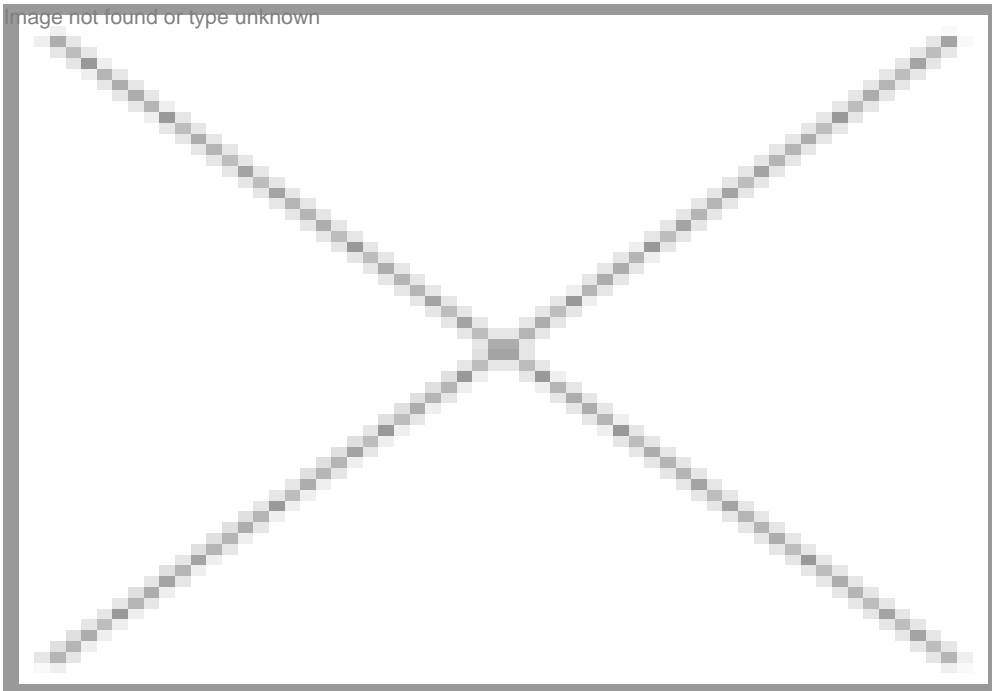
## GM Crops: The Debate

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Why the nation needs it

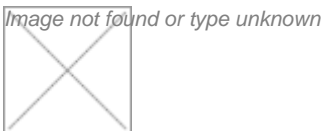


*India's first genetically-modified (GM) crop, Bt cotton was introduced in 2002. Despite stiff opposition to its commercial introduction from several anti-GM activities, cotton farmers took the biotech variety of the crop and adapted it faster than any other technology in the field of agriculture. Seven years later, India's farmers are likely to get the choice to choose between GM and non-GM varieties of brinjal (eggplant), one of the less than dozen vegetable crops native to India.*

*And this has led to a debate on the need for GM food crops in India. Of the 10 GM crops undergoing trials in India currently, seven (potato, tomato, cauliflower, cabbage, okra or bhindi, brinjal and onion) are vegetables and two (maize and rice) are cereals and the last one is a legume (groundnut). Except for brinjal and rice, all the other crops originated in South America or Mediterranean region. Yet they have all become an integral part of Indian cuisine and rarely do consumers look at them with suspicion due to their foreign origin.*

*With annual production exceeding 85 million tonnes, India is just behind China as the world's second largest vegetable producing nation. Nearly 72 percent of India's vegetable production is not marketable due to high wastage. More than half the input costs to produce these vegetable are spent by farmers on pesticides to control some of the major pests. As Bt cotton success has shown, with the adoption of GM seeds, these inputs costs could come down drastically and farm productivity improve dramatically.*

*More funds in the farmers is certainly a good way to lift them out of poverty quickly. Most policy makers have talked about using biotech tools. But rarely has anyone analyzed the numbers involved in the vegetable economy. BioSpectrum has compiled the production and cost savings that may occur due to the use of GM varieties in seven popular food crops. And these are the numbers industry, policy makers and other supporters and opponents of the technology should look at in the coming months as the nation prepares to take the first tentative steps in embracing the GM technology in food.*



## **Experts speak up for GM crops finally**

The popular media is now full of anti-GM articles featuring prominently the views of most of the known anti-GM activists and NGOs. The rationale for GM crops, the benefits accrued to the society through Bt cotton and the pesticide savings and productivity increases, which are likely with the introduction of GM food crops are not being communicated to the public.

In an initiative towards addressing this communication gap, BioSpectrum organized a forum on "GM Crops: Why The Nation Must Embrace This Technology" on August 25, 2009 in Bangalore to devise the industry-wide strategies to get the message across to the society in the most appropriate and efficient manner. The roundtable organized by BioSpectrum, was convened to gather inputs from diverse segments of the agribiotechnology community—mainly companies, agricultural universities and associations—as to the current issues concerning it, with a view for determining further recommendations towards promoting

## GM crops.

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The discussion with Narayanan Suresh as the moderator consisted some of the prominent names from the agribiotech industry—Dr KK Narayanan, MD, Metahelix Life Sciences, Bangalore; Dr S Ramanathan, VP, Crop Research, Rasi Seeds, Salem; Dr P Balasubramanian, head, Centre for Plant Molecular Biology, Tamil Nadu Agricultural University, Coimbatore; Dr Sharan Angadi, head, Breeding Tropical Asia Pacific, Nunhems India, Bangalore; Bhagirath Choudhary, national coordinator, ISAAA, New Delhi; Rajvir Rathi, GM, Market Acceptance, South Asia, Bayer Crop Science, New Delhi; Dr Sajiv Anand, director, All India Crop Biotech Association, New Delhi; Dr Kameshwara Rao, secretary, Foundation for Biotechnology Awareness and Education (FBAE), Bangalore; and many other experts from the agribiotech community.

The primary focus of discussion at the roundtable was on issues and mechanisms to introduce GM crops to the public and ideate strategies to counter the anti-GM campaign. The deliberation that followed was multidimensional in the sense that different and wide view points from all the participants were sought.

The session started with Dr KK Narayanan saying, “The resistance towards biotechnology in agriculture is increasing day-by-day and this needs to be countered in a very responsible way. There is a looming food crisis. The stockpile of food grains have come down. The solution is adoption of right technologies which can lead to better productivity. India suffers from drought and there is the need for drought tolerant varieties in food crops.” Although Monsanto is developing such a variety abroad given the tough and uncertain regulatory situation in the country, Monsanto may not bring such a technology to India, he said. Dr Narayanan also expressed his disappointment towards the public sector in which a lot of investments are being made towards this gene modification (GM) technology but nothing is being done to promote it.

Rajvir Rathi of Bayer Crop Science says, “In the adoption of new technologies there is a missing link between the rural and urban sectors. When it comes to farmer’s upliftment with the use of modern technologies, there is so much of noise and resistance. However, adoption of modern technologies in urban centers is not resisted much. Therefore, this missing link needs to be cracked.” He adds, “A group of people are influencing the policy and government decisions. They have triggered the belief that GM crops are bad although they are least aware of this technology and most of them do not exactly understand genetic modification.”

“The government is aware of the challenges that most of the developing countries are facing. The industry should project these challenges to the government and the public,” says Jagadish Mittur, director, Monsanto Research Center, Bangalore.

Dr Sharan Angadi of Nunhems India suggests that the agribiotech community should make things more practical, credible and bring in more balanced opinion and project them in the right way. He says, “An important question that we must ask the opposition groups and media writing against GM is – What is the kind of loss the country would have suffered if we wouldn’t have accepted Bt cotton?”

Dr Sanjiv Anand, however, defended the statement saying, “Media on its own is not responsible, it is always the opposition groups. And unlike the anti opposition groups we have to support our statements with more information and statistics. And these needs to be publicised as nicely as the opposition groups do.”

Suggesting that this initiative by BioSpectrum should have been taken long back, Dr Ramanathan of Rasi Seeds says, “It is important that companies and research institutions should do in-depth research on the GM technology so as to avoid drawbacks, rather than concentrating on speedy introduction and marketing it.” He also stressed on the need to organize discussions on GM crops inviting people from the industry, farmers, politicians as well as celebrities who are supportive of GM. He confided that the opposition cannot stop the technology but they can only delay its introduction.

The other subject that came up for discussion was that the people in the judiciary were not well informed about the technology. Dr Subramaniam, who is also working on the field trials for Bt brinjal suggests that there should be a forum to organize workshops for the judiciary and offer them a better understanding of the technology.

Although the field trials for Bt brinjal is almost over and its commercial release was expected to happen in the first quarter of 2009, the release got held up due to some socio-economic issues. “How will a company/institute do the socio-economic study until the technology is released and used,” asks Bhagirath Choudhary. He further questions on whether the socio-economic data should be a part of the GEAC approval?

Offering tips on media handling, Narayanan Suresh, group editor, BioSpectrum says, “While the resistance for GM crops is increasing, the scientists and experts working on this technology usually do not speak and defend it. So getting an expert opinion on the subject is difficult. He insisted that the scientific community should take more interest in responding to media queries.”