

"Biotechnology is a tool in the toolbox of technology to increase productivity"

11 March 2008 | News

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-Clive James, chairman, ISAAA

The International Service for the Acquisition of Agri-biotech Applications (ISAAA) announced the global status of commercialized biotech/GM crops for the year 2007 in Delhi recently. The new report released by ISAAA indicates that during 2002-2007, there was a 125-fold increase in Bt cotton in India, which is four times the 67-fold increase for global biotech crops during the 12-year period from 1996-2007. Not only are farmers planting more biotech hectares, but also adopting varieties with more than one biotech trait. Developing countries (12) surpassed the industrialized countries (11) and the growth rate in the developing world (21 percent) was more than three times of the industrialized nations (9 percent).

Speaking on the occasion, Clive James, chairman ISAAA said, "2007 has been the year of 12 for GM crops-GM crops are in their 12th year of commercialization, biotech crop area has increased by approximately 2 million hectares in the past five years, 12 million farmers have planted GM crops in 2007 and 12 developing countries using the technology." In an interview, Clive James shares his views on the future of GM crops. Excerpts:

How do you see biotech crops addressing the needs for sustainable development?

Quoting Norman Borlaug, the father of green revolution, 'I have only bought you time, you need to invest in technology', whenever we talk of biotech, we need to find out how it is related to the feed of the world. Today we see three out of four

people in the world dependent on agriculture. The last few years have not only seen an increase in commodity prices, but also an increase in the world population and it is estimated that in the next 50 years, the global population will consume as much food as it has consumed since the start of agriculture. It is the most formidable challenge in front of us in the light of the increasing world population.

Conventional crops will not allow one to double food production, neither will biotech crops. Biotech is not a panacea. We need to select the best of biotech and the best of conventional for this so that we can optimize on both and move forward with a radical approach. This would far better be able to address the need of the consumer who needs quality product at reduced prices. GM crops have already contributed to the alleviation of poverty in India, China, Thailand and the Philippines. Biotechnology is not a panacea, it is a tool in the toolbox of technology to increase productivity.

What traits do you see in the next breed of GM crops?

Right now the genes in the crops are more for agronomic usage, but in the coming years we can have genes with quality, genes for proteins, amino acids. By 2010, we will see crops GM crops having stacked genes, say a set of 8 genes in a genome, like a cassette. We have to understand the need of the farmers in terms of GM crops. Not only does the crop need to be disease resistant, pest resistant, but also tolerant to drugs. Hence multiple genes is the need of the farmer. In the US, 30 percent of all crops have stacked genes, which is what the need of the farmer is.

What are some of the GM crops to be available commercially in the next few years?

By 2011 golden rice would be available in all countries. We also see biotechnology playing a role in biofuels that would further help reduce costs. Countries like Africa, Egypt and Burkina Faso will also soon be taking up biotechnology and GM crops in a big way. We see crops like rice and brinjal in Asia and India. We see wheat following rice. Biotech wheat was developed about 3-4 years ago, but it was decided that it was unfit for human consumption. However, its position is now being reexamined. A trait related to a microtoxin, fumonisin is being looked into. Biotech wheat will lower the concentration of this toxin. We would also see a move from fiber crops to feed crops like wheat and rice.

Not all countries are proponents of GM crops, some are fierce rejectors as well, such as the EU. Your comments

EU might be one of the fierce rejectors of GM crops but it has registered a 77 percent growth with 10,000 hectares. Developing countries have registered a higher growth than industrial countries. Out of 27 countries in the EU, 8 are using GM technology, France banned GM a week back. Russia is close to an approval of GM potato. Romania is the only country in the world where we can increase the production of Bt crops by 3 times. ISAAA believes that people who can have organic food should have it, people who want to have conventional food should have it, and those who want to have biotech food should have it. It's only people who should have the power to make objective decisions.

GM crops have faced a few hurdles as far as their acceptance is concerned. How do you see this change in the future?

If we look at pasteurized milk or irradiated foods, they faced the same acceptance issues as biotech crops. We see an increase in the no of countries to 40 from 23 and in the no of farmers to 100 million from 23 million. Rice would be the second decade of commercialized GM crops. Golden rice being developed in China and then be commercialized in India and will be the crop of the poor. Multilocal trials have been completed in India. Bt rice leads to an increase in the yield of 4-5 percent on 30 million hectares of land. There is an 80 percent decrease in the insecticide spray on food crops as well. Economically it will lead to an increase of 4 million dollars per year for an average farmer.

-Shalini Gupta