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World Food Laureate: Ã?Â¢Ã¢â??Â¬Ã â??Over regulation is killing the scienceÃ?Â¢Ã¢â??Â¬Ã?Â•

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Dr Marc Van Montagu, who won the 2013 World Food Prize, is considered to be the Father of GM technology by many. He is credited with the discovery of the Ti-plasmid, which not only acts as a vector to transport the required genetic traits but also initiates the process of formation of tumors in the GM plant.

During the late 1960s, Dr Montagu and his fellow researcher Dr Jeff Schell (1935-2003) started working with the plant disease known as crown gall. In 1974, they became the first to discover that Agrobacterium tumefaciens, the plant tumor-inducing soil microbe, carries a rather large circular molecule of DNA, which they named "Ti plasmid." Dr Montagu went on to found two biotechnology companies including, Plant Genetic Systems and Crop Design. While the former is best known for its early work on insect-resistant and herbicide-tolerant crops; the latter is focused on the genetic engineering of agronomic traits for the global commercial corn and rice seed markets. Also, in 2000, he founded the Institute of Plant Biotechnology Outreach with the mission to assist developing countries in gaining access to the latest plant biotechnology developments and to stimulate their research institutions to become independent and competitive.

Dr Montagu speaks exclusively to *BioSpectrum* on a wide variety of topics ranging from Super Weeds to MNC monopoly, from the future of GM technology to the attitude of today's scientists. Excerpts are as follows:

What do you think the future is going to be for Genetically Modified (GM) crops in the next 10 years?
First of all let me tell you that GM crops are not dangerous. It is not bad for the environment, and scientists have explained

that. In fact, in the future, most of the solutions related to problems linked to the environment would be solved by using Green Energy, which will in turn be fuelled by GM crops or agriculture. If we want to keep the domain of agriculture and green industry pollution-free, then we will need to develop a variety of Genetically Modified (GM) plants.

We will not survive without GM crops. People need to understand, believe and start thinking about GM crops, instead of just disgracing it. Individuals need to now understand that the society is ready to accept GM crops. If not anything, just imaging the kind of pressure and challenges the agricultural sector will face when the population of India, which was 250 million a decade back have today become 1 billion and 250 million

Do we need to regulate patents more stringently in order to prevent the monopoly of MNCs?
Regulations should make sense. Regulations can be a dangerous thing. However, why would you want to regulate something that is not dangerous? I have seen people spread fear with respect to GM crops and this is criminal. Over regulation is killing the science and economic development. If we don't reap the benefits of GM technology, somebody else will take advantage of it.

How do we solve the problem of 'Super Weeds'?
We can solve any problem using science. We need to use different chemicals and make different herbicides in order to handle weeds. You can also use several mechanical methods while practicing agriculture to deal with weeds. What one should keep in mind is that the techniques should not be expensive. However, with the present prevalence of over regulation, keeping techniques affordable has become difficult. Thus the industry is utilizing the available tools at hand to get maximum returns.

How does Dr Montagu describe science?
Like how all scientists would describe science. Observe; have a discussion on what you observe; propose a solution to the problem and describe the solution by publishing the experimental results. Try executing the solution and see how it goes. It is an eternal learning process. You need to be aware that in science, it will take several little steps in order to do something big.

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