



## Biotechnology important to Africa's development

By: Schalk Burger

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Biotechnology, specifically the genetic modification of plants to produce herbicide tolerance, pesticide and insecticide resistance, ensures crop protection, reduces input costs and exposure to harmful chemicals and can also improve grain quality, a diverse group of biotechnology, researchers says.

Speaking at the recent AfricaBio media dialogue on agricultural biotechnology, the researchers covered legislative control of genetically modified (GM) organisms to ensure the safe and responsible handling and use of GM crops in South Africa (specifically GM maize, cotton and soy). Other topics covered included an overview of biotechnology, a public perception study and the socio-economic impact of GM crops on South Africa.

University of Pretoria Department of Agricultural Economics, Extension and Rural Development research fellow **Marnus**

**Gouse** highlighted that the approved GM crops in South Africa are maize, soy and cotton.

The use of *Bacillus thuringiensis* (Bt) cotton, he said, had reduced the need to spray insecticides and has led to significantly increased cotton yields in South Africa owing to the reduced effect of problematic bollworms.

Farmers who noticed the benefit of using Bt cotton moved to using a dual-herbicide-tolerant Bt cotton strain when it was introduced, which increased their yields, compared with conventional seeds. The herbicide-tolerant nature of the cotton is beneficial as a farmer can spray herbicides to control weeds without killing the crop.

"Most benefits arise from education around the effective use of GM crops. However, farmers are pragmatic and will not use the GM seeds should the prices rise too sharply," he explained.

GM crops were important innovations that had a role to play in the development of Africa, stated Human Sciences Research Council researcher **Michael Gastrow**.

"Public perceptions shape policy, meaning that science must engage effectively in public relations. Further, governments are often not involved in shaping public perception through information dissemination, which can also lead to negative perceptions if conflated with labour issues or ethical issues – issues that are often not connected to the topics being discussed."

However, scientists had to appreciate the environment that the media worked in, including tight deadlines and restricted or limited access to primary sources, which meant that journalists were often shut out unless they had a personal relationship with the scientist or researcher. This revolved around the issue of trust and whether the scientists felt that non-experts accurately expressed their professional views, he added.

Meanwhile, Soweto smallholder GM maize farmer **Motlatsi Musi** explained that he had been planting Bt maize since 2004, which increased his yields by controlling his stalk borer infestations. As a result of his extra profits, he had bought a mechanical harvester and had increased his land under cultivation.

"We missed the green revolution. Let us not miss the biotechnology revolution," said science publication *Spoonful of Science* editor and pharmacologist Dr **Sandy Evans**.

There was a lack of input and investment into agricultural development in Africa and, hence, stagnating food production growth, she highlighted.

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Tel: +27(0)11 622 3744 | Fax +27(0)11 622 9350 |  
newsdesk@engineeringnews.co.za  
<http://www.engineeringnews.co.za>