

## **THE ROLE OF BIOTECHNOLOGY IN SMALLHOLDER FARMING**

A project to determine the role of biotechnology in smallholder farming during the 2004/05 maize season was highly successful. Some 636 small-scale farmers, 65 agricultural extension officers and 21 decision makers in six provinces received extensive training on biotechnology and Bt maize. Bt maize is simply conventional maize that has been genetically modified to be insect tolerant using biotechnology techniques.

Bt yield increases on the six sites averaged 42.5% over conventional maize.

AfricaBio, in collaboration with the National African Farmers' Union (NAFU), Buhle Farmers' Academy at Delmas in Mpumalanga, Cedara Agricultural College in KZN and the Provincial Departments of Agriculture, initiated this project during the 2004 planting season.

Six demonstration sites were selected where Bt and conventional maize were planted side by side. The plots, consisting of 1 ha Bt maize and 1 ha non-Bt maize, were established at the following sites: Buhle Farmers' Academy, Delmas, Mpumalanga; Fairdeal Training Centre, Zuurbekom, Gauteng; Madinyane Village, Brits, North West; Sannaspos, Bloemfontein, Free State; Nolutkhanyo Administrative Area, Bathurst, Eastern Cape; and Cedara College of Agriculture, Pietermaritzburg, KZN.

The plots were planted with white Bt and conventional maize in November/December 2004 and harvested during June/July 2005. The average yield for the Bt maize was 42.5% higher than the conventional crop. The highest increase was 55.1%, recorded at Cedara. The lowest was 27.5% at Bathurst.

The damage to Bt cobs by stalkborer was on average 2.1%, compared to 18% for the conventional crop. The highest damage was 38.9%, registered at Cedara which is a highly stalkborer prevalent area.

The objectives of the project were to:

- Ensure small-scale farmers have the agricultural opportunity to test Bt white maize.
- Foster science-based discussions on biotechnology in the SADC region.
- Provide demonstrations of technology for farmers, scientists, decision makers and policy makers.
- Raise public awareness by visual demonstration of the technology.

"The objectives of the project have without doubt been fully achieved," says Prof Jocelyn Webster, executive director of AfricaBio. "Hundreds of small-scale farmers, extension officers, decision makers, senior local government officials and large numbers of people in rural communities have been better informed about Bt maize and the benefits it offers to food security in Southern Africa."

"Training farmers is an ongoing process. One training session is not enough and we will certainly repeat the project this coming season by adding more experimental sites in order to reach more farmers," she added.

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