False codling moths (FCM) are the most severe pests on export citrus, with fruit losses of up to 30%. Stringent phytosanitary import regulations and controls in countries such as the USA, Europe, China, South Korea and Iran are aimed at eliminating the possible imports of FCM infested fruits. The presence of FCM larvae in export shipments destined for these markets places the entire export program at risk of being terminated. This can have a negative impact on exports and therefore on the South African economy.

XSit (Pty) Ltd owns and operates a Sterile Insect Technique (SIT) facility, where they commercialize a technology based on rearing and irradiating FCM moths after they emerge from the pupae. Specially trained teams of operators then release the irradiated sterile FCM into designated orchard areas under supervision from the XSit facility management. The releases have shown tremendous success with orchard infestations being reduced drastically. The aim of the FCM SIT program is to eventually service the entire citrus industry, with SIT facilities in the Western Cape, Eastern Cape and Mpumalanga/Limpopo.

Dr Boni Mehlomakulu, Group Executive: Department of Science and Technology was the keynote speaker and guest of honour for the evening. She says agriculture's strong indirect role in the economy is a function of backward and forward linkages to other sectors. Purchases of goods such as fertilisers and chemicals form backward linkages with the manufacturing sector, while forward linkages are established through the supply of raw materials to the manufacturing industry. About 68% of agricultural output is used as intermediate products in the sector. Agriculture is therefore a crucial sector and an important engine of growth for the rest of the economy.

According to the 2006/07 export values, wine was at (R4.3 billion), citrus fruit (R3.8 billion), grapes (R2.5 million), sugar (R2.3 million). Therefore, good quality citrus fruit exports are important for South Africa. R3.8 billion rand export revenue per year is significant.

“In this sector, the use of insecticides is becoming increasingly problematic because of pest resistance, environmental problems, stringent regulatory controls and legal restrictions on residues and larvae in export fruit. It is clear that in this industry, a country that relies on export markets needs to innovate or it risks losing the market value. R3.8 billion into South Africa is significant and we need to protect and grow that market share,” Dr. Mehlomakulu added.

In a developmental state context, innovation must:
- Address developmental challenges and be relevant to the economy;
- Be dynamic and responsive to global challenges;
- Be managed in a structured institutional arrangement that enables the creation of factors of production along the product development value chain; and
- Be based on sound principles of identifying grand opportunities for socio-economic benefit.

The food irradiation technology has emerged internationally as a solution to the post-harvest problems associated with food production and consumption.

Sampie, Hendrik, Dr. Boni and Gabrie van Eeden. Gabrie is the Chairman of the XSIT board.
vest issues of agriculture in developed countries, which the developing countries are also trying to acquire to escape post-harvest losses. These efforts are strongly supported by the International Atomic Energy Agency and countries are encouraged to investigate their use for socio-economic benefits.

“Companies today must have some sort of advantage over their competitors to sustain market share and provide consumers with what they want at the prices they are willing to pay. That requires embracing innovation. I sometimes get worried that South Africa, as different scientific outputs indicators show, is getting left behind by the other developing countries in the race to innovate and capture the markets. We are all part of the chain that triggers the development of new companies like XSIT, creating sustainable employment and flow of forex into South Africa,” Dr. Mehlomakulu says.

PlantBio Trust, a biotechnology innovation centre funded by the Department of Science and Technology, together with River Biosciences (PTY) Ltd are the shareholders of XSIT (Pty) Ltd. PlantBio’s mandate is to build economic and social value through the creation of sustainable plant bio-tech initiatives with commercial impact, establishment of platforms, and poverty alleviation initiatives. Plant biotechnology investment areas have been identified according to South African capacities and priorities and include the following areas:

Technology areas: Biocontrol/biofertilisation; plant breeding; in vitro propagation; plant transformation & genomics

Thematic Areas: Poverty alleviation or food security; biofuels and industrial crops; exploitation of South African bio-resources; environmentally friendly agriculture; and technology platforms in genomics and proteomics, biosafety and in vitro propagation.

River Biosciences is a wholly owned subsidiary of the Citrus Growers’ Association that commercializes new technologies developed by Citrus Research International (CRI).

The shareholders have identified FCM as a significant pest of citrus industry and have undertaken to fund this initiative which is aimed at a more sustainable, effective and environmentally-friendly approach to controlling this harmful insect pest.