

## #CitrusSummit: Fruitful opportunities in technology

March 22, 2019



At the recent Citrus Growers Association's conference in Port Elizabeth, the Citrus Academy's general manager, Jacomien De Klerk said the rapid advancement of technology and its potential to efficiently connect the planet and people is both thrilling and daunting. "It requires new ways of thinking and doing, but it also offers boundless opportunities particularly in agriculture. The Citrus Academy, augmenting the work of the Citrus Growers' Association of Southern Africa, is determined to harvest these opportunities," said De Klerk.



*Jacomien De Klerk is the General Manager of the Citrus Academy, a non-profit company working under the auspices of the Citrus Grower Association of Southern Africa. This is an extract from her presentation at the Citrus Summit in Port Elizabeth on 14 March 2019.*

South African citrus is world-renowned with a reputation for excellent quality, De Klerk said, but maintaining this exceptional international reputation needed constant investment in technology, skills development and in the country's future citrus farmers.

### Tech upskilling

"South Africa's young people are already embracing tech – but the new ways of thinking and doing that are needed to be part of a tech-focused agricultural future should be prioritised to meet the demands of this revolution," she said. "Simple changes to introduce subjects that are aligned with these emerging technologies can make all the difference in developing a pipeline of future tech-savvy farmers.

"We are resolute in the maintenance of our competitive edge. Our local citrus industry is one of the country's most important fruit groups by value and volume. It yields a revenue of over R20 billion per year, of which 92% comes from exports, and provides jobs to more than 100 000 people, many of them young South Africans. The new technological advances that are available to us present endless opportunities to grow these jobs if we know how to see and seize them. The Citrus Academy's training programmes are already aligning to equip our industry with the knowledge and skills required in this new environment.

"It is because of the high standard of production and packing that South African citrus is so well-respected worldwide," she continued. "However, staying ahead of the pack requires constant evolution on the technological front – not only to market our citrus digitally, but also to automate the packaging."

De Klerk referred to the fact that a game changer on citrus farms seems to be plant growth monitoring systems. "These systems consist of sensors that measure fruit and stem growth daily, offering near real-time information that will help farmers to better schedule irrigation and manage the nutrition requirements of citrus trees," she said.

"There are also exciting advances towards ensuring successful crops, such as soil sensors that monitor the water content and soil health, as well as satellite and drone technology – using real-life imaging to monitor the condition of individual trees. These advances have already led to better crop protection."

### **Robots in packhouses**

De Klerk said that automation at packhouses through robotics at pack lines will become the order of the day. "We're seeing the benefits of innovations such as optical sorters that can detect and sort individual fruit for sugar and acid content, blemishes, colour, and size. In addition, automated packing machines and robotic pallet stackers and wrappers will ensure greater consistency, while new software will manage truck loading and distribution towards better stock management and ensuring the continued delivery of a quality product."

She pointed out that some of these developments are advances on current technology and will require additional skills from staff beyond the training they regularly receive. Most useful technologies underway, are new and will need significant upskilling of employees. In many cases, there may be entirely new positions and job descriptions in the workplace.

"Employers and employees must be willing or able to upskill and create new positions to accommodate these new skills to fully reap the benefits of technological advances. In packhouses, the skills level is moving upwards and there is a need for workers – even those on the packhouse floor – to be computer literate."

De Klerk said these new technologies would also require employees, especially at management level, to use process thinking, a skill that has up until now been developed mostly in professions like industrial engineering. "Process thinking will be an aptitude required on a much broader basis, and forms part of the Citrus Academy's programmes that develop strong, analytical farmers."

The Citrus Academy's general manager said the advances and the subsequent automation on farms and in pack houses present abundant opportunities for all workers across the citrus value chain to expand their knowledge and skills to meet the demands of these new technologies. "The Citrus Academy aims to lead and equip particularly our young growers to embrace this fruitful future," said De Klerk. – *Carin Venter, Farmbiz*

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