

New seed breeding technologies can benefit the oilseeds industry

By Dr Lukeshni Chetty, general manager, South African National Seed Organisation

Agricultural challenges continue to grow in the wake of global climate, social and economic changes. For producers to remain profitable and to address these challenges, they need to have access to a variety of improved seed choices to sustain food and fibre production. It is therefore imperative that innovative breeding technologies are employed in the oilseed industry.

Breeding programmes focus on the development of varieties with improved yield, good agronomic adaptation to growing conditions, disease resistance, and varieties that can respond to lower inputs. But they should also address high-end use qualities required in the value chain. Barriers placed in the path of breeders to employ the latest novel research and breeding techniques, may lead to the stagnation of the development of new varieties and hybrids.

Government's support is vital

A seed technology environment that focusses on the development of new and improved varieties can only be created with the support of government. A mutual appreciation of the value of technology for agriculture and South Africa at large is needed. The future of the agricultural industry lies in breeders having access to several new breeding techniques.

Over the years, the introduction of biotechnology traits has resulted in the growth of the local soya bean industry. Last year, the South African regulatory authority approved a new genetically modified (GM) soya bean trait for the first time in almost 20 years. As a result, new soya bean germ plasm can now be sourced from across the globe. This one action will increase the profitability of producers and the industry.

Intacta Roundup Ready® 2 Pro (Intacta RR2 PRO™) is only the second GM soya bean trait to be approved for cultivation in

South Africa. The first was Roundup Ready® soya bean, which was approved in 2001. Now, soya bean growers can benefit from cultivars with protection to damage caused by *Lepidopteran* soya bean pests, together with the advantages offered by the herbicide-tolerant trait in the past.

On the opposite side of the coin, there are a number of examples where limited access to new breeding techniques, a lack of funding, and limited support for breeding programmes have had a major impact on the development of new and adapted plant varieties.

One such example is that of sunflower. The same breeding technologies and biotechnologies that are available for maize and soya beans are not available in sunflower breeding programmes, and this can be seen as one of the fundamental reasons why yield and specific trait advantages are lacking.

An enabling environment may change the situation. The ability of the sunflower industry to remain competitive will be determined by the availability of new cultivars addressing market requirements, such as high-oil content or mitigating stress in the field by being less susceptible to diseases such as *Sclerotinia*. However, more research is needed. *Sclerotinia* has played a significant role in the decrease in sunflower plantings and recently also reached the far western production regions, where it was previously unknown.

Promoting new breeding technologies

Novel techniques of plant breeding are continuously evolving and creating onerous and costly barriers for new technologies that could be used to create new products. This will be detrimental to the agricultural sector. These barriers may discourage the development and uptake of new technologies and innovation.

There are many upbeat prospects in South Africa's oilseed industry, but it is



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important that government understands its role in this. Placing unnecessary barriers in the way of introducing products derived from new breeding technologies (NBTs), can seriously hamper the sector's growth and the country's ability to feed the nation.

We would like to see that South Africa employs science-based regulations for the safe introduction of products derived from NBTs. The South African National Seed Organisation (Sansor) is committed to engaging in this process in good faith and welcomes any joint action with the Department of Agriculture, Land Reform and Rural Development, as well as the executive council of the *Genetically Modified Organisms Act (Act 15 of 1997)* to remove any obstacles, and in so doing, facilitate effective, efficient and evidence-based regulation of products derived from NBTs. 🌱

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