

Symposium focusses on challenges and solutions

By Susan Marais, Plaas Media

Soya bean production in South Africa has more than doubled over the past 50 years, but experts warn that the country cannot afford to rest on its technological laurels – or risk losing ground globally. This was the central message at the recent soya bean symposium, held on 29 July at the CSIR Convention Centre in Pretoria and hosted by the Protein Research Foundation (PRF), Oil and Protein Seeds Development Trust (OPDT), and the Oilseeds Advisory Committee (OAC).

Prof Ferdi Meyer, director of the Bureau for Food and Agricultural Policy (BFAP), noted that South Africa's rapid increase in soya bean output reflects an age-old truth: production is not 'pushed', but 'pulled' by demand.

He outlined four key drivers behind the country's soya bean growth success:

- **Poultry expansion:** Rapid growth in the poultry industry created a significant opportunity to replace imported soya bean meal.
- **Technology transfer:** Organisations such as the OAC and Grain SA spearheaded awareness and knowledge-sharing initiatives.
- **Policy support:** The Department of Trade, Industry and Competition provided clear policy direction, encouraging private investment in crushing facilities.
- **Innovation in production:** The introduction of a technology levy, extensive cultivar trials, and improved farming practices played a significant role. Interestingly, nitrogen use has remained largely unchanged since 2001, even as production and phosphate use have increased – an indicator of the soil health benefits and nitrogen fixation of soya bean cultivation.

On a cautionary note, Prof Meyer stressed that South African consumers remain

under significant economic strain, while the poultry sector is still recovering from the impact of avian influenza.

New cultivars and technology

In the 1970s, Dr Antony Jarvie, soya bean research programme manager at Corteva, authored a paper on how producers could potentially boost soya bean yields to over 3t/ha. Decades later, he notes that advances in management practices, technology, and genetics have been so significant that he could now write an article on achieving 6 or even 7t/ha.

Speaking during a panel discussion on the impact of new cultivars and technology on South African soya bean production – led by Dr Lukeshni Chetty, general manager of Sansor – Dr Jarvie highlighted the introduction of drought tolerance in both soya beans and maize. "This," he explained, "has reduced chemical residues in soils, enabling more effective crop rotation, which has been integral to the global success of soya beans."

While technological innovation has propelled the global soya bean industry forward, Dr Jarvie cautioned that South Africa must keep up or risk falling behind.

Adriaan Jordaan, commercial strategy integrator for horticulture and cereals at Bayer, stressed that while new technologies have been highly beneficial, they must be protected. "It takes at least 20 years for a new product to reach the market – and it is even more challenging in a leverage country such as South Africa," he said. A leverage country, he explained, adopts technology developed elsewhere. "We are fortunate to benefit from international research, but we must remain aware of the significant effort required to bring new developments into the country."

Dr Derick van Staden, director of Agri-Seed and Technology (AST), added that while the South African Cultivar and Technology Agency (Sacta) levy is functioning well, they would prefer industry funding to come from seed sales



During the first session, speakers gave an overview of the macroeconomic picture of Brazilian and South African soya bean production. The speakers were, from the left, Prof Ferdi Meyer, managing director of the Bureau for Food and Agricultural Policy (BFAP), Dr Leandro Eugenio Cardamone Diniz, researcher and head of soya bean international affairs at Embrapa, and Andries Theron, chairperson of the Protein Research Foundation, who facilitated the session.



A panel of experts discussed the impact of new cultivars and technology on soya bean production in South Africa, led by Dr Lukeshni Chetty, general manager of Sansor. From the left are Facundo Stella, commercial manager of GDM Seeds in South Africa, Adriaan Jordaan, commercial strategy integrator for horticulture and cereals at Bayer, Dr Derick van Staden, director of Agri-Seed and Technology, and Dr Antony Jarvie, soya bean research programme manager at Corteva.



Dr Lisa Rothmann, plant disease epidemiologist from the University of the Free State, spoke about *Sclerotinia* management and control in South Africa.

rather than levies. "It would be far better to receive dividends than levies," he noted.

Although the implementation of the new *Plant Breeders' Rights Act, 2018 (Act 12 of 2018)* strengthens the industry, Dr Van Staden believes South Africa can still learn valuable lessons from Brazil's approach.

Lessons from Brazil

Dr Leandro Eugenio Cardamone Diniz, a researcher and head of soya bean international affairs at Embrapa, shared an overview of soya bean production in Brazil, highlighting how technology is driving major advancements. In the 2024/25 season, Brazil harvested approximately 168,3 million tonnes of soya beans from 47,5 million ha, achieving a productivity rate of 3 541kg/ha. Looking ahead, the country anticipates harvests reaching 330 million tonnes in future.

While improved genetics have been a major factor in Brazil's progress, Dr Diniz emphasised that better management practices have played an equally important role in boosting production. This success is not simply the result of individual production units leveraging economies of scale – in fact, most producers in the southeastern region of Brazil farm less than 50ha. In contrast, farms in central Brazil average around 450ha, with only a few producers in the Matopiba region working on between 500 and 1 000ha.

According to Dr Diniz, small producers thrive because they are well organised into cooperatives. "This gives them excellent

bargaining power when purchasing seed. They also pool resources to buy farming equipment that they all share and gain access to the best technology on the market," he explained.

Many seed dealers – around 41% – are members of cooperatives. The structure even allows producers to earn royalties when seed is purchased from such dealers.

Another key difference between Brazil and South Africa is the way cultivars are developed and used. Brazil is divided into seven regions, each having new cultivars annually that are adapted to the conditions prevalent in each of those regions. In South Africa, on the other hand, a cultivar could possibly be planted anywhere in the country's soya bean production regions.

Soya beans in Brazil are also sold differently – not by weight but by number. A producer might, for example, buy 200 000 seeds, with the price determined by the technologies included in the seed. Despite these advancements, Brazil faces similar logistical challenges than South Africa. "Our roads aren't exactly a dream to travel on," Dr Diniz remarked, adding that producers must factor transport costs into their profitability calculations.

He referred to a 2003 study which revealed that every single centimetre of soil lost due to erosion reduces soya bean yields by 150kg/ha. Therefore, applying no-till practices correctly is critical for soya bean producers in that country.

Proper integrated disease management programmes are also crucial as they focus

on using resistant cultivars, no-till cropping systems, balanced plant nutrition, and proper soil management for better root growth. Crop rotation programmes are worked out very carefully and ensure that seed is used correctly. Good seed quality cannot be compromised, Dr Diniz stressed.

Managing challenges

Dr Lisa Rothmann, plant disease epidemiologist from the University of the Free State, discussed *Sclerotinia* management in South Africa. "This story began in 2018 when the *Sclerotinia* Research Network was formed," she said. "I'm excited to say we've made significant progress in controlling the disease. However, producers must remember there is no silver bullet. Effective control requires an integrated pest management system."

Nadine Loubser, head of microbiology at Microbial Biological Fertilizers International (MBFI), spoke about how microbial innovations could enhance soya bean productivity and connect science with practical applications. "Microbial inoculants assist with biological nitrogen excision. This is a lot more beneficial to the environment and means less conventional nitrogen can be applied to a crop." 🌱

For more information regarding the symposium, send an email to Yvette Papadimitropoulos at admin@proteinresearch.net