

The Southern African Grain Laboratory: Services to the oilseed industry

By Ursula Human

The Southern African Grain Laboratory NPC (SAGL), an independent ISO 17025 accredited testing laboratory, acts as the reference laboratory for the grain and oilseed industry in Southern Africa. The crop quality division of the SAGL performs national crop quality surveys on different crops, including soya beans and sunflower seeds.

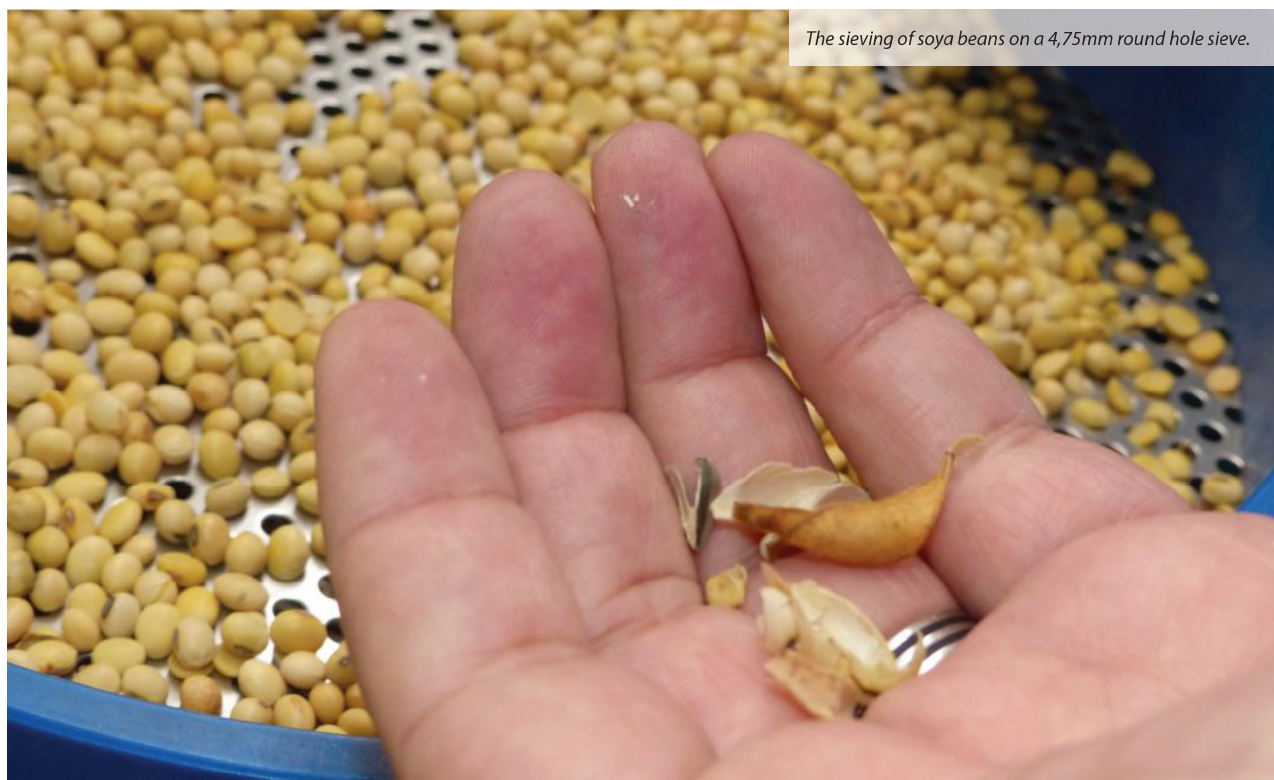
These oilseed surveys are funded by the Oil and Protein Seed Development Trust. Results of the surveys are available on the SAGL website. During the season, results are updated weekly on the website and at the end of the season hard copy reports are distributed to directly affected groups and interested parties.

Training and research

Technical and quality training courses, developed and presented by SAGL staff to participants from South Africa and the rest of Africa, consist of theoretical and practical modules. The training presented at the SAGL's premises include grading and milling, conducting of analytical methods

and quality procedures to comply with the requirements of the international ISO 17025 standard. There is a special focus on improving the testing capacity of the Southern African Development Community region.

Through participation in international proficiency schemes as part of the ISO 17025 accreditation process, SAGL is continuously providing proof of technical competency, traceability and comparability to global standards. The South African National Accreditation System conducts surveillance audits within an 18-month cycle to confirm that the SAGL complies with the requirements of the standard.



The sieving of soya beans on a 4,75mm round hole sieve.

The SAGL offers ring tests to local and international participants to be used as independent assessments of their quality control measures relating to the monitoring of equipment, staff and analytical methods. Results of collaborative research studies conducted with tertiary educational and research institutions as well as national annual crop quality surveys are shared with the industry. Reports of the national cultivar trials on soya beans and sunflower conducted by the Agricultural Research Council are also included in the survey reports.

Soya beans are the main oilseed crop produced and expanded crushing capacity resulted in higher demand.

Services to the oilseed industry

In a reference laboratory capacity, the SAGL makes use of accredited international primary test methods in the different laboratories. The methods of importance to the oilseed industry include:

Grading: Grading and physical testing on oilseeds are services available to all stakeholders in the value chain.

Nutritional analyses: Nutritional analyses, including moisture, protein, oil, ash and fibre content are conducted. Soya beans are the main oilseed crop produced and expanded crushing capacity resulted in higher demand. Results from the crop surveys can provide useful information regarding quality of locally produced soya beans from different production regions and seasons.

Amino acid profiling: Soya protein is a major component in both animal feed and human food. Soya protein contains all 11 essential amino acids. Analyses on isolated soya bean protein or heat processed soya bean meal

Foreign matter (left) and pieces of soya beans (right) removed on a 4,75mm round hole sieve.



Determination of percentage screenings and foreign matter in sunflower with a 1,8mm slotted sieve.



Shelling (dehulling) of sunflower using the Barley Pearler.



Dehulled sunflower with heat-damaged nucleus portions and sound sunflower.



can provide the industry with information on factors such as over- or under-processing.

Mycotoxin testing:

Changing climatic conditions over regions and seasons require more regular mycotoxin testing of oilseed commodities and related food and feed products to ensure safe levels in compliance with regulatory requirements. The specific mycotoxins included in the SAGL multi-mycotoxin method are based on the mycotoxins of generic importance to the industry. Reports are published annually.

Time, volume and cost

Turnaround times at the laboratory are determined by the volumes of samples submitted as well as the number and type of analyses requested per sample. The workflow in the laboratory, the time required for sample preparation and analysis time are all determining factors to be taken into account.

Arrangements for batches of samples to be submitted simultaneously for analyses, such as amino acid determination, can shorten turnaround times and reduce unit costs. This will enable the SAGL to offer the service at a more affordable fee for quality control and research study purposes. Requests to develop capacity for specific analyses that are not part of the current scope of services are encouraged. This will ensure a better service to the stakeholders in the oilseed value chain. 🌱

For more information, contact the SAGL on 012 807 4019 or email info@sagl.co.za. Visit www.sagl.co.za to learn more.