



## NEWS

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UKZN's **African Centre for Crop Improvement** (ACCI) is part of a collaborative plant breeding project with the University of the Free State (UFS) and the **Sorgho** (Pty) Ltd company, initiated and funded by the Department of Science and Innovation (DSI), that seeks to improve the yield of this neglected and underutilised crop by research into genetic improvement to result in higher-yielding hybrids.

Sorghum, a tropical cereal grass, has been cultivated in South Africa for three millennia as a local staple for human and animal consumption and is the world's fifth most important crop. It is a highly nutritious, versatile crop that has adapted to growing in harsh climatic conditions that are increasing in a climate-changed world, making it an excellent source of food security.

In its unprocessed form, sorghum has a high protein and sugar content and almost no fat. In the form of a processed meal known as *amabele*, its energy content is higher than that of maize meal. Its stalks can also be used for fodder, fuel, shelter, or sugar and syrup production.

In South Africa, sorghum production and consumption have dramatically declined, to the extent that the country is now a net importer of the grain rather than an exporter as it used to be. This is due to a lack of genetic improvement in developing cultivars with enhanced yield potential, making sorghum production less competitive than other cereal crops.

To tackle this, the DSI initiated and funded a study on market opportunities for sorghum in South Africa to identify the challenges facing sorghum production and recommend how the sorghum industry could become more competitive and productive. This led to the establishment of the Sorghum Cluster Initiative (SCI) to advance the report's recommendations towards implementation.

As part of the SCI, the ACCI, led by Professor Hussein Shimelis, is collaborating with the UFS and Sorgho to evaluate exotic germplasm as a precursor to sorghum pre-breeding. This project, which commenced in late 2023, is operating trials at three sites in the Free State, KwaZulu-Natal, and North West provinces where sorghum research is being carried out, looking at different aspects of sorghum breeding. Researchers aim to select breeding lines that will be beneficial for application in the commercial seed industry and future breeding efforts.

The project aims to breed high-performing sorghum hybrids for higher yield, better disease resistance, drought tolerance, and better quality in the processing sector. This will increase the utilisation of sorghum in agro-processing and animal feed and increase breeding capacity beyond the existing two breeding programmes.

UKZN's strength in drought tolerance research will benefit the project as its researchers screen the sourced material from breeding programmes in more than five countries worldwide for abiotic stress responses and adaptability to South African conditions.

pests and diseases. Sorgho aims to develop hybrid varieties for commercialisation. There are also potential avenues for research into enhancing the genetic traits of sorghum to make it a prime source of biofuel and fodder.

Words and photograph: [Christine Cuénod](#)

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