

## **Sorghum and Millets as Whole-grain Food Staples for 21st Century Africa: Opportunities, Challenges and Solutions**

John Taylor, Henriëtte de Kock

Department of Consumer and Food Sciences, University of Pretoria, Pretoria, South Africa

### **Abstract**

2023 is the United Nations International Year of Millets, under the very descriptive slogan of “Rich in heritage, full of potential”. Sorghum and millets are tropical (C4-type) plants and are uniquely hardy crops. Hence, they are naturally well-adapted to cultivation under hot arid environmental conditions, which are being further exacerbated by climate change.

Sorghum and millets are traditional food and beverage staples in the arid and semi-arid regions of Africa, Asia and Eastern Europe. Their grains range in size from being small to tiny, and therefore they are generally consumed as whole-grain foods. Recently, they have attracted wider interest, primarily due to their gluten-free status and because as whole grains they normally contain substantially higher levels of micronutrients and polyphenolic phytochemicals than other cereal foods. However, sorghum and millet production and utilization globally and in South Africa has remained largely static or declined. This is because they have a number of drawbacks, notably: higher cost due to low crop yields, the absence of dough-forming proteins, and the stronger colour, flavour, coarse texture and lack of convenience of their foods.

These challenges are not insurmountable. Here, we will look at examples where the application of food technologies can address their quality issues and achieve product success in modern-day Africa. Related to this, the recently created Sorghum Cluster public-private sector initiative to revitalize the South African sorghum industry will be described.

### **PRESENTER BIOGRAPHY: JOHN TAYLOR**

John Taylor is a Senior Research Fellow at the University of Pretoria in South Africa, specializing in grain science and alleviation of micronutrient malnutrition. He has very extensive experience in grain and food processing, both academically and through his collaborations with the food industry across Africa. His current research focus is on whole-grain foods. He is an Honorary President of the International Association for Cereal Science and Technology (ICC), and fellow of ICC, the Cereal and Grains Association and the International Academy of Food Science and Technology. John is author of numerous scientific papers and book chapters on sorghum, millets, and other grains. He is the previous editor-in-chief of the Journal of Cereal Science and recently co-edited monographs on Ancient Grains and on Sorghum and Millets. He is currently co-editing a handbook on modern cereal science and technology.