

# Special Seminar

To invite researcher from Swedish University, we will hold special seminar on sesame breeding.

**Date and Time: August 1<sup>st</sup> 2024, 15:00-15:30.**

**Place: Multipurpose room at ALRC.**

## Unlocking Sudan's Sesame Potential: Genomic Insights for Climate-Resilient and Nutritionally Enhanced Breeding



**Mr. Mohammed Omer Elsafy**

**Department of Plant Breeding, Swedish University of Agricultural Science (SLU), Alnarp, Sweden**

Sesame, an ancient oilseed crop domesticated millennia ago, is prized for its high oil and protein content, making it a valuable food and feed resource. According to FAO statistics, the leading producers are Sudan, Myanmar, Tanzania, India, Nigeria, and China. Sesame breeding efforts have primarily focused on meeting human needs: increasing seed yield, improving plant architecture, enhancing tolerance to biotic and abiotic stresses, developing indehiscent capsules, and optimizing oil quality. Recent advancements in breeding tools, including phenomic and genomic marker-assisted selection, have facilitated the mapping of sesame's compact diploid genome (350 Mb). These novel technologies are accelerating breeding processes, enabling the development of sesame varieties adapted to climate change and addressing biofortification and food security challenges.

Despite its importance, the genetic resources of Sudanese sesame remain largely unexplored using advanced genomic tools. In collaboration with the Agricultural Research Corporation, Sudan, the Department of Plant Breeding at SLU initiated a project to evaluate key breeding traits such as seed coat color, fatty acid composition, and capsule shattering through genome-wide association studies to address this gap. This seminar will present some of the project's outcomes and discuss future research directions in sesame improvement.

# Special Seminar

To invite researcher from the National Academy of Sciences of Tajikistan (NAST).  
We will hold special seminar on sweet potato in Tajikistan

**Date and Time: August 1<sup>st</sup> 2024, 15:30-16:00.**

**Place: Multipurpose room at ALRC.**



## **SWEET POTATO IN TAJIKISTAN: PAST, CURRENT, AND FUTURE**

**Musavvara SHUKUROVA, PhD**

**Institute of Botany, Plants Physiology and Genetics, NAST, Dushanbe, Tajikistan**

The sweet potato is a tuber-bearing plant that comes in a variety of flesh colors, such as yellowish, orange, purple, or white. It is considered one of the top ten important tuber crops worldwide. With its unique properties and structure, the sweet potato is often hailed as a superfood due to its numerous beneficial properties. It is highly nutritious, packed with vitamins (A, C, B6), minerals (potassium, zinc), and antioxidants, making it an excellent choice for promoting gut health, maintaining good eyesight, and boosting the immune system.

In developing countries, where malnutrition is a common issue, sweet potatoes are a cost-effective crop. They are relatively easy to grow and can thrive in various climatic conditions, which makes them suitable for Tajikistan's diverse landscape and arid climate. Tajikistan, being a low-income country with a high vulnerability to malnutrition and food security concerns, could greatly benefit from cultivating sweet potatoes.

Although sweet potatoes are not traditionally grown in Tajikistan, several attempts have been made to introduce this crop since the early 20th century. However, due to insufficient promotion, improper storage practices, and difficulties in cooking, these attempts were unsuccessful, and the crop was eventually abandoned. Given its high nutritional value and potential applications in food fortification, starch and glucose production, and livestock feed, sweet potato could play a vital role in Tajikistan's agricultural sector. Cultivating this crop could ensure the sustainability of agricultural production, reduce poverty and malnutrition, and improve overall food security in Tajikistan.