Facts about the Feed the Future Striga Smart Sorghum for Africa (SSSfA)

FACT

01

The Striga Smart Sorghum for Africa (SSSfA) project will use cutting edge science to improve sorghum for striga resistance. Sorghum is an important food crop whose production is largely constrained by Striga, a parasitic weed that feeds off sorghum. Genome editing is a general term for a new breeding method that enables targeted and specific modifications to the genetic material (genome) of a cell. The CRISPR/Cas9 method offers great promise for conferring crop traits' improvements.

The technique used in this project will mimic a natural mutation on low germination loci 1 (lgs1) that makes some sorghum varieties resistant to the Striga. The resistance is conferred through hindering striga seed germination. The resultant Genome edited sorghum from the project will not contain foreign DNA and the crop will be similar to conventionally bred sorghum varieties.

FACT

02

Striga resistance field evaluation will be carried out in western Kenya, targeting three zones with high Striga infestation pressure. The sites will be Alupe, Mbita and Kibos. The sites represent three distinct agro-ecological sites with varying Striga weed virulence.

FACT

03

Genome edited sorghum will contribute to increased sorghum production in Kenya and Ethiopia. The SSSfA seed will be accessible to farmers through the existing systems for dissemination of improved seeds. This will be achieved by initiating commercialization of Striga resistant sorghum varieties with local seed companies. The commercialized striga resistant sorghum will be one that is adaptable and preferred for food and feed by small scale farmers and the manufacturing and processing industry in the focus countries.

FACT

04

The project will initiate commercialization and accelerate enhanced capacity for production of Genome edited (GEd) products in Ethiopia and Kenya by empowering the next generation of African scientists' ability to develop new products to address future challenges. The SSSfA project will establish centers of innovations called Africa Biosciences Hubs (AfriBIOHubs). The AfriBIOHubs will be modeled around the Open Bioeconomy Lab concept. The concept recognizes proprietary models of ownership, market consolidation and lack of access to knowledge and research tools such as improvised equipment and reagents as key factors restricting the ability to perform biological research to shape the direction of biotechnology in developing countries. These AfriBIOHubs will be founded on the principles of incubation and commercialization and therefore will have a clear path to self-reliance after initiation.

FACT

05

The SSSfA project will ensure that Genome edited Sorghum seeds in Kenya and Ethiopia are availed to farmers by ensuring seed affordability and in a way that does not infringe on the contractual, intellectual property (IP) or other proprietary rights of third parties. Therefore, freedom-to-operate (FTO) assessments will be conducted to review, identify gaps in IP protection and negotiate for other additional or necessary negotiated royalty free humanitarian use licenses for the technology to be sold by local seed companies or non-assert agreements.

FACT

06

The SSSfA project will develop and implement a stewardship plan for Genome edited sorghum. Stewardship will guarantee best practices that safeguards product quality and integrity and ensures sustainable access to good quality seeds by farmers, promotes adoption, and enhances regulatory compliance as well as enhances consumer confidence.

FACT

07

The SSSfA project will nurture an enabling environment for genome editing. A data driven communication strategy will be developed and implemented and will lay an appropriate foundation for uptake and enable policy favorable for commercialization of SSSfA products. SSSfA project will implement advocacy and communications efforts to support and advance the Genome edited Striga resistant sorghum throughout all relevant phases of product life cycle using three broad approaches namely: Integrity>Inspire>Inform.

FACT

08

The SSSfA project embraces collaborative engagements with African scientists and local experts. The project implementation will be coordinated by ISAAA AfriCenter, Kenyatta University, African Agricultural Technology Foundation (AATF) University of Addis Ababa who are leading in different work packages in SSSfA project.

FACT

09

Genetically edited sorghum is safe for environment. In compliance with regulatory requirements, all genetically edited sorghum will be assessed for environmental safety in National Performance Trial (NPT) before they are released to farmers. Environmental mitigation and monitoring plan (EMMP) has been put in place to guide in implementation on laboratory and field trials.

FACT

10

The SSSfA project incorporates gender inclusivity and public participation. Public engagement activities will be carried out with farmers, men and women, youth, policy and decision makers and value-chain actors will be sensitized about genetically edited sorghum through suitable awareness platforms and field visits to experimental sites. Approaches to public participation will include seeing-is-believing tours, real-time process documentation, scientists-journalists engagements, and outreach in impact areas where the project is being implemented.


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