AWARD
African Women in Agricultural Research and Development

Profile

2019 AWARD Fellow
Digna Hyginus Swai

Position	Associate Breeder
Institution	East-West Seed International
Country	Tanzania
MSc	Plant Breeding, Université LaSalle, 2016
Mentor	Dr. Pavithravani Venkataramana Bangalore, Lecturer, Nelson Mandela African Institution of Science and Technology (NM-AIST)
Research Area	Breeding of African indigenous leafy vegetables.

Swai's research focuses on breeding of amaranth, nightshade, Ethiopian kale, African spider plant, and cowpeas and working with farmers to investigate their market value. Her research is geared toward alleviating hunger and malnutrition.

Digna Hyginus Swai grew up in a farming family in the southern highlands of Tanzania. She is proud that she and all four of her siblings have completed their university education, and she expects the same from her young daughter, who will soon turn eight years old.

Swai excelled in science in secondary school, and was accepted at four universities. Although most of her peers were going for accounting courses, she had always loved farming and longed to see improvements to farming techniques, so she chose food science for her undergraduate degree, "because it's in the science realm." Her parents were very supportive of her choice.

She completed her first degree in 2010, earning a BSc in Food Science from Sokoine University of Agriculture (SUA). She then took a job in the food industry in Arusha. "I was working in a vegetable-processing company, doing quality control," she recalls. "But it was night work, and I didn't feel like I was adding anything to it." She was drawn to research, as she felt it would enable her to have a greater impact.

Before starting an MSc in Plant Breeding at Université LaSalle in France, Swai took a position as a research technician at the International Institute of Tropical Agriculture (IITA) in Dar es Salaam. She applied for this position despite the fact that IITA was looking for candidates with a background in biotechnology. "Even though I didn't have a lot of experience, the job covered everything I was interested in and so I applied anyway—I wrote the exam, did the interview, and was hired," she recalls proudly.

The project she undertook at IITA dealt with cassava. "My duties in the molecular biology lab included running diagnostic experiments on cassava mosaic disease (CMD) and cassava brown streak disease (CBSD) and

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performing tissue culture activities," she explains. She also participated in field diagnostic surveys in Tanzania. Swai spent two and half years in that position, "becoming a person who can find a problem and solve it."

Now an associate breeder at East-West Seed International, Swai is collecting information from farmers on the challenges they are facing when growing African indigenous leafy vegetables. "East-West Seed is a breeding company of Thailand origin," she explains. "The company has more than 35 years of experience, and has successfully bred different varieties of vegetable crops. They have just begun working in Africa, and I am part of the pioneering team making their African breeding hub a success."

Swai's research focuses on breeding of amaranth, nightshade, Ethiopian kale, African spider plant, and cowpeas, among other crops. She is working with smallholder farmers, the main growers of leafy vegetables. "I ask the farmers for the marketing intelligence—they know why they grow it, where they sell it, what consumers want, and what challenges exist. Each month, I spend one week with the farmers."

Swai says her breeding program is a continuous activity. "It's mostly women who are growing these vegetables," she says. "All you need to do with these leafy vegetables is give them water—with amaranth, for example, in one month you can grow it, harvest it, and sell it."

Swai is encouraged to see women running businesses near where she lives. She says people are interested in buying from roadside gardens, which are typically run by women. In Kenya and Tanzania, people eat different vegetables, such as kale, a brassica species crop—where it is known as *sukuma wiki*. "Someone brought collard greens from the U.K., which we've been cultivating for many years, resulting in late-flowering plants that can be grown from leaves—and for a long time."

Swai heard about the AWARD Fellowship from a colleague back in 2011, and subscribed to the AWARD newsletter to keep informed about happenings. She expects that the training she receives in the fellowship will be a great benefit. "We are learning to set goals, and to achieve what I want to do I need to know how to write research proposals," she says.

She plans to pursue a PhD in plant breeding to contribute to the improvement of indigenous African leafy vegetables, which can play big role in alleviating hunger and malnutrition in sub-Saharan Africa. She has been in touch with a professor in Georgia in the United States, who keeps her connected to other plant breeders, and she is scheduled to take the GRE general test—the most widely accepted graduate admissions test worldwide—in April.

Swai sees herself as a leader at her institution, and hopes to use her leadership skills to improve the institute and the activities they undertake. "I see myself supporting women who are engaged in farming, business, and cooking. I want to involve myself in activities that encourage people to eat leafy vegetables to improve nutrition."

She plans to realize her goal of supporting farmers "from seeds to the table—this has been my dream for many years."

Swai is one of a growing number of women agricultural scientists who have won an AWARD Fellowship. AWARD works toward inclusive, agriculture-driven prosperity for the African continent by strengthening the production and dissemination of more gender-responsive agricultural research and innovation. We invest in scientists, research institutions, and agribusinesses to deliver innovative, sustainable, gender-responsive agricultural research and innovation.

The AWARD Fellowship is a career-development program that invests in top women agricultural scientists to ensure that confident, capable, and influential women are available to lead critical advances and innovations in the agricultural sector.

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