



2013 AWARD Fellow
Mavis Owureku-Asare

Position	Research Scientific Officer
Institution	Biotechnology and Nuclear Agriculture Research Institute (BNARI), Ghana Atomic Energy Commission
Country	Ghana
MPhil	Food Science, University of Ghana, 2006
Mentor	Dr. Firibu Saalia, Senior Lecturer, University of Ghana

Research area: Agro-processing, product development, postharvest management, and preservation of agricultural produce such as cereals, legumes, roots, tubers, fruits, and vegetables.

Born in Ghana, Mavis Owureku-Asare learned to be independent when she went off to boarding school at age six, where a teacher encouraged her to pursue science. Food preparation and cooking became a later passion, and the wife of her high school chemistry teacher, a nutritionist working for the World Health Organization, developed her interest in a career in the food industry. She obtained a BSc degree in nutrition and food science from the University of Ghana, and after graduation she spent her national service working for the Ghana Standards Authority, testing food imports for their nutritional content. She later returned to university to pursue a master's degree in food science.

Owureku-Asare is passionate about improving postharvest handling of locally grown food so that all Ghanaians have better access.

"We have so many indigenous food products that can be promoted both locally and internationally, but we need food scientists to conduct research to optimize these products and give them a longer shelf life," says Owureku-Asare. "Food scientists should also promote indigenous foods to help upgrade and promote the local food industry." Her aim is to help develop a culture where people will value and consume fresher and locally processed food, not just imported products, which are the current preference. She wants to stimulate demand so that farmers will have a local market for their produce. For her, it's a matter of life and death.

"In Ghana's Upper East region, high rates of suicide are reported among tomato farmers who have lost their crops, their markets, and their livelihoods," reports Owureku-Asare. "Many can't earn a living, despite the fact that Ghana is the world's second-largest importer of tomato paste." Close to 90 percent of the two million people residing in this area grow tomatoes, and a high percentage of these farmers are women. Growing tomatoes is more lucrative than rice, maize, or yam—and there is an extremely high demand for them. However, farmers face tremendous challenges in getting their products to market and they must compete with imported tomato products.

"Some 40 to 50 percent of tomatoes in Ghana are lost after the harvest because farmers often cannot get their produce to market before it rots," she explains. "Yet tomatoes are a very important ingredient in Ghanaian food.

Almost everything we eat has tomatoes in it.” Owureku-Asare’s current research focuses on the development of dried tomato products, as well as sweet potato-soybean blend products, using conventional and indigenous processing technologies. “During my Norman E. Borlaug Fellowship at the University of Louisiana in 2012, I learned that processing dried tomatoes could help solve the loss problem.”

Owureku-Asare wants to help women’s groups obtain simple solar dryers so they can produce dried tomatoes and not be forced to sell their fresh crops at rock-bottom prices to “tomato queens”—powerful middle women who run the markets. “I want to start with one community and develop a larger program on empowering women toward sustainable income generation.”

Once the technology is worked out, she sees potential in attracting local youth to operate some of the processing plants and stay in the rural areas rather than migrating to the city. Her current challenges involve access to sufficient clean water, electricity, and affordable raw materials while working within less than supportive government policies. But she is not easily discouraged. She also hopes the community-based processing centers will encourage more farmers to process their tomatoes and even work on drying other fresh produce, too. “It is possible to use dried tomatoes as a substitute to tomato paste, and Ghanaians should be willing to explore and use this product.”

Owureku-Asare’s second research focus is on bissap or sobolo, a popular drink produced from the dried flowers of *Hibiscus subdariffa* that is said to be high in anti-oxidants. Bissap has become an income-generating business in West Africa, especially in Ghana, Nigeria, Senegal, Togo, and Burkina Faso.

“Women are mostly engaged in producing and processing bissap,” says Owureku-Asare. “They are making and selling it even at their offices, importing the dried flowers from Senegal, Togo, or Côte d’Ivoire.” In her research, she surveys consumption patterns, knowledge, and consumer preferences, and assesses the socio-economic impact on the livelihoods of women producers in southern Ghana. She also determines microbial, nutritional, and physiochemical qualities of bissap as well as the effect of gamma radiation as a mode of preservation and shelf life extension of the product.

Capacity building is another important focus of Owureku-Asare’s work. After returning from a training course in Morocco recently, she advocated for the establishment of a techno-park and incubation unit to provide training for processors and small and medium-sized enterprises. A site has been secured at BNARI, and negotiations for funding have begun.

As an AWARD Fellow, Owureku-Asare plans to focus on achievable and relevant outcomes of her research and developing her leadership skills. “There was a time when I was not sure if I wanted to continue in research or change my career path and become a food industry entrepreneur,” she recalls. “Now, I’m clearly focused on becoming an effective food scientist, whose outputs enhance agricultural productivity and healthy food production in my country.”

Owureku-Asare is one of a growing number of African women agricultural scientists who have won an AWARD Fellowship. AWARD is a career-development program that equips top women agricultural scientists across sub-Saharan Africa to accelerate agricultural gains by strengthening their research and leadership skills through tailored fellowships. AWARD is a catalyst for innovations with high potential to contribute to the prosperity and well-being of African smallholder farmers, most of whom are women.

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