



2018 AWARD Fellow
Patricia Oteng-Darko

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| Position | Research Scientist |
| Institution | Council for Scientific and Industrial Research (CSIR), Crops Research Institute |
| Country | Ghana |
| PhD | Soil and Water Engineering, Kwame Nkrumah University of Science and Technology (KNUST), 2016 |
| Mentor | Dr. Stella Ama Ennin, Director and Chief Research Scientist, CSIR-Crops Research Institute |
| Research Area | Efficient resource use in crop production: water use efficiency, nutrient use efficiency, energy use efficiency in agriculture, irrigation, and water management in agriculture, agricultural mechanization. |

Oteng-Darko is researching aeroponics technology, the process of growing plants in an air or mist environment without the use of soil or other aggregate media. The primary goal of aeroponics is to prevent disease infestation and provide adaptation measures in the context of climate change.

Patricia Oteng-Darko grew up in Kumasi, Ghana's second-largest city, in a family of three girls—one of whom is her twin. The wife and mother of three did her bachelor's, master's, and doctoral degrees at KNUST.

"Growing up, I always wanted to be in either academia or research," she says. She did well in math and physics, and sought guidance from a high school teacher as to what to study. "When I started my BSc, I opted for agricultural engineering—I had failed miserably at biology," she laughs. She was the first woman to complete a PhD in Soil and Water Engineering at KNUST.

At CSIR, she is researching aeroponics technology, which is the process of growing plants in an air or mist environment without the use of soil or other aggregate media. "Aeroponics doesn't demand too much space, nutrients, water, or labor," she explains. "This is a good way to promote seed production." The focus of this project is on seed yam production, and each plant can yield up to 1,000 seed yams.

The primary goal of aeroponics is to prevent disease infestation and provide adaptation measures in the context of climate change. "Temperatures have increased, and rain patterns have changed," she remarks. "We need to find ways to improve our seed systems in this environment."

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Oteng-Darko 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 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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Oteng-Darko is also a principal investigator on a project focusing on agricultural mechanization in Ghana, where she is concentrating on crop production at the farm level. “We want to know exactly what types of machinery and implements the farmers are using, the production systems, and the general status of mechanization in Ghana,” she says. Ghana’s farming system is made up of mainly smallholders, but they often bring in tractors that are far too big. “We need to get to the basics, to find out what the farmers need,” she says. “We need to develop a system that will ultimately inform policy and improve agricultural mechanization in the country.”

Crop production in Ghana takes place mostly under rain-fed conditions with limited inputs—less than one percent of farmlands have been developed with irrigation systems. “In the dry season, it is hot and dusty,” she continues. “Few people can use irrigation systems because they lack the infrastructure and the technology. We need to devise ways to make good use of the rains.”

Oteng-Darko enjoys working directly with smallholder men and women farmers, holding focus group discussions to get their views. “We recently held an interactive stakeholder workshop on the mechanization project, and it was well attended and informative,” she says.

Oteng-Darko heard about the AWARD Fellowship from her director at CSIR-Crops Research Institute, Dr. Stella Ama Ennin, who is now her AWARD Mentor. She is grateful that Dr. Ennin spoke to her about the program. She hopes to rise through the ranks to become a chief research scientist and eventually a development consultant.

Oteng-Darko appreciates the training she is receiving as an AWARD Fellow, and is confident that it will enhance her skills. She intends to compete for the advanced science training that AWARD offers. “We have had a few previous AWARD Fellows at our institute, and I am happy to be part of this group. We are raising AWARD’s visibility too.”

Along with her research work, Oteng-Darko has found time to engage in her other passion: education. “Three years ago, I founded a school for children, which is currently up to level three,” she states. She has faced competition and challenges, including sometimes being the only woman on a research team and sharing office space with male colleagues. But she strives to do the best she can. What she struggles with most is time management, but this competent woman is surely up to the task.