AWARD
African Women in Agricultural Research and Development

Profile

2013 AWARD Fellow

Olufunke Oluwakemi Oluwole

Position	Research Fellow II
Institution	Obafemi Awolowo University (OAU), Ibadan, Nigeria
Country	Nigeria
MSc	Agriculture, OAU, 2005
Mentor	Dr. Adeyemo Olanike, Associate Professor Department of Veterinary, Public Health and Preventive Medicine, University of Ibadan

Research area: Molecular investigation of the immune status of Nigerian indigenous pigs for disease resistance to African swine fever using polymerase chain reaction.

Olufunke Oluwakemi Oluwole considered becoming a midwife like her mother, but was introduced to agriculture in high school. "I loved it and decided to concentrate on soil science during my BSc studies in Agriculture at university." Her second degree is also in Agriculture, this time focusing on animal science. With a growing interest in biotechnology, her research into pig chromosomes began, and she has since authored or co-authored some 10 papers published in peer-reviewed journals and at conference proceedings. She is currently in PhD program in Animal Science at OAU.

Oluwole is working on the molecular screening and characterization of three breeds of pigs for disease resistance to African swine fever (ASF) to prove Nigerian indigenous pigs' resistance to this disease. The ASF virus, which originated in warthogs but quickly spread to domestic pigs, causes high fever and bleeding from orifices and is the only virus with a DNA genome that is transmitted by arthropods. It often causes death within as little as a week after infection. This killer virus was first diagnosed in eastern Kenya in 1921, and is now a concern throughout sub-Saharan Africa.

Although there are currently no formal economic estimates of overall losses to ASF in Nigeria, an outbreak in Ibadan in 2001 saw 91 percent of almost 32,000 affected pigs succumb to the disease. Oluwole's research into ASF is showing promise. "The black hairy Nigerian indigenous pig, in particular, is known to have special traits, such as greater resistance to common diseases and heat tolerance of a high parasitic load," she explains. "But due to extensive breeding with an introduced exotic pig breed, there is a risk of losing the gene pool of these traits."

Oluwole is using polymerase chain reaction (PCR) to amplify a particular segment of DNA across several orders of magnitude, generating copies of a particular DNA sequence. "I extract the DNA, get the primers (short segments of DNA), then run the PCR with the primer in the lab, which enables us to see which pigs have the disease," she says. "After verifying that Nigerian indigenous pigs can resist the disease, the next

step is to locate the genes that are responsible for that resistance, and then further work can be done to retrogress the gene for resistance into the exotic breeds that are susceptible to the diseases."

Her long-range plans include encouraging people in rural communities to set up breeding plans to prevent diseases in their pigs. "I want to find out what rural folk are doing with their own pig breeding," she says. "I hope to introduce them to modern methods through workshops that demonstrate the latest techniques." She plans to produce agricultural extension information materials for pig farmers including posters, pamphlets, and booklets written in language they can understand. "I also want to organize capacity-building workshops to promote agriculture as a career choice among primary, secondary, and tertiary students at both the local and national levels," Oluwole continues.

Oluwole says her research has not been without its challenges. "This type of research can be very expensive, especially the chemicals, because we have to import them," she says. "The instability, scarcity, and high cost of electricity in Nigeria also pose problems." A major strike of university staff last year hindered her progress, as well.

As an AWARD Fellow, Oluwole relishes the opportunity to be mentored, and looks forward to liaising with other women scientists. "My career goals were not as obvious to me before. AWARD has helped me to sit down and identify what I really want to do."

Oluwole 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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