AWARD
African Women in Agricultural Research and Development

Profile

2014 AWARD Fellow

Osazoduwa Marian Ekebafe

Position	Research Officer I
Institution	Nigerian Institute for Oil Palm Research (NIFOR)
Country	Nigeria
MSc	Analytical/Environmental Chemistry, University of Benin, Benin City, Nigeria, 2006
Mentor	Dr. Philip Oviasogie, Chief Research Officer, NIFOR
Research Area	Use of biomass waste technology to enhance oil palm and maize productivity.

Osazoduwa Marian Ekebafe, whose name means "God chooses your pathway in life," is confident that she is on the right road as she applies her lifelong passion for chemistry to helping women farmers increase their crop yields by recycling biomass waste.

Ekebafe says her grandmother sparked her initial curiosity about food chemistry. She remembers being fascinated as a child as she watched her grandmother prepare a "black soap" out of plantain peels. "She would take this soup to the market and make good money," Ekebafe recalls. "I was intrigued that she was able to make something useful out of what most people saw as waste."

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The eldest in a family of six children whose parents valued education, Ekebafe completed a bachelor's degree in Chemistry and then taught senior secondary school for 10 years."To get students excited about chemistry, you need to present it in a dynamic fashion," she says.

Ekebafe went on to complete a master's in the same discipline at the University of Benin, and then changed from teaching to research—a transition she says took some time to adapt to. Now, as a research officer at NIFOR, she is concentrating on finding uses for biowaste produced on Nigerian farms.

"Biowaste is organic agricultural waste—maize peels, stalks, leaves and the like—which is renewable, available in abundance, and of limited value since it constitutes environmental pollution," Ekebafe explains. "But it is a principal source of value-added products such as compost and mulch, which can be used to improve agricultural soil conditions and enhance crop productivity."

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Her research has led to the use of "biochar technology", a strategy for restoring carbon to depleted soils that entails heating biomass with little or no oxygen to eliminate volatile gases, leaving only carbon behind. "This technology was invented in the United States," Ekebafe explains. "I looked at all of the waste around my institute from crops such as oil palm, date palm, coconut, raffia palm, and shea tree. I improvised a closed cave, and packed all of the biomass in. I then heated it slowly until the whole biomass turned to carbon."

When the material has carbonized, Ekebafe puts it into a machine to make a powder, a process that takes about five days, depending on the quantity. The powder is then applied to different crops as a soil ameliorant or conditioner.

Ekebafe tested the technique before providing one-on-one training to smallholder farmers in her community. "It's really a very simple technology—and the women just love it," she says. "These are the women who grow and market the continent's crops, and my objective is to help them in whatever way I can. I hope they will understand that this technology will help to increase their crop yields, and that they will join with me in implementing it. I am convinced that biochar will help to reduce poverty in Africa."

Biochar will be beneficial for smallholder farmers, especially since the Nigerian government plans to do away with inorganic fertilizer in a move toward environmental conservation.

As an AWARD Fellow, Ekebafe appreciates the opportunity to liaise with other scientists from across Africa. She plans to take full advantage of the AWARD training courses, especially the opportunity to learn how to write successful proposals. "I need grants if I want to take my research to a higher level," she says.

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.

AWARD is generously supported by the Bill & Melinda Gates Foundation, the United States Agency for International Development, and the Alliance for a Green Revolution in Africa. For more information, visit www.awardfellowships.org