AWARD
African Women in Agricultural Research and Development

Profile

Mary Modupe Adewole
2015 AWARD Fellow

Position	MSc Student
Institution	University of Ibadan
Country	Nigeria
BSc	Crop Protection, Federal University of Agriculture, Abeokuta (FUNAAB)
Mentor	Dr. Oluwafemi Richard Pitan, Associate Professor Crop Protection, FUNAAB
Research Area	Determination of the efficacy of *Moringa oleifera* root oil extract as a cowpea seed protectant against *Callososbruchus maculatus* to reduce annual crop losses.

"My project assessed the efficacy of Moringa oleifera essential oil in reducing pest damage in stored cowpea. I found that the extract has insecticidal properties that deter the weevil in storage and reduce oviposition—and it is toxic to the pest."

Mary Modupe Adewole developed an interest in agriculture as a teenager while working on the family farm. The last born of five children, she always followed her father to the farm and volunteered to help water, harvest, and sell the crops. "My father, a career soldier, retired when I was about 12 years old and became a full-time farmer," she says. "I enjoyed working with him on the different crops, keeping the farm tidy, and organizing my time around the various activities such as planting, weeding, inspecting, and harvesting."

Adewole chose to study crop protection at university because she saw the heavy crop losses her father incurred, both in the field and after harvest. The damage caused by pests to crops in Nigeria results in losses of 70 to 80 percent due to mismanagement and poor postharvest handling. "It is terrible for farmers to lose so much of their crop because of improper handling after a good harvest," she states.

For her undergraduate project Adewole studied five crops along with cotton, to determine which of the plants could be a trap crop—one planted to attract insect pests from another crop—to control the Podagrica insect pest. In Abeokuta, where she studied, okra is heavily damaged by insects. She found that okra significantly attracted the insects because of a phytochemical found in the plant. This meant that okra could be used as a trap crop for the other crops. This was part of a larger study that continued to look for botanical controls for okra.

Immediately after completing her national service, Adewole enrolled in a master's program in agriculture at the University of Ibadan, where she worked on biological methods of controlling the cowpea weevil—

Callosobruchus maculatus—the primary pest affecting stored cowpea. Cowpea is an important source of plant protein and vitamins, animal feed, and a cash crop for many smallholder farmers in Nigeria. Traditionally, the pest is controlled using insecticides, which are effective but detrimental to humans because they leave residues on the crops and contaminate groundwater. "Many scientists have used extracts from Moringa leaves and seeds as botanical control methods, but I wanted to determine the best botanical control method against the cowpea weevil," says Adewole.

Her study involved extracting oil from Moringa roots. "My project assessed the efficacy of *Moringa oleifera* essential oil in reducing pest damage in stored cowpea," she explains. "I found that the extract has insecticidal properties that deter the weevil in storage and reduce oviposition—and it is toxic to the pest."

Adewole's goal is to be a professor at one of the federal universities in Nigeria. Her first order of business is therefore to register for a PhD in molecular biotechnology, immediately after she defends her master's later this year. She expects the AWARD training courses to provide her with the proposal writing and communications skills she needs to advance in her career. She also hopes her experience will help her reach her full potential.

"Wherever I end up, I want to share the AWARD training with other women to show them the opportunity that is available to them," says Adewole. In particular, she plans to use the knowledge, exposure, and skills she gains to help rural smallholders and women's groups improve their livelihoods through agriculture.

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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