AWARD
African Women in Agricultural Research and Development

Profile

2010 AWARD Fellow
Esther Kanduma

Position:	Assistant lecturer and PhD student
Institution:	University of Nairobi
Country:	Kenya
MSc:	Biochemistry, University of Nairobi, 2001
Mentored by:	Dr. Vertistine Mbaya, Associate professor Department of Biochemistry University of Nairobi

Research area: Identifying polymorphic genetic markers to determine the diversity of the tick vector* Rhipicephalus appendiculatus *for effective vaccine development for bovine livestock.

Esther Kanduma vividly remembers that milk money earned from the family's 10 dairy cows paid her school fees until events wiped out the milk market, leaving her family without income. "My mother had to start a trading business to keep us in school," Esther recalls. "I was the best student in my high school class, and was admitted to a BSc program at the University of Nairobi with a focus on zoology and biochemistry."

In her career, Kanduma first concentrated on developing diagnostic markers for cancer by analyzing cancer antigens in sera from patients. She then worked in Tanzania on tuberculosis in a collaborative project between University College, London and Kilimanjaro Christian Medical Center. She spent several years teaching biochemistry in Tanzania and at her alma mater in Nairobi. In 2007, she saw an advertisement from Biosciences for Eastern and Central Africa for a PhD fellowship, which she secured.

Kanduma is now involved in research toward developing a vaccine against East Coast fever, a tick-transmitted disease that kills one cow every 30 seconds in eastern, central, and southern Africa. A vaccine for East Coast fever could save over a million cattle and up to US$270 million a year in the 11 countries where the disease is now endemic. Many governments have yet to endorse the currently available live vaccine, as it faces several technical challenges. "It will take some time before we have an effective vaccine to break the transmission cycle, but I have generated important data to support this development. It seems that several tick vectors are involved in the transmission," she says. Molecules are already being tested as potential vaccine candidates to prevent transmission.

Kanduma plans to develop a brochure specifically for women, showing pictures of the ticks and what the animal looks like at different stages, so that even the less literate can understand. "I want to help those farmers, especially the women. When the animals are close to home, it is the women who take care of them, even in pastoral communities."

Kanduma wants to use the leadership skills she expects to gain as an AWARD Fellow to steer research in the right direction and to write successful grant proposals. Her greatest challenge is her work-life balance. This mother of a four-year-old son wants more children, but says she needs to concentrate on her PhD right now. "My joy is knowing when I change someone's life for the better and when I have convinced a few girls that, if I made it in science, they can do it as well. Money does not matter much to me, it is the impact I have on others."

Kanduma is one of 180 African woman scientists who have won an AWARD Fellowship. AWARD is a professional development program that strengthens the research and leadership skills of African women in agricultural science, empowering them to contribute more effectively to poverty alleviation and food security in sub-Saharan Africa. For more information, please visit www.awardfellowships.org