



Bringing in the African Harvest

Florence Wambugu's passion for plant breeding is improving crop production in Africa.

By Stephanie Fehr

IN AFRICA, WOMEN PRODUCE 80% of the food, so it's only fitting Florence Wambugu has taken a keen interest in finding solutions for the continent's smallholder farms. As a child watching plant diseases destroy the family garden and smallholder farms in Kenya, Wambugu became determined to combat the problem and now she is, playing a significant role in fighting hunger and malnutrition in Africa.

Sent to school by her mother, who paid for her secondary school education with the sale of the family cow, Wambugu has taken her training and run with it, focusing on agriculture to help African farmers. And she's doing incredible work, says David Dennis of Performance Plants in Canada who knows her well. "She's doing a lot of work in Africa to make crops available for African farmers which would have a lot of impact on that continent," he says. "We hear a lot about AIDS and malaria in Africa, but until you get rid of the malnutrition then you are not going to solve the problems."

Wambugu's list of accomplishments is long: by researching tissue culture protocols for chrysanthemum, she helped restore Kenya as a leading producer of the plant. During her post-doctoral fellowship at Monsanto, she developed sweet potato varieties resistant to viral diseases – which are now in field trial stages. Wambugu was also integral to the rebirth of Kenya's banana and agro-forestry industries with the Tissue Culture Banana project, an initiative of the International Service for Acquisition of Agri-Biotechnology Applications, AfriCenter.

As founder of Africa Harvest Biotech Foundation International, Wambugu and her team refocused the TC Banana program, looking at benefits for the entire value chain and helping ensure technology adoption isn't negatively affected by increased production. The work is seeing results. "In a small village outside Nairobi, DuPont funded the Chura Community TC Banana Project; in three years close to 60,000 people have been uplifted from abject poverty, almost tripling their income to about US\$3.00 per day," she says.

While this is more of a short-term intervention to poverty, Wambugu has received funding from the Bill and Melinda Gates Foundation to develop a nutritionally-enhanced sorghum variety – expected to improve the health of over 300 million Africans.

This work is crucial to helping Africans jump the hunger hurdle, and Wambugu is convinced science will lead the way. "Plant breeding is still a very important scientific tool in agriculture as it is used to develop crops with traits suitable to the African environment," she says. "Genetic modification has advantages over crop breeding in that it is easier and takes a shorter time to move the desired genes from different hosts to the target plant."

Wambugu was the first Kenyan to learn the techniques of gene transfer and she has put her knowledge to good use, making a decision to ensure the education her mother paid for with the family cow will benefit others. "I moved back to Africa on realization that the knowledge I had gained was needed to address the challenges the continent faces," she says.

Wambugu has come full circle. She's back to fighting pests to improve African agriculture, only on a larger scale – one that can have dramatic effects for the health of the continent. **SW**



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