IITA 45 1967-2012 Research to Nourish Africa

THE BULLETIN

Issue No. 2122, 28 May - 1 June 2012

IITA, partners score against scourge of *Striga* in sub-Saharan Africa

Striga is a parasitic weed that is considered to be one of the biggest constraints to agriculture in sub-Saharan Africa, mostly affecting maize and cowpea grown in the region. Affected farmers lose 40 to 100 percent of their crops, with total losses amounting to about US$1.2 billion every year and affecting the livelihoods of more than 25 million smallholder farmers.

Like a vampire, *Striga* sucks and drains its host of water and vital nutrients to the point that the infected plant withers and dies. It does most of its damage underground, even before emerging from the soil surface. By the time the violet bloom of *Striga* appears, there is not much that farmers can do to save their crops.

In June last year, IITA and partners in Kenya and Nigeria launched a collaborative effort to develop a package of *Striga* control options for smallholder farmers. Known as the "Achieving Sustainable *Striga* Control for Poor Farmers in Africa" project, or ISMA, its goal is simple: disseminate and encourage the adoption of proven *Striga* management technologies that work in smallholder farming conditions.

The four-year project focuses on improving access to *Striga* control solutions that include using *Striga*-resistant maize and cowpea varieties, deploying "push-pull' technology that involves intercropping with specific *Striga*-suppressing forage legumes, using imazapyr herbicide-coated seeds, encouraging maize-legume intercropping and crop rotation; and adopting *Striga* biocontrol technologies.

"The suite of integrated *Striga* control interventions being promoted by ISMA will generate an estimated US$ 8.6 million worth of maize and cowpea grain annually in project sites in Kenya and Nigeria," says Mel Oluoch, ISMA project manager.

"We are also optimistic that the interventions will lead to 50 percent more yields in maize and more than double cowpea harvest in *Striga*-infested areas. About 250,000 farmers will directly benefit from the project," he added.

During the project review meeting held at IITA-Ibadan in May this year, the project team reported on some of the initial successes of ISMA.

In Kenya, almost 6,000 farmers in the western region now have access to new *Striga* control technologies. Partner seed companies have produced 66 tons of seed that uses Imazapyr herbicide-resistant (IR) maize coating technology, with over 35 tons disseminated to more than 23,000 smallholder farmers through participating agro-dealer networks. IR maize coating technology, combined with the use of resistant maize varieties, reduce the emergence of *Striga* by up to 60%.

As part of the push-pull *Striga* management technology, community seed producers and partner seed companies have produced and disseminated some 2.1 tons of desmodium seed to farmers. Desmodium is a flowering plant that, when deployed in a maize or cowpeas farm as hedge crop, can significantly reduce the incidence of *Striga*.

The project has also trained more than 8,000 Kenyan farmers on the push-pull technology, with 6,800 of them adopting it in their farms.

In Nigeria, the project worked with 100 communities in *Striga* hotspots in Kano and Bauchi States and established 500 on-farm demonstrations of improved cowpea, maize, and soybean varieties along with *Striga* management technologies.

About 500 tons of certified seed of *Striga* resistant maize varieties were produced by project partners and distributed to beneficiaries. These open-pollinated varieties and hybrids produce 30 to 75 percent more grain, reduce *Striga* damage by 20 to 50 percent, and lessen *Striga* incidence by 22 to 88 percent compared to farmers' varieties and common commercial hybrids. These partner seed companies and local seed producers have also produced some 142 tons of certified seeds of *Striga*-resistant cowpea varieties, with almost 80 tons sold to farmers across 100 communities in the two states.

Farmers and researchers standing amidst Striga-infested maize in northern Nigeria.

The project has also disseminated *Striga* management technologies to about 38,000 Nigerian farmers through farmer-to-farmer knowledge transfer, on-farm demonstrations, field days, and radio. It has also trained some 3,500 farmers on modern crop management and *Striga* control practices.

ISMA researchers also conducted field evaluation of biocontrol technology against *Striga* in maize farms. They found that the combination of biocontrol agent and resistant maize reduced *Striga* incidence by up to 89 percent and resulted in 68 percent more yield than farmer-preferred varieties alone.

The successful models in the two countries will be scaled out to other sub-Saharan Africa countries with similar ecologies and where *Striga* is a major concern.

The project is funded by the Bill & Melinda Gates Foundation and implemented by IITA in partnership with CIMMYT, icipe, AATF, BASF Crop Protection, and NARES and private sector players in Kenya and Nigeria.

Members of the ISMA project team during the review meeting held at IITA-Ibadan on 21-24 May.

IITA welcomes new physician...

Dr Olufemi

The IITA community welcomes Dr. Olufisayo O. Olufemi, who has joined the IITA Medical Unit as Family Physician on 2 May 2012.

Dr. Olufemi obtained Bachelor of Medicine, Bachelor of Surgery (MBBS) from the College of Medicine, University of Ibadan in 2003. She is also a registered Medical Practitioner with the Medical and Dental Council of Nigeria (MDCN).

She worked briefly as Registrar at St. Mary's Catholic Hospital Ibadan in 2006. She was a Consultant Family Physician at Federal Medical Centre Owo, Ondo State till April 2012 when she joined IITA.

Dr. Olufemi is a Nigerian. She lives in Apartment No. 6, IITA Drive on the IITA campus and her telephone numbers are 2278 (home) 2247 (office).

... as new cassava breeder joins R4D team

Dr Parkes

Dr. Elizabeth Parkes, a Ghanaian, has joined the IITA R4D team as HarvestPlus Cassava Breeder based in Ibadan, Nigeria.

She was an international consultant at the Cassava Breeding Unit of IITA-Ibadan before this appointment. She obtained her PhD in Plant Breeding from University of the Free State in Bloemfontein, South Africa in 2011; MPil in Crop Science from University of Ghana in 2001; and BSc from the University of Cape Coast, Ghana in 1989.

Dr. Parkes was a Cassava Molecular Breeder and Head of the Pokuase Research Station of CSIR-CRI from 2004 to 2012. She started her research work with the root crop team of CSIR-CRI in Kumasi in 1992, working on agronomic studies of cassava, yam, cocoyam, sweet potato, frafra potato, and taro.

She is married with children. She resides at No. 12 Tropical Crescent, ext. 2270. Her office is located in building 400, Room 43 and ext. 2343.

IITA, UCLA-IRTC sign Master Affiliation Agreement

On 16 May, IITA-Cameroon (on behalf of IITA) and the University of California Los Angeles (on behalf of its International Research and Training Center - IRTC) signed a Master Affiliation Agreement (MAA) that establishes general terms and conditions intended to govern future exchange of faculty/scientists, staff and students and of research projects and other forms of collaboration.

The MAA is the product of negotiations that started in December 2011 between IITA-Cameroon and UCLA's IRTC. Subsequently, IITA-Cameroon joined a Consortium led by UCLA's IRTC to establish on the IITA-Cameroon campus a Center for Integrative Development (CID). To that end, UCLA on behalf of the Consortium submitted a pre-proposal for US$ 25 million to USAID's RFA on Higher Education Solutions Network for the establishment of the CID.

The pre-proposal was selected from 450 submissions for further development. The overall objective of this endeavor is to establish a permanent, multi-disciplinary enterprise focused on evidence-based solutions to critical developmental challenges in Central Africa.

The CID will expand and amplify the capacity of UCLA's IRTC located in Yaoundé and IITA-Cameroon's capacity and facilities to create a Research and Education Park focused on water and health, food security, and climate change. The facility will include a distance learning for US and African students, data repositories, a technology innovation incubator, remote sensing research and training lab, molecular genetics and disease screening lab, lodging and conference center, and logistics office to assist international participants and help partner them with local researchers.

IITA/CFC ESA completes training on cassava machine fabrication in Zambia

As part of efforts to enhance the capacity of cassava processing machine fabricators in Zambia, IITA, through the CFC-ESA project, concluded a fabricators' training on 16-22 April at New Sams, manufacturer and supplier of farm implements and transportation and postharvest equipment workshop, in Lusaka, Zambia.

Participants included Rashid Phiri of Rasma Engineering, Kunyanda Wambulawaye of Nsams Cooperative, David Njovu of Nsams Cooperative, and Grevazio Tembu and Sunday Musakabantu of Advance Metals Fabrication.

The training comprised mainly of hands-on sessions with the IITA/CFC-ESA Project Engineer Alenkhe Bamidele.

At the end of the training, the participants manufactured a high-output grating machine. Country project manager Ivor Mukuka was highly delighted with the outcome of the activity, saying that "Zambia will no longer have to import graters from their neighboring countries" Participants were also appreciative of the training and promised to use skills learned in fabricating high quality, durable machines for cassava processors in Zambia.

(Clockwise from top left) Participants with Mukuka; fitting the delivery chute on the main frame of the grating machine; testing the grater before painting; some of the participants proudly showing off their completed grater.