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Eastern Africa: Scientists Root for Disease and Drought Resistant Sorghum Variety to Fight Hunger

Scientists have developed and tested more than 50 improved varieties of sorghum that are resistant to both drought and *Striga* which could increase food production in the Horn of Africa.

By George Okore

NAIROBI---As discussions on the drought-induced humanitarian crisis in the Horn of Africa move from London to the UN General Assembly in New York, dryland scientists in Eastern Africa are raising the red flag on the under-stated yet growing threat posed by the parasitic weed, *Striga*, to food security in the region.

The UN Food and Agriculture Organisation estimates that *Striga* destroys US\$ 7bn worth of cereal crops every year in Africa jeopardising the food security of more than 100 million people. In the Horn of Africa, *Striga* destroys about USD2.89 bn worth of maize and sorghum every year, sorghum suffering 86 percent of this loss. Maize is the most popular cereal in Eastern and Central Africa, followed by sorghum.

"*Striga* is second only to drought as a factor reducing the yield of staple food crops in Africa. It is one of the most serious constraints to cereal production in Africa, sometimes causing up to 100 per cent yield losses on farmers' fields," says Dr Dan Kiambi, Executive Director of Nairobi-based Africa Biodiversity Conservation and Innovations Centre (ABCIC).

By the late 1980s, *Striga* had infested more than half (about 56 percent) of Africa's cereal growing areas, according to FAO. Studies undertaken in 2010 show that 32 percent of sorghum-producing areas in Eastern and Central Africa are already infested with *Striga*. As a result, the weed accounts for 22 percent of sorghum yield losses (2,225,000 tonnes) every year, valued at USD 623 million.

Striga attacks roots of young crops starving them of nutrients leading to low grain yields of 500 to 800kg/ha in Africa, compared to up to seven tonnes per hectare (7 ton/ha) achieved in other parts of the world. The weed is a prolific seed-producer, a single plant producing more than 50,000 dust-like seeds that are readily spread by wind, water or contact, and which survive in soil for up to 20 years. It not only damages crops from below, but also emerges from the ground after farmers have finished weeding, making crop management a doubly arduous task for farmers.

Scientists have developed and tested more than 50 improved varieties of sorghum that are resistant to both drought and *Striga* which could increase food production in the Horn of Africa. These varieties have been tested in Kenya, Eritrea and Sudan, and are set for wider trial in seven countries in the region. "We are at the tail-end of developing technologies that offer hope for problems that have been very serious sorghum production constraints in East and Central Africa. In a year's time we should have products ready for farmers," says Dr Kiambi.

The Africa Biodiversity Conservation and Innovations Centre with funding from Association for Strengthening Agriculture Research in Eastern and Central Africa (ASARECA) convened a regional research dissemination workshop to share their joint findings with NARS researchers in Kenya, Sudan and Eritrea in collaboration with ICRISAT on the new drought-tolerant and *Striga*-resistant varieties. They discussed protocols for more widespread testing and release of the new varieties to farmers in Eritrea, Kenya, Rwanda, Tanzania, South Sudan, Sudan and Uganda.

“The development and utilization of *Striga*-resistant crop varieties holds the best promise of combating and reducing the effect of this noxious weed on sorghum yields,” says ASARECA’s AGROBIO Programme Manager, Dr. Charles Mugoya

Sudan is leading the way and is set to officially release the new improved drought-tolerant and *Striga*-resistant sorghum seeds in December 2011 which will be available to all farmers in the entire region.

Eastern Africa’s drylands are classified among the poorest and most food insecure areas in the world with depressingly high levels of malnutrition and child mortality. Most people here struggle to eke a meagre living through subsistence farming of exhausted soils with diminishing food yields.