Striga Control Through Herbicide Resistant Maize

The Problem
- Striga infests over 20 million ha crop land in Sub-Saharan Africa.
- Causes >$1 billion in lost maize yield annually and affects the livelihood of > 100 million people.
- Very prolific - one Striga plant produces 50,000-200,000 seeds.
- Typically 20 plants/m² infestation, 10-40 billion seeds/ha/yr added to soil.

The Solution
- Reduce seed bank and crop losses by:
  - Developing appropriate agronomic practices
  - Striga resistant maize varieties
  - Herbicide resistant maize varieties

Herbicide Resistant Maize
- Imidazolinone-Resistance (IR) is a natural non-transgenic maize mutation identified and isolated on tissue culture.
- Herbicide resistant maize seed is coated with low dose of systemic herbicide (imazapyr) at 30g per hectare.
- Herbicide kills Striga as it attaches to the root before it can damage the host plant.
- Striga seed bank is reduced due to suicidal germination of Striga and direct action of herbicide on seeds.

Herbicide Resistant Maize - Achievements
- 12 IR lines released (CML512-CML523).
- Seven hybrids released in Kenya and Tanzania.

Integrated Striga Management
- Deploy and disseminate existing effective Striga control technologies in Kenya while adapting them to different agro-ecologies, farmer practices and climate change scenarios.
- Demonstrated different control strategies.
- IR-maize, commercial maize, Striga-resistant maize (IITA) as sole crop or as intercrop with Desmodium or Groundnut.

Acknowledgements
We appreciate with gratitude the financial support from Bill and Melinda Gates Foundation (BMGF), BASF, Rockefeller Foundation and other partners.