What is Striga?

Striga is a small green plant with beautiful white or pink flowers. It appears in cropped fields near the end of the rainy season.

Striga attaches to the roots of its host plant, robbing it of water and nutrients. There are two species, one attacking cereals (above) and the other attacking cowpea (below).

Striga causes a lot of damage to crops. The following pages provide information about the parasite and show how this destructive plant can be controlled.
Development of Pearl Millet and its Striga Parasite

Underground development of Striga (June - August)

- Sowing
- Germination
- Establishment
- Tillering
- Stem elongation

- Striga seeds absorb water
- Host root signal stimulates Striga seed germination
- Striga attaches to host roots
- Underground Striga plantlets depend on the host for water and nutrients

Above-ground development of Striga (September - November)

- Heading
- Flowering
- Grain filling
- Maturity

- Striga emergence
- Above-ground development
- Flowering
- Capsules open and shed seeds
- Maturity
Striga seeds in the soil absorb water from first rains. Seeds geminate in response to a signal from pearl millet roots. Germinated seeds attach to host roots. Striga obtains water and nutrients from host roots and develops underground. Striga emerges, turns green, and becomes less dependent on the host. The Striga Life Cycle.

Pearl millet reaches maturity. Striga plants mature. Striga plants flower. Shed seeds spread by wind, water, animals and humans. Germinated seeds attach to host roots.

Striga Seed and its Underground Stages:
- Striga seeds on the finger of a farmer and magnified under a microscope.
- Germinated and attached Striga seed.
- Striga plantlet attached to a pearl millet root.
Organic Manure and Compost for Striga Control

Sowing pearl millet without manure or compost.

Pearl millet develops slowly and Striga emerges in large numbers.

Without manure or compost, Striga devastates the pearl millet and yield is very low.

Sowing pearl millet with application of manure or compost.

Pearl millet develops faster and fewer Striga emerge.

Manure or compost allows for good yield despite Striga presence.
Host Plant Resistance for Striga Control

A susceptible variety has a very low yield when it is grown in a field infested with Striga.

A resistant variety will yield well and reduce the number of emerged Striga plants in an infested field.

Sorghum: there are many varieties with resistance to Striga.

Pearl millet: there are very few resistant varieties, but scientists are developing varieties with resistance to Striga.
Intercropping Cereals and Legumes to Control Striga

Intercropping pearl millet and cowpea.

Intercropping pearl millet and groundnut.

Intercropping can reduce Striga through improved soil cover and yields additional legume grain and fodder. This practice also reduces the risk of complete crop failure, improves soil fertility (legumes fix nitrogen) and conserves soil moisture.
Ridging, Hilling and Hand-pulling for Striga Control

Ridging and hilling by hand or with a plough covers Striga plants with soil to smother them and reduce damage to the cereal crop.

An application of urea or DAP to wet soil at hilling or ridging will help the crop to develop faster and yield more.

Handpulling of Striga plants and removal from the field before they start to flower is very important. If flowering Striga are left in the field, many small, long-lived seeds will be spread and will cause problems in future years.
Microdoses of Mineral Fertilizer to Control Striga

No application of mineral fertilizer at sowing or weeding.

Application of DAP or NPK at sowing, or DAP or urea at weeding.

Pearl millet develops slowly and many Striga plants emerge.

Pearl millet develops rapidly and fewer Striga plants emerge.

Without mineral fertilizer Striga damages pearl millet and yield is very low.

With fertilizer millet yield is improved.
Combining Control Methods to Control Striga

A single Striga control method may not reduce Striga and produce a good crop yield.

Some methods will reduce Striga but not increase crop yield, while other methods may increase yield but not reduce Striga. Some methods are expensive or may require a lot of labor.

It is best to combine several methods to control Striga.

When you combine intercropping, organic fertilizer, and small doses of mineral fertilizer together with ridging and hand pulling, you can expect good control of Striga and a profitable harvest!