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African Insect Science for Food and Health

Saving money from a small plot

Like most farmers in Kenya's Vihiga district, Rumona Mayoka only has a very small plot of land to help her make ends meet for her family. She has always grown maize on her quarter-acre, but striga had taken hold, and the shamba was purple. She was forced to rely on her income as a tailor, and contributions from her husband who works away, to feed and pay school fees for her five children.

In 2012, she heard about push–pull at a workshop for women with disabilities. She liked the technology because it controls striga, but also because it gave smallholders a chance to cultivate with little labour. She arranged for an *icipe* field officer to visit her own group, and they established a group plot on rented land. Rumona then persuaded her husband to let her start cultivating push–pull on their land.

Rumona no longer buys maize all year round. Instead, she buys when the price is low, and stores her harvest for home consumption, selling the surplus when prices in the market rise. She sells her brachiaria grass and desmodium to neighbours with dairy cows, and puts the income into a merry-go-round savings scheme.

Rumona says that push–pull has improved her income and her confidence. It has helped her to see that she is equal to able-bodied people, and that she has the power to do what other people do.

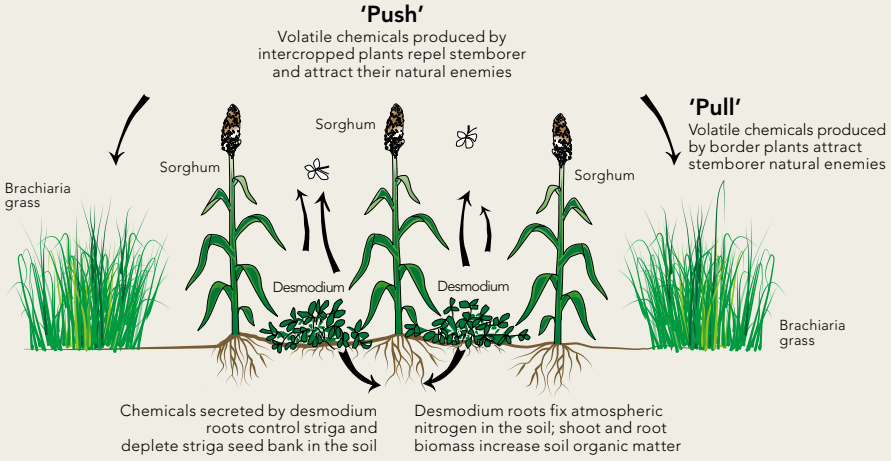
What is push–pull?

Push–pull is a farming system where a cereal crop is intercropped with the legume desmodium, and the plot is surrounded with Napier or brachiaria grass for control of stemborer and striga. If well-established, the plot produces a high yield of healthy cereal crops. The desmodium and Napier or brachiaria grass also provide nutritious and quality feed for animals.

Using the push–pull system for planting stops the damage caused by striga and stemborer.

How does push–pull work?

Push–pull stops stemborer attacking food crops by using rows of desmodium planted between the rows of cereal plants, and a border of Napier or brachiaria grass planted around the plot. Desmodium is a 'push' plant, which pushes the moth away from the food crop when it is time for it to lay its eggs. Napier and brachiaria are 'pull' plants, which attract the moth so that it lays its eggs away from the crop.



Push–pull stops striga taking away nutrients from the food crop because natural chemicals in the desmodium stop the roots of the striga from growing and attaching themselves to the roots of the crop plants.

On top of dealing with stemborer and striga, using push–pull helps soil health and fertility. Desmodium fixes nitrogen, adds organic matter to the soil, conserves soil moisture and enhances soil biodiversity, thereby improving soil health and fertility. It provides ground cover and, together with the border of Napier or brachiaria, protects the soil against erosion.

What do the push–pull plants look like?

In this push–pull plot, there is a row of sliverleaf desmodium between each row of maize, and a border of Napier grass.

In drier areas, the best plants for push–pull are greenleaf desmodium (left) between the rows of crop, and brachiaria grass (right) around the border.

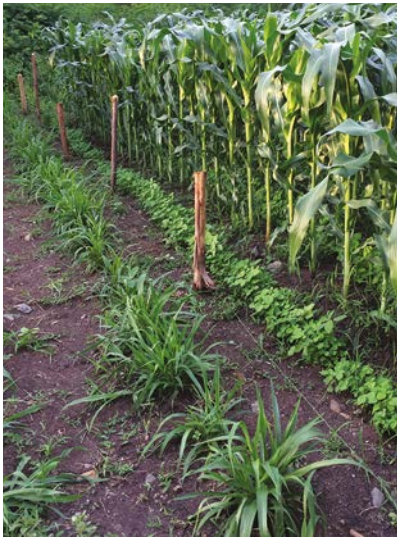
How do I start using push–pull?

1. Clear your land during the dry season and prepare the soil to make it very fine. Demarcate the push–pull plot to plant three rows of Napier or brachiaria grass around the border of the plot, as shown in this drawing.

2. Plant alternate rows of desmodium and food crop. The rows of the food crop should be 75cm apart. Make sure that you start and finish with a row of desmodium. You will need 1kg of desmodium seed for 1 acre of land. Plant desmodium with the rains for maximum germination.

3. Early weeding is very important for establishing a push–pull plot. Weed once when the crop is three weeks old and once when the crop is five weeks old. This photo shows a push-pull plot of maize, desmodium and brachiaria just after the second weeding.

4. Trim desmodium after three and six weeks so that it does not overgrow in between the maize plants.



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