

Push-pull fodder - less work, more money

Rebecca Thomas's husband is member of a Heifer International group in Tanzania, and the family have benefitted from a dairy cow. Rebecca decided to adopt push–pull in 2013 to produce fodder. There is no striga on her farm, and she is not much troubled by stemborer. But desmodium and brachiaria offered her a way out of the relentless work of finding enough food for the cow.

"The animal was a lot of work at first," says Rebecca, and she almost lost hope. "No woman wants to go out to look for grass on top of household chores," she says. This changed when the animal calved, and began to produce 8 litres of milk a day. Some of the income from milk is for school fees and household items, but Rebecca says that the biggest benefit is that she can access credit, and save money. "When I have feed to cut and carry," she says, "dairy is the best project. I know I always have money."

When Rebecca and her husband lost their house following a business dispute, the milk cow was used as security for the loan they needed to build another. Rebecca decides how their milk money is to be spent, and every week, alongside all her other expenses, she puts an agreed amount into the moneybox to pay off the loan.

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 wellestablished, the plot produces a high yield of healthy cereal crops. The desmodium and Napier or brachiaria grass also provide nutritious and guality 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.



Chemicals secreted by desmodium roots control striga and deplete striga seed bank in the soil Desmodium roots fix atmospheric nitrogen in the soil; shoot and root biomass increase soil organic matter 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.



- 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.



To learn more about how to get started with push-pull please contact:

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