

# Pheromone traps help save cowpea

Simple traps made from small plastic jerry-cans and baited with pheromones give farmers a valuable early warning system against the legume podborer. The podborer moth's caterpillars cause devastating losses in cowpea. But, catching a certain number of adult moths in traps lets farmers know that caterpillars will soon appear in their fields, and that they should spray their crop in the next few days.

The system was designed and tested in tandem with farmers in **Benin** and **Ghana**, and there is demand for traps and lures from other farmers who have heard about the technique. The system has potential for many more areas where the podborer threatens cowpea.

## Setting the traps

**The traps are made from local 5-litre plastic jerry-cans.**

The trap has four windows, one cut out of each side. Before use, some water is put in the bottom to drown the podborer moths that are caught. A commercial lure - a plastic tube containing a mix of three pheromones - is hung inside the trap. Three weeks after sowing their cowpeas the farmers hang the traps from a pole in their fields and wait to see what they catch. The cost of making and using a trap over a cowpea season is about US\$4.50.

## Watching the traps

**The farmers keep an eye on their traps, checking them at least three times a week.** When they catch a podborer moth, they tell their neighbours.





When the group have all caught two moths in their traps, they know that the podborers will be arriving soon and that they should spray their crop over the next two or three days. They need to replace the lures after four weeks.

## So do the traps catch the moths?

**The technical people studied the traps to find out if, and where, they would work.** Things like the composition of the pheromone mix, the type of lure and the design and height of the trap were all looked into and carefully tuned. Then they teamed up with extension workers and subsistence farmers to test their perfected traps on farms in Ghana, northern **Nigeria, Burkina Faso** and throughout Benin. Although the traps worked well in Benin, central Ghana and parts of Burkina Faso, moth catches in northern Nigeria and northern Ghana were not up to the mark.

This research had shown that in many areas in the region, the traps could successfully alert farmers to the imminent arrival of podborers in their cowpea fields, and the on-farm observations in Benin tried to link the number of moths caught in the traps with the level of infestation.

The researchers in Benin then turned their attention to comparing different pesticides, both conventional ones and biological pesticides, and looked at just how many moths each trap should catch before the farmers began spraying – and how many days they should wait before starting the spraying. On-farm testing, followed by tests at farmer field schools, followed.

These tests showed that by using these traps, together with a biological pesticide, farmers could keep up their cowpea yields at a lower cost and without the use of toxic pesticides. Even if the farmers persisted in using conventional pesticides, fewer sprays would be needed so using the traps would still save them money.

## Scientists and farmers working together

**Links among the Natural Resources Institute in the UK, the International Institute of Tropical Agriculture (IITA) in Benin and the research institutes in the countries involved played a vital part in the testing of the traps, at the research station and on the farm.**

Season-long, weekly farmer field schools help to train the farmers in making and using the traps and the science behind it. Because of the participatory approach used, farmers were involved in all aspects of testing the traps.

Without these institutional links and the participatory approach developed by the partner organisations, it wouldn't have been possible to test the traps over such a wide agro-ecological range or to have exposed the technology to so many farmers.

When the project finished in 2005, ten of the villages that had been involved were given lures and refresher training on how to make and use the traps. But there is still demand for traps and lures from other cowpea farmers in the country who have heard about the technique.

## For more information

For further technical information go to the RIU online database at [www.researchintouse.com/database](http://www.researchintouse.com/database) and type in **CPP27** or email [riuinto@nrint.co.uk](mailto:riuinto@nrint.co.uk)

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