

The Scent of a Moth

Cowpea, the black-eyed bean, is a major source of dietary protein for low-income populations in West Africa and also provides vital forage for cattle in many farming systems. However, cowpea yields are frequently reduced by up to 80% by a complex of insect pests which includes the legume podborer moth, *Maruca vitrata*, flower thrips, aphids, foliage beetles and pod-sucking bugs. Use of conventional insecticides can raise yields several-fold but expense often limits their use by poor farmers; in other cases subsidies lead to insecticide over-use and abuse (e.g. in cotton-growing regions of Benin).

Through project R8300, researchers, NGOs and extension organisations in Benin and Ghana are developing and promoting new, less damaging technologies for controlling cowpea insect pests. Careful timing of insecticide application is required to control most pests, but especially *M. vitrata*, because the larvae tend to bore into flowers and pods where they are protected from

the crop to control the pests. Traps are constructed locally from plastic containers and the lures, now obtainable from commercial sources, remain effective for four weeks. A single trap with lures costs about £3 to produce and operate for one season (the trap is re-usable).



Preparation of a plant based (botanical) insecticide for control of podborer moth, *Maruca vitrata*



A farmer adds water to his locally produced trap to drown the moth as it seeks the lure

insecticides. A trap, baited with a sexual 'lure', or pheromone, has been developed and catches of *M. vitrata* in the trap warns cowpea farmers of the onset of infestations. Participatory training with farmer groups enables them to use the traps and to determine the most effective time to spray

Earlier research has shown that the use of locally available plant-based insecticides, such as neem and papaya leaf extracts, for control of *M. vitrata* and other pests can double cowpea grain yields. The combination of traps and botanical pesticide is comparable to conventional insecticide spraying in economic terms although there is still scope for improving technical performance.

The work is supported and promoted through the regional cowpea initiative PRONAF (*Projet de Niébé pour l'Afrique*) project which is funded by the International Fund for Agricultural Development (IFAD). NGOs and the private sector are also being engaged for the commercialisation of the production of the traps, lures and botanicals.

R8300: Implementing pheromone traps and other new technologies for control of cowpea insect pests in West Africa through Farmer Field Schools

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