

# Mosquito net for crops may reduce the insecticide pollution in peri-urban areas of Africa

**T**o reduce the insecticide contamination of environment, which is strongly suspected to select insecticide resistance in mosquitoes from peri-urban areas, we experienced to replace foliar sprays on vegetables by using mosquito netting. The protection of cabbages using a net was investigated in a field trial in Benin during the dry season.

Cabbage field trial comparing an insecticide foliar protection, a netting protection and an unprotected control.



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## Methods

A trial was implemented in November in the Research Centre of Agonkanmey (Benin). Four treatments were compared in a Fisher block design:

- insecticide treated net (only for seedling nursery),
- untreated net,
- local insecticide protection with 10 sprays of deltamethrin at 12 g/ha,
- a control without any protection.

Nets, from local market, were in knitted polyester with 25 holes/cm<sup>2</sup>. Treated nets were impregnated two days before use by dipping with deltamethrin at 50 mg/m<sup>2</sup>. Four wood pickets were placed at each corner to maintain nets at 50 cm height in the seedling nurseries. The nets were removed during the day when the flight activities of pests were reduced to suppress the problem of overheating and excessive shade.

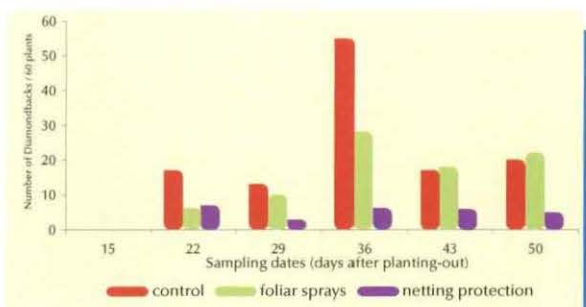
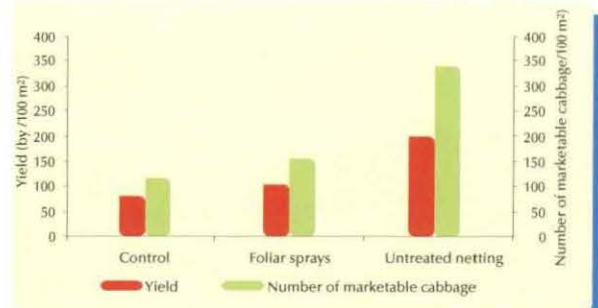


Cabbage plots at harvest time. The left plot was protected with an untreated net. The right plot was not protected.

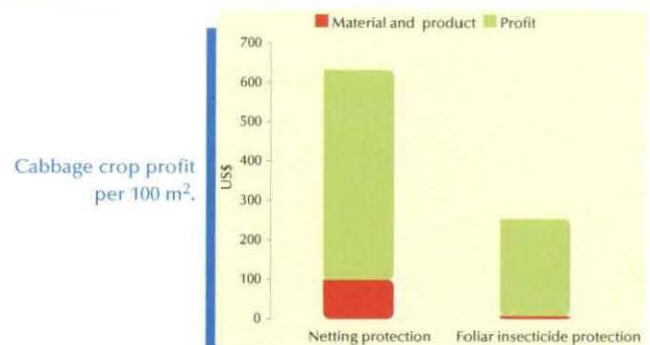
## Results

Nets were very effective to protect cabbages from caterpillar attacks, particularly the Diamondback moth *Plutella xylostella*. An insecticide treated net allowed a better protection against small pest such as aphids when compared with an untreated net. At harvest time, the production of marketable cabbages with a netting protection was significantly better than a foliar insecticide protection. Netting protection is an economical and valuable method for cabbage protection.

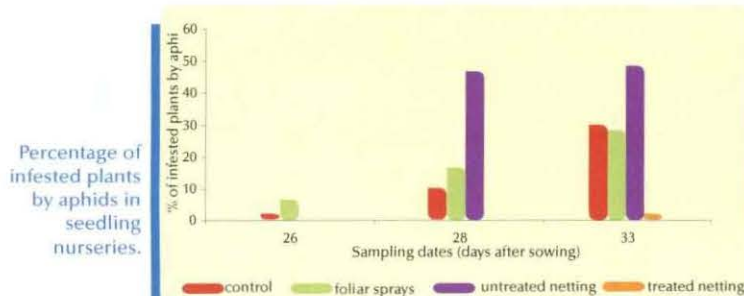
Number of marketable cabbages and yield at harvest time.



Evolution of Diamondback moths per cabbages.



Cabbage crop profit per 100 m<sup>2</sup>.



Percentage of infested plants by aphids in seedling nurseries.

## Conclusion

A mosquito net may efficiently protect vegetables against a wide range of pests. Netting protection could prevent unsustainable insecticide practices in peri-urban areas of tropical countries. The material is available on local market and can be cost effective as it could be easily used many times. This technique could benefit from the large scale implementation of bednets in Africa by the national malaria programmes and conversely.