

An IPM system for pod-borer control in small-scale commercial cowpea production in Nigeria



Maruca vitrata larva Photo: D Ironside
http://www.daff.qld.gov.au/26_9885.htm



Cowpea is an important source of income for rural households in Kebbi State Nigeria. Expensive insecticide sprays are used in a calendar-based regime to control pod-borer (*Maruca vitrata*). Field trials were conducted with farmers to evaluate the use of neem extract to replace commercial insecticide. Insecticide and neem were applied either weekly from 60% flowering or based on pest scouting.

RESULTS: Larval numbers were decreased by 78% by insecticide applied on a calendar basis and by 66% by neem (Fig. 1).

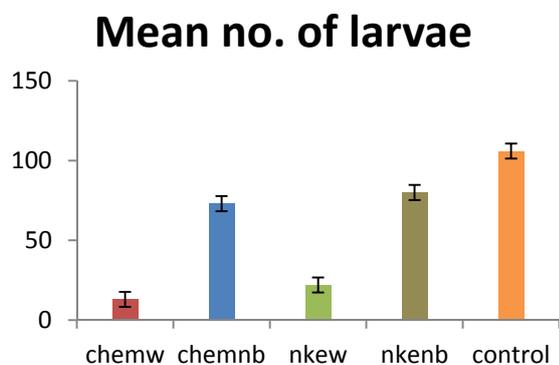


Fig. 1. Effect of commercial insecticide and neem extract on number of pod borer larvae

Control was less effective with both Insecticide and neem when spray timing was based on scouting. This may be due to the difficulty experienced by farmers in counting larvae hidden under leaves.

chem = commercial insecticide
nke = neem
w = weekly sprays
nb = scouting-based

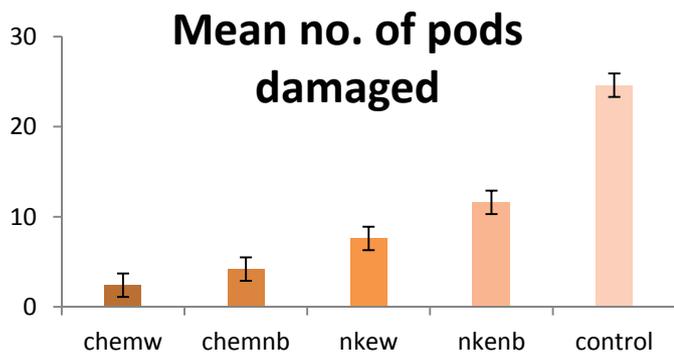


Fig.2. Mean number of pods damaged by *M. vitrata* with different spray regimes.

Pod damage was decreased by 70 – 80% by commercial insecticide and 40 – 50% by neem, applied on a calendar basis or based on scouting respectively (Fig. 2)

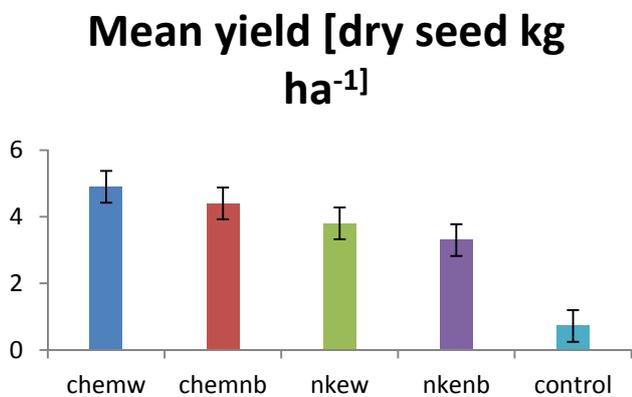


Fig.3. Mean yield of cowpea seed in response to different spray regimes to control *M. vitrata*

Yield increases in response to spraying corresponded to relative decrease in pod damage (Fig 3). However, economic returns were greater from the use of neem extract than from commercial insecticide. Neem extract also had less impact on the beneficial insect population, although weekly applications of neem still caused a 50% decrease in the number of predators and parasites recovered from the plots (Fig 4).

Total no. of beneficial insects

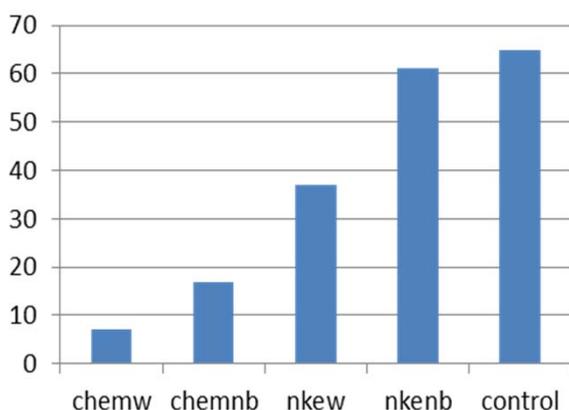


Fig.4. Total number of beneficial insects recovered from plots treated with different spray regimes.

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