

STUDIES ON THE PERFORMANCE OF SELECTED COWPEA CULTIVARS FOR  
RESISTANCE TO SOME HOMOPTERAN FOLIAR PESTS

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## ABSTRACT

Studies on the performance of selected cowpea cultivars for resistance to some homopteran foliar pests were conducted under greenhouse conditions at the National Agricultural Laboratories, Nairobi. Two homopteran pests: Green leafhopper, Empoasca sp. and pea aphid, Acyrtosiphon gossypii Mordwilko, reared in the laboratory were used to screen eleven cowpea cultivars obtained from the International Institute of Tropical Agriculture (IITA), for resistance to attack by these insects. Resistance in the cowpea cultivars was assessed on visual scale of 0-5 (0 = normal, 1 = 0-5%, 2 = 6-25%, 3 = 26-50%, 4 = 51-75% and 5 = 76-100%). A cultivar was considered resistant when the damage index was between 0-2 (0-25%) and susceptible if damage exceeded 25.9%.

Seven cultivars, TVU 1190 (VITA 3), TVU 123, TVU 662, TVU 1509 TVU 59, Prima (TVU 76) and TVU 2045 were screened for resistance to green leafhopper. Prima (TVU 76) and TVU 2045 were rated susceptible cultivars. Five of these cowpea cultivars were found to possess varying degree of resistance to this insect species. TVU 59, TVU 1190 (VITA 3) and TVU 123 were consistently resistant to leafhopper attack in all experiments due to either antibiosis or non-preference effects.

The five cowpea cultivars screened for resistance to pea aphid revealed that only Ife Brown, TVU 408P2 and TVU 410 had, in fact, either antibiosis or non-preference effects on this pest. Prima and Palegreen were susceptible.

A field trial was conducted at the National Agricultural Laboratories, Nairobi (Kabete), with the purpose of recording

the performance of some IITA cowpea cultivars as compared with local selections under minimum insecticide application. A very poor performance was recorded on all the cultivars under evaluation. When the dryseed yields of the local selections were compared with the exotic cultivars, the former did better than the latter, though yields were below the expected value. The maximum dryseed yield of 163.22 kg per hectare was recorded on 'Emma white' under minimum insecticide application while minimum yield was obtained from Prima.

Low yields were attributed to adverse weather conditions, high altitude, weaver birds, insect pests and diseases. Cowpea cultivars, particularly TVU 1190 (VITA 3), which is successfully grown in Nigeria, failed to do well at Kabete with an altitude of 1737.36 m, suggesting that high altitude is not suitable for the growing of cowpeas. This cultivar should, therefore, be tried at low altitude areas to confirm its adaptability in Kenya. 'Emma white', 'Kitui white' and 'Makueni red' did well in comparison to other local and exotic cultivars.