EFFECT OF COWPEA MOSAIC VIRUS ON NODULATION AND NITROGEN FIXATION IN CULTIVARS OF COWPEA

Vigna unguiculata (L.) **Walp**

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This study was carried out to assess the effects of Cowpea Mosaic Virus (CMV) infection on agronomic parameters, nodulation and N_2 fixation in four cultivars of cowpea namely IFOB, Ife Brown, Obwell Standard and BPQ/C with and without Starter N application in the greenhouse. This was with the aim of screening for which Cowpea variety is naturally resistant to the Cowpea Mosaic Virus.

The first experiment was set up using a Randomized Complete Block Design (RCBD) on treatments consisting of four cultivars of cowpea in two sets: (a) disease free and (b) infected with CMV, each replicated four times. The second experiment involved the assessment of the effect of Starter nitrogen (N) on nodulation and nitrogen fixation in cultivars of cowpea inoculated with CMV. The layout was also set up using RCBD and the treatment consisted of four cultivars of cowpea also in two sets: (a) inoculated with CMV plus Starter N and (b) the second set uninoculated without Starter N each replicated three times. Analysis of variance (ANOVA) was used to analyze the treatment effects. Means of the treatment effects were also compared using Duncans New Multiple Range Test (DNMRT) at 0.05 level of significance.

Results of the study showed that plant height, days to 50% flowering, shoot, root and nodule dry weight, number of nodules, total nitrogen content and total nitrogen fixed by inoculated Ife Brown, Obwell Standard and BPQ/C were significantly reduced ($P<0.05$) with or without Starter N when compared with their corresponding uninoculated cultivars, except for IFOB which showed a high level of resistance to inoculation with CMV, with or without Starter N. This study also showed that there was no improvement in the performance of the infected cowpea cultivars in presence of Starter N.

It was concluded that while Obwell Standard, BPQ/C and Ife Brown were susceptible to CMV with or without Starter nitrogen, IFOB was resistant.