

Cowpea reactions to *Alectra vogelii* I : : effect on growth

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Abstract

Field trials were conducted in 1993, 1994 and 1995 wet seasons to determine the effect of *Alectra vogelii* on the vegetative growth of 16 cowpea varieties. This include 11 resistant varieties: IT81D-985, IT81D-994, IT89KD-245-1, TN93-80, TN121-80, IT90K-76, IT90K-59, IT86D-534, IT86D-843, B301 and IT89KD-245, two tolerant varieties: KANO 1696 and VITA 3 and three susceptible varieties: SAMPEA 7, TVX 3236 and IT82D-849. The growth of *A. vogelii* on each of the cowpea varieties was also evaluated. Cowpea varieties Tvx 3236, VITA 3, SAMPEA 7, KANO 1696, IT89KD-245 and IT82D-849 had higher *Alectra* infestation than the other varieties in the study. *Alectra* infestation generally showed a high tendency to stimulate root and shoot dry matter production of most cowpea varieties studied at 5 WAP, especially in 1993 and 1994. Generally, more cowpea varieties had the root and shoot dry matter production reduced at 9 WAP, with greater reduction in the late planted crop and heavily infested cowpea plants as observed in 1993 and 1995, respectively. The root dry weight of varieties IT89KD-245, IT90K-76 and IT90K-59 in 1993 and 1994 and IT81D-994 and B301 in 1994 and 1995 and TN93-80 in 1993 and 1995 was increased at 9 WAP, whereas that of SAMPEA 7 and IT86D-843 was reduced at 9 WAP in all the trials. Irrespective of sowing date and level of infestation, the adverse effect of *Alectra* infestation on cowpea shoot growth was more apparent between 7 and 9 WAP — a period of flower initiation and first phase of pod development. Generally, *Alectra* infestation showed a high tendency to reduce the leaf area of most of the cowpea varieties in at least two of the sampling dates. The root nodule formation in both resistant and susceptible cowpea varieties was inhibited by *Alectra* infestation. It reduced the root nodule count of varieties IT81D-985, IT89KD-245-1, IT90K-76, TN93-80, KANO 1696 and SAMPEA 7 in 1994 and IT82D-849 in 1995 at all the sampling dates in each trial. This study showed that the devastation of cowpea grain yield by *Alectra* could be attributed to the reduced root nodulation, root and shoot growth exhibited by susceptible varieties at stages of vegetative growth.

Author Keywords: Growth; Root nodules; Field trials; Parasitic weed