Inheritance of resistance in cowpea (Vigna unguiculata) to the pod-sucking bug Clavigralla tomentosicollis (Hemiptera: Coreidae)

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Abstract

Inheritance of resistance in cowpea to Clavigralla tomentosicollis Stål was studied on F1, F2 and F3 generations produced from crosses made between Ife Brown, a susceptible cultivar (PS), and TVu 3354, a resistant variety (PR), on the pods of which freshly emerged nymphs of C. tomentosicollis were caged. Nymphal weight gain was significantly higher (p < 0.05) on PS. There were no significant differences between the weight gains of nymphs that fed on F1, F2 and F3 pods. Insect mortality was significantly higher on PR (86.7%) and the F2 (70.0%) generation. Total nymphal development period was significantly longer on PR (15.0 days) while that on F1 and F2 generations was significantly longer than on the F3 generation. Nymphal survival and adult emergence were observed on eight plants out of 60 and 19 plants out of 80 from the F2 and F3 generations, respectively. Broad-sense heritability estimates were 90.3% and 94.3% for the F2 and F3 generations, respectively. The results clearly indicated that TVu 3354 has highly heritable resistance to C. tomentosicollis. Copyright © 2008 John Wiley & Sons, Ltd

Keywords:
Clavigralla tomentosicollis; cowpea; pod-sucking bug; resistance; Vigna unguiculata