

## Abstract

Cowpea (*Vigna unguiculata* L. Walp.) is a drought resistant, multipurpose legume commonly used for food, fodder and soil fertility improvement. Cowpea and commonly cultivated multipurpose shrubs (*Calliandracalothyrsus* and *Leucaena leucocephala*) were evaluated for their early growth establishment abilities by assessing nodulation, shoot and root biomass, root to shoot ratios and total plant biomass. The main objective of the study was to investigate how cowpea early growth compares with that of commonly grown multipurpose leguminous tree shrubs and assess the potential of the test plants for use in short term rotations in semi-arid areas. The experiment was laid down as a completely randomized block design replicated five times. Results obtained indicated that cowpea maintained higher values for all parameters measured in the test plants throughout the sampling period. For instance, cowpea accumulated highest shoot biomass of 1.2g compared to 1.08g and 1.04g accumulated by *Leucaena* and *Calliandra*, respectively. Root biomass was also highest for Cowpea 1.5g, followed by *Leucaena* 1.2g and finally *Calliandra* 0.9g. Cowpea root to shoot ratio was significantly ( $p < 0.05$ ) higher than that of *Calliandra*. These results indicated that cowpea could be a potential short rotation legume for cropping systems in the semi-arid areas in a changing climate