

Maturity, protein content and yield stability of cowpea in Uganda

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Abstract

Low yields and protein content are major constraints to cowpea production in semi-arid areas. A study was conducted to determine cowpea performance across diverse environments in Uganda. Twenty-eight cowpea genotypes were evaluated in a randomised complete block design with three replications and parameters such as days to maturity, yield and protein content were quantified. Results revealed significant ($P < 0.05$) differences among cowpea genotypes for all the traits measured. The earliest-maturing genotype (WC 64) took 7 d less than the latest-maturing genotype (IT99K-216-48-1) to reach physiological maturity. Genotype IT97K-491-7 yielded 1.28 t ha⁻¹, which was 23% more than the average yield for all genotypes studied, whereas genotypes NE 15 and NE 19 exhibited the highest (25.5%) and lowest (23.1%) protein content, respectively. Based on stability analysis, the genotypes IT97K-491-7 and NE 48 were found to be more stable for grain yield, whereas IT93K-452-1, SECOW 4B and WC 36 were stable for protein content across the three environments. The results revealed variability in cowpea maturity, yield, protein content and stability, which could be exploited by breeding programmes to develop suitable cultivars across diverse environments in Uganda.

Keywords: maturity, protein, stability, *Vigna unguiculata*, yield