



Measurements of experimental precision for trials with cowpea (*Vigna unguiculata* L. Walp.) genotypes

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ABSTRACT. The aim of this study was to evaluate the suitability of statistics as experimental precision degree measures for trials with cowpea (*Vigna unguiculata* L. Walp.) genotypes. Cowpea genotype yields were evaluated in 29 trials conducted in Brazil between 2005 and 2012. The genotypes were evaluated with a randomized block design with four replications. Ten statistics that were estimated for each trial were compared using descriptive statistics, Pearson correlations, and path analysis. According to the class limits established, selective accuracy and F-test values for genotype, heritability, and the coefficient of determination adequately estimated the degree of experimental precision. Using these statistics, 86.21% of the trials had adequate

experimental precision. Selective accuracy and the F-test values for genotype, heritability, and the coefficient of determination were directly related to each other, and were more suitable than the coefficient of variation and the least significant difference (by the Tukey test) to evaluate experimental precision in trials with cowpea genotypes.

Key words: *Vigna unguiculata* L.; Experimental planning; Quality control