

ABSTRACT

A preliminary evaluation of thirty four cowpea cultivars was conducted to select for detailed studies, promising cultivars with potential for commercial and small farm production. Parameters used in the selection process were high seed yield per plant, high virus tolerance, low degree of vining, large seed size and earliness to maturity. Nineteen cultivars, (12 determinate and 7 indeterminate) were selected and plant characteristics of each were described. The implications of these characteristics were discussed.

Studies of growth, development and yield of the two groups of cultivars selected were conducted in two experiments each during the wet and dry seasons. Plant population densities were 100,000 plants per hectare and 66,000 plants per hectare for the determinate and indeterminate cultivars respectively. The results indicated that the number of pods per plant was the most important component affecting variation in seed yield among cultivars.

Significant differences in yield existed among cultivars in each group in each season. Mean seed yield of the determinate group was higher than that of the indeterminate group in both seasons. More than one harvest was required to recover the seed yield in all cultivars. The percentage of final seed yield recovered at first harvest for each cultivar was higher in the dry season than in the wet.

A larger plant size for each cultivar was achieved during the wet season, with higher maximum total plant weights and maximum Leaf Area Indices than in the dry season. Leaves and stems made the major contributions to TDM accumulation up to the attainment of 50% flowering,

after which peduncles and pods made major contributions. Plants flowered earlier, and crop duration was shorter in the dry season than in the wet.

The relationships between maximum plant weight and maximum Leaf Area Index with seed yield for the two groups of cultivars were examined and discussed. Promising cultivars for large scale commercial production and small farmers and home gardeners were identified, and advantages and disadvantages were discussed.

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