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TUDY OF DAYS TO FLOWERING AND YIELD COMPONENT VARIATION AMONG SELECTED COWPEA GENOTYPES

(Vigna unguiculata)

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ABSTRACT

Cowpea is a valuable source of plant protein, vitamins and minerals that form part of the human diet and animal feed, besides its role in improving soil fertility through biological nitrogen fixation. However, cowpea productivity in Sri Lanka remains low due to the limited availability of improved varieties environmental stresses and insufficient breeding research. Therefore, the present study was carried out to evaluate the variation in days to flowering and yield component traits among the selected cowpea genotypes to identify promising lines for future improvement and cultivation under local agro-climatic conditions. The experiment was conducted from 08th of July to October 2025 at the Faculty of Technology, Eastern University, Sri Lanka. Twenty tow genotypes (*CP 21, CP 32, CP 39, CP 169, CP 104, CP 16, CP 50, CP 158, CP 173, CP 177, CP 195, CP 246, CP 247, ANKCM 20-1, ANKCM 20-2, ANKCM 20-3, ANKCM 20-4, ANKCM 13-4, ANKCM 14-1, ANKCM 14-2,Warni,Dawala)* .obtained from the Grain Legumes and Oil Crops Research and Development Centre, Agunakolapelessa, were evaluated in a Randomized Complete Block Design (RCBD) with three replications. Data were collected on days to flowering, number of pods per plant, seeds per pod, pod length, pod width, 100-seed weight and grain yield per plant, biomass yield, and harvest index. Analysis was conducted and a dendrogram will be constructed using Minitab version 17 to visualize the genetic relationships among the genotypes. Six clusters were separated according to morphological data. Four cowpea genotypes belong to the early flowering (30-36 days) high yielding (13.01- 28.33 g) category (*CP 246, ANKUM13-4, Dhawala, Warumi)* which are suitable for cultivation during drought periods and for cultivation in dry zones. Other high yielders such as *CP39, ANKCM 20-4, ANKCM* 14-*2, CP 173, CP195, ANKCM 20-1,CP 158, CP247* have been indicated but they are late flowering (39- 48 days). The highest yield of cowpea genotypes is late flowering *CP 173* (28.33±0.03^{a}). These initial data can be used for future cowpea breeding programs in Sri Lanka.

Keywords: Days to flowering, Genotype variation, Genetic diversity, Pod yield, Seed yield.

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