EFFECT OF DIFFERENT PLANTING PATTERNS IN OKRA (*Abelmoschus esculentus*) COWPEA (*Vigna unguiculata* L. Walp) INTERCROPPING ON GROWTH AND YIELD OF BASE AND INTERCROP IN SANDY REGOSOL

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ABSTRACT

This experiment was carried out at the Crop Farm of Eastern University, Sri Lanka during the period from June 2018 to September 2018 to study the effect of different planting patterns in okra (*Abelmoschus esculentus* L.) – cowpea (*Vigna unguiculata* L. Walp) intercropping on growth and yield of base and intercrop in sandy regosol, with the okra variety *Haritha* and cowpea variety *Waruni*. The experiment was laid out in a Randomized Complete Block Design (RCBD) with four replications. Treatments were okra as a sole crop with the spacing of 90 cm × 90 cm (T1), cowpea as a sole crop with the spacing of 30 cm × 15 cm (T2), alternative planting of okra and cowpea (T3), 60/150 cm paired row planting of okra with two rows and three rows of cowpea in between paired rows (T4 and T5) and 75/120 cm paired row planting of okra with two rows and three rows of cowpea in between paired rows (T6 and T7).

Plant height, root length, fresh and dry weights of plant, leaf area, leaf area index, canopy width, days for 50% and 100% flowering, number of fruits per plant and weight per fruit were higher in 60/150 cm paired row planting of okra with three rows of cowpea in between paired rows (T5) compared with tested treatments. Okra in T5 gave 17.1% higher yield than T1. Yield of cowpea was significantly different ($P<0.05$) among tested treatments and higher yield was noted in T2 at 3rd picking and higher cumulative yield also was high in T2 followed by T3 and T5. A significant difference ($P<0.05$) was observed in Land Equivalent Ratio and Area – Time Equivalent Ratio with the highest value of both offering to T5. Economic parameters such as gross return, net profit, cost: benefit ratio and per day return were significantly different ($P<0.05$) among tested treatments and higher values were in T2 followed by T5.

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