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COMPARATIVE STUDY ON YIELD COMPONENTS OF VEGETABLE AMARANTHUS (*Amaranthus tricolor* L.) PLANTED AS SOLE AND INTERCROP

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ABSTRACT

This study was carried out at the Agronomy farm, Eastern University, Sri Lanka to compare the yield components of vegetable amaranthus (*Amaranthus tricolor* L.) planted as sole and intercrop. Vegetable amaranthus, red variety was used in this study. Radish (*Raphanus sativus* L.) was selected as a base crop in intercropping. Experiment was designed in a Randomized Complete Block Design with five treatments and four replicates. The treatments were vegetable amaranthus as a sole crop with the spacing of 10 cm x 5 cm, 20/50 cm paired row planting of radish with three rows of vegetable amaranthus in between paired rows of radish, 20/50 cm paired row planting of radish with four rows of vegetable amaranthus in between paired rows of radish, 25/40 cm paired row planting of radish with three rows of vegetable amaranthus in between paired rows of radish and 25/40 cm paired row planting of radish with two rows of vegetable amaranthus in between paired rows of radish. Leaf area was taken at regular intervals and leaf number, root length, shoot height, fresh and dry weights of leaf, stem and root were measured at the time of harvest. Leaf area index was also calculated.

The results revealed that number of leaf, leaf area, leaf area index and dry weights of root and leaf of vegetable amaranthus were performed well in both monocropping and intercropping system. However, shoot height, root length and fresh weights of stem, leaf and root of vegetable amaranthus were better in monocropping compared with intercropping. Further, fresh weight of plant was also high (68.44 g/plant) in monocropping than that of intercropping. Yield of vegetable amaranthus per plot (2.16 m²) varied according to the plant density in each treatment. In this study, overall performance of vegetable amaranthus was high in monocropping followed by intercropping in a system of 20/50 cm paired row planting of radish with three rows of vegetable amaranthus in between paired rows of radish.

Key words: Intercropping, Leaf area index, Monocropping, Vegetable amaranthus, Yield.