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Intercropping performance of radish (*Raphanus sativus* L.) planted with vegetable amaranthus (*Amaranthus tricolor* L.) in response to paired row planting system

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Intercropping is widely practiced by the farmers in the tropics, because of increased productivity and reliability in production. This study was carried out at the Agronomy farm, Eastern University, Sri Lanka to evaluate the effect of intercropping performance of radish (*Raphanus sativus* L.) planted with vegetable amaranthus (*Amaranthus tricolor* L.) in response to paired row planting system. Radish, Japan ball variety was used for this attempt. Experiment was designed in a Randomized Complete Block Design with six treatments and four replicates. Treatments included radish as a sole crop with the spacing of 30 cm × 10 cm (T1), vegetable amaranthus as a sole crop with the spacing of 10 cm × 5 cm (T2), 20/50 cm paired row planting of radish with three rows of vegetable amaranthus in between paired rows of radish (T3), 20/50 cm paired row planting of radish with four rows of vegetable amaranthus in between paired rows of radish (T4), 25/40 cm paired row planting of radish with three rows of vegetable amaranthus in between paired rows of radish (T5) and 25/40 cm paired row planting of radish with two rows of vegetable amaranthus in between paired rows of radish (T6). In radish planted as base crop, leaf area index (LAI) was recorded at regular intervals, while tuberous root diameter, total root length and fresh and dry weights of leaf and tuberous root were measured at harvest. In addition, land equivalent ratio (LER) was calculated.

The results revealed that LER was high in intercropping system compared with monocropping. It ranged from 1.16 (T6) to 1.31 (T3). There was no significant difference ($P>0.05$) in radish yield among the treatments. However, the yield of radish (39.26 tons/ha) in monocropping was higher as compared to that in intercropping. Among intercropping, T3 gave slightly higher yield (37.78 tons/ha). In all treatments reached optimum LAI at harvest. Fresh and dry weights of tuberous root and leaf and other parameters were high in T3. In the present study, 20/50 cm paired row planting of radish intercropped with three rows of vegetable amaranthus in between paired rows of radish would be the most suitable planting system.

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