GROWTH AND YIELD RESPONSES OF OKRA (*Abelmoschus esculentus* L.) AS INFLUENCED BY RED LARGE ONION (*Allium cepa* L.) PEEL LIQUID WITH MORINGA LEAF EXTRACT ORGANIC FERTILIZER

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ABSTRACT

Okra (*Abelmoschus esculentus* L.) is the most popular vegetable in Sri Lanka. It is a nutrient-rich vegetable, and the crop responds well to organic fertilizers. A pot experiment was carried out to evaluate the impact of red onion (*Allium cepa* L.) peel liquid (ACL) and moringa (*Moringa oleifera* L.) leaf extract (MLE) organic fertilizer on growth and yield of okra. The experiment was arranged in a completely randomized design with 48 replications. Different concentrations of the red onion peel liquid and moringa leaf extract organic fertilizer, along with the recommended level of inorganic fertilizer (as per the Department of Agriculture, Sri Lanka) was defined as treatment, viz. T1-control (recommended inorganic fertilizer), T2 (100% MLE + ½ dosage of recommended inorganic fertilizer), T3 (100% ACL + ½ dosage of recommended inorganic fertilizer), T4 (20% MLE + 80% ACL + ½ dosage of recommended inorganic fertilizer), T5 (40% MLE + 60% ACL + ½ dosage of recommended inorganic fertilizer), T6 (50% MLE + 50% ACL + ½ dosage of recommended inorganic fertilizer), T7 (60% MLE + 40% ACL + ½ dosage of recommended inorganic fertilizer) & T8 (80% MLE + 20% ACL + ½ dosage of recommended inorganic fertilizer). Agronomic practices, except fertilizer application, were followed as recommended for all treatments. Growth and yield parameters were measured at two-week interval and total yield per plant was measured at two days interval. Plants treated with 100% moringa leaf extract with ½ dosage of recommended inorganic fertilizer - T2 (0.253 l/m^2) showed significantly (p<0.05) better performance in measured growth parameters, viz., plant height, stem girth, number of leaves, leaf area, days to 50% flowering, days to first flowering, number of flowers, days to first harvest, fresh weight of leaves, pod length, pod girth, pod fresh weight and total yield per plant. The lowest performance was recorded in plants under T8. From this study it could be concluded that, 100% moringa leaf extract combined with half dosage of recommended inorganic fertilizer (T2) provides optimum nutrients for okra growth and yield, while promoting sustainable and environmentally friendly alternatives to conventional fertilization techniques.

Keywords: *Allium cepa* peel liquid, Foliar spray, Moringa leaf extract, Plant nutrition, Sustainable agriculture

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