

EFFECT OF DEFOLIATION ON GROWTH AND YIELD OF OKRA (*Abelmoschus esculentus* L.)

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ABSTRACT

Okra is one of the important vegetable crops in many countries including Sri Lanka. In Sri Lanka, the average yield of okra is below the potential yield. Removal of selected leaves (*i.e.*, defoliation) in crops was known to improve the crop yields through modifying the effective photosynthetic area and overall canopy photosynthesis. The defoliation may have varying effects on growth and yield formation of crops depending on the growth stages. However, the effect of defoliation on the growth and yield of okra has not yet been identified. Hence, the aim of this investigation was to assess the effects of different intensities of defoliation at different growth stages on the growth and yield of okra. The experiment was arranged in Complete Randomized Design (CRD) with eighteen individual treatments and three replications. The treatments were D1 (10 % defoliation), D2 (20 % defoliation), D3 (30 % defoliation), D4 (40 % defoliation), D5 (50% defoliation), D6 (control – no defoliation) and these six intensities of defoliation were implemented in three growth stages namely, vegetative stage, flowering stage and pod formation stage of separate group of plants totaling eighteen treatments. All treatment plants were grown in pots under recommended management. Plant height and root length were measured as growth parameters while fresh pod weight was measured as yield parameter. The data were statistically analysed using Minitab 17, and Turkey's Multiple Range Test was performed for mean comparison at 5 % significant level. The results indicated 30% of defoliation intensity implemented at flowering stage (*i.e.*, 8 weeks after planting) showed the best performance in terms of growth and yield of okra. Growth and yield were lower when the defoliation was applied at vegetative or pod formation stage. Meanwhile, undefoliated plants and plants defoliated with lower or higher intensities than 30% showed lower growth and yield. This experiment needs to be conducted across different agroecological regions in the country to test the applicability of the above findings before recommending the defoliation for okra to enhance its growth and yield.

Keywords: *Canopy, Defoliation, Leaf Area, Photosynthesis, Yield*

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