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Vegetative propagation of lemongrass as affected by variety, slip height, potting media and pruning

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Abstract

Lemongrass belongs to the family Graminae which ranks among the top ten oil bearing crops in the world essential oil market. Lemongrass oil is used for numerous purposes including pharmaceutical, cosmetic and food and beverage industry. Few decades ago, lemongrass was one of the key export crops in Sri Lanka, but currently less abundant due to low productivity, quality and absence of proper protocol for commercial production. Therefore, a pot experiment was conducted at Department of Crop Science, Faculty of Agriculture, University of Ruhuna, Sri Lanka from November 2020 to March 2021 to study the effect of variety, slip height, potting media and pruning on tiller count of lemongrass. Two commercially cultivating lemongrass varieties; *Cymbopogon flexuosus* (V1) and *Cymbopogon citratus* (V2), two slip heights; 6" (H1) and 9" (H2) and four potting media; soil: sand: compost: 1:1:1(P1), soil: sand: poultry manure: 1:1:1(P2), soil: sand: poultry manure: 1:1:2(P3) and soil: sand: poultry manure: 1:1:3(P4) were arranged in 2×2×4 Factorial Randomized Complete Block Design (RCBD) with four replicates. 12" × 10" pots were prepared using gauge 300 black polythene to plant lemongrass cuttings. Pruning effect was evaluated as a separate experiment and pruning was done two months after planting. Tiller count per plant was recorded. Results revealed that, main effect of variety and potting media had a significant effect on the number of tillers produced per plant ($p < 0.05$). Slip height and other interaction effects did not show any significant effect on tiller count. V1 had significantly higher tiller count (4.65) over V2 (4.17) in experiment 01. In experiment 02, significantly higher tiller count also showed in V1 (5.07) with compared to V2 (4.33) while P4 had resulted higher tiller count (31.25) over P1 (15.00) before pruning. Further, pruning significantly induced tillering ability of V1 (26.75) over V2 (19.97) while P4 (31.25) with compared to other media. Therefore, it can be concluded that, cultivating *Cymbopogon flexuosus* (V1) using potting mixture soil: sand: poultry manure: 1:1:3 (P4) with pruning two months after planting resulted higher vegetative propagule production.

Key words: lemongrass, potting media, pruning, slip height, tiller count

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