

Modified Planting System for the Quality Improvement of Cinnamon Quills

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Though Sri Lanka is the largest supplier in the global cinnamon market, majority of exported cinnamon quills are categorized as lower grade with lower export value. Export earnings can be enhanced by increasing the production of higher grade quills. By altering the current production system, stems suitable for higher grade quills (medium girth, long and straight) can be produced. This study was conducted to identify the effect of spatial pattern, type of planting material and harvesting interval on stem structure of cinnamon in order to produce higher grade quills. Seedlings and vegetatively propagated plants (VP) of cinnamon; variety Sri Gemunu were planted under three spatial patterns as (A) 1.2×0.6 m with three plants per hill, (B) 1.2×0.4 m with two plants per hill and (C) 1.2×0.2 m with one plant per hill at the Faculty of Agriculture, University of Ruhuna, Sri Lanka. Stems were harvested in two planting intervals as 6 and 8 months and height, top diameter, bottom diameter and average diameter were recorded. Study was conducted under 3 factor factorial split plot design with 4 replicates. The results revealed that, interaction effect among 3 factors was not significant ($p < 0.05$) for stem height or diameter. Interaction effect of spatial pattern and planting material along with planting material and harvesting interval were significant ($p < 0.05$) for stem height. Height of seedlings harvested in 8 months interval (2nd harvest: 205.61 cm, 3rd harvest: 235.14 cm) was significantly higher ($p < 0.05$). Simultaneously, seedlings established in spatial pattern C were produced significantly longer stems (2nd harvest: 202.72 cm, 3rd harvest: 238.99 cm) ($p < 0.05$). Any interaction effect or main effect were not significant ($p < 0.05$) for top diameter of stems. Bottom diameter of stems harvested in 8 months interval during 2nd harvest (24.44 mm) were significantly higher ($p < 0.05$) than plants harvested in 6 months interval (21.31 mm) though the effect was not significant during the 3rd harvest. VP produce stems with significantly higher ($p < 0.05$) bottom diameter (2nd harvest: 26.87 mm, 3rd harvest: 33.75 mm) than seedlings (2nd harvest: 18.88 mm, 3rd harvest: 29.78 mm). Average diameter of VP (2nd harvest: 26.71 mm, 3rd harvest: 28.80 mm) was significantly higher ($p < 0.05$) than seedlings (2nd harvest: 18.31 mm, 3rd harvest: 23.76 mm) while average diameter of stems harvested in 8 months interval (2nd harvest: 23.97 mm, 3rd harvest: 27.90 mm) were significantly higher ($p < 0.05$) than stems harvested in 6 months interval (2nd harvest: 21.07 mm, 3rd harvest: 24.66 mm). Findings of this study can be used for production of higher-grade cinnamon quills and further quality enhancement studies of cinnamon.

Keywords: Cinnamon; Higher grade quills; Seedlings; Spatial pattern; vegetatively propagated plants