

Influence of Spacing and the Type of Planting Material on Selected Growth Parameters of *Cinnamomum verum* J. Presl (Cinnamon): at the Stage of First Harvest

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Abstract

Cinnamomum verum J. Presl is one of the most well-known spices in the world. Being the largest cinnamon exporter, Sri Lanka contributes largely to the international cinnamon trade. However, Sri Lankan cinnamon production is stagnated due to low productivity and lower grade cinnamon quills. To overcome this, quality and quantity of cinnamon quills need to be improved. Since cinnamon bark is the harvestable component, stem characteristics play an important role in quality and quantity of the product. Longer stems with medium girth are the most important characteristics in producing higher quantity of high-quality quills. Behaviour of cinnamon plants under different spacing need be studied from the initial stage due to the plant's perennial nature. Therefore, this study was aimed at identifying the type of planting material (seedlings and vegetative plants) and spacing on the main factors influencing the bark yield namely; height, top and bottom diameter of the main stem and leaf area of cinnamon plants at the stage of first harvest. Seedlings and vegetatively propagated plants of cinnamon variety Sri Gamunu were planted under three different spacing as 1.2×0.6 m with three plants per hill, 1.2×0.4 m with two plants per hill and 1.2×0.2 m with one plant per hill as two factor factorial RCBD for the study. The study was carried out at the Agriculture Faculty premises of University of Ruhuna. Seedlings established in spatial pattern 1.2×0.6 m with three plants per hill were used as the control. All trees were headed back at 10-12cm above ground after two years from establishment and the measurements were taken. According to the results, seedlings established in the spacing as 1.2×0.2 m with one plant per hill showed the highest mean height, highest bottom and top diameter of the main stem. But the values were not significantly different ($P=0.05$) from the control. Leaf area of seedlings were significantly higher ($P=0.05$) than the leaf area of vegetative propagated plants. Results of the study revealed, the seedlings developed their structure rapidly compared to vegetative propagated plants. Though vegetative propagated plants have a higher yield potential, it appears to require more time to develop a better structure which can give a higher yield. Experiment is continuing to validate the results.

Keywords: Bottom diameter, *Cinnamomum verum*, Leaf area, Plant height, Top diameter

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