Correlation between Cinnamon (*Cinnamomum verum* Presl) bark yield and some identified stick parameters

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Sri Lanka is the world's largest producer of Cinnamon which is one of the important crops where the estimated area of cultivation is approximately 25,300 ha. The present harvesting cost is greater than 50% of the total production cost. If a realistic yield estimate mechanism is developed for a standard cinnamon cultivation, farmers who seek for leasing opportunities would be benefited. The same model expresses the potential yield in an experimental plot. Correlation studies provide degree of association of yield with its components and also amongst them. Therefore, the objective of the present study was to find a suitable correlation (if any) between cinnamon bark yield and dimensions of cinnamon sticks of a harvestable bush.

Sticks were selected randomly from cinnamon bushes of ten year old standard cinnamon plots at Intercropping and Betel Research Station, Export Agriculture Department (DEA), Narammala. The sticks (286) obtained from 45 pruned cinnamon bushes were peeled and processed as per the DEA's recommendations. Stem diameter (cm) and bark thickness (mm) were recorded at 1 cm above the cutting edge of each stem (stick) following the scraping of the sticks to clean the corky tissues. Fresh (wet) weight of clean bark (g) of each stick was recorded. Several statistical models were attempted.

Correlation coefficients between the wet bark yield of a stick and each variable of stick diameter, stick length and bark thickness are positive and significant. Therefore, following multiple regression equation was obtained.
Y (g) = 3.718 diameter (mm) + 0.494 length (cm) + 51.896 bark thickness (mm)-132.043

Multiple regression model appeared to be acceptable as the overall model was highly significant ($P<0.0001$) with r^2 of 0.816. Coefficient of variation for the data set was 28.65%. This model may be adopted for an estimation of yield from a unit area of harvestable cinnamon bushes. For this purpose, Y value should be obtained using a sample survey for a particular cultivation.