B 027

Effect of plant spacing and number of plants per planting point on bark yield of *Cinnamomum verum* Presl. (Cinnamon)

Even though cinnamon *(Cinnamomum verum)* has been cultivated for centuries in Sri Lanka, impact of plant spacing/density in determining variations in bark yield of cinnamon is not well established. A field experiment was carried out to investigate yield variation in cinnamon bark at different plant densities.

Six different treatment combinations of spacing and number of plants per planting point used were 90x60 cm with 3 plants (T1),90x90 cm with 4 plants (T2) 120x45 cm with 2 plants (T3), 120x120 cm with3 plants-control(T4), 120x90 cm with 6 plants (T5) and 120x120 cm with 8 plants (T6). Treatments were arranged in RCBD and replicated four times in 7,2x7.2 m plots. Fertilizer applications was done planting point basis. Yield performances at 43, 58, 80, 89 and 102 months after planting were monitored during the study period of 9 years. Bark yield was estimated from the middle portion of the plot leaving guard rows.

No significant difference ($p>0.05$) was observed during the growth period as well as in the 1st 3rd and 4th harvests. Remarkable yield difference were recorded in 2 rd harvest ($P<0.01$) and 5th harvest ($p<0.005$). Since bark yield varies with climate, harvesting frequency and the intensity, cumulative bark yield of five harvests was considered. It gave highly significant ($p<0.01$) variation among treatments. Higher cumulative bark yield of 4696 and 4633 kg ha^{-1} associated with T3 and T1, which had the higher number of planting points ha^{-1} (18518) with low number of plants $point^{-1}$ (2 plants). This study clearly revealed that closer spacing of 90x60 cm and 120x45 cm 90.54 m^2 planting $point^{-1}$) with less number of plants(2 or3 plants planting $point^{-1}$) can increase bark yield of cinnamon than wider spacing of 120x120 cm (1.44 m^2 $point^{-1}$) with higher number of plants (8 plants) planting $point^{-1}$.