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Evaluation of S9 arabica coffee (*Coffea arabica* L.) progeny for the yield in mid country of Sri Lanka

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Coffee is a perennial seed crop; cultivated as a beverage Export Agricultural crop in Sri Lanka. Two species of coffee are commercially cultivated, namely *Coffea arabica* L. (Arabica coffee) and *Coffea canephora* Pierre (Robusta coffee) but, arabica coffee is the most important species and it occupies 80% of the world market. Among those arabica varieties selection 9 (S9) which is a selection obtained from the hybrid between Hibrido de Timor (HDT) and x Tafarikela is one of the very important selections introduced from India. This variety thrives well in high altitude areas above 600 m ASL. However, it gives considerable yield in the mid country wet zone ecological conditions even below the 600 m ASL. Cup quality of S9 coffee is very much higher when compared to the other arabica varieties. It has high resistance to the coffee rust disease. Therefore, it is important to evaluate a progeny from the S9 variety and select the high yielding plants for crop improvement programs.

A progeny from one of the best mother plants was field established in complete randomized design. All the plants were collar pruned in 1998 to obtain even canopy structure and maintained using recommended management practices by the Department. Initial growth data including height, girth at 7.5 cm height from the base, canopy diameter and the number of plagiotropic branches were recorded in four months interval. Yield data were recorded during six years period.

It takes approximately three years to give considerable yield after collar pruning. Yield data clearly shows that the alternative yielding pattern. Therefore, the mean yield is comparatively low. The best yielding two plants (S4/2 and S4/5) were selected considering the cumulative fresh yield of the plants where the estimated dry yield over 2000 kg $ha^{-1}yr^{-1}$. However, plant S 4-2 shows the dry yield of 2.9 kg $plant^{-1}$ (8900 kg ha^{-1}) in 2004. Those two plants have shown promising height (150 cm) and girth (21 mm) at 15 months age. Plant S 4-2 shows the highest canopy spread (110 cm) and number of plagiotropic branches (23 $plant^{-1}$) whereas plant S 4-5 shows the highest yield (185 g $branch^{-1}$) in 2004. Those characters can be used for future hybridization programmes.

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