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Evaluation of coffee introductions with the local selections in the mid country wet zone of Sri Lanka

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Coffee is a perennial seed crop, cultivated as a beverage, It has been an export agricultural crop since 1503. Two species of coffee are commercially cultivated, namely *Coffea arabica* (Arabica coffee) and *Coffea canephora* (Robusta coffee). Arabica coffee is the most important species as it occupies 80 % of the world market and has a more favorable flavor and aroma, but is adapted to higher elevations i.e. above 600 m mean sea level (MSL). The total extent of coffee plantations in Sri Lanka is 5975 ha, with about 50 % of this lying in the Central Province. The annual export volume of coffee was 60.8 t earning Rs. 15.8 million in 2007. There is a huge opportunity to further improve coffee cultivation in the mid country of Sri Lanka. Therefore, a new Arabica line S4711 and a promising hybrid CxR were introduced from India. This study was carried out to evaluate the effectiveness of these two lines with the cultivar Catimor and two local lines [H(K), and S(K)] for increasing the yield in coffee grown in the mid-country wet zone. The experiment was established in the year 2000 at Stallenburg Estate, Pupuressa (800 m AMSL) in a Randomized Complete Block Design with three replicates. The experiment was maintained using recommended general management practices published by the Department of Export Agriculture. Yield data were recorded by harvesting fresh berries which were processed and weighed. Berry and leaf characters were also recorded and the data were analyzed using ANOVA of the SPSS software package.

According to the results, the best performing line is the local selection, H(K) giving the highest average parchment coffee yield (2502 kg $ha^{-1}yr^{-1}$). The introduction of S4711 generated a similar yield (2409 kg $ha^{-1}yr^{-1}$). Catimor produced 2223 kg $ha^{-1}yr^{-1}$ while CxR and S(K) produced about 2000 kg $ha^{-1}yr^{-1}$. The highest diameter (1.4 cm) of fresh berries was observed in Catimor while the longest fresh berry (1.5 cm) was from S4711. Line H(K) has the highest dry seed weight (0.288 g) as well as a low fresh berry : dry weight ratio (5.11 : 1). Leaf characters show that the hybrid CXR has the largest leaves with the highest leaf area (124.14 cm^2), petiole length (1.1 cm), leaf length (19.27 cm) and leaf width (9.23 cm). Therefore, the local selection, H(K) and introduction of S4711 could be recommended as the best yielding Arabica coffee lines for the mid country wet zone of Sri Lanka.

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