218/B

Evaluation of six robusta coffee (*Coffea canephora* Pierre) varieties

A L S Dharmaparakrama, W M R W B Wijekoon*, C L Thilakarathne and I G M Rajapaksa
Research station, Department of Export Agriculture, Matale

Coffee belongs to genus *coffea*, which is a member of the family *Rubiaceae*. Two species of coffee are commercially cultivated, such as *Coffea arabica* L. (arabica coffee) and *Coffea canephora* Pierre (robusta coffee).This study was initiated to evaluate six important robusta coffee varieties such as Q36, Q96, IMY, CCI, S274 and GCR for the yield and adaptability to the mid country wet zone of Sri Lanka.

Six robusta coffee varieties were planted at the Export Agriculture Research Station, Matale in 1977. Randomized complete block (RCBD) design was used having six varieties as treatments with three replicates and 30 plants per plot. Plants were collar pruned in April 2001 to obtain even canopy structure. The trial was maintained using recommended general management practices recommended by the Department. The yield data were recorded during four years period.

According to the results, variety IMY performed well in 2003 (dry weight -1014.9 g plant^{-1}), 2004 (1686.7 g plant^{-1}) and 2005 (1814.4 g plant^{-1}) compared to the other varieties. However, all the varieties performed well except Q 36 (801.3 g plant^{-1}) and Q 96 (858.2 g plant^{-1}) in year 2005. Therefore, it clearly indicates that the variety IMY performing better than the other varieties from the initial stage to the last yield collected. However, it shows some yield reduction in year 2006 (1100.7 g plant^{-1}) which may be due to alternative bearing pattern. The estimated mean processed yield also shows the highest value (2120 kg ha^{-1} yr^{-1}) in the variety IMY. CCI and GCR are equally performing in every year. However, when compared the estimated dry yield, CCI (2075 kg ha^{-1} yr^{-1}) is better than GCR (1975 kg ha^{-1} yr^{-1}). Variety S274 was performing well in 2005 but in other three years, performances were poor. Varieties Q36 & Q96 gave lower yield in every year. Yield increment was observed until 2005 in all the varieties except Q36 & Q96. Yield reduction in year 2003 may be due to the effect of collar pruning and the yielding pattern from 2004 to 2006 can be described as the dimorphic yielding pattern in robusta coffee. Variety IMY & CCI have 3.83:1& 4.26:1 fresh into dry parchment yield conversion rate respectively and Variety Q 36 shows the highest fresh: dry yield conversion rate (4.34:1).

Finally it can be concluded that Varieties IMY and CCI can be recommended as the high yielding robusta coffee varieties giving more than 2000 kg ha^{-1} yr^{-1} processed coffee yield for the mid country areas. Varieties GCR and S 274 also can be recommended & Varieties Q 96 and Q 36 could not be recommended for the similar agro-ecological conditions.

Tel: 066-2222822