

**Correlation of some pod and bean characters in
cocoa (*Theobroma cacao*.L) *Trinitario* and estimation of pod yield**

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Cocoa (*Theobroma cacao*.L) is one of the important export agricultural crops and the export volume seems to be decreased from 3000 MT in 1950's to 1100 MT in 2003 (Anon, 2003). Therefore, research on plant genetic improvement of cocoa would be a very important area to improve the production. The variability in characters attributed to the yield in present population of cocoa is ascribed to regular cross pollination and several re-introductions of cocoa genetic resources into Sri Lanka. As a part of a characterisation study on available cocoa germplasm, a correlation study was made using important bean and pod characters of cocoa. The study was conducted using randomly selected pods from twenty five year old *Trinitario* type cocoa trees in the germplasm nursery and in the field blocks at Research Centre, Matale. According to the correlation studies, the characters such as pod length, weight of beans with pulp and weight of beans without pulp seem to be important yield contributing characters in cocoa. Finally, following stepwise regression equation was derived to show the correlation among the important characters.

$$* Y = 0.6408 L - 1.1155 D + 0.1144 W + 0.3842 B + 2.2537 C - 3.3218$$

This implies that the above yield components can be considered as important characters in cocoa mother plant selection programme, leading to a reduction in the workload. Estimated yield would be more beneficial for selection of mother plants from cultivations in remote areas than the final harvest since the latter may not be possible due to squirrel damage or theft problem.

*Y = Bean weight per pod (g), L = Pod length (cm), D = Pod diameter (cm), W = Weight of beans with pulp (g)
B = Weight of beans without pulp (g), C = Cotyledon weight (g)

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