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A Comparison of Three Field Layout Systems for Mechanisation during Early Phase of Rubber Cultivation

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Mechanisation is needed to alleviate the shortage of labour in plantation agriculture. The first step towards a successful implementation of many mechanised operations in plantation agriculture is the need to have a field layout system which will facilitate bringing mechanised operations into the interior of the field. In fact, the implementation of such a field layout system must be done as early as possible after land clearing. This will allow more field operations to be mechanised. The design of such a layout system for rubber growing areas poses challenges since the crop is often planted on sloping to hilly terrain. A comparison was made for three field layout systems which comprised of an inter-connecting network of terraces which were: (a) 3.7 m wide, (b) 5.5 m wide and (c) double terraces of 2.7 m width for each terrace. It was seen that the 5.5 m wide terrace was the best in terms of speed to complete field operations coupled with good growth of rubber. However, this broad terrace can be difficult to construct on very steep areas especially when the soils are also shallow. Observations carried out at a very much later stage of 70 months after planting, showed that this area had a very large number of vacant points which would result in a lesser number of trees available for tapping later on. Thus, on the practical side, balancing performance in mechanisation, ease of terrace construction and anticipated number of trees available for tapping, a field layout system made up of terraces of 3.7 m width, would be the most suitable design for mechanisation in rubber cultivation.

Keywords: *Mechanisation, field layout system, terrace design, rubber tree growth.*

